St. Croix Chippewa Indians of Wisconsin

Nonpoint Source Assessment Report

DAVEY Resource Group

Draft – May 2026

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Acronyms and Abbreviations

BIA	Bureau of Indian Affairs
BMP	Best Management Practice
CWA	Clean Water Act
ENRD	Environmental and Natural Resources Department
HSG	Hydrologic Soil Group
HUC8	8-digit Hydrologic Unit Code
HUC10	10-digit Hydrologic Unit Code
HUC12	12-digit Hydrologic Unit Code
mg/L	Milligrams Per Liter
NPS	Nonpoint Source
POWTS	Private Onsite Wastewater Treatment System
QAPP	Quality Assurance Project Plan
SWCD	Soil and Water Conservation District
TAS	Treatment as a State
TP	Total Phosphorus
mg/L	Milligrams Per Liter
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	U.S. Department of Agriculture, Forest Service
USFWS	U.S. Fish and Wildlife Service
WIDNR	Wisconsin Department of Natural Resources
WRWAM	Wisconsin Rapid Wetland Assessment Methodology

Overview

Nonpoint source (NPS) pollution delivers pollutants to surface waters from diffuse origins rather than from one or more discernible point sources. NPS pollution is often the result of runoff from precipitation and activities on the landscape, such as development and farming, as well as stressors, such as habitat alteration, dams, or channelization. Eroding lake shores and streambanks, internal loading of nutrients from lakes, atmospheric deposition, and private onsite wastewater treatment system (POWTS; e.g., septic systems) discharges are also examples of NPSs.

This NPS assessment report for the St. Croix Chippewa Indians of Wisconsin (St. Croix) analyzes NPS challenges and opportunities for tribal waters with emphasis on St. Croix trust waters that will be included in the Clean Water Act (CWA) Section 518(e) Treatment in a Similar Manner as a State (TAS) application for a CWA Section 319 program. This report addresses the statutory requirement for an NPS assessment report and will provide background information for development of an approvable Clean Water Act (CWA) Section 319 NPS management program plan for these tribal waters. In order to qualify for CWA Section 319 funding, a Tribe must meet four criteria (USEPA 2010):

1. Be a federally recognized Tribe
2. Complete an approved CWA Section 319(a) NPS assessment report
3. Complete an approved CWA Section 319(b) NPS management program
4. Be CWA Section 518(e) approved for Treatment in a Similar Manner as a State ("treatment as a state" or TAS)

This assessment report will serve to summarize existing data, identify sources of NPS pollutants, and serve as the basis for targeting reductions of NPS pollution on St. Croix lands. Through partnerships, future program expansion, and the completion of a Section 319 NPS management plan, the Nation will focus on activities that will result in improved water quality.

This report addresses each of the Section 319 requirements for an NPS Assessment Report (Table 1).

Table 1: Section 319 Requirements for Nonpoint Source Assessments

Section 319 Requirement	Section of Assessment Document Addressing the Section 319 Requirement
Section 319 (a)(1) - Opportunity for public comment.	Section 2.5
Section 319(a)(1)(A) - Identification of those navigable waters within the Reservation which, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards or the goals and requirements of the Clean Water Act.	Section 5

Section 319(a)(1)(B) - Identification of those categories and subcategories of nonpoint sources or, where appropriate, nonpoint sources which add significant pollution to each portion of the navigable waters identified under subparagraph (A) in amounts which contribute to such portion not meeting such water quality standards or such goals and requirements.	Section 6
Section 319(a)(1)(C) - Description of the process, including intergovernmental coordination and public participation, for identifying Best Management Practices (BMPs).	Section 7
Section 319(a)(1)(D) - Identification and description of existing programs for controlling pollution added from nonpoint sources to, and improving the quality of, each such portion of the navigable waters, including but not limited to those programs which are receiving Federal assistance under subsections (h) and (i).	Section 8

Introduction

The St. Croix Chippewa Indians of Wisconsin acquired reservation status in 1854 and became federally recognized in 1934. St. Croix tribal lands consist of separate (noncontiguous) communities in northwest Wisconsin mainly located in Barron, Burnett, and Polk Counties, with small portions in Washburn and Pierce Counties). The four major St. Croix Tribal communities are Sand Lake, Danbury, Round Lake, and Maple Plain. Reservation lands occupy approximately 6,423 acres, with tribal headquarters located in the Burnett County reservation community of Big Sand Lake, near the unincorporated village of Hertel. Current tribal enrollment is approximately 1984 members.

Table 2: St. Croix land area

County	Total Land (mi2)	St. Croix Land (mi2)	Percentage of Total St. Croix Territory
Burnett	880	5.998	59.77%
Polk	956	3.279	32.68%
Barron	890	0.748	7.45%
Washburn	853	0.008	0.08%
Pierce	592	0.002	0.02%

2.1 Land Ownership and Designation

Current tribal ownership of the 6,423-acre St. Croix territory is 3,974 acres held in fee-simple by the tribe and the remaining 2,449 acres held in Trust by the United States for the benefit of the tribe. Trust lands are currently located in Burnett, Polk, and Barron counties. While the tribe's Section 106 program applies only to trust lands, upstream fee simple lands could also qualify for BMP implementation if they are identified as sources of water quality impairment to trust lands and demonstrate a nexus to trust lands.

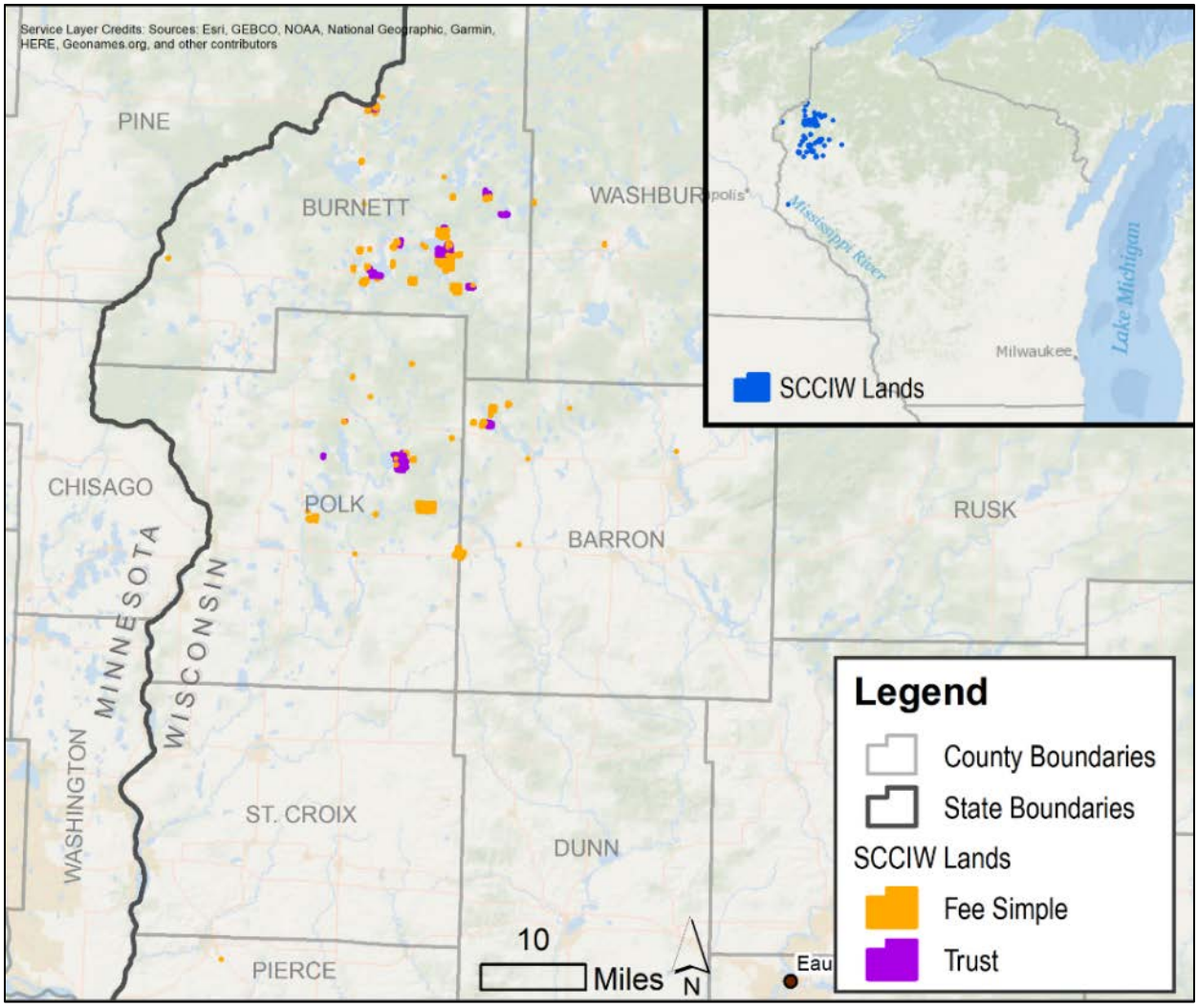

Figure 1: St. Croix tribal land designations

2.2 Governance and Management

The St. Croix Chippewa Indians of Wisconsin is a federally recognized tribe governed by a five-member Tribal Council publicly elected for staggered four-year terms. The Tribal Council consists of a Chairman, Vice-Chair, Secretary/Treasurer, and two Community Representatives and is responsible for the general welfare of tribal members and the management of day-to-day tribal business. It serves as a communication tool between Federal, State, and local governments. The St. Croix Tribal Court handles judiciary matters involving child welfare, St. Croix Tribal Natural Resource offenses, St. Croix Chippewa Housing disputes, and civil cases.

The St. Croix Tribal Environmental and Natural Resources Department (ENRD) manages programs including water quality monitoring, indoor air quality monitoring, walleye and sturgeon restoration, wild rice management, recycling, and examining lands potentially containing hazardous substances. They also oversee the tribal General Assistance Program and management of tribal Geographic Information Systems (GIS) data, which help inform

watershed-based planning and implementation. The ENRD is responsible for developing and implementing the tribe's surface water quality program which has been in place since 1996. Their Clean Water Act (CWA) Section 106 program has historically monitored water quality of tribal streams, wetlands, and lakes at up to 18 monitoring stations, although only 8 stations are currently monitored on a rotating basis due to funding and capacity limitations. Monitoring includes samples and measurements for water chemistry, biology (phytoplankton and chlorophyll-a), and turbidity. An abbreviated organizational chart showing the Environmental and Natural Resources Department is below:

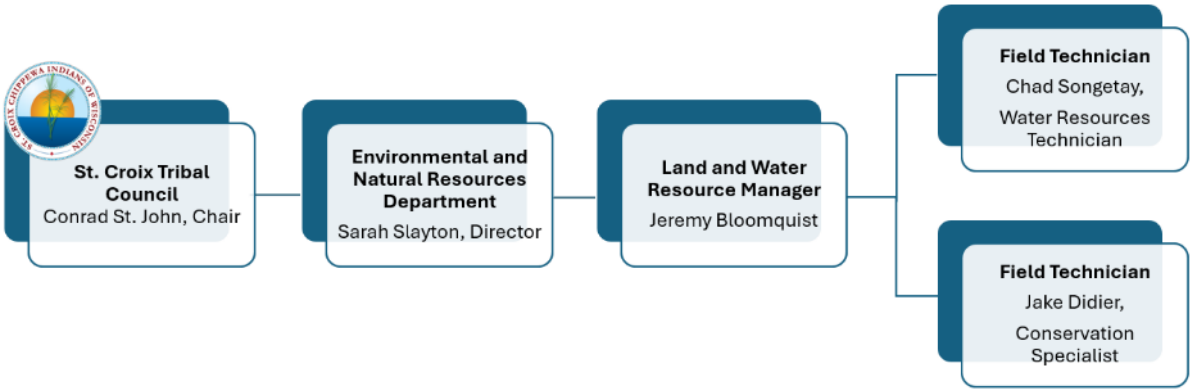

Figure 2: St. Croix organizational chart

The ENRD has also delineated, mapped, and classified wetland resources on tribal trust land. This information is valuable for future land-use planning so these resources can be protected and continue to provide for the tribal community. The program also implements and/or oversees projects that will improve or protect water quality on tribal waters, such as the installation of Best Management Practices (BMPs); storm-water management; upland/wetland habitat restoration and projects to improve in-stream habitat.

2.3 Key Water Information

Water resources are a vital part of the St. Croix culture, and all St. Croix Chippewa communities are found near either lakes or rivers. Lakes within tribal lands provide wild rice, which is an integral part of tribal culture, and the St. Croix River Basin is also an important resource for tourism. The St. Croix Tribe believes water resource protection is critical to ensure a healthy environment for all that use the water. Due to the scattered land base of the St. Croix, their lands include acreage in the Lower St. Croix, Upper St. Croix, and Red Cedar HUC8 watershed units, as shown on the below map.

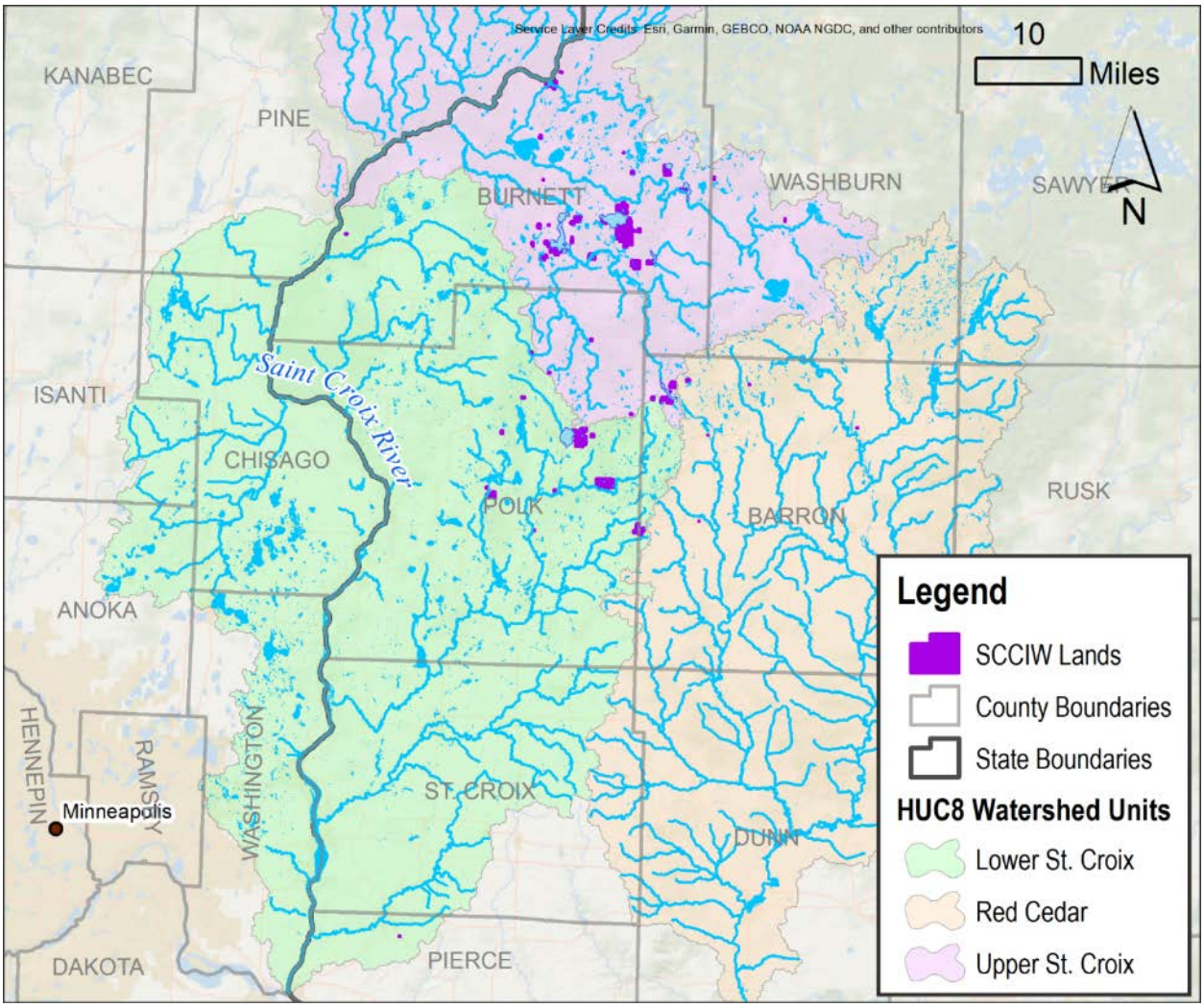

Figure 3: St. Croix tribal lands and associated HUC8 watershed units

The Upper St. Croix (07030001) and Lower St. Croix (07030005) HUC8s are within the Wisconsin DNR's St. Croix Basin Water Management Units, while the Red Cedar (07050007) HUC8 is within WI DNR's Lower Chippewa Watershed Management Unit. The St. Croix WMU is characterized by its abundant streams, lakes, and wetlands and associated forests, making it a popular tourism destination as well as location to live. The Lower Chippewa WMU contains more rare species and native prairie than any area of similar size in the state (WIDNR, 2026), protected by a tradition of land stewardship under the Lower Chippewa River State Natural Area.

St. Croix trust water resources include portions of large lakes (Clam Lake, Big Sand Lake, Round Lake, Sand Lake, Rice Lake, Bashaw Lake, and Gaslyn Lake) with total acreages shown in the below table. Approximately 3 miles of rivers (Yellow River, St. Croix River) and creeks (Loon Creek, Gaslyn Creek) are located on trust lands.

Table 3: Key trust lakes

Name	Total Acres	County	HUC12
Clam Lake	1743.7	Burnett	Clam Lake-Clam River
Big Sand Lake	1466.7	Burnett	Big Sand Lake-Yellow River
Round Lake	1049.9	Polk	Straight River
Sand Lake	335.2	Barron	Sand Creek
Rice Lake	331.9	Burnett	Rice Lake-Yellow River
Bashaw Lake	172.8	Burnett	Bashaw Brook
Gaslyn Lake	165.6	Burnett	Sand Lake-Yellow River

St. Croix trust lands include an estimated 473 acres of wetlands delineated, classified, and mapped. Wetlands are considered a valuable and critical water resource to the St. Croix people, and a wetland site was previously included in the ENRD's Section 106 water quality monitoring program, but monitoring has not been continued due to financial constraints.

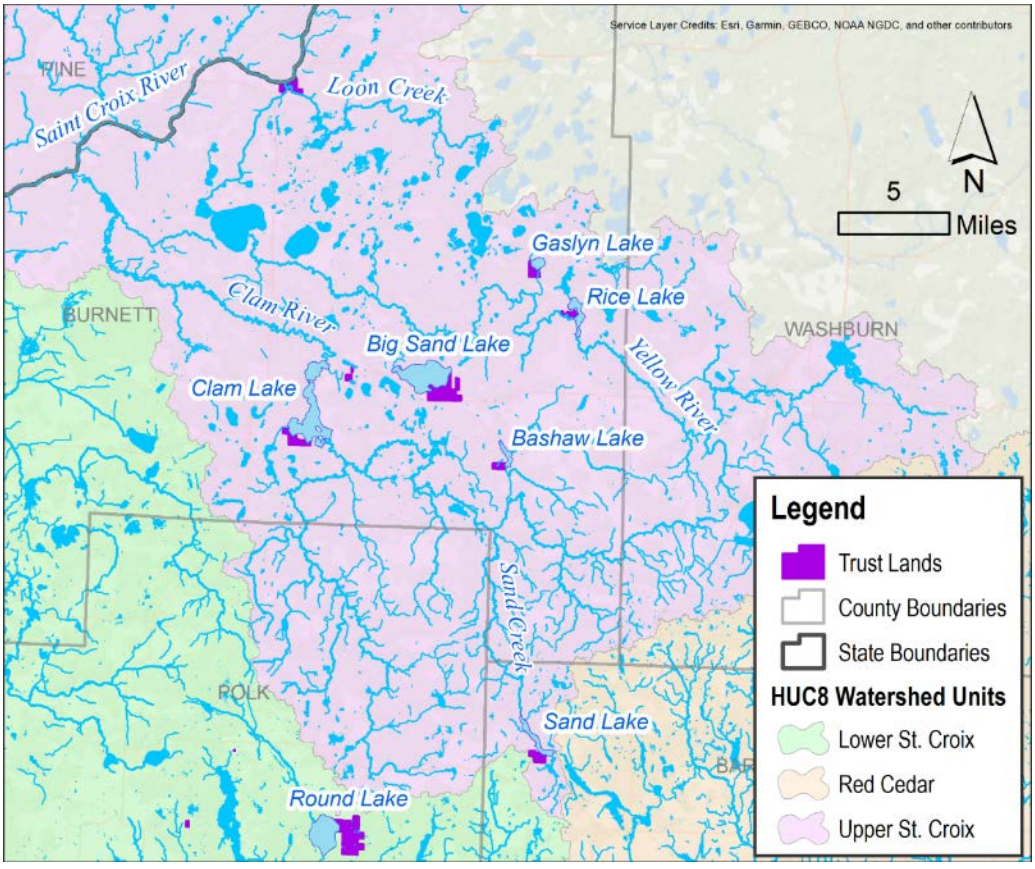

Figure 4: Key trust lakes and associated stream resources

2.4 Goals and Objectives

The St. Croix Chippewa Indians of Wisconsin are striving to assess, protect, and restore water quality within and adjacent to the St. Croix Reservation and territory. It is the goal of the St. Croix to reestablish waters of the reservation to more closely resemble pre-European settlement conditions. Non-point sources in the watershed continue to release pollutants into the tributaries and the lakes, and changes in forestry practices and agriculture are priority water quality concerns. Tribal leaders and members are keenly interested in assessing on a continuing basis the impacts of these pollutants and the chemical and biological quality of the waters.

The St. Croix need continuing information regarding water quality conditions of the reservation and the surrounding territory to maintain and understand the water quality within the reservation and determine if it supports the needs of the tribal community. Initial phases of water quality monitoring were conducted by a cooperative agreement between the St. Croix and the USGS to document current water quality and data gaps in baseline data. Currently, the St. Croix is rotationally monitoring four lakes and four river sections per year between three different counties, and their Section 106 budget has either remained static or decreased over the past 26 years. More funding is sorely needed to boost staffing and time to increase monitoring frequency and locations. To that end, the St. Croix has identified the following objectives to meet these goals:

- Establish a baseline of surface water quality on selected tribal lands to identify waters that cannot meet or maintain water quality goals or thresholds for nutrients, bacteria, and sediment without control of NPS pollution; the state of Wisconsin water quality standards have been adopted by the St. Croix as interim water quality goals until such a time that St. Croix water quality standards are implemented.
- Determine extent to which surface water quality is changing over time related to NPS pollutants including nutrients, bacteria, and sediment.
- Identify problem areas with poor surface water quality and/or the potential to degrade surface water quality stemming from NPS pollution and the causes and sources of those pollutants.
- Identify those tribal waters meeting water quality goals and thresholds to identify if protection measures are needed and at what level.
- Continue and expand current monitoring and reevaluation as necessary.
- Expand staff monitoring capacity by hiring additional field technicians.

Information regarding water quality will be used in determining trends in water quality and inform where implementation of restoration activities will be beneficial, to compare and add current water quality data to baseline/historical conditions and provide data to assess water resources.

This NPS Assessment Report identifies the nature, extent, and effect of NPS pollution for tribal waters in the St. Croix lands, as well as the sources of such pollution. The assessment

evaluates water quality monitoring data and information from various sources and categorizes NPS pollution sources for those individual waters identified as needing control of NPS pollution. In addition, this report discusses how the St. Croix will identify best management practices (BMPs) needed to control NPS pollution on tribal lands and describes existing tribal, state, federal, and other programs that could provide support for BMP implementation.

2.5 Public Review Process

The St. Croix Tribal Environmental and Natural Resources Department hosted a series of public meetings in February 2026 to seek feedback for the Assessment Report development.

During the community meetings, presentations covered necessary background information on Section 319 of the Clean Water Act (CWA) and explained the basics of nonpoint source (NPS) pollution. The discussion focused on different types of BMPs, with information boards showing photo examples of the BMPs that were described in the presentations. Following the presentations, the meetings became open forums where people could share their specific, local concerns about NPS pollution. Common problems brought up included fertilizer runoff near local lakes, soil erosion, and ongoing drainage issues in their areas.

Feedback was gathered via written surveys completed by participants after the presentations. To maximize the response rate, these surveys were also distributed at three additional community events held during the same week as the meetings. Overall, thirty-one complete written surveys were collected; survey responses are included in Appendix A.

The survey was designed to see what people knew, how they felt, and what their priorities were about water quality and managing resources. The six main questions were:

1. Do you think water quality is a problem where you live?
2. How do you use your water resources?
3. Do you think local water needs to be protected or made better?
4. What do you think is the biggest danger to water quality?
5. What kinds of BMPs have you seen in your community?
6. How has land use changed over the last 20 years?

The survey results gave clear insights into what the community thinks about water quality. More than half of the people (51%) said water quality was a *very high* or *high* concern. When it came to water use, the community mostly said they use it for recreation—like fishing or as a food source harvesting wild rice—making up 75% of responses. A large majority (over 71%) felt that while water is being managed, there is a need for more proactive steps and improvements.

Identifying what threatens water quality brought up a variety of important concerns. While the answers were spread out a bit, agricultural runoff, which causes too many nutrients and algal blooms, was named by the largest group, with 65% calling it the biggest threat. Other serious threats included worries about failing septic systems, too much soil erosion or land loss (50% of people), and new contaminants. Contaminants, such as pharmaceuticals, were the top concern

for almost 52% of the respondents, showing people are becoming more aware of potential pollution sources.

The survey also captured the community's interest in specific types of BMPs, which were evenly split across three main groups. The St. Croix will use these survey results and community input to help choose which BMPs to put into action. The community showed interest in the following NPS focus areas:

- **Agricultural BMPs:** Minimizing herbicide applications, cover crops or vegetative buffers
- **Water Resource BMPs:** Stream or lake restoration, maintenance of dams or removal of infrastructure
- **Forestry BMPs:** Planned harvesting, road management and fire management

In the end, the engagement process clearly showed that the tribal community is deeply worried about local water quality and strongly supports taking action to improve and protect these vital resources, including development of the Assessment Report and subsequent Management Plan. As part of the Section 319 (a)(1) opportunity for public comment, the draft Assessment Report will be posted on the St. Croix website with an invitation to provide feedback.

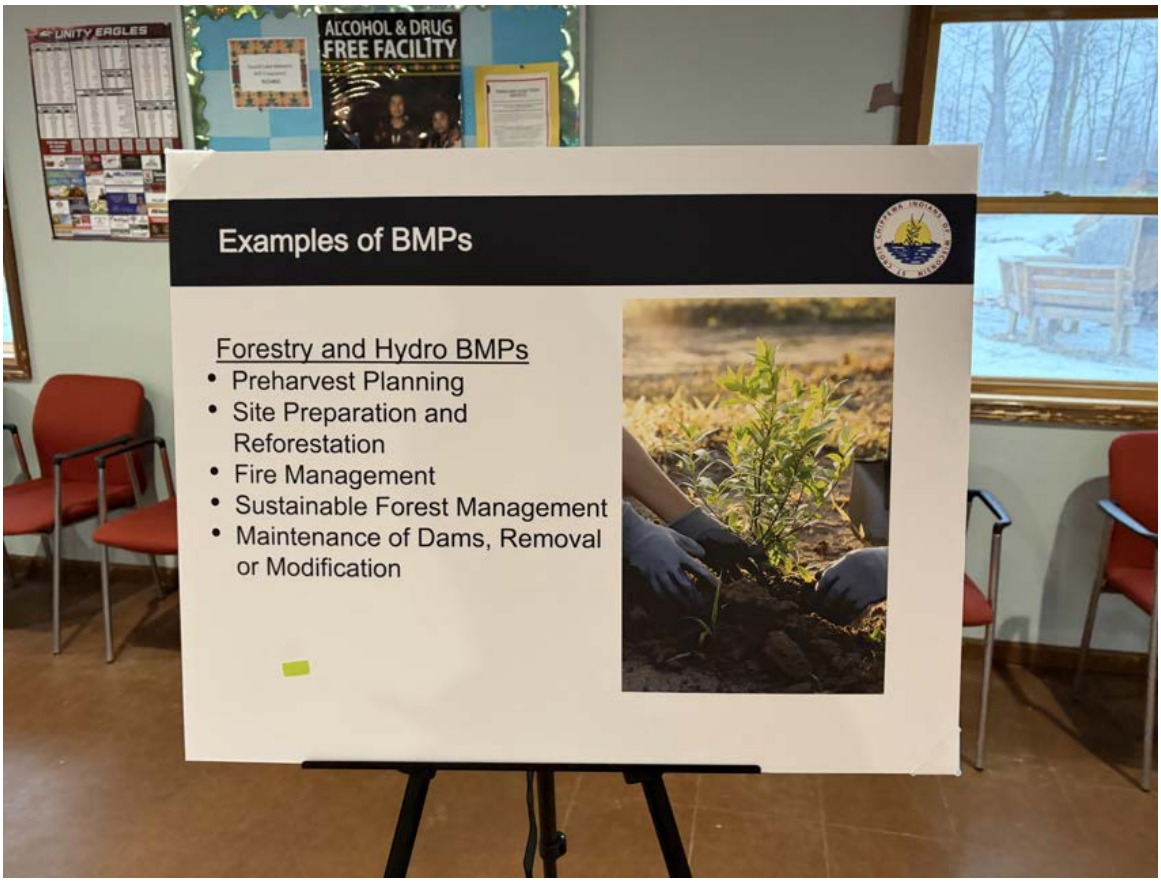

Figure 5: One of the information boards used during public events

Methodology

The St. Croix Tribal Environmental and Natural Resources Department (ENRD) has been managing the US EPA CWA Section 106 Program since they became eligible in 1996. The St. Croix monitoring program includes the following surface water collection methodologies:

Lakes

Lake sampling consists of collecting seven (7) field parameters every month over a seven-month period (April – October) and seven (7) lab samples in June, July, and August at one sample location on each of the four lakes. In the winter months between December and March, only the seven (7) field parameters are collected. Sample locations are located using GPS equipment. Preservatives are provided by the lab if needed for samples and samples are stored in coolers with ice. Samples must be received by the lab within 48 hours.

Nutrient samples are collected using the “Grab-Sampling” method approximately 0.5 meters from the surface and 0.5 meters from the bottom at the deepest point of each lake (Saad, D.A. et al, USGS, 2000). Nitrogen series parameters are sampled once during each sampling season; usually in July or August, and will be collected as a “grab sample” 0.5 meters from the surface of the water. Samples will be collected with a non-metallic horizontal sampling bottle. Other parameters collected include chlorophyll-a, orthophosphorus, total phosphorus, alkalinity and phytoplankton (Clam Lake only).

General water characteristics are sampled at each sample location each month and consist of: TDS, turbidity, dissolved oxygen, pH, secchi depth, temperature, and specific conductance. TDS, turbidity, dissolved oxygen, pH, temperature, and specific conductance samples are measured every month at each sample location using a Hydrolab HL4. These meters measure these characteristics at 2.0-foot intervals from 2.0 feet below the surface to 2.0 feet above the bottom for lakes less than 30 feet deep. For lakes deeper than 30 feet, staff perform depth-integrated measurements at 2-foot intervals for the first 10 feet, then 5-foot intervals after 10 feet. Each multi-meter records and saves the data for each point on its internal memory. Data is also then transcribed to a field form for each station. All data is entered into the tribe’s internal database in an excel file.

Streams

Stream sampling consists of collecting eight (8) field parameters monthly over a seven-month period (April – October) at four sample locations on four streams/rivers hydrologically connected to Tribal waters. GPS equipment is used to identify each sample location. Permission from landowners is obtained prior to sampling. A single “grab sample” is collected for lab measurements near the middle of the stream channel at a uniform location. Field data is collected in the same location in the upper 40% of the water column. Samples are collected with a non-metallic horizontal sampling bottle. Parameters such as total nitrogen, phytoplankton, total Kjeldahl nitrogen, chlorophyll a, sulfate, total phosphorus, and orthophosphate are sampled as indicated in the current 106 work plan table, shown in Table 5. Preservatives are provided by

the lab if needed for samples and samples are stored in coolers with ice. Samples must be received by the lab within 48 hours.

Field parameters sampled at each sample location consist of: TDS, turbidity, dissolved oxygen, pH, transparency tube, temperature, and specific conductance and are measured every month at each sample location using a Hydrolab HL4. Data is transcribed to a field form for each station. Lastly, data is entered into the tribe's internal database in an excel file. Each sample location is numerically identified as a sample station accompanied by independent sample station files.

Wetlands

The Tribe has mapped existing wetlands on trust lands and built the data into a GIS. Wetlands were classified by the Cowardin system used by USFWS (FGDC, 2013). Detailed classification information is included in 4.2, Land Use/Land Cover. Past wetland monitoring occurred in 2011 at one site due to potential concerns from WWTP discharges and included all lake and stream parameters except for secchi-depth transparency and water column profiling. Wetland monitoring currently occurs only on a need-by-need basis but could be developed into a more robust program that includes biological monitoring of wetland conditions with increased funding support.

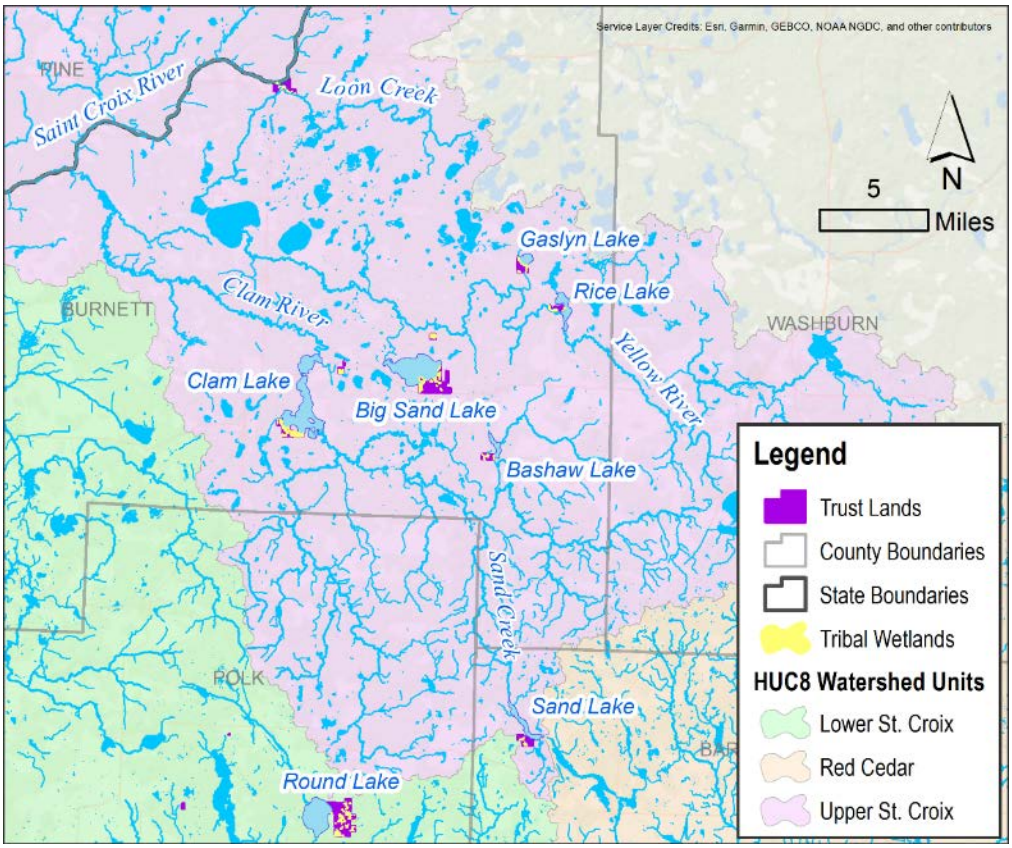

Figure 6: Mapped wetlands on SCCIW trust land

3.1 Field Data Collection and Timeframes

Up to 24 field stations have been identified for water quality monitoring by the St. Croix, with 18 stations monitored non-concurrently between 2001-2025 under the Section 106 program. Due to financial constraints, only 8 stations are currently being monitored under the Section 106 program. Below is a table of all Section 106 monitoring stations and their years monitored.

Table 4: Section 106 monitoring station locations and timeframes

Type	Site Name	Station Name	Years Monitored	Currently Sampled
River	Yellow River - North	SCT_01_YRN	2001-2010, 2012-2015	No
River	Loon Creek	SCT_02_LC	2001-2010, 2012-2016	No
River	Yellow River - South	SCT_03_YRS	2001-2010	No
Lake	Gaslyn Lake	SCT_04_GL	2001-2010, 2012-2025	Yes
Lake	Big Sand Lake	SCT_07_BSL	2001-2011, 2015-2016, 2019-2020, 2025	Yes
Lake	Bashaw Lake	SCT_09_BL	2001-2010, 2015-2018, 2021-2022	No
Lake	Sand Lake - Maple Plain	SCT_11_SL	2001-2011, 2017-2018, 2023-2024	No
Lake	Clam Lake	SCT_16_CL	2001-2011, 2015-2025	Yes
River	Clam River - Lynch Bridge	SCT_18_CRLB	2001-2011, 2015-2025	Yes
River	Yellow River - County H	SCT_20_YRH	2004-2010, 2017-2018	No
Lake	Yellow Lake	SCT_21_YL	2004-2010	No
River	Clam Lake - Pike Bend	SCT_24_CRPB	2004-2011, 2015-2025	Yes
River	St. Croix River	SCT_25_SCR	2004-2010	No
Wetland	Ballfield	SCT_26_BALL	2011	No
Creek	Gaslyn Creek	SCT_28_GC	2012-2025	Yes
River	Straight River - North	SCT_13A_SRN	2001-2014	No
River	Straight River - South	SCT_13B_SRS	2008-2014, 2019-2025	Yes
Lake	Big Round Lake	SCT_15_BRL	2001-2014, 2019-2025	Yes

St. Croix surface water monitoring program includes field measurement and laboratory analysis of chemical water quality parameters and biological monitoring. The St. Croix Environmental and Natural Resources Department maintains and updates the monitoring data as more information is collected. Publicly available monitoring data can be accessed through the U.S.

Environmental Protection Agency's Water Quality Monitoring Portal at https://www.waterqualitydata.us/provider/STORET/STCROIX_WQX/. Monitoring results are discussed in more detail in Section 5, Surface and Groundwater Quality. Figure 5 below shows the locations of past and present St. Croix Section 106 water quality monitoring stations.

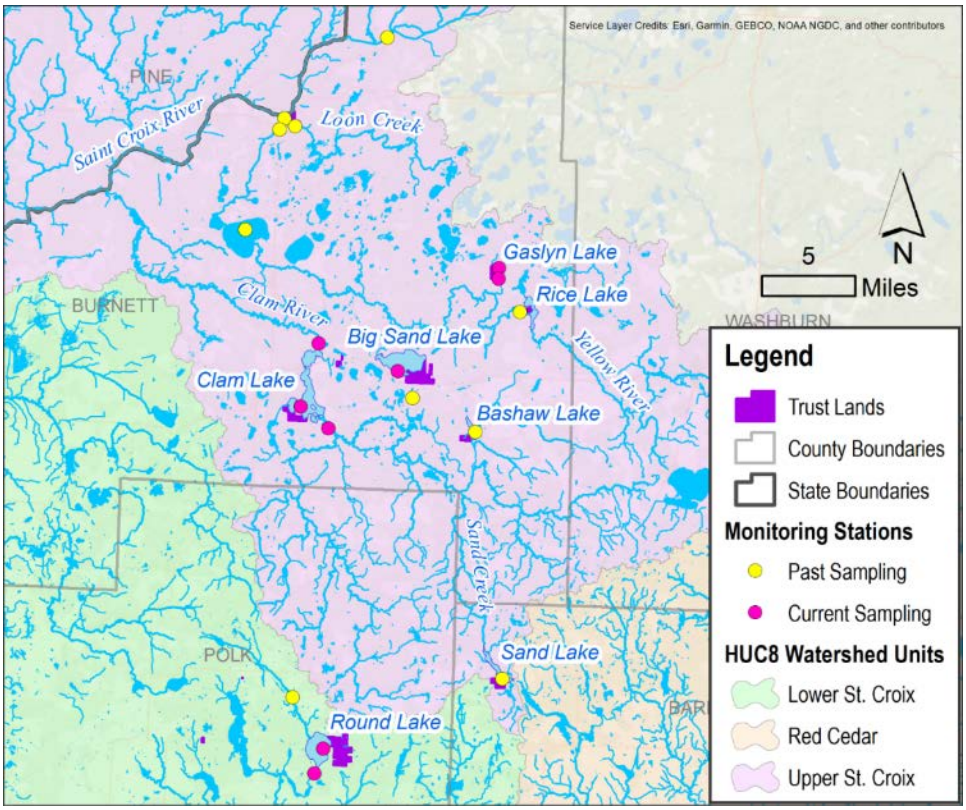

Figure 7: Past and present Section 106 monitoring stations

Field measurements are taken by St. Croix staff and consist of analyzing the following parameters: conductivity, dissolved oxygen, pH, temperature, turbidity, depths, transparency tube readings, and secchi depth transparency. The Land and Water Resources Manager and the Field Technician are responsible for calibrating and testing field equipment as directed by the equipment's manufacturer. The Land and Water Resources Manager and the Field Technician are also responsible for following the recommended laboratory standard operating procedures for ordering and storing sample bottles, sample collection, holding, and shipping of the samples. A contracted laboratory is responsible for analyzing phosphorus, orthophosphorus, nitrogen series, total suspended solids, alkalinity, sulfate, chlorophyll-a, and phytoplankton.

Stations are in a rotation chosen every two years. Stations are prioritized due to important resources like a significant fishery, wild rice health, or if there are issues occurring such as a chemical treatment, erosion and/or sedimentation issues, a potential threat that may arise, or projects like dam reconstruction. If no issues are known, the rotation is random. The current rotation of stations and timeframes, along with collection parameters, is shown below.

Table 5: Schedule and parameters for 2023-2028 surface water sampling

Parameters	Month of Collection							Remarks
	Apr	*May*	*June*	*July*	*Aug*	*Sep*	*Oct*	
Total Phosphorous			Stations 18, 16, 24	Stations 18, 16, 24	Stations 18, 16, 24			0-0.5 meters from the surface
Total Nitrogen			Stations 18, 16, 24	Stations 18, 16, 24	Stations 18, 16, 24			
Phytoplankton			Stations 18, 16, 24	Stations 18, 16, 24	Stations 18, 16, 24			
Dissolved oxygen, pH, temperature, specific conductance, turbidity, TDS, Secchi Depth	All	All	All	All	All	All	All	Vertical profiles are defined by measuring the five parameters from two feet below the lake surface to the bottom at two-foot intervals on lakes 30 feet deep or less. Lakes less than 30 feet deep start at two feet below the surface and are measured at four-foot intervals to the bottom.
Orthophosphorus and Sulfate			Streams	Streams	Streams			Combined sample from both depths 0.5 meter from surface and 0.5 meter from bottom
Chlorophyll-a			Stations 18, 16, 24	Stations 18, 16, 24	Stations 18, 16, 24			0-0.5 meter from the surface. Chlorophyll-a vertical profile.
Secchi Depth	L	L	L	L	L	L	L	Index of Clarity
Transparency Tube	S	S	S	S	S	S	S	Measure of Clarity
Total Kjeldahl Nitrogen				All				

Notes: L = lakes only; S = streams only

3.2 Current Water Quality Efforts [CZ1]

The Tribe's Section 106 2021-2026 Tribal Water Quality Monitoring Strategy takes a holistic approach to the water resources of the St. Croix Chippewa. While all waterbody types were considered in the development of the monitoring strategy, special focus is on surface waterbodies including lakes, streams, rivers, and wetlands. The following specific monitoring objectives have been identified in the monitoring strategy:

1. Surface Water Quality Monitoring and Assessment
2. Aquatic Plant Surveying
3. Wetlands
4. Fish Tissue Sampling
5. Habitat/Land Use Surveys (macroinvertebrate and fisheries)

The surface water quality assessment program is the Tribe's base program and has been their primary focus over the past five years. Continued collection of this data allows the Tribe to add more data points to their existing database and increases their ability to assess overall water quality and spot trends in water quality over time. These data collection activities also allow the Tribe to identify impaired waters and develop solutions to remediate these problem areas.

Based on the water quality of the St. Croix tribal lands, the Tribe will determine whether restoration or specific protection plans need to be developed. These determinations can only be made, and remedial options identified, after a period of baseline data collection and analysis, and subsequent continued monitoring. The period for water quality analysis for each station is variable and may change by year after the previous year's water quality data and St. Croix project plans are reviewed. In compliance with their Section 106 grant funding, Water Quality Assessment Reports are developed on 2-year cycles with data from the stations monitored during each cycle and submitted to USEPA.

Future actions may consist of adopting promulgation of US EPA Water Quality Standards, or St. Croix may develop its own water quality standards in the future, which would require St. Croix Tribal Council and legal staff approval. Water quality data (field and lab) is currently compared to threshold values identified in the table below. Key WQ NPS parameters used for Sections 5 and 6 are bolded.

Table 6: Key WQ parameters and threshold values

Parameter	**Threshold Comparison Value**
Water Temperature	Max. Water Temp: Coldwater Fishery <22.8 ºC Warm-water Fishery <31.7 ºC

pH	6.0-9.0 or change of >0.5 units outside natural seasonal max (mean) and min (mean)
Dissolved oxygen	Coldwater Fishery 6 mg/L Warmwater Fishery 5 mg/L
Specific conductivity	TBD
Secchi Disk	TBD
Transparency Tube	TBD
Turbidity	**Level III Ecoregion 51: 0.84 NTU**
NO2 + NO3	**Level III Ecoregion 51: 0.13 mg/L**
Total Nitrogen	**Level III Ecoregion 51: 0.33 mg/L**
Kjeldahl Nitrogen (TKN)	**Level III Ecoregion 51: 0.33 mg/L**
Orthophosphorus	TBD
Total Phosphorus	**NR102: 0.075 mg/L** **Level III Ecoregion 51: 0.028 mg/L**
Sulfate	10 mg/L
Alkalinity (total)	TBD
Chlorophyll-a	TBD
Phytoplankton	TBD

Aquatic plant surveying was introduced in FY 2009 and is not currently being done. Aquatic plants were used as indicators of specific water quality impairments as well as overall water quality condition. Aquatic plants also influence designated uses identified by the Tribe, including but not limited to fish harvest and wild rice gathering. Specific surveying objectives the Tribe would like to address include presence/absence of wild rice, presence/absence of non-native plant species, and overall determination of plant community health within tribal waterbodies. With additional resources, the Tribe can conduct more detailed wild rice surveys for both coverage and density, to help inventory wild rice populations and prioritize restoration efforts.

The wetland program area is one of the least-developed program areas and needs further development. The Tribe has mapped and delineated all the wetlands within their lands, along with basic vegetation classification following the Cowardin system used by USFWS (FGDC, 2013). One wetland site, Ballfield, did have water quality monitoring performed in 2011 because of concerns related to an adjacent development project, but the Tribe does not currently have

enough capacity to perform regular monitoring across all wetlands, and wetland monitoring currently occurs on an as-needed basis. With additional resources and capacity, sampling could be more regular and include macroinvertebrates, physical parameters (DO, pH, etc), and aquatic plants to better determine the overall health, function, and value of specific wetland areas.

Fish tissue sampling has historically been done in the past to support the fish harvest, which is an important part of the St. Croix Chippewa culture. Fish is harvested for consumption multiple times throughout the year, and locally caught fish makes up a significant part of both fish diet and overall diet for many Tribal members. Walleye has been the target species for fish tissue analysis, with mercury being the target parameter. The Tribe has coordinated with partner organizations (Great Lakes Indian Fish & Wildlife Commission, WIDNR, local Lake Associations) to sample and analyze walleye populations, with the hope that future fish tissue sampling, including additional contaminants like pesticides and pathogens could be added back to the program if funding increases.

The Tribe's habitat and bioassessment program is also underdeveloped and would benefit from increased funding. Water quality monitoring currently focuses on chemical and physical parameters including chlorophyll-a and diatoms, but with increased funding and capacity could include regular monitoring of macroinvertebrates, fish species, and aquatic plants.

The St. Croix GIS department has collected base layers within their system, including aerial photos, parcel information, and statewide and federal datasets. They have created tribal wetland delineation boundaries and water quality station monitoring layers and are working on increasing the level of local detail by producing ground truthed datasets focusing on lacustrine shorelines that show impervious surfaces, land use/land cover, substrate types, and other data relevant to surface water quality. As more data is collected under the Tribe's Section 106 program, integration of the data in GIS will be fundamental to programmatic success.

3.3 Other Data

Wisconsin DNR evaluates surface waterbodies according to water quality standards in Chapter NR 102, *Water Quality Standards for Wisconsin Surface Waters* in their state Administrative Code. State water quality categories of surface water uses are Fish and Aquatic Life, Recreational, Public Health and Welfare, and Wildlife, with monitoring parameters and criteria established for each use as described below. For the purposes of this report, the focus will be on Fish and Aquatic Life and Recreational Uses.

Fish and Other Aquatic Life Uses

Cold Water Communities: surface waters capable of supporting a community of cold-water fish and other aquatic life or serving as a spawning area for cold-water fish species. This category includes surface waters identified by WIDNR as trout waters.

Warm Water Sport Fish Communities: surface waters capable of supporting an abundant diverse community of forage fish and other aquatic life.

Limited Forage Fish Communities (intermediate surface waters): surface waters of limited capacity and naturally poor water quality or habitat. These surface waters are capable of supporting only a limited community of forage fish and other aquatic life.

Limited Aquatic Life (marginal surface waters): surface waters of severely limited capacity and naturally poor water quality or habitat. These surface waters are capable of supporting only a limited community of aquatic life.

Primary parameters used by WIDNR for Fish and Aquatic Life use are dissolved oxygen, oxythermal layer thickness (two-story fishery lakes only), pH, presence of toxic substances, and temperature. Water quality criteria for each of these parameters varies for surface water resources depending on their use categorization and other special factors like Trout Water designations.

Recreational Use

Recreational Use is predicated on the requirement that all surface waters must be suitable for supporting recreational contact (swimming, etc.). Recreational Use criteria determinations occur after bacterial monitoring and are used to protect humans from illness caused by fecal contamination due to recreational contact with the surface water. Surface waters are assigned ratings of Excellent, Good, or Poor where applicable.

Public Health and Welfare Use

This use is predicated on the requirement that all surface waters shall be suitable for supporting public health and welfare and applies to all surface waters regardless of their status as a public drinking water supply or their applicable fish and aquatic wildlife use. For surface waters used as a public drinking supply or classified as cold water or warm water sport fish community, there are specific taste and odor criteria that must be met. With limited exceptions, all discharges to surface waters must not exceed 120 degrees Fahrenheit. PFOS (perfluorooctane sulfonate) and PFOA (perfluorooctanoic acid) have concentration thresholds that must be met depending on different surface water uses and conditions.

Wildlife Use

This use is predicated on the requirement that all surface waters must be suitable for supporting wildlife. Wildlife criteria vary depending on the wildlife and are designed to protect wildlife from adverse effects resulting from ingestion of surface waters of the state and from ingestion of aquatic organisms taken from surface waters of the state. Specific criteria are found in Chapter NR 105, *Surface Water Quality Criteria and Secondary Values for Toxic Substances.*

Below are current data and information on key water resources in the St. Croix lands, summarized from the WIDNR's water details database with links to the appropriate resource page. Water Resources noted as not attaining adjacent to St. Croix lands are highlighted.

Table 7: WIDNR water quality data of key water resources

Name	County (St. Croix lands)	HUC12 (St. Croix station)	WI NR102 Classifications	Fish and Aquatic Life (FAL) Use	Recreational Use	Impairments	Sources
Clam Lake	Burnett	Clam Lake-Clam River	Reservoir	Cold - not attaining (restricted aquatic life)	Poor	Excess Algal Growth, Eutrophication	Phosphorus
Big Sand Lake	Burnett	Big Sand Lake-Yellow River	Deep Seepage, ORW, ERW	Default FAL - attaining	Unknown	None	N/A
Big Round Lake	Polk	Straight River	Shallow Seepage	Default FAL - not attaining (restricted aquatic life)	Poor	Excess Algal Growth, Eutrophication	Phosphorus
Sand Lake	Barron	Sand Creek	Deep Lowland, ORW, ERW	Default FAL - attaining	Excellent	None	N/A
Rice Lake	Burnett	Rice Lake-Yellow River	Shallow Lowland	Default FAL - attaining	Good	None	N/A
Bashaw Lake	Burnett	Bashaw Brook	Shallow Lowland	Default FAL - attaining	Unknown	None	N/A
Gaslyn Lake	Burnett	Sand Lake-Yellow River	Shallow Lowland	Default FAL - attaining	Unknown	None	N/A
Yellow Lake	Burnett	Yellow Lake-Yellow River	Two-Story	Warmwater - not attaining (restricted aquatic life use)	Poor	Excess Algal Growth, Eutrophication	Mercury, Total Phosphorus
Clam River	Burnett	Clam Lake-Clam River, Black Brook-Clam River	Cool-Warm Mainstem, Cool-Warm Headwater, ORW, Trout Water	Cold - attaining	Unknown	None	N/A
Yellow River	Burnett	Sand Lake-Yellow River, Buffalo Lake-Yellow River	Cool-Cold Mainstem, Cool-Warm Mainstem	Default FAL - attaining	Unknown	None	N/A
Straight River	Polk	Straight River	Cool-Warm Headwater, Trout Water	Cold - attaining	Unknown	None	N/A
Loon Creek	Burnett	Loon Creek	Cool-Warm Mainstem	Default FAL - attaining	Unknown	None	N/A
St. Croix River	Burnett	Hay Creek-Saint Croix River	Macroinvertebrate, Cool-Cold Headwater, Warm Headwater, Coldwater, Cool-Warm Headwater, Large River, ORW (14 miles), ERW (7 miles)	Default FAL - attaining on St. Croix lands u/s of HWY 243 bridge, not attaining 1 mile d/s of HWY 243 bridge to mouth	Unknown	PCBs in fish tissue (not at St. Croix lands)	PCBs (not at St. Croix lands)
Gaslyn	Burnett	Sand Lake-Yellow	No detailed WIDNR	Default FAL - not	Unknown	Unknown	Unknown

Creek		River	information	monitored			

Lakes

Clam Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2656200)
Clam Lake is a shallow lowland lake which is situated in the Clam River watershed in Burnett County. Clam Lake monitoring data collected between 2021 and 2022 was included in Wisconsin's 2024 Water Quality Report to Congress under the state's Clean Water Act responsibilities. Per the report, the waterbody is considered impaired, or in poor condition for designated uses which include the quality of fish and aquatic life, recreational use, and public health and welfare (fish consumption and related). Pollutants or problems encountered during sampling (impairments) are determined based on water quality standards outlined in Wisconsin 2020 Consolidated Assessment and Listing Methodology (WisCALM).

Assessment results show water conditions that are potentially harmful for Aquatic Life use and Recreation use due to values for total phosphorus and chlorophyll that fall into the range expected for an aquatic community in poor health, therefore this water is listed as impaired. Assessment results during the 2020 listing cycle show continued impairment based on total phosphorus and chlorophyll levels too high for healthy aquatic communities, like plants, fish, and bugs, according to 2020 WisCALM levels. This water has been listed as impaired since 2012 for total phosphorus. In 2020 eutrophication was added as an impairment alongside the previous excess algal growth listing. This water changed to category 5W because it is part of the DNR approved restoration plan *Implementation Plan for the Lake St. Croix Nutrient Total Maximum Daily Load (2025)*.

Big Sand Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2676800)
Big Sand Lake is located in the Lower Yellow River Watershed in Burnett County. This lake is an outstanding/exceptional resource water under NR102 under the Fisheries Program. This lake is managed for fishing and swimming and is currently not considered impaired.

Big Round Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2627400)
This lake is located in the Upper Apple River Watershed in Polk County. The feasibility study for this lake (1980) documented a eutrophic body of water primarily influenced by in-lake recycling of sediment phosphorus. The lake has experienced recurring algae blooms and other eutrophic symptoms. This lake should receive high priority for a lakes planning grant to assess the priorities of the lake community and work toward a long-range lake management plan. High priority should also be accorded to this lake for any funding to reasonably implement the recommendations of the 1980 study. Extensive use is made of the lake by migratory waterfowl; ranging in importance from most to least use are coots, diving ducks (redheads and canvasbacks), puddle ducks, Canada geese, and whistling swans. Nesting waterfowl include mallards, bluewing teal, greenwing teal and ringneck ducks. Fish present include northern pike, walleyes, largemouth bass, bluegills, black crappies, perch, pumpkinseed, and bullheads.

Big Round Lake was recently evaluated during the ten-year period of 2009 through 2018 for results that were reported to the USEPA for the 2020 Clean Water Act condition report. The waterbody is considered impaired, or in poor condition for designated uses which include the quality of fish and aquatic life, recreational use, and public health and welfare (fish consumption and related). Pollutants or problems encountered during sampling (impairments) are determined based on water quality standards outlined in Wisconsin 2020 Consolidated Assessment and Listing Methodology (WisCALM). Assessment results show water conditions that are potentially harmful for Recreation and Aquatic Life uses due to values for total phosphorus and chlorophyll that fall into the range expected for an aquatic community in poor health, therefore this water is listed as impaired.

Assessment results during the 2020 listing cycle show excess algal growth and eutrophication as a result of total phosphorus levels. Chlorophyll and total phosphorus data were assessed during the 2020 listing cycle. Both were too high for a healthy waterbody for recreation and aquatic life. Based on the most updated information, this water was proposed for the impaired waters list in 2020.

Sand Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2661100)
Sand Lake is in the North Fork Clam River Watershed in Barron County. This lake is an outstanding/exceptional resource water under NR102 under the Fisheries Program. This lake is managed for fishing and swimming and is currently not considered impaired.

Sand Lake was assessed during the 2016 WIDNR listing cycle; total phosphorus and chlorophyll sample data were clearly below 2016 WisCALM listing thresholds for the Recreation use and Fish and Aquatic Life use. This water was also assessed for chlorides and sample data were clearly below 2016 WisCALM chronic and acute listing criteria for the Fish and Aquatic Life use. This water meets these designated uses and is not considered impaired.

Rice Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2677900)
Rice Lake T39n R14w S10 is in the Lower Yellow River and Shell Lake and Upper Yellow River Watersheds in Burnett County. This lake is managed for fishing and swimming and is currently not considered impaired.

Bashaw Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2662400)
Bashaw Lake is in the North Fork Clam River Watershed in Burnett County. This lake is managed for fishing and swimming and is currently not considered impaired.

Gaslyn Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2677700)
Gaslyn Lake is in the Lower Yellow River Watershed in Burnett County. This lake is managed for fishing and swimming and is currently not considered impaired.

Yellow Lake (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2675200)
Yellow Lake in Burnett County has been historically impacted from point source issues like untreated city wastewater, creamery waste, and whey. The lake has improved since the point

sources were removed but is still impaired, likely from this historical point source loading, as WIDNR has found no major sources of nonpoint source loading in this area, including from surrounding agriculture. The lake is impaired for Recreational Uses as blue green algal blooms restrict swimming. Blue green algae blooms are frequent and macrophyte growth is high. Currently, Yellow Lake's TSI-chlorophyll score of 62 puts this lake in the Fair category for a shallow lowland lake, but its average Total Phosphorus concentration (2004-2008) is 0.048 mg/l, which exceeds the listing threshold for Shallow Lowland lakes of greater than or equal to 0.04 mg/l. Yellow Lake was placed on the impaired waters list for total phosphorus in 2010. The 2018 assessments showed continued impairment by phosphorus; total phosphorus and chlorophyll-a sample data exceeded the 2018 WisCALM listing thresholds for the Recreation use and Fish and Aquatic Life use.

Yellow Lake has historically been an excellent and very diverse fishery. It has one of the state's best, sustainable sturgeon populations (including a world record), cisco spawning, a rare naturally reproducing walleye population, and large northern pike and muskies.

Rivers/Streams

Yellow River (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2670300)
Segments 44.74-69.14 of the Yellow River are assessed as Cool-Cold Mainstem, Cool-Warm Mainstem by WIDNR. The river is attaining its supported default aquatic life use and is capable of supporting a warm water dependent sport fishery. Representative aquatic life communities associated with these waters generally require cool or warm temperatures and concentrations of dissolved oxygen that do not drop below 5 mg/L.

St. Croix River (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2601400)
The St. Croix River is classified as an outstanding resource water for 14 miles within this watershed and as an exceptional resource water for 7 miles. The entire river is also a national wild and scenic waterway as designated by the National Park Service. The river is considered a Macroinvertebrate, Cool-Cold Headwater, Warm Headwater, Coldwater, Cool-Warm Headwater, Large River under the state's Natural Community Determinations. Cool (Warm-Transition) Headwaters are small, sometimes intermittent streams with cool to warm summer temperatures. Coldwater fishes are uncommon to absent, transitional fishes are abundant to common, and warm water fishes are common to uncommon. Headwater species are abundant to common, mainstem species are common to absent, and river species are absent. Cool (Cold-Transition) Headwaters are small, usually perennial streams with cold to cool summer temperatures. Coldwater fishes are common to uncommon (<10 per 100 m), transitional fishes are abundant to common, and warm water fishes are uncommon to absent. Headwater species are abundant to common, mainstem species are common to absent, and river species are absent. Warm Headwaters are small, usually intermittent streams with warm summer temperatures. Coldwater fishes are absent, transitional fishes are common to uncommon, and warm water fishes are abundant to common. Headwater species are abundant to common, mainstem species are common to absent, and river species are absent.

The Saint Croix River from its mouth at Prescott to 1 mile below Hwy 243 bridge (miles 17.44 to 44.72), was placed on the impaired waters list in 1998 for PCB contaminated fish tissue. The river is not attaining its supported default aquatic life use in those reaches, but is attaining upstream where St. Croix lands are. The river is capable of supporting a warm water dependent sport fishery. Representative aquatic life communities associated with these waters generally require cool or warm temperatures and concentrations of dissolved oxygen that do not drop below 5 mg/L.

Loon Creek (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2670400)
Loon Creek is in the Lower Yellow River Watershed in Burnett County. This river is managed for fishing and swimming and is currently not considered impaired.

Clam River (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2654200)
The Clam River is considered a Cool-Warm Mainstem and Cool-Warm Headwaters under Wisconsin's Natural Community Determinations. Cool (Warm-Transition) Headwaters are small, sometimes intermittent streams with cool to warm summer temperatures. Coldwater fishes are uncommon to absent, transitional fishes are abundant to common, and warm water fishes are common to uncommon. Headwater species are abundant to common, mainstem species are common to absent, and river species are absent.

The Clam River (miles 43.58-47.58; 50.71-59) was assessed during the 2018 listing cycle; new biological (fish Index of Biotic Integrity (IBI) scores) sample data were clearly below the 2018 WisCALM listing thresholds for the Fish and Aquatic Life use. This water was meeting this designated use and was not considered impaired, however, recommendations were made to continue monitoring water quality and sediment.

Straight River (https://apps.dnr.wi.gov/water/waterDetail.aspx?WBIC=2626900)
The headwaters of the Straight River flow from an unnamed lake less than a mile west of Straight Lake. The river runs over 15 miles through Straight Lake, Big Round Lake, and Big and Little Blake Lake before finally discharging into Fox Creek. Mile 10.75 - 12.27 of Straight River is classified as a cold Class II Trout stream and further upstream the river is considered a warm water forage fishery.

Cool (Warm-Transition) Headwaters are small, sometimes intermittent streams with cool to warm summer temperatures. Coldwater fishes are uncommon to absent, transitional fishes are abundant to common, and warm water fishes are common to uncommon. Headwater species are abundant to common, mainstem species are common to absent, and river species are absent. Representative aquatic life communities associated with these waters generally require cold temperatures and concentrations of dissolved oxygen that remain above 6 mg/L. Since these waters are capable of supporting natural reproduction, a minimum dissolved oxygen concentration of 7 mg/L is required during times of active spawning and support of early life stages of newly-hatched fish.

Gaslyn Creek

Gaslyn Creek is not specifically monitored by WIDNR.

3.4 Long-Term Needs and Objectives

An initial water quality monitoring plan was created in cooperation with the USGS, derived from the 2000 USGS retrospective report titled “Water-Resource-Related Information for the St. Croix Reservation and Vicinity, Wisconsin” (Saad and Robertson, 2000). This Retrospective Study identified numerous data gaps in water quality for the area. Since that study, St. Croix has developed extensive water quality datasets for each sampling station identified in Table 4 which has been used to characterize the water quality and identify issues in the past and present. However, water quality sampling and assessment will need to continue in perpetuity to allow St. Croix staff to evaluate waterbodies on an annual or multi-year basis based on the level of funding available. It is important to monitor the described lakes and streams for the purposes of protecting water quality, aquatic life, human health, and detecting changes in water quality as they happen. We will continue to try to answer the following questions:

- What is the baseline water quality of tribal waters?
- How is the water quality of tribal waters changing over time with respect to physical, chemical, and biological parameters?

Nutrient parameters are important to monitor because of the relationship between loadings of these substances into lakes and lake eutrophication. Nutrients are identified by the St. Croix as the key pollutants of concern in lake degradation. The parameters monitored as part of this program will be used as the baseline for data to compare to in the future. Over the longer term, the Tribe plans to continue monitoring for the selected parameters at representative locations to note trends in water quality and identify any emerging concerns in perpetuity, as monitoring is the key to identifying changes in water quality and provides an opportunity to address water quality degradation proactively. Degradation is determined by comparing single sampling event data and seasonal averages to established thresholds or to historical water quality datasets managed by the St. Croix for each sampling station.

However, the ability to establish a baseline of overall water quality for trust waters is limited due to budgetary constraints. Currently, eight stations are in a rotation chosen every 2 years, while previous monitoring efforts were able to cover 11 stations over a period of 9 consecutive years. For a six-year period between 2004-2010, 15 stations were able to be monitored consecutively. However, the Section 106 budget has either remained static or decreased over the past 26 years and a reduction of monitoring has been necessary to meet rising costs, making it difficult to develop trends and establish a baseline of water quality. This shortfall is solely due to budgetary constraints that limit the Tribe’s ability to monitor the rotating stations every year as was previously done. The following needs would have to be addressed to meet this objective:

- Secure additional funding to hire (2) 1.0 FTE Field Technicians to complete more monitoring.
- Secure additional funding for contractual services, travel and supply costs for additional monitoring.

The Tribe's goal is to increase the number and frequency of stations monitored in order to collect an adequate amount of data to meet monitoring objectives, but this is dependent on the ability to secure more program funds. Section 319 funding can be used where monitoring is needed to track nonpoint source issues. More funding would result in each waterbody having significantly more data to use for the establishment of baseline conditions, water quality assessment and development of trends.

3.5 Quality Assurance and Data Management, Analysis, & Assessment

Data collection activities associated with surface water quality are outlined in the approved Quality Assurance Project Plan (QAPP) titled: *QUALITY ASSURANCE PROJECT PLAN (QAPP) FOR SURFACE WATER QUALITY ASSESSMENT 2023-2028* (St. Croix Chippewa Indians of Wisconsin, May 24, 2023). The St. Croix reviews and updates the QAPP as needed approximately every five years unless significant changes warrant a QAPP revision.

The St. Croix Project Director is responsible for overall direction and assuring that the project and project activities are compatible with the goals of the St. Croix Tribe. The Project Manager is responsible for assuring quality reporting to the US EPA. The Field Technician is responsible for overseeing both laboratory field-sampling standard operating procedures and the recommended manufacturers field-testing equipment standard operating procedures. The Data Manager is responsible for managing the water quality data, data analysis, and compiles and organizes the data for reporting purposes. All data is entered into the St. Croix Tribe's network for central data storage, data interpretation, trend analysis, and graphic representation of the data for project reporting purposes. The St. Croix Project Manager in coordination with the US EPA Project Officer/Program Analyst/Program Manager is responsible for initiating, developing, approving, and implementing any needed corrective actions. Specific information about the QA processes, auditing procedures and corrective actions can also be found in the QAPP.

Land Use Summary

4.1 Climate

Local climatological data is available within the region containing St. Croix trust lands. Temperature and precipitation datasets from the Grantsburg (Grantsburg 0.6 SSW, WI US, US1WIBT0001, 45.7728, -92.6886) station in Burnett County and Spooner AG (SPOONER EXPERIMENTAL FARM, WI US, USC00478027, 45.8236, -91.8761) station in Washburn County, were used to show climatological trends. Examining these data over a period of 20 years, winter temperatures on St. Croix lands typically range from a little above 45 degrees F to 10 degrees F and peak summer temperatures range from 70 degrees F down to mid-60s. Average annual precipitation from 2005 through 2025 was approximately 33.7 inches per year.

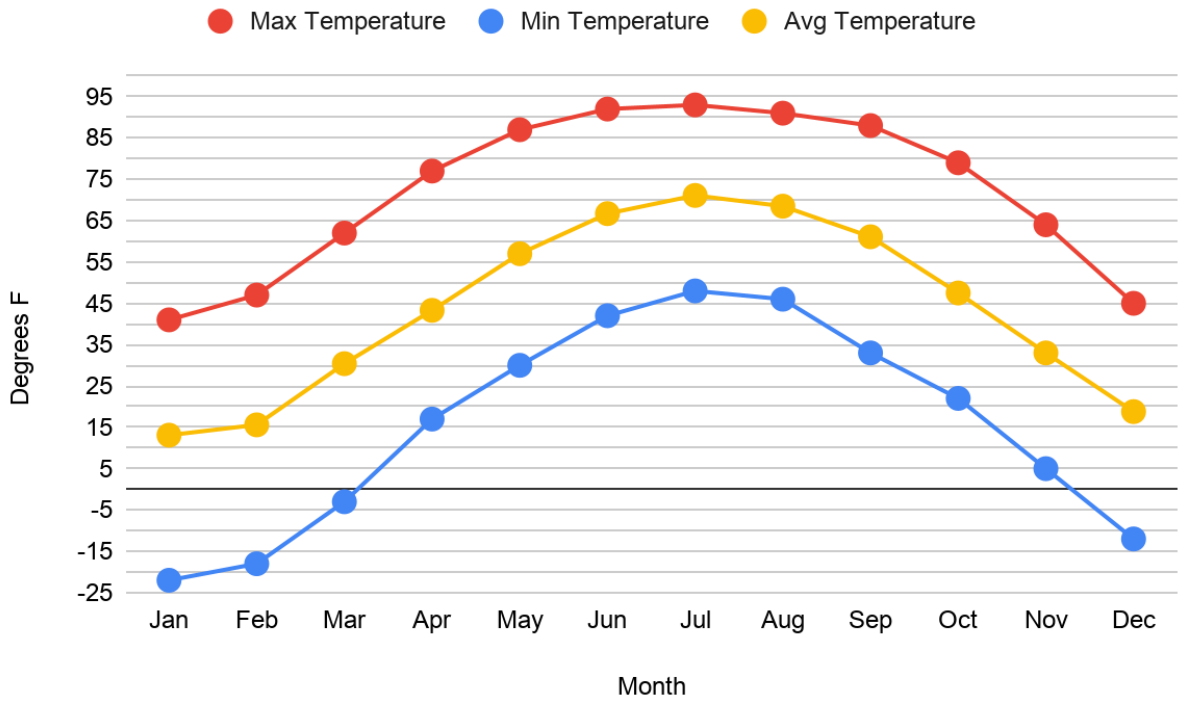

Figure 8: Monthly maximum, minimum, and average temperatures (°F) (2005-2025)

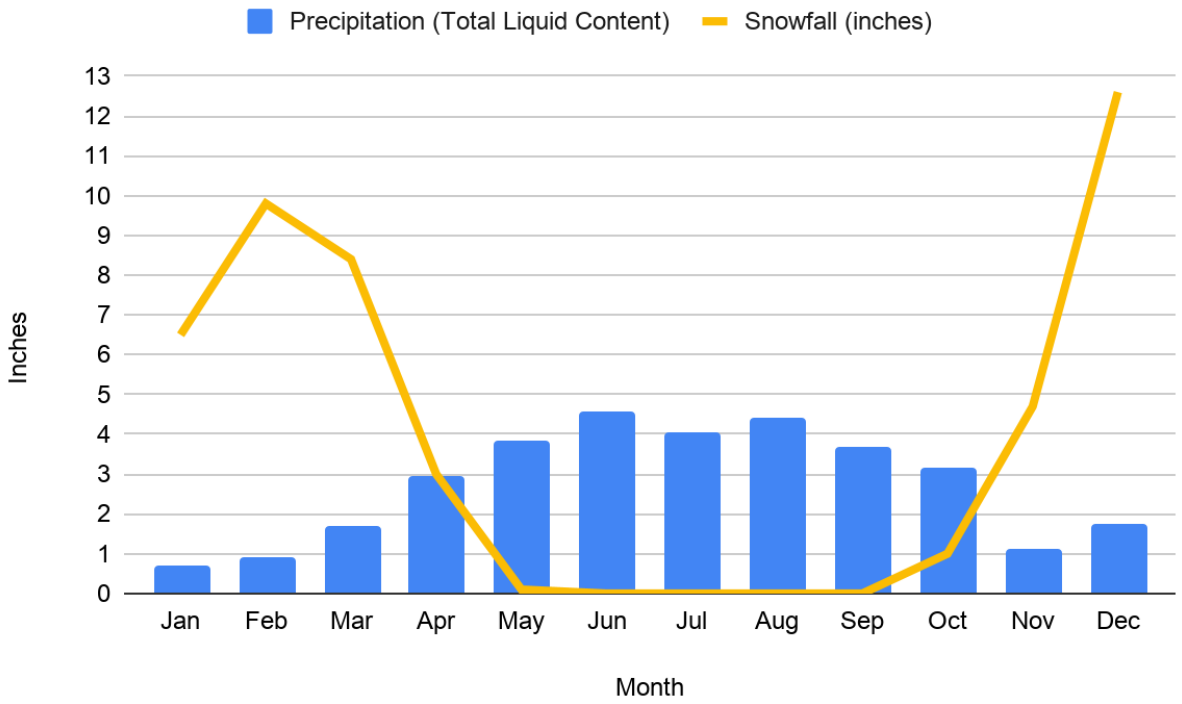

Figure 9: Average monthly precipitation and snowfall (inches) (2005-2025)

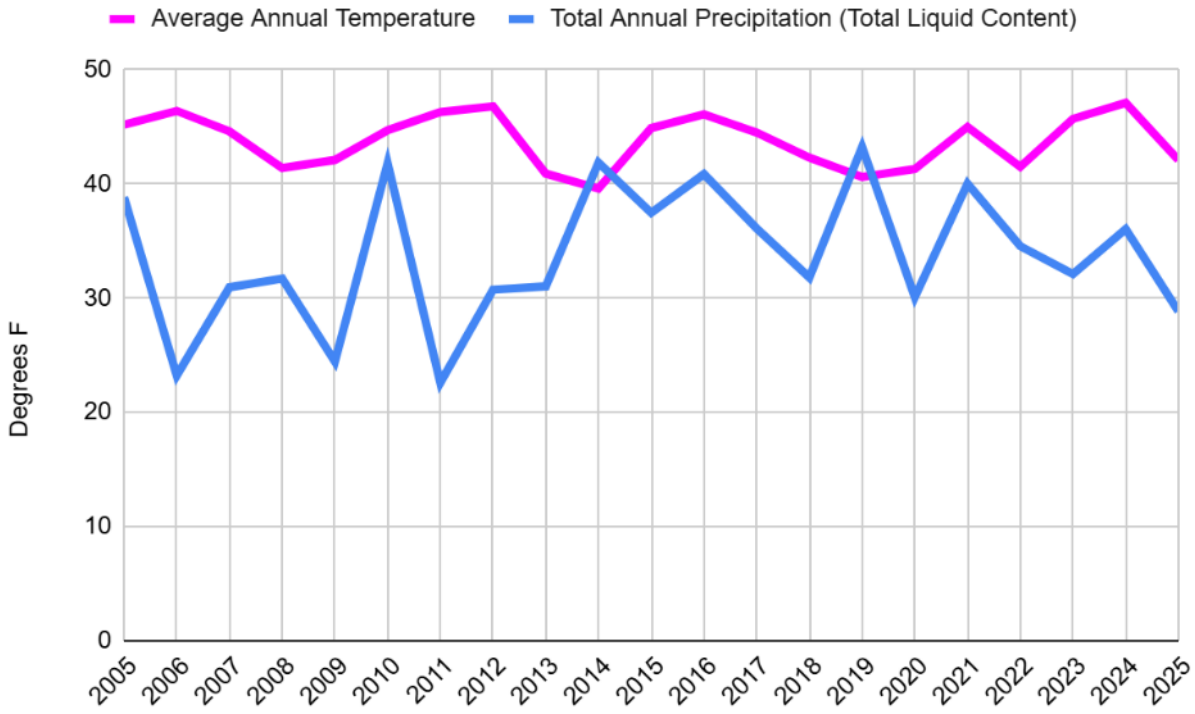

Figure 10: Total annual precipitation (in.) and average annual temperature (°F) (2005-2025)

When compared to climate normals for Wisconsin's Division 1 Northwest climate division (https://climatology.nelson.wisc.edu/wisconsin-climate-divisions/climate-normals) as depicted in the below figure, the local data are relatively on-trend.

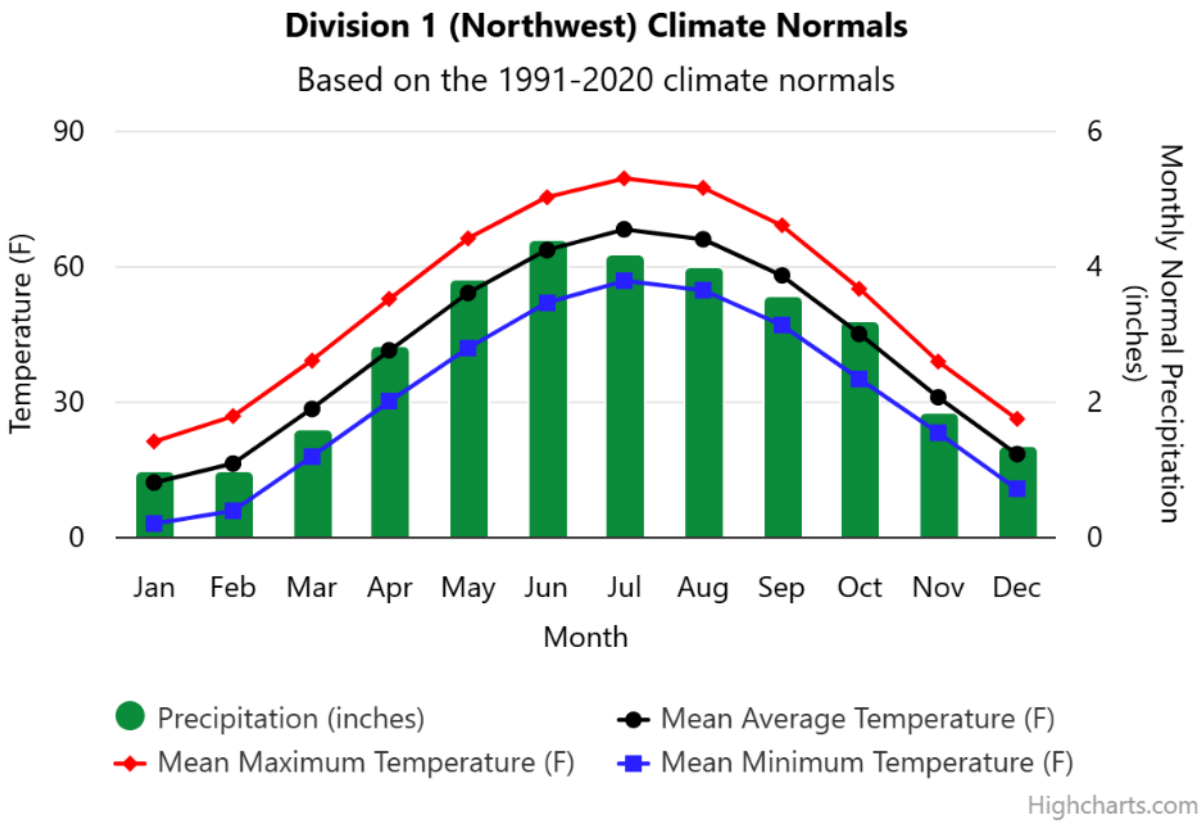

Figure 11: Climate normals for Division 1 (Northwest)

4.2 Land Use/Land Cover

Various types of forested land make up the majority of the land cover on St. Croix lands. Deciduous forest and woody wetlands dominate, with mixed forest and evergreen forest making up smaller percentages for a total of 69.5% forested cover. Emergent wetlands, scrub/shrub, and grassland/herbaceous cover make up about 15.3% of the land cover, meaning approximately 84.8% of St. Croix lands are undeveloped or not in agricultural use. Development overall is low intensity, and total developed areas represent about 9.24% of St. Croix lands. Agriculture makes up about 4.2% of St. Croix land cover.

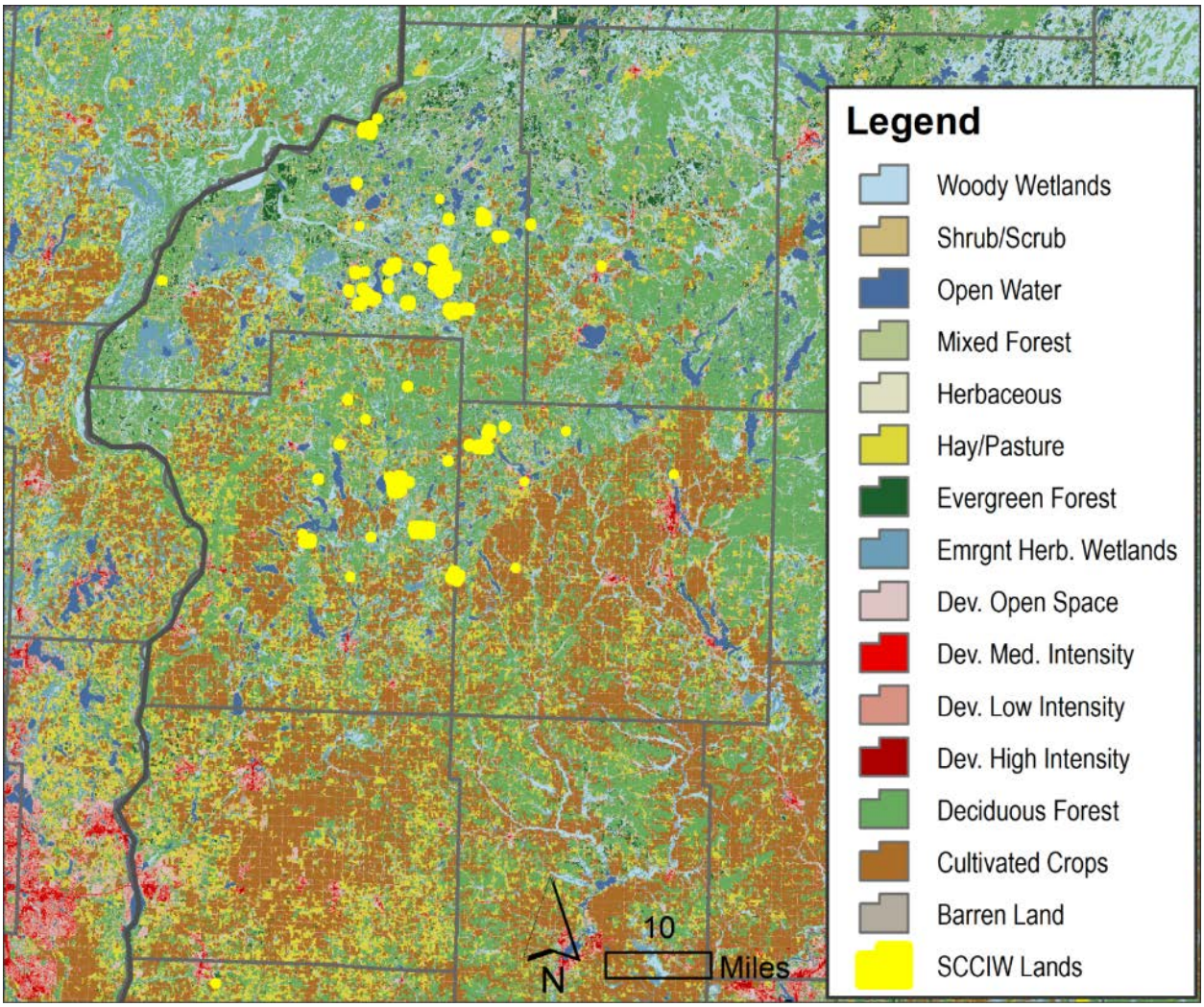

Figure 12: Regional St. Croix land cover

Table 8: St. Croix land cover (NLCD, 2024)

Land Cover Type	Percentage of St. Croix Lands
Deciduous Forest	41.80%
Woody Wetlands	20.19%
Shrub/Scrub	7.68%
Mixed Forest	6.69%
Emergent Herbaceous Wetlands	6.61%
Developed, Open Space	4.97%
Developed, Low Intensity	2.75%

Pasture/Hay	2.54%
Cultivated Crops	1.69%
Open Water	1.66%
Grassland/Herbaceous	1.03%
Developed, Medium Intensity	0.98%
Evergreen Forest	0.81%
Developed, High Intensity	0.55%
Barren Land	0.05%

The receding glaciers left many pitted outwash areas that are fairly flat and dotted with potholes, wetlands, lakes, and marshes. As noted in the above table, wooded areas also cover a large portion of St. Croix communities and development is low, which helps maintain water quality.

A significant amount of St. Croix lands are adjacent to large lakes; water resources are a vital part of the St. Croix culture, and all St. Croix Chippewa communities are found near either lakes or rivers. Lakes within tribal lands provide wild rice, which is an integral part of tribal culture, and the St. Croix River Basin is also an important resource for tourism. Large lakes adjacent to trust lands include Clam Lake, Big Sand Lake, Round Lake, Sand Lake, Rice Lake, Bashaw Lake, and Gaslyn Lake. Hundreds of smaller lakes also provide important habitat and recreational opportunities near St. Croix lands. The area is home to numerous high-quality fisheries, wild rice lakes, and wetlands of great significance to tribal and non-tribal communities. Pressure from forestry and agriculture are primary water quality concerns of the Tribe.

St. Croix lands are found within three HUC8 watersheds: Upper St. Croix, Lower St. Croix, and Red Cedar. As a relatively small percentage of St. Croix land and no trust land or monitoring stations are found in the Red Cedar HUC8, this assessment report will focus on the Upper and Lower St. Croix HUC8s.

Upper St. Croix (07030001)

The Upper St. Croix HUC8 comprises portions of Minnesota and Wisconsin. It is approximately 2,026 square miles, with the larger portion within Wisconsin and mainly within Burnett County. The HUC8 portion within the state lies primarily within Wisconsin’s Forest Transition and Northwest Sands ecological landscapes. The Forest Transition Ecological Landscape lies along the northern border of Wisconsin's Tension Zone, through the central and western part of the state, and supports both northern forests and agricultural areas. The western portions within the HUC8 are on moraines of the Wisconsin glaciation. Soils range from sandy loam to loam or shallow silt loam, and from poorly drained to well drained. Historic vegetation was primarily northern hardwood forest dominated by sugar maple and hemlock with some yellow birch, red pine and white pine. Current forest vegetation is primarily northern hardwoods and aspen, with smaller amounts of oak and lowland hardwoods. Small areas of conifer swamp are found near the headwaters of streams and associated with lakes in kettle depressions on moraines. The

Northwest Sands Ecological Landscape is a large glacial outwash system consisting of flat plains or terraces along glacial meltwater channels, and pitted outwash plains containing kettle lakes. Soils are deep sands, low in organic material and nutrients. Historic vegetation was jack pine/scrub oak forest and barrens, with white and red pine forests. Numerous barrens occurred in the southwest half of the landscape, along with oak savannas in the south central portion. Current vegetation is a mix of forest (pine, aspen-birch, and oak, with smaller areas of maple-basswood, spruce-fir, and lowland hardwoods), agriculture, and grassland with some wetlands in the river valleys. Within the open lands, there is a relatively large proportion of grassland and shrub land, a small but locally significant amount of emergent/wet meadow and open water, and very little row-crop agriculture.

The Upper St. Croix contains many significant, high-quality streams and rivers; the St. Croix River and the North Fork and South Fork of the Clam River are classified as Outstanding Resource Waters and the Clam River is designated an Exceptional Resource Water by WIDNR. Parts of the Clam River are also classified as Class I and III Wisconsin trout waters. At least six other smaller unnamed trout streams in the watershed are also designated as Outstanding Resource Waters. Large lakes significant to the St. Croix within this HUC8 include Big Sand Lake, Clam Lake, Sand Lake, and Gaslyn Lake. Big Sand Lake and Sand Lake are both designated Outstanding Resource Waters.

Lower St. Croix (07030005)

The Lower St. Croix HUC8 covers about 2,616.8 square miles and is located entirely within the Forest Transition ecological landscape, described above. The hydrology of the watershed around St. Croix lands is heavily influenced by land characteristics and land uses. Nearly half of the watershed consists of flat glacial plains that have been clear cut and drained to support intensive agricultural activities. The streams and rivers in agricultural regions of the watershed are flashy and erosive, carrying large sediment and nutrient loads to the watersheds lakes and reservoirs. However, the remainder of the watershed is covered with glacial moraines, kettle lakes and predominantly forested wetlands, which allow for precipitation to infiltrate into the groundwater, resulting in significantly less stormwater runoff. Dominant soils are typically derived from weathered sandstone and glacial till materials deposited from alluvial processes, including the formation of sandy outwash fans. Soils with a higher organic content have hydric characteristics and are concentrated mainly in lowlands. Colluvial deposits weathered from sedimentary stone and wind-formed loess deposits with glacial till characterize loamier soil units. Large lakes significant to the St. Croix within this HUC8 include Round Lake.

Groundwater

Groundwater contamination is a concern for the St. Croix; a significant amount of drinking water comes from a mix of community and private wells. St. Croix lands lie within the Cambrian-Ordovician aquifer system. This aquifer system is a complex, multi-aquifer system that consists of individual aquifers that are separated by leaky confining units. The aquifers are capped by the Maquoketa confining unit, which bounds them as an aquifer system.

Hydrogeologic units that comprise the aquifer system include (in descending order): the Maquoketa confining unit, the St. Peter-Prairie du Chien-Jordan aquifer, the St. Lawrence-Franconia confining unit, the Ironton-Galesville aquifer, the Eau Claire confining unit, and the Mount Simon aquifer. Portions of St. Croix lands are located within the Ironton-Galesville aquifer and the Mount Simon aquifer.

Ironton-Galesville Aquifer

The Ironton and Galesville Sandstones comprise the Ironton- Galesville aquifer. These formations are predominantly medium- to coarse-grained sandstone that has a combined thickness that ranges from 50 to 150 feet. The direction of groundwater flow is towards the Mississippi, Minnesota, and Wisconsin Rivers in southeastern Minnesota and western Wisconsin and southeastward towards the Illinois Basin in eastern Iowa. The Ironton-Galesville aquifer has the lowest water level of the three aquifers that make up the Cambrian-Ordovician aquifer system and has a transmissivity of approximately 1,100 square feet per day. Water in the aquifer is a mixed-ion type.

Mount Simon Aquifer

The Mount Simon aquifer, which is the lowermost aquifer of the Cambrian-Ordovician aquifer system, consists of the coarse to fine-grained Mount Simon Sandstone and the Bayfield Group. The top of the aquifer slopes southward and southwestward from southeastern Minnesota and western Wisconsin, where it is 1,000 feet or more above sea level, to southwestern Iowa, where it is about 2,500 feet below sea level. This aquifer is confined above by the Eau Claire confining unit and overlies less permeable rocks of Precambrian age.

Wetlands

The St. Croix trust lands contain approximately 473 acres of wetlands, mainly wooded with some emergent wetlands. Many wetlands are associated with adjacent large lakes. The table below, based on GIS data maintained by the St. Croix, shows approximate total wetland acres in Trust parcels delineated by the St. Croix and the watersheds they are located in.

Table 9: Wetlands in St. Croix trust lands

HUC8 Number	HUC8 Name	HUC10 Number	HUC10 Name	HUC12 Number	HUC12 Name	Wetland Acres
7030001	Upper St. Croix	0703000104	Shell Lake-Yellow River	070300010405	Rice Lake-Yellow River	5.33
		0703000105	Yellow Lake-Yellow River	070300010501	Sand Lake-Yellow River	39
				070300010502	Big Sand Lake-Yellow River	109.17
				070300010505	Loon Creek	6.4
				070300010506	Buffalo Lake-Yellow River	8.44

		0703000108	North Fork Clam River	070300010802	Bashaw Brook	16.72
				070300010803	Sand Creek	20.1
		0703000109	Clam River	070300010904	Clam Lake-Clam River	143.9
7030005	Lower St. Croix	0703000507	Beaver Brook-Apple River	070300050702	Straight River	62.6
				070300050704	Rice Bed Creek-Apple River	61

Specific wetland communities that have been identified to date within trust lands include:

- Forested (186 ac): needle-leaved/deciduous, needle-leaved, broad-leaved deciduous, needle-leaved evergreen, and deciduous vegetation. Several wetlands in the Buffalo Lake-Yellow River HUC12 are noted as associated with a floodplain complex.
- Forested/Emergent Wet Meadow (3.23 ac): broad-leaved deciduous, narrow-leaved persistent, and needle-leaved vegetation. One wetland in the Clam Lake-Clam River HUC12 is noted as having its vegetation recently removed.
- Forested/Scrub-Shrub (49.5 ac): broad-leaved deciduous, needle-leaved, needle-leaved evergreen, broad-leaved evergreen, and evergreen vegetation. Two wetlands in the Rice Bed-Apple Creek HUC12 are noted as having associated floating vegetated mats.
- Scrub/Shrub (25.6 ac): broad-leaved, broad-leaved deciduous, broad-leaved evergreen, and evergreen vegetation. Several wetlands in the Straight River and Rice-Bed Apple Creek HUC12s are noted as having associated floating vegetated mats.
- Scrub/Shrub, Emergent/wet meadow (110.3 ac): broad-leaved, broad-leaved evergreen, narrow-leaved persistent, and broad-leaved deciduous vegetation. Wetlands in the Big Sand Lake-Yellow River, Bashaw Brook, Straight River, and Rice Bed-Apple Creek HUC12s are noted as having associated floating vegetated mats.
- Emergent/Wet Meadow (51.5 ac): narrow-leaved persistent and nonpersistent vegetation. Some wetlands in the Clam Lake-Clam River and Straight River HUC12s are noted as having associated floating vegetated mats.
- Emergent/Wet Meadow, Aquatic Bed (8.28 ac): nonpersistent, floating, and rooted floating vegetation. Hydrologic regimes include standing and flowing water from associated lakes and rivers.
- Aquatic Bed (0.06 ac): floating vegetation. Only one instance of this wetland, associated with standing water from a lake in Clam Lake-Clam River HUC12.
- Open Water (28.49 ac): no noted characteristic vegetation owing to class type; hydrologic regimes are all palustrine standing water. Three wetlands in the Sand Lake-Yellow River and Loon Creek HUC12s are noted as having been excavated.

Detailed biological monitoring of tribal wetland conditions has not been performed. Wetland monitoring for nutrients and other chemical parameters has occurred on one wetland site, Ballfield, in 2011, and is included in Section 5.1, Data Analysis.

Ecoregions

St. Croix lands lie primarily within two Level III ecoregions: North Central Hardwood Forests and Northern Lakes and Forests. Some non-trust St. Croix lands are within the Western Corn Belt Plains. Level III ecoregions are important for watershed-based planning in Wisconsin, as several state water quality thresholds are set based on the Level III ecoregion the water body is located in. Below are descriptions of each relevant ecoregion (Omernik, 2000).

50. NORTHERN LAKES AND FORESTS

The Northern Lakes and Forests is a region of relatively nutrient-poor glacial soils, coniferous and northern hardwood forests, undulating till plains, morainal hills, broad lacustrine basins, and extensive sandy outwash plains. Soils in this ecoregion are thicker than in those to the north and generally lack the arability of soils in adjacent ecoregions to the south. The numerous lakes that dot the landscape are clearer and less productive than those in ecoregions to the south.

51. NORTH CENTRAL HARDWOOD FORESTS

The North Central Hardwood Forests ecoregion is transitional between the predominantly forested Northern Lakes and Forests (50) to the north and the agricultural ecoregions to the south. Land use/land cover in this ecoregion consists of mosaic forests, wetlands and lakes, cropland agriculture, pasture, and dairy operations. The growing season is generally longer and warmer than that of Ecoregion 50 and the soils are more arable and fertile, contributing to the greater agricultural component of land use. Lake trophic states tend to be higher here than in the Northern Lakes and Forests, with higher percentages in eutrophic and hypereutrophic classes.

47. WESTERN CORN BELT PLAINS

Once mostly covered with tallgrass prairie, over 80 percent of the Western Corn Belt Plains is now used for cropland agriculture and much of the remainder is in forage for livestock. A combination of nearly level to gently rolling glaciated till plains and hilly loess plains, an average annual precipitation of 26 to 37 inches, which occurs mainly in the growing season, and fertile, warm, moist soils make this one of the most productive areas of corn and soybeans in the world. Agricultural practices have contributed to environmental issues, including surface and groundwater contamination from fertilizer and pesticide applications as well as concentrated livestock production.

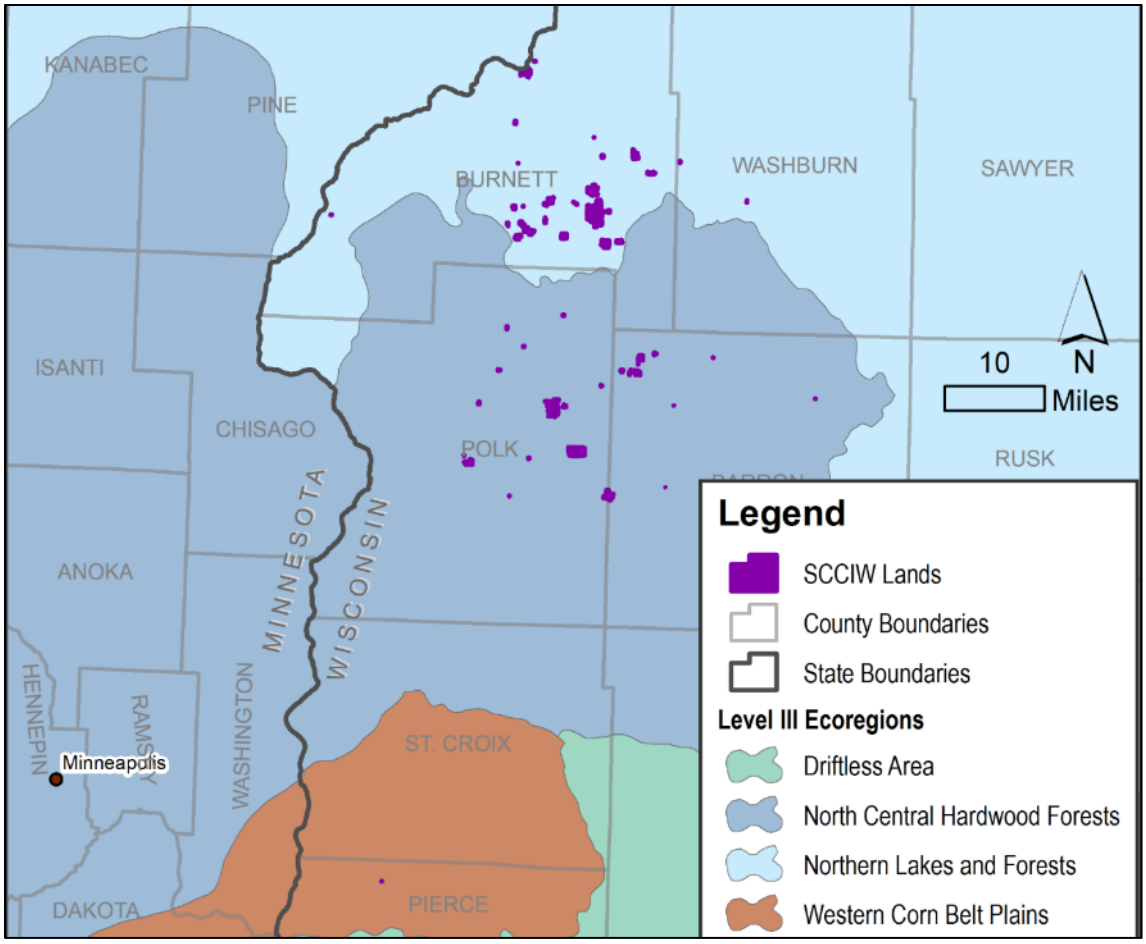

Figure 13: Level III Ecoregions of St. Croix lands

Socioeconomic

The St. Croix Chippewa Indians of Wisconsin have approximately 1984 enrolled tribal members. St. Croix Tribal Government and Tribal Enterprises are the largest employers in Burnett County and the 2nd largest employer in Barron County (Source: Wisconsin Department of Workforce Development). The Tribal Government employs many community members within the Tribal Government Center, which include a Health Department/Clinic, Family Resource Center, Housing Authority, Construction Company, Youth/Education, Elders, Food Distribution, EPA, Natural Resources, Police Department and many other departments and agencies dedicated to service in the St. Croix Tribal community. Government employment is about 50% Native American and 50% non-Native American, and Enterprise employment is 25% Native American and 75% non-Native American. Businesses owned by the St. Croix also include casinos and hotels, gas stations, office space complexes, an aquaculture facility, health services clinic, smoke shop, IT software company, travel agency, and campground.

Hunting, fishing, and gathering are integral to St. Croix tribal culture. In order to promote the conservation and management of reservation natural resources, the St. Croix have passed a tribal ordinance setting up rules for the control and regulations of hunting, fishing, and gathering on the lands and waters of the St. Croix reservation. The Tribe has recognized the following

protected species which cannot be hunted, fished, trapped, or gathered on St. Croix reservation lands: paddlefish, marten, wolverine, badger, flying squirrel, timber wolf, lynx, cougar, moose, and homing pigeons or any wild bird not regulated for harvest by their ordinance. The ordinance places many restrictions on fishing to protect and conserve St. Croix water resources; for example, the ordinance prohibits the use of goldfish or alewife for bait and prohibits the transport of any live fish into or within tribal lands except for minnows. Unused bait minnows can only be released if they were naturally obtained from the fishing water source; unused bait minnows from a different lake or from a bait seller cannot be released on St. Croix lands.

The ordinance makes provisions for gathering of plants for household or ceremonial use. Harvest of timber on tribal lands is prohibited, except for limited circumstances. Some historic timber clears occurred in 2019 related to windstorms, but typically timber activity on tribal lands has been very limited. However, timber sales and forestry practices have crept up in St. Croix lands, so a more strategic and proactive forestry management program is being put in place.

Wild Rice Cultivation & Harvest

Wild rice is sensitive to water levels altered by dams as well as road construction, pollution, poor harvesting practices, invasive species (plant and animal), genetic engineering (genetic contamination of the wild rice from the paddies), and climate change. The Wisconsin DNR and representatives of area Ojibwe Tribes cooperate to determine when rice on date-regulated lakes is ripe. The WIDNR, with input from respective Ojibwe rice chiefs, will determine when the season is open for harvesting or gathering wild rice on a specific lake. Wild rice harvest on any waters within Native American reservations is typically limited to tribal members. Big Sand Lake, Clam Lake, Round Lake, Gaslyn Lake, and Rice Lake are all St. Croix tribal lakes designated as Wild Rice Lakes by WIDNR harvested by both tribal and state harvesters.

Figure 14: Aerial image of wild rice on Clam Lake

Surface and Ground Water Quality Summary and Results

Surface water quality of St. Croix trust land has become increasingly threatened in recent years due to the increase in development and shifts to other intensive land-uses within the watersheds that encompass tribal land. Existing high-quality and attaining lake and stream resources on trust lands are sensitive to these pressures and maintenance of good water quality is essential to the St. Croix way of life. Lake eutrophication, in particular, is a major concern of the St. Croix due to tribal lakes' uses for recreation, fisheries, and wild rice. Baseline water quality monitoring results continue to be of concern regarding the current water quality found on tribal lands. Overall, water quality in the St. Croix trust lands is good, with several high-quality water resources. However, concerns with water quality stemming primarily from non-point source contributions continue to be apparent and protection strategies will be an important approach going forward.

The Tribe is challenged with maintaining an adequate baseline monitoring program in the face of budgetary constraints. The baseline monitoring activity includes in-stream measurements for physical, chemical, and biological indicators, including the collection of water samples for laboratory analysis. Currently, the St. Croix has 8 active rotating stations (four stream, four lake) out of a total of 18 stations which are in the following watersheds:

Table 10: Monitoring stations by HUC watershed units

Station Name	Site Name	Type	HUC12 Number	HUC12 Name	HUC10 Number	HUC10 Name	HUC8 Number	HUC8 Name
SCT_04_GL	Gaslyn Lake	Lake	070300010501	Sand Lake-Yellow River	0703000105	Yellow Lake-Yellow River	07030001	Upper St. Croix
SCT_20_YRH	Yellow River - County H	River						
SCT_28_GC	Gaslyn Creek	Creek						
SCT_07_BSL	Big Sand Lake	Lake	070300010502	Big Sand Lake-Yellow River				
SCT_26_BALL	Ballfield	Wetland						
SCT_21_YL	Yellow Lake	Lake	070300010504	Yellow Lake-Yellow River				
SCT_02_LC	Loon Creek	River	070300010505	Loon Creek				

SCT_01_YRN	Yellow River - North	River	070300010506	Buffalo Lake-Yellow River				
SCT_03_YRS	Yellow River - South	River						
SCT_09_BL	Bashaw Lake	Lake	070300010802	Bashaw Brook	0703000108	North Fork Clam River		
SCT_11_SL	Sand Lake - Maple Plain	Lake	070300010803	Sand Creek				
SCT_16_CL	Clam Lake	Lake	070300010904	Clam Lake-Clam River	0703000109	Clam River		
SCT_18_CRLB	Clam River - Lynch Bridge	River						
SCT_24_CRPB	Clam Lake - Pike Bend	River	070300010905	Black Brook-Clam River				
SCT_25_SCR	St. Croix River	River	070300011202	Hay Creek-Saint Croix River	0703000112	Chases Brook-Saint Croix River		
SCT_13A_SRN	Straight River - North	River	070300050702	Straight River	0703000507	Beaver Brook-Apple River	07030005	Lower St. Croix
SCT_13B_SRS	Straight River - South	River						
SCT_15_BRL	Big Round Lake	Lake						

5.1 Data Analysis

The water quality data that is represented was collected at the following St. Croix monitoring stations during various sampling periods depending on the station. Some stations have been monitored more extensively than others. Stations are sampled on a random rotational basis unless certain stations are identified for priority sampling, such as ahead of a scheduled culvert project. All monitoring followed methods outlined in 3.1 Field Collection and Timeframes.

Summaries of the water quality results for turbidity (as proxy for suspended sediment concentration), Nitrate of Nitrite (NO_3+NO_2), Kjeldahl nitrogen, total Nitrogen, and total Phosphorus are given below for each sampling station organized by the relevant HUC8, HUC10, and HUC12 watersheds. Where relevant, chlorophyll-a data is included for lakes as an indicator of lake productivity which can be influenced by nutrients. Waters assessed include lake and river/stream sites, with one wetland site. Where applicable, exceedances for each parameter are measured based on Wisconsin's NR 102 guidance and/or US EPA reference criteria for Nutrient Ecoregion VI (Corn Belt and Northern Great Plains) as noted in Table 6 in Section 3.2, Current Water Quality Efforts.

Upper St. Croix HUC8 07030001

St. Croix has sampled 15 sampling stations at varying intervals in the Upper St. Croix HUC8 for their Section 106 program, listed below by HUC10 and HUC12.

Yellow Lake-Yellow River HUC10 0703000105

St. Croix sampled three rivers (Gaslyn Creek, Yellow River (three locations), and Loon Creek), three lakes (Gaslyn Lake, Big Sand Lake, and Yellow Lake), and one wetland (Ballfield) in this HUC10.

Sand Lake-Yellow River HUC12 070300010501

At station SCT_04_GL, Gaslyn Lake (sampling years 2001-2010, 2012-2025), 41 samples (54%) exceeded the EPA threshold of 0.028 mg/L with 4 samples (5%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Six hundred and seventeen samples (95%) exceeded the EPA threshold of 0.84 NTU for turbidity. Two samples (29%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 37 samples (100%) exceeded the total N threshold of 0.33 mg/L and 41 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

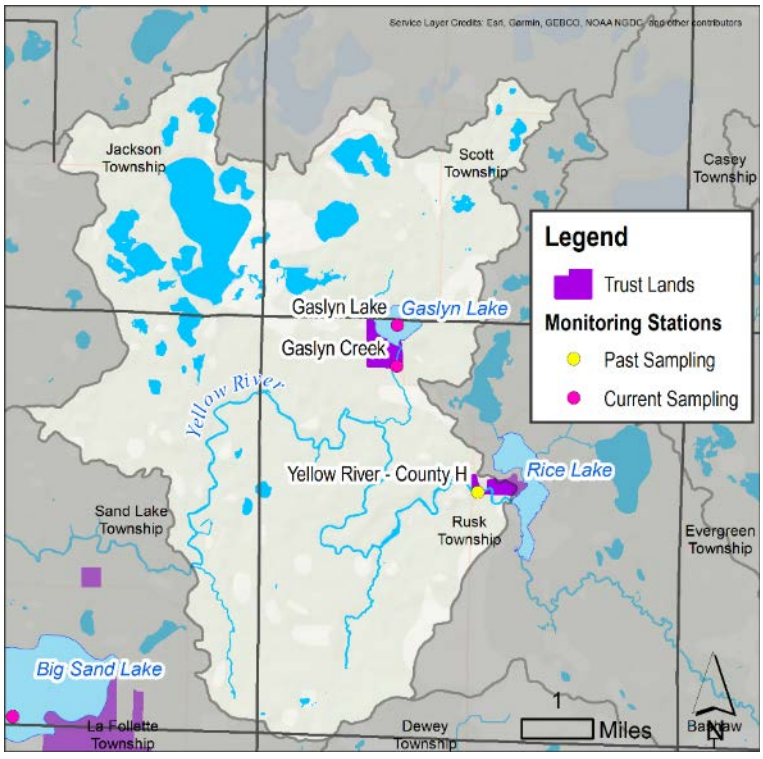

Figure 15: Sand Lake-Yellow River HUC12

At station SCT_28_GC, Gaslyn Creek (sampling years 2012-2025), 28 samples (64%) exceeded the EPA threshold of 0.028 mg/L with 4 samples (9%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Eighty samples (94%) exceeded the EPA threshold of 0.84 NTU for turbidity. Three samples (17%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L,

while 34 samples (100%) exceeded the total N threshold of 0.33 mg/L and 32 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

At station SCT_20_YRH, Yellow River - County H (sampling years 2004-2010, 2017-2018), 42 samples (86%) exceeded the EPA threshold of 0.028 mg/L with 3 samples (6%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Forty-nine samples (92%) exceeded the EPA threshold of 0.84 NTU for turbidity. Five samples (83%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 6 samples (100%) exceeded the total N threshold of 0.33 mg/L and 5 samples (83%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

Table 11: Sand Lake-Yellow River monitoring stations

	SCT_04_GL Gaslyn Lake	SCT_28_GC Gaslyn Creek	SCT_20_YRH Yellow River
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L		
n (n*)	NR102: 76 (4); Lvl III: 76 (41)	NR102: 44 (4) ; Lvl III: 44 (28)	NR102: 49 (3); Lvl III: 49 (42)
Range (mg/l)	0.016 -0.12	0.015 - 0.082	0.025 - 0.091
	Turbidity: Level III Ecoregion 51: 0.84 NTU		
n (n*)	647 (617)	85 (80)	53 (49)
Range (NTU)	0 - 530	0 - 44.8	0 - 88
	NO2 + NO3: Level III Ecoregion 51: 0.13 mg/L		
n (n*)	7 (2)	18 (3)	6 (5)
Range (mg/l)	0.0125 - <0.3	0 - 0.16	0.039 - 0.73
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L		
n (n*)	37 (37)	34 (34)	6 (6)
Range (mg/l)	0.36-1.4	0.35 - 1	0.74 - 1.1
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L		
n (n*)	41 (41)	39 (32)	6 (5)
Range (mg/l)	0.36 - 1.4	0.25 - 1	0.26 - 1

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Big Sand Lake-Yellow River HUC12 070300010502

At station SCT_07_BSL, Big Sand Lake (sampling years 2001-2011, 2015-2016, 2019-2020, 2025), 11 samples (20%) exceeded the EPA threshold of 0.028 mg/L with no samples exceeding the 0.075 mg/L WIDNR NR 102 threshold. Eight hundred and twenty-two samples (68%) exceeded the EPA threshold of 0.84 NTU for turbidity. Two samples (29%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 15 samples (100%) exceeded the total N threshold of 0.33 mg/L and 15 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

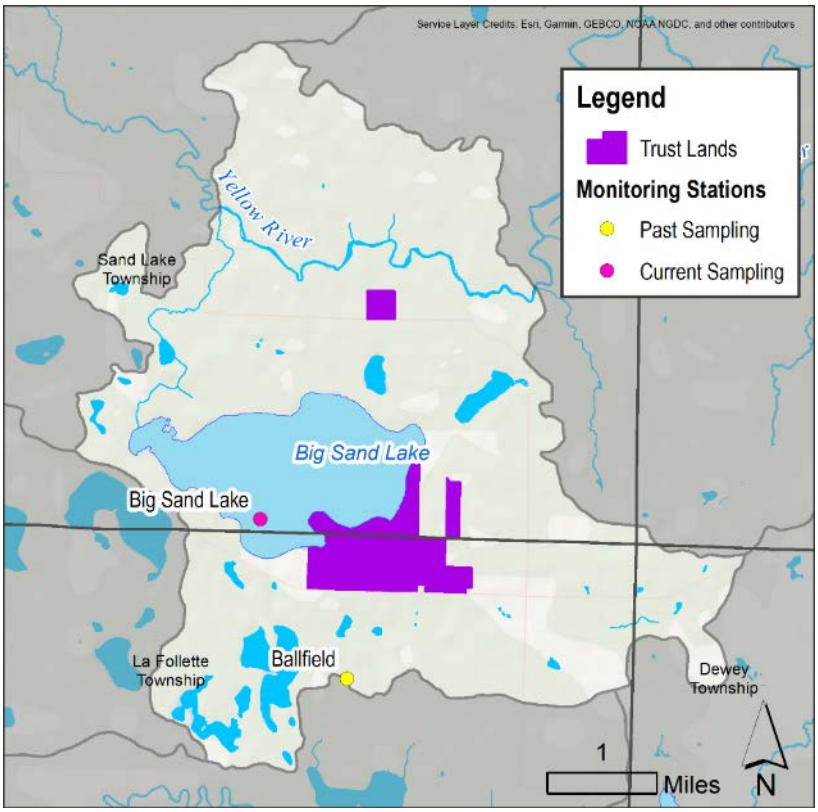

Figure 16: Big Sand Lake-Yellow River HUC12

At station SCT_26_BALL, Ballfield (sampling year 2011), 5 samples (71%) exceeded the EPA threshold of 0.028 mg/L with 1 sample (14%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Seven samples (100%) exceeded the EPA threshold of 0.84 NTU for turbidity. Zero samples exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 1 sample (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L. Total N was not sampled.

Table 12: Big Sand Lake-Yellow River monitoring stations

	SCT_07_BSL Big Sand Lake	SCT_26_BALL Ballfield
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L	
n (n*)	NR102: 56 (0), Lvl III: 56 (11)	NR102: 7 (1); Lvl III: 7 (5)
Range (mg/l)	0.007 - 0.7	0.019 - 0.13
	Turbidity: Level III Ecoregion 51: 0.84 NTU	
n (n*)	1209 (822)	7 (7)
Range (NTU)	0 - 999	2.58 - 35.8
	NO2 + NO3: Level III Ecoregion 51: 0.13 mg/L	
n (n*)	7 (2)	1 (0)
Range (mg/l)	0.019 - 0.56	0.044

	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L	
n (n*)	15 (15)	N/A
Range (mg/l)	0.37 - 0.74	N/A
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L	
n (n*)	15 (15)	1 (1)
Range (mg/l)	0.34 - 0.79	1.1

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Yellow Lake-Yellow River HUC12 070300010504

At station SCT_21_YL, Yellow Lake (sampling years 2004-2010), 28 samples (88%) exceeded the EPA threshold of 0.028 mg/L with 8 samples (25%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Three hundred and eighty-five samples (90%) exceeded the EPA threshold of 0.84 NTU for turbidity. NO_2+NO_3, total N, and Kjeldahl N were not sampled.

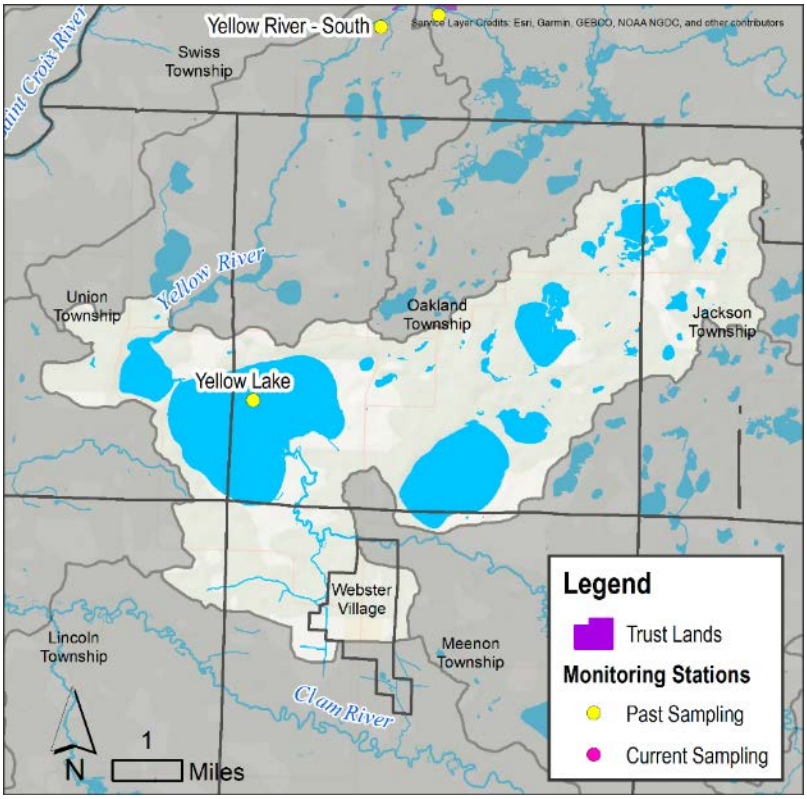

Figure 17: Yellow Lake-Yellow River HUC12

Table 13: Yellow Lake-Yellow River monitoring stations

	SCT_21_YL Yellow Lake
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L
n (n*)	NR102: 32 (8), Lvl III: 32 (28)
Range (mg/l)	0.013 - 0.17
	Turbidity: Level III Ecoregion 51: 0.84 NTU

n (n*)	428 (385)
Range (NTU)	0 - 240
	NO2 + NO3: Level III Ecoregion 51: 0.13 mg/L
n (n*)	N/A
Range (mg/l)	N/A
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	N/A
Range (NTU)	N/A
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	N/A
Range (mg/l)	N/A

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Loon Creek HUC12 070300010505

At station SCT_02_LC, Loon Creek (sampling years 2001-2010, 2012-2016), 32 samples (47%) exceeded the EPA threshold of 0.028 mg/L with no samples exceeding the 0.075 mg/L WIDNR NR 102 threshold. Sixty-six samples (80%) exceeded the EPA threshold of 0.84 NTU for turbidity. Two samples (22%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 3 samples (75%) exceeded the total N threshold of 0.33 mg/L and 7 samples (78%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

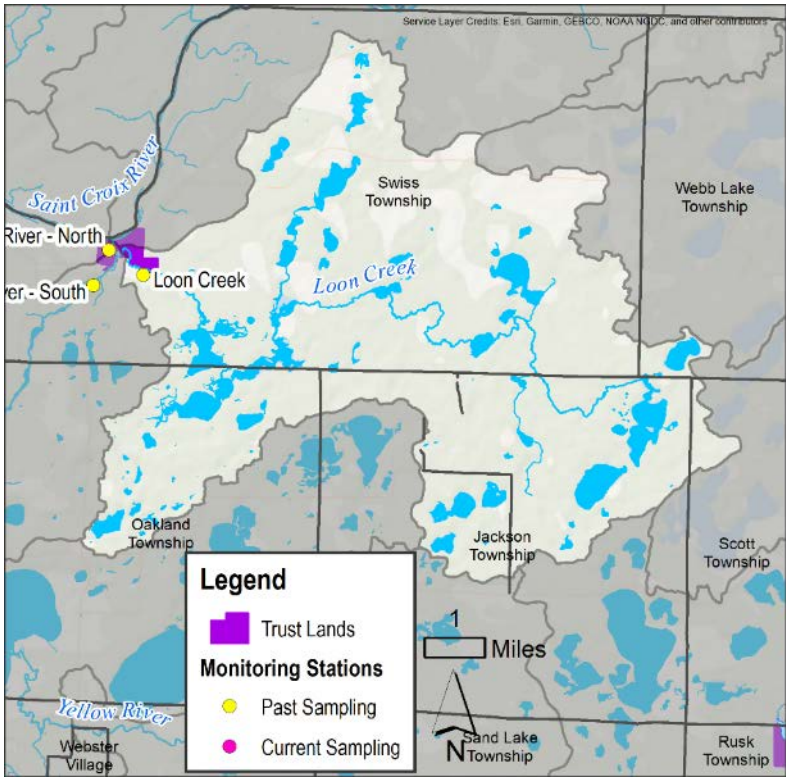

Figure 18: Loon Creek HUC12

Table 14: Loon Creek monitoring stations

	SCT_02_LC Loon Creek
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L
n (n*)	NR102: 68 (0), Lvl III: 68 (32)
Range (mg/l)	0.012 - 1.15
	Turbidity: Level III Ecoregion 51: 0.84 NTU
n (n*)	83 (66)
Range (NTU)	0 - 101
	NO2 + NO3: Level III Ecoregion 51: 0.13 mg/L
n (n*)	9 (2)
Range (mg/l)	0.0125 - 0.3
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	4 (3)
Range (NTU)	0.24 - 0.48
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	9 (7)
Range (mg/l)	0.21 - 0.67

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Buffalo Lake-Yellow River HUC12 070300010506

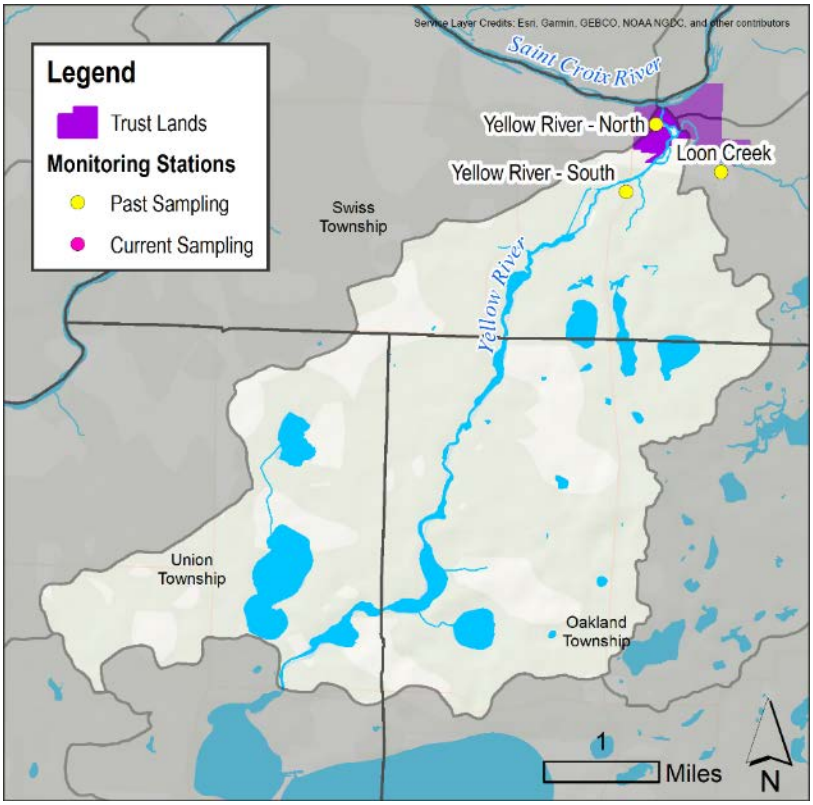

Figure 19: Buffalo Lake-Yellow River HUC12

At station SCT_01_YRN, Yellow River - North (sampling years 2001-2010, 2012-2015), 56 samples (82%) exceeded the EPA threshold of 0.028 mg/L with 5 samples (7%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Sixty-seven samples (91%) exceeded the EPA threshold of 0.84 NTU for turbidity. One sample (20%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while one sample (100%) exceeded the total N threshold of 0.33 mg/L and 4 samples (80%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

At station SCT_03_YRS, Yellow River - South (sampling years 2001-2010), 34 samples (72%) exceeded the EPA threshold of 0.028 mg/L with 4 samples (9%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Thirty-eight samples (88%) exceeded the EPA threshold of 0.84 NTU for turbidity. Three samples (100%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while one sample (100%) exceeded the total N threshold of 0.33 mg/L and 3 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

Table 15: Buffalo Lake-Yellow River monitoring stations

	SCT_01_YRN, Yellow River - North	SCT_03_YRS, Yellow River - South
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L	
n (n*)	NR 102: 68 (5); Lvl III: 68 (56)	NR 102: 47 (4); Lvl III: 47 (34)
Range (mg/l)	0.007 - 0.42	0.016 - 0.094
	Turbidity: Level III Ecoregion 51: 0.84 NTU	
n (n*)	74 (67)	43 (38)
Range (NTU)	0 - 119	0 - 173
	NO3+NO2: Level III Ecoregion 51: 0.13 mg/L	
n (n*)	5 (1)	3 (3)

Range (mg/l)	0.085 - 0.12	< 0.3
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L	
n (n*)	1 (1)	1 (1)
Range (mg/l)	0.63	0.59
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L	
n (n*)	5 (4)	3 (3)
Range (mg/l)	0.31 - 0.67	0.5 - 0.63

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

North Fork Clam River HUC10 0703000108

St. Croix sampled two rivers (Bashaw Lake, Sand Lake) in this HUC10.

Bashaw Brook HUC12 070300010802

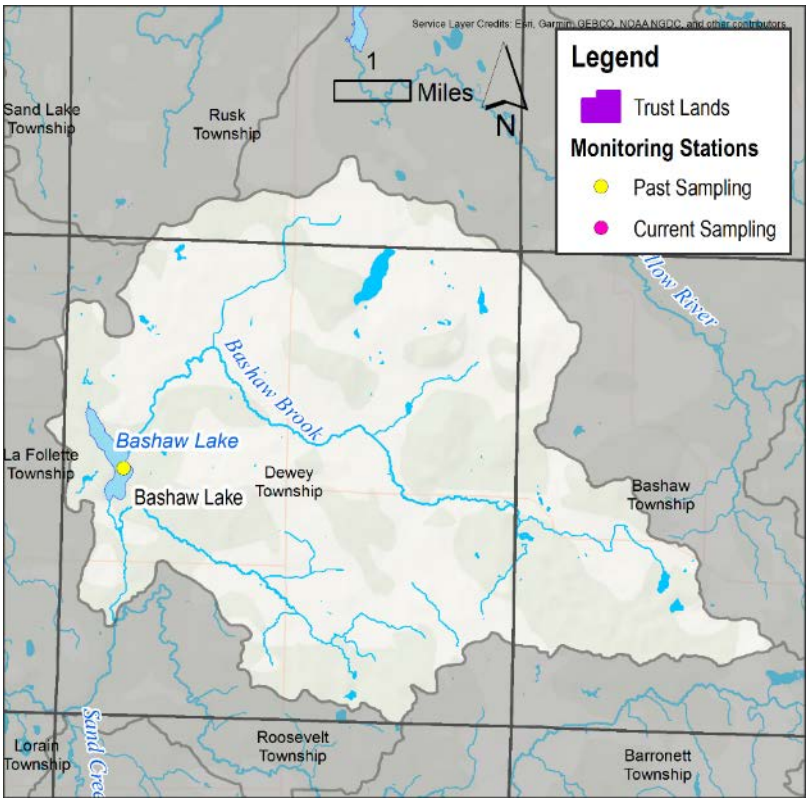

Figure 20: Bashaw Brook HUC12

At station SCT_09_BL, Bashaw Lake (sampling years 2001-2010, 2015-2018, 2021-2022), 56 samples (95%) exceeded the EPA threshold of 0.028 mg/L with 26 samples (44%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Three hundred and twenty-six samples (97%) exceeded the EPA threshold of 0.84 NTU for turbidity. Ten samples (83%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 18 samples (100%) exceeded the total N threshold of 0.33 mg/L and 19 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

Table 16: Bashaw Brook monitoring stations

	SCT_09_BL, Bashaw Lake
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L
n (n*)	NR102: 59 (26), Lvl III: 59 (56)
Range (mg/l)	0.024 - 0.29
	Turbidity: Level III Ecoregion 51: 0.84 NTU
n (n*)	337 (326)
Range (NTU)	0 - 317
	NO2 + NO3: Level III Ecoregion 51: 0.13 mg/L
n (n*)	12 (10)
Range (mg/l)	0.019 - 1.9
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	18 (18)
Range (NTU)	0.79 - 1.8
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	19 (19)
Range (mg/l)	0.77 - 1.8

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Sand Creek HUC12 070300010803

At station SCT_11_SL, Sand Lake - Maple Plain (sampling years 2001-2011, 2017-2018, 2023-2024), 10 samples (40%) exceeded the EPA threshold of 0.028 mg/L with 5 samples (20%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. One thousand ninety-five samples (84%) exceeded the EPA threshold of 0.84 NTU for turbidity. One sample (13%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 11 samples (85%) exceeded the total N threshold of 0.33 mg/L and 11 samples (85%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

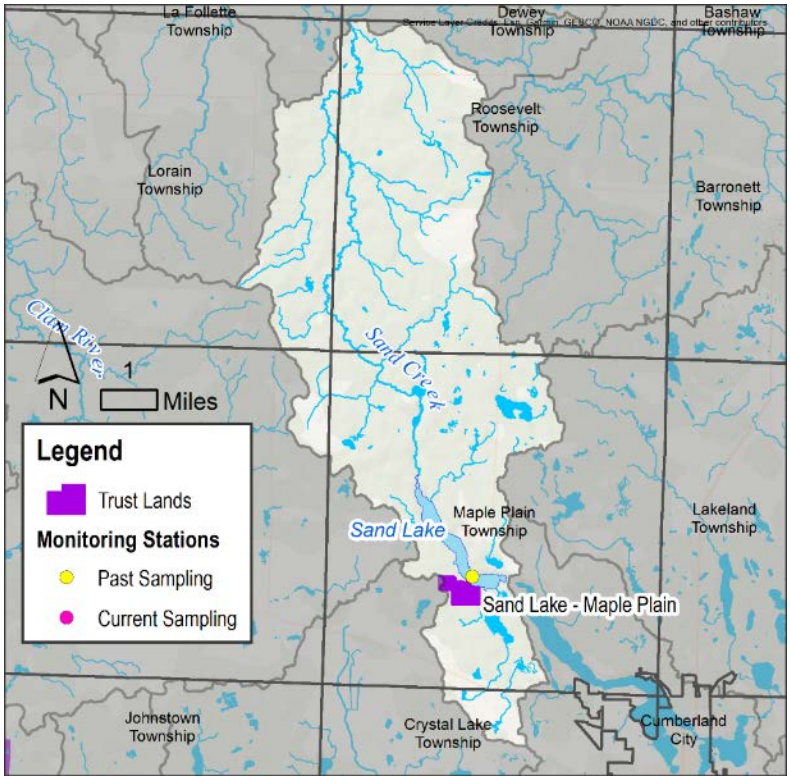

Figure 21: Sand Creek HUC12

Table 17: Sand Creek monitoring stations

	SCT_11_SL, Sand Lake - Maple Plain
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L
n (n*)	NR102: 25 (5), Lvl III: 25 (10)
Range (mg/l)	0.009 - 0.21
	Turbidity: Level III Ecoregion 51: 0.84 NTU
n (n*)	1301 (1095)
Range (NTU)	0-361
	NO2 + NO3: Level III Ecoregion 51: 0.13 mg/L
n (n*)	8 (1)
Range (mg/l)	0.033 - 0.12
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	13 (11)
Range (NTU)	0.17 - 2.9
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L

n (n*)	13 (11)
Range (mg/l)	0.27 - 2.9

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Clam River HUC10 0703000109

St. Croix sampled the Clam River in two locations and Clam Lake in this HUC10.

Clam Lake-Clam River HUC12 070300010904

At station SCT_16_CL, Clam Lake (sampling years 2001-2011, 2015-2025), 82 samples (98%) exceeded the EPA threshold of 0.028 mg/L with 40 samples (48%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Three hundred and fifty-one samples (98%) exceeded the EPA threshold of 0.84 NTU for turbidity. Five samples (36%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 35 samples (100%) exceeded the total N threshold of 0.33 mg/L and 36 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

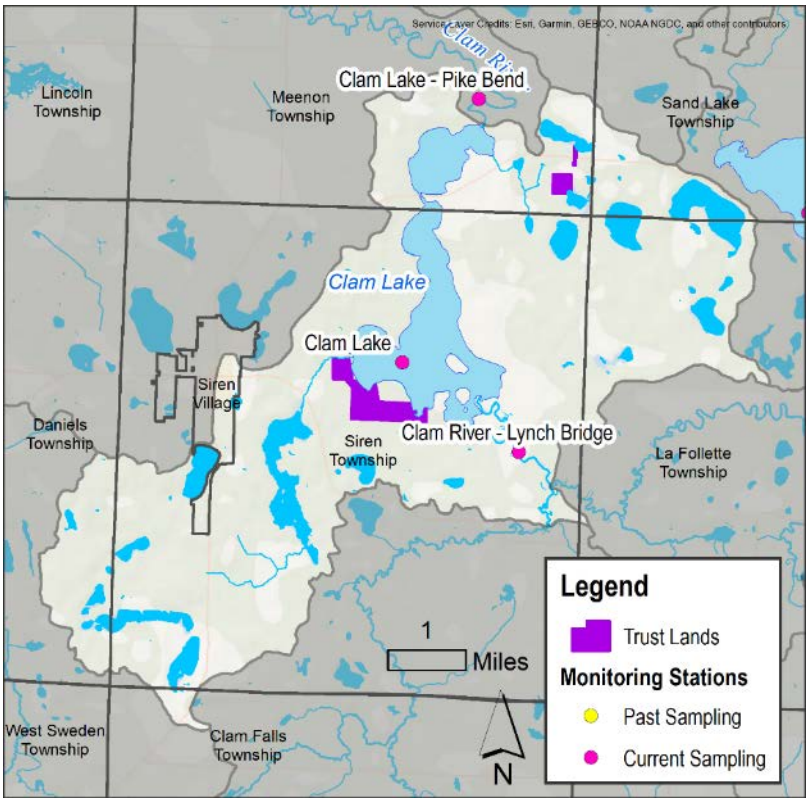

Figure 22: Clam Lake-Clam River HUC12

At station SCT_18_CRLB, Clam River-Lynch Bridge (sampling years 2001-2011, 2015-2025), 85 samples (98%) exceeded the EPA threshold of 0.028 mg/L with 24 samples (28%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. One hundred twenty-five samples (99%) exceeded the EPA threshold of 0.84 NTU for turbidity. Twenty-three samples (68%) exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 29 samples (94%) exceeded the total N threshold of 0.33 mg/L and 24 samples (71%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

Table 18: Clam Lake-Clam River monitoring stations

	SCT_16_CL, Clam Lake	SCT_18_CRLB, Clam River-Lynch Bridge
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L	
n (n*)	NR102: 84 (40), Lvl III: 84 (82)	NR102: 87 (24), Lvl III: 87 (85)
Range (mg/l)	0.02 - 0.734	0.01 - 0.38
	Turbidity: Level III Ecoregion 51: 0.84 NTU	
n (n*)	358 (351)	126 (125)
Range (NTU)	0 - 999	0 - 134
	NO3+NO2: Level III Ecoregion 51: 0.13 mg/L	
n (n*)	14 (5)	34 (23)
Range (mg/l)	0.019 - 0.19	0.045 - 0.3
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L	
n (n*)	35 (35)	31 (29)
Range (mg/l)	0.39 - 3.4	0.25 - 1.2
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L	
n (n*)	36 (36)	34 (24)
Range (mg/l)	0.36 - 3.3	0.22 - 0.94

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Black Brook-Clam River HUC12 070300010906

At station SCT_24_CRPB, Clam Lake - Pike Bend (sampling years 2004-2011, 2015-2025), 74 samples (91%) exceeded the EPA threshold of 0.028 mg/L with 39 samples (48%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. One hundred fifteen samples (96%) exceeded the EPA threshold of 0.84 NTU for turbidity. No samples exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while thirty-five samples (100%) exceeded the total N threshold of 0.33 mg/L and 38 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

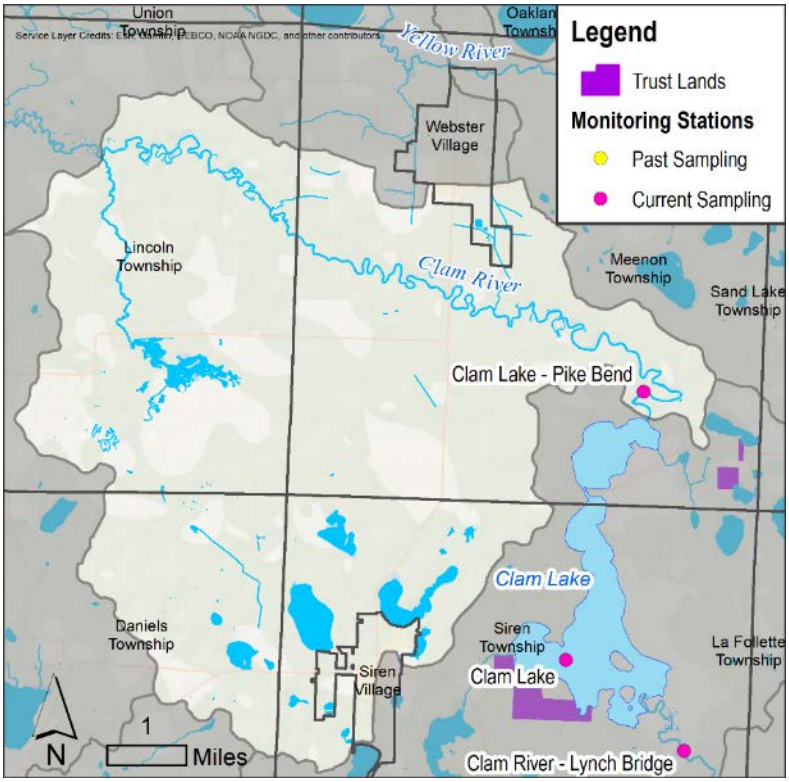

Figure 23: Black Brook-Clam River HUC12

Table 19: Black Brook-Clam River monitoring stations

	SCT_24_CRPB, Clam Lake - Pike Bend
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L
n (n*)	NR102: 81 (39), Lvl III: 81 (74)
Range (mg/l)	0.012 - 0.84
	Turbidity: Level III Ecoregion 51: 0.84 NTU
n (n*)	120 (115)
Range (NTU)	0 - 153
	NO3+NO2: Level III Ecoregion 51: 0.13 mg/L
n (n*)	4 (0)
Range (mg/l)	0.041 - 0.13
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	35 (35)
Range (NTU)	0.41 - 1.9

	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	38 (38)
Range (mg/l)	0.41 - 1.8

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Chases Brook-Saint Croix River HUC10 0703000112

St. Croix sampled the St. Croix River in one location in this HUC10.

Hay Creek-Saint Croix River HUC12 (070300011202)

At station SCT_25_SCR, St. Croix River (sampling years 2004-2010), 13 samples (37%) exceeded the EPA threshold of 0.028 mg/L with 2 samples (6%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Turbidity, NO_2+NO_3, total N, and Kjeldahl N were not sampled.

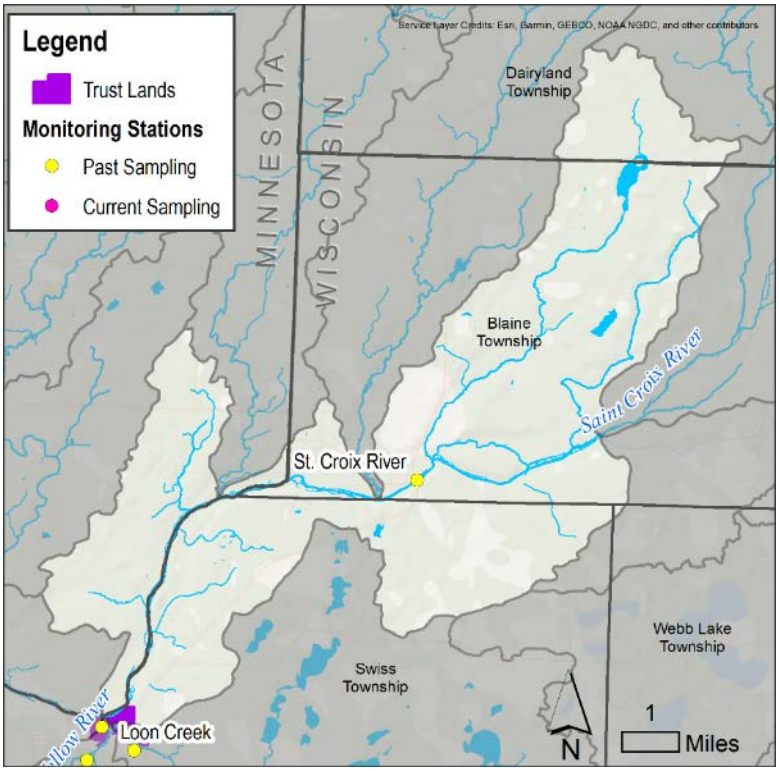

Figure 24: Hay Creek-St. Croix River HUC12

Table 20: Hay Creek-St. Croix River monitoring stations

	SCT_25_SCR, St. Croix River
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L
n (n*)	NR102: 35 (2), Lvl III: 35 (13)
Range (mg/l)	0.01 - 0.15
	Turbidity: Level III Ecoregion 51: 0.84 NTU

n (n*)	N/A
Range (NTU)	N/A
	NO3+NO2: Level III Ecoregion 51: 0.13 mg/L
n (n*)	N/A
Range (mg/l)	N/A
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	N/A
Range (NTU)	N/A
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L
n (n*)	N/A
Range (mg/l)	N/A

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

Lower St. Croix HUC8 07030005

St. Croix has sampled one lake (Big Round Lake) and one river (Straight River, two locations) at varying intervals in the Lower St. Croix HUC8 for their Section 106 program, listed below. All sampling locations are in the Beaver Brook-Apple River HUC10 (0703000507) and the Straight River HUC12 (070300050702).

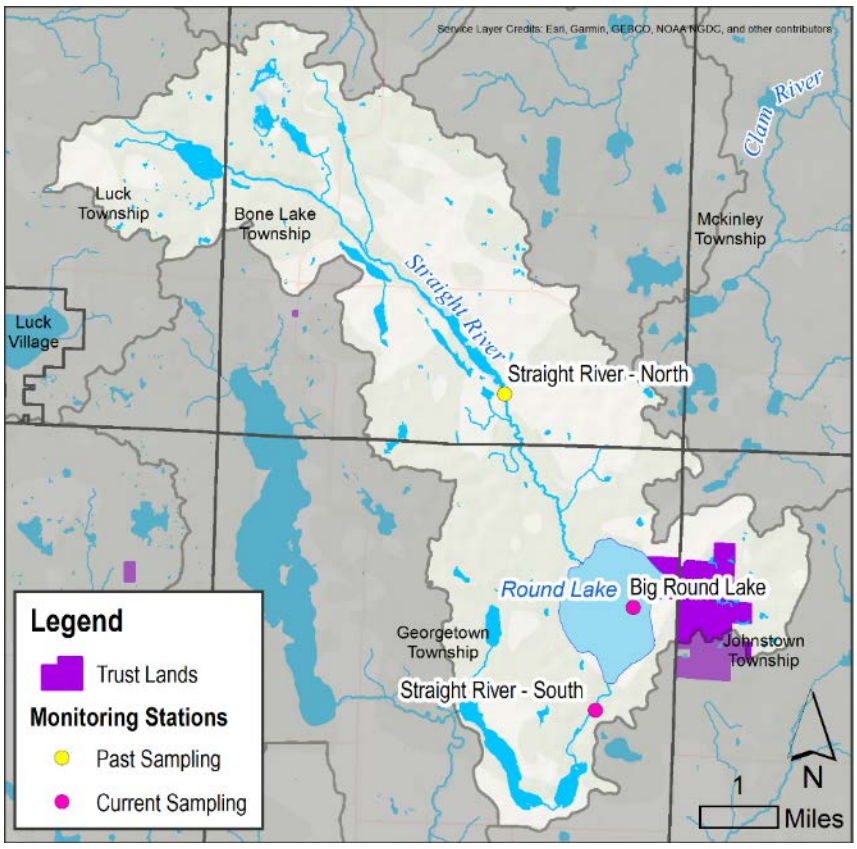

Figure 25: Straight River HUC12

At station SCT_15_BRL, Big Round Lake (sampling years 2001-2014, 2019-2025), 43 samples (58%) exceeded the EPA threshold of 0.028 mg/L with 20 samples (27%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Six hundred and eighty-four samples (90%)

exceeded the EPA threshold of 0.84 NTU for turbidity. No samples exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 19 samples (95%) exceeded the total N threshold of 0.33 mg/L and 22 samples (96%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

At station SCT_13B_SRS, Straight River - South (sampling years 2008-2014, 2019-2025), 30 samples (68%) exceeded the EPA threshold of 0.028 mg/L with 2 samples (23%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Seventy-nine samples (89%) exceeded the EPA threshold of 0.84 NTU for turbidity. No samples exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 19 samples (90%) exceeded the total N threshold of 0.33 mg/L and 22 samples (92%) exceeded the Kjeldahl N threshold of 0.33 mg/L.

At station SCT_13A_SRN, Straight River - North (sampling years 2001-2014), 9 samples (100%) exceeded the EPA threshold of 0.028 mg/L with 2 samples (22%) exceeding the 0.075 mg/L WIDNR NR 102 threshold. Sixteen samples (94%) exceeded the EPA threshold of 0.84 NTU for turbidity. No samples exceeded the NO_2+NO_3 threshold of 0.13 mg/L, while 3 samples (100%) exceeded the Kjeldahl N threshold of 0.33 mg/L. Total N was not sampled.

Table 21: Straight River monitoring stations

	SCT_15_BRL, Big Round Lake	SCT_13B_SRS, Straight River - South	SCT_13A_SRN, Straight River - North
	total Phosphorus: NR102: 0.075 mg/L, Level III Ecoregion 51: 0.028 mg/L		
n (n*)	NR102: 74 (20); Lvl III: 74 (43)	NR102: 44 (10) ; Lvl III: 44 (30)	NR102: 9 (2) ; Lvl III: 9 (9)
Range (mg/l)	0.011 - 0.51	0.013 - 0.14	0.03 - 0.14
	Turbidity: Level III Ecoregion 51: 0.84 NTU		
n (n*)	762 (684)	89 (79)	17 (16)
Range (NTU)	0 - 356	0 - 49.8	0 -17.4
	NO2 + NO3: Level III Ecoregion 51: 0.13 mg/L		
n (n*)	1 (0)	19 (0)	2 (0)
Range (mg/l)	0.125	0.0125 - 0.07	0.0125 - 0.062
	total Nitrogen: Level III Ecoregion 51: 0.33 mg/L		
n (n*)	20 (19)	21 (19)	N/A
Range (mg/l)	0.021 - 2	0.021 - 1.7	N/A
	Kjeldahl Nitrogen: Level III Ecoregion 51: 0.33 mg/L		
n (n*)	23 (22)	24 (22)	3 (3)
Range (mg/l)	0.021 - 2	0.021 - 1.9	0.7 - 1.1

n = number of samples; n* = number of exceeded samples (in parentheses). Where exceeded, red indicates 75% or greater of samples exceeded. Orange indicates 50-74% of samples exceeded. Yellow indicates 25-49% of samples exceeded. Green is zero exceedances. P exceedance color coding is for WIDNR NR 102.

5.2 Summary of Water Quality Data

The table below summarizes the overall water quality status of the monitored waterbodies in the St. Croix Section 106 monitoring program based on past sampling. The following classification is used to sort the waterbodies into three categories of water quality goal attainment:

- **Impacted** – Sites that had at least three pollutants with data in exceedance of the goal or are in exceedance of phosphorus are considered Impacted by NPS pollution.
- **Threatened** –. Sites that had one to two pollutants with data in exceedance of the goal are considered Threatened by NPS pollution.
- **Protection** – Sites without any data that exceeded goals are identified solely for Protection activities.

Table 22: WQ summary table

Upper St. Croix HUC8 07030001						
Yellow Lake-Yellow River HUC10 0703000105	**Station ID**	**Station Name**	**P**	**N**	**Turbidity**	**Goal Attainment**
Sand Lake-Yellow River HUC12 070300010501	SCT_04_GL	Gaslyn Lake		X	X	Threatened
	SCT_20_YRH	Yellow River - County H		X	X	Threatened
	SCT_28_GC	Gaslyn Creek		X	X	Threatened
Big Sand Lake-Yellow River HUC12 070300010502	SCT_07_BSL	Big Sand Lake		X	X	Threatened
	SCT_26_BALL	Ballfield		X	X	Threatened
Yellow Lake-Yellow River HUC12 070300010504	SCT_21_YL	Yellow Lake	X	N/A	X	Impacted
Loon Creek HUC12 070300010505	SCT_02_LC	Loon Creek		X	X	Threatened
Buffalo Lake-Yellow River HUC12 070300010506	SCT_01_YRN	Yellow River - North		X	X	Threatened
	SCT_03_YRS	Yellow River - South		X	X	Threatened
North Fork Clam River HUC10 0703000108	**Station ID**	**Station Name**	**P**	**N**	**Turbidity**	**Goal Attainment**
Bashaw Brook HUC12 070300010802	SCT_09_BL	Bashaw Lake	X	X	X	Impacted
Sand Creek HUC12 070300010803	SCT_11_SL	Sand Lake - Maple Plain		X	X	Threatened
Clam River HUC 10 0703000109	**Station ID**	**Station Name**	**P**	**N**	**Turbidity**	**Goal Attainment**
Clam Lake-Clam River HUC12 070300010904	SCT_16_CL	Clam Lake	X	X	X	Impacted
	SCT_18_CRLB	Clam River - Lynch Bridge	X	X	X	Impacted
Black Brook-Clam River HUC12 070300010905	SCT_24_CRPB	Clam Lake - Pike Bend	X	X	X	Impacted

Chases Brook-Saint Croix River HUC10 0703000112	Station ID	Station Name	P	N	Turbidity	Goal Attainment
Hay Creek-Saint Croix River HUC12 070300011202	SCT_25_SCR	St. Croix River		N/A	N/A	Protection
Lower St. Croix HUC8 07030005						
Beaver Brook-Apple River HUC10 0703000507	**Station ID**	**Station Name**	**P**	**N**	**Turbidity**	**Goal Attainment**
Straight River HUC12 070300050702	SCT_13A_SRN	Straight River - North		X	X	Threatened
	SCT_13B_SRS	Straight River - South		X	X	Threatened
	SCT_15_BRL	Big Round Lake	X	X	X	Impacted

Discussion

For each HUC12 watershed listed in Section 5, a summary of the pollutants of concern, stressors or causes of NPS pollution, and NPS category focus areas are provided. NPS category focus areas were selected based on review of available data, best professional judgement, and tribal feedback.

Upper St. Croix HUC8 07030001

Sand Lake-Yellow River HUC12 (070300010501)

The Sand Lake-Yellow River HUC12 (070300010501) is ranked by the state for ecological health in the top third of 36 HUC12s identified as the top 30% healthiest watersheds within the St. Croix HUC6 (includes Upper and Lower St. Croix HUC8s). This HUC12 is specifically noted by WIDNR for its high-quality lakes and rivers. Less than 10% of tribal samples taken at each station (Gaslyn Lake, Gaslyn Creek, and Yellow River- County H) in the HUC12 exceeded the WIDNR's NR 102 total P criteria of 0.075 mg/L, which reinforces available state data.

Figure 26: Gaslyn Lake

Gaslyn Lake was categorized by the St. Croix in 2022 as mesotrophic, meaning it typically has a moderate supply of nutrients, experiences moderate algal blooms, and has occasional oxygen depletions at depth. Phosphorus trends

over the last five years of sampling at Gaslyn Lake and Gaslyn Creek show some minor fluctuations in total P within the lake year to year, but no significant trending increases or decreases. It is worth noting that there is very little residential development along Gaslyn Lake. Development is restricted along the entire east shoreline due to County Highway H, and only one house is directly on the lakefront while less than 10 houses are within 500 feet of the shoreline. This lack of lakefront development is likely contributing to Gaslyn Lake's trophic status, and protection/natural enhancement of the remaining undeveloped shoreline should be a priority to maintain water quality.

Gaslyn Creek flows into Gaslyn Lake from the west and flows out in the southeast corner. The creek's headwaters are primarily wooded wetland and forested upland land cover, and its outlet from Gaslyn Lake down to its confluence with the Yellow River flows through St. Croix lands that are very low-density development and mostly forested. Prioritizing continued forest canopy cover along Gaslyn Creek is a recommended protection strategy to maintain water quality.

Figure 27: Gaslyn Creek

The Yellow River sampling site is located upstream of Gaslyn Creek's confluence with the Yellow River, at State Highway H. This section of the Yellow River is undeveloped with a large percentage passing through county owned forest land. Some small wild rice beds also exist along this section from sparse to dense densities in given years. Sampling there shows generally more elevated total P than the Gaslyn Lake and Gaslyn Creek sites, as well as a slight upward trend in total P over the last five sampling years (2008-2010 and 2017-2018). This may be the result of increasing P sources further upstream in the watershed. None of those recent samples exceeded the state total P criteria, but they all exceeded the USEPA Level III Ecoregion 51 criteria.

Pollutants of concern

- Phosphorus
- Sediment
- Nitrogen

Stressors of concern

Removal of streamside vegetation
Timber harvesting
Road construction and road use

Loss of wetland/riparian areas

NPS category focus areas
Wetland/Riparian Areas
Forestry

Big Sand Lake-Yellow River HUC12 070300010502

The Big Sand Lake-Yellow River HUC12 (070300010502) is ranked by the state for ecological health in the middle third of 36 HUC12s identified as the top 30% healthiest watersheds within the St. Croix HUC6 (includes Upper and Lower St. Croix HUC8s). It includes two tribal monitoring stations at Big Sand Lake and a wetland monitoring that occurred in 2011 at the Ballfield site. Given that the Ballfield site was a single monitoring year in response to a project, NPS water quality discussion will be centered on Big Sand Lake. Total P levels at Big Sand Lake across all monitoring years showed zero exceedances of the WIDNR NR102 threshold of 0.075 mg/L. The lake is classified by WIDNR as a Deep Seepage lake, an Outstanding Resource Water, and an Exceptional Resource Water. Past trophic state index calculations by St. Croix classified the lake as mesotrophic. Shoreline stabilization in various locations along the lake has been performed by St. Croix in the past to prevent excessive sediment from washing into the lake. Tribal members fish for a variety of species in Big Sand Lake including bluegill, black crappie, walleye, largemouth bass, yellow perch, and northern pike. Areas of wild rice also exist on Big Sand Lake and historically were larger. Continued shoreline protection and enhancement actions to protect and restore native lakeside vegetation including wild rice is recommended to maintain the lake's high level of water quality.

Pollutants of concern
- Sediment
- Nitrogen

Stressors of concern
Removal of streamside vegetation
Timber harvesting
Road construction and road use
Loss of wetland/riparian areas

NPS category focus areas
Wetland/Riparian Areas
Forestry

Yellow Lake-Yellow River HUC12 070300010504

Surrounding land use at Yellow Lake has significantly more lakeside development than Gaslyn or Big Sand Lakes, as well as more surrounding agriculture; however, WIDNR has found no major sources of nonpoint source loading in this area, including from surrounding agriculture. The lake has legacy impairments from past point source pollution and excess phosphorus is

likely from internal loading. Blue green algae blooms are frequent and macrophyte growth is high. Yellow Lake was placed on the state impaired waters list for total P in 2010. Tribal sampling covered 2004-2010 and showed 25% of samples taken across those years exceeding state total P criteria, and 88% of samples exceeding USEPA total P criteria. WIDNR assessments from 2018 showed continued impairment by phosphorus with total phosphorus and chlorophyll-a sample data exceeding the 2018 WisCALM listing thresholds for the Recreational and Fish and Aquatic Life uses.

Despite these listed impairments, Yellow Lake has historically been an excellent and very diverse fishery. It has one of the state's best, sustainable sturgeon populations, cisco spawning, a rare naturally reproducing walleye population, and large northern pike and muskies. Because of this, there is a recommendation by WIDNR to remove Yellow Lake from impairment of its Fish and Aquatic Life use. Given the quality of its fisheries and the likelihood of internal loading contributing to high total P, this HUC12 is not on St. Croix's priority list for addressing NPS pollution.

Loon Creek HUC12 070300010505

The Loon Creek HUC12 includes one tribal sampling station on Loon Creek, which is a small tributary of the Yellow River. The creek contains gravel/cobble substrate at the sampling location but shifts to sand and silt in other locations. Total P sampled at this location across all sampling years showed zero exceedances of the WIDNR total P criteria, and less than half of the samples exceeded the USEPA total P criteria. Past tribal sampling at this location has included macroinvertebrates, which showed a high degree of taxonomic richness with almost 80% EPT taxa, a strong indication of good water quality and reinforced by the total P data. The HUC12 is ranked by the state for ecological health in the lower third of 36 HUC12s identified as the top 30% healthiest watersheds within the St. Croix HUC6 (includes Upper and Lower St. Croix HUC8s), a further indicator of good water quality. NPS recommendations for this HUC12 include protection of existing riparian cover and adjacent wetlands, and implementation of best practices for forestry management.

Pollutants of concern

- Sediment
- Nitrogen

Stressors of concern

Removal of streamside vegetation
Timber harvesting
Road construction and road use
Loss of wetland/riparian areas

NPS category focus areas

Wetland/Riparian Areas
Forestry

Buffalo Lake-Yellow River HUC12 070300010506

The Buffalo Lake-Yellow River HUC12 is ranked by the state for ecological health in the lower third of 36 HUC12s identified as the top 30% healthiest watersheds within the St. Croix HUC6 (includes Upper and Lower St. Croix HUC8s). The HUC12 includes two tribal monitoring stations, Yellow River-North and Yellow River-South, both situated along the Yellow River. Total P sampled across all years at each station showed less than 10% exceedance of the WIDNR total P criteria; however, it showed over 70% exceedance of the USEPA total P criteria at each station which was higher than other HUC12s attaining WIDNR total P criteria. The Yellow River-North sampling station is situated at the mouth of the Yellow River where it confluences with the St. Croix River, and the YR-South station is just upriver of that, so these stations are influenced by a large drainage area. Fortunately, the drainage area consists of mostly forested wetland and upland with a very low level of development, which contributes to the HUC12's overall good water quality. NPS recommendations for this HUC12 include protection of existing riparian cover and adjacent wetlands, and implementation of best practices for forestry management.

Pollutants of concern

- Phosphorus
- Sediment
- Nitrogen

Stressors of concern

Removal of streamside vegetation
Timber harvesting
Road construction and road use
Loss of wetland/riparian areas

NPS category focus areas

Wetland/Riparian Areas
Forestry

Bashaw Brook HUC12 070300010802

Figure 28: Bashaw Lake

The Bashaw Brook HUC12 includes the Bashaw Lake sampling station. The lake does have some tribal land adjacent to it, but without local cooperation any NPS implementation activities to reduce nutrient and sediment loads may be difficult. Total P sampled from 2001-2010, 2015-2018, and 2021-2022 indicated 44% of all samples exceeding the WIDNR total P criteria, and 95% of samples exceeding the USEPA total P criteria. Bashaw Creek upstream of Bashaw Lake flows through an agricultural area, which may be the reason for the higher P content and resultant algae blooms. Bashaw Lake and the creek just downstream of the lake supported a modest rice bed in the past, and tribal elders have noted the area as a “good ricing spot” historically. Over 50% of the lakeshore is developed, which could impact water quality and the ability to restore past ricing locations. Tribal members fish the lake for panfish, northern pike and largemouth bass. The lake is not currently considered impaired for total P by the WIDNR, and it is not a high priority for NPS implementation for the St. Croix at this time.

Sand Creek HUC12 070300010803

The Sand Creek HUC12 contains the Sand Lake-Maple Plain monitoring station. Sand Lake is classified as a Deep Lowland, ORW, and ERW by WIDNR and it is fully attaining both its Aquatic Life and Recreational uses. It is considered a high-quality body of water with a good fishery; muskellunge, panfish and walleye are fished by tribal members and the lake is stocked with walleye fingerlings by the St. Croix. Past tribal trophic status index calculations have classified the lake as mesotrophic. Total P sampling across all years at Sand Lake show it exceeding only 20% of samples using the WIDNR NR102 criteria, and 40% of all samples using the USEPA criteria. NPS recommendations for this HUC12 include protection of existing riparian cover and adjacent wetlands around the lake, and implementation of best practices for forestry management.

Pollutants of concern

- Phosphorus
- Sediment
- Nitrogen

Stressors of concern

Removal of streamside vegetation

Timber harvesting
Road construction and road use
Loss of wetland/riparian areas

NPS category focus areas
Wetland/Riparian Areas
Forestry

Clam Lake-Clam River HUC12 070300010904

The Clam Lake-Clam River HUC12 includes two tribal monitoring stations, Clam Lake and Clam River-Lynch Bridge. Clam Lake is listed as impaired by WIDNR for excess P due to excess algal growth and eutrophication. In contrast, the Clam River is identified by WIDNR as an Outstanding Resource Water and is currently attaining its cold water Aquatic Life Use. Total P sampled across all years at Clam Lake show 48% of samples exceeding the WIDNR total P criteria, and 98% of samples exceeding the USEPA total P criteria. Algae blooms are noted as problematic at Clam Lake. The Clam River sampling location had only 28% of samples exceeding the WIDNR total P criteria, but also 98% of samples exceeding the USEPA total P criteria. Continued monitoring of both stations is important to stay on top of NPS trends, as the past five years of total P monitoring shows recent upward trends of total P at each station in exceedance of the WIDNR total P criteria. Clam Lake is likely affected by upstream agricultural use in the Clam River headwaters. St. Croix priorities for Clam Lake are to restore wild rice, water quality, fisheries, and waterfowl populations. Wild rice acreage at Clam Lake is considered to be one of the best lakes in Northwest Wisconsin.

Pollutants of concern
- Phosphorus
- Sediment
- Nitrogen

Stressors of concern
Removal of streamside vegetation
Timber harvesting
Road construction and road use
Loss of wetland/riparian areas
agricultural runoff, erosion

NPS category focus areas
Wetland/Riparian Areas
Forestry
Agriculture

Black Brook-Clam River HUC12 070300010906

The Black Brook-Clam River HUC12 includes the Clam Lake-Pike Bend monitoring station, which is located at the furthest downstream outlet of Clam Lake on Clam River. As mentioned earlier, the Clam River is identified by WIDNR as an Outstanding Resource Water and is currently attaining its cold-water Aquatic Life Use, with parts of the river being class I and III trout water. The monitoring station at Pike Bend is likely influenced by algal blooms and excessive P in Clam Lake, with 48% of all samples taken exceeding the WIDNR total P criteria and 91% exceeding the USEPA criteria. NPS recommendations for this HUC12 are tied to the recommendations in the Clam Lake-Clam River HUC12, as well as protecting and restoring adjacent riparian and wetland areas along the Clam River downstream of Clam Lake.

Pollutants of concern

- Phosphorus
- Sediment
- Nitrogen

Stressors of concern

Removal of streamside vegetation
Timber harvesting
Road construction and road use
Loss of wetland/riparian areas
agricultural runoff, erosion

NPS category focus areas

Wetland/Riparian Areas
Forestry
Agriculture

Hay Creek-Saint Croix River HUC12 070300011202

This HUC12 includes the tribal monitoring station along the St. Croix River. Only total P has been sampled at this station, and only 6% and 37% of samples exceeded the WIDNR total P and USEPA total P criteria, respectively. This HUC12 is ranked by the state for ecological health in the top third of 36 HUC12s identified as the top 30% healthiest watersheds within the St. Croix HUC6 (includes Upper and Lower St. Croix HUC8s). This HUC12 is specifically noted by WIDNR for its high-quality rivers, including the St. Croix River. The river is classified as an Outstanding Resource Water and as an Exceptional Resource Water. The entire river is also a national wild and scenic waterway as designated by the National Park Service. Within tribal lands, NPS recommendations for this HUC12 are focused on wetland/riparian areas and forestry management.

Pollutants of concern

- Sediment
- Nitrogen

Stressors of concern
Removal of streamside vegetation
Timber harvesting
Road construction and road use
Loss of wetland/riparian areas

NPS category focus areas
Wetland/Riparian Areas
Forestry

Lower St. Croix HUC8 07030005

Straight River HUC12 070300050702

The Straight River HUC12 includes three tribal sampling stations: Big Round Lake, Straight River-South, and Straight River-North. St. Croix lands are located on the northeast corner of the lake, and over 75% of the lakeshore is developed. The Straight River enters Big Round Lake on the northern end and exits at the southern end. The Straight River-North and South sampling stations are upstream and downstream of Big Round Lake, respectively. The Straight River-South station has been sampled more frequently and recently than Straight River-North. Total P sampling across all years at Big Round Lake shows 27% of samples exceeding the WIDNR total P criteria and 58% exceeding the USEPA criteria. Algal blooms occur at Big Round Lake annually, and were observationally getting worse in spread as of 2019 per tribal information. As with Yellow Lake, internal P loading is suspected to be the issue at Big Round Lake, and alum has been discussed as a treatment. Small, remnant crops of wild rice are located near the Straight River-North sampling station and at the tribal lands on the northeast shore. Given the level of lakeside development, it may be difficult to restore additional wild rice populations. Tribal members spear and fish Big Round Lake for walleye, largemouth bass, yellow perch, bluegill, black crappie, and northern pike, and the lake has been used in the past to collect walleye eggs for tribal nurseries. Extensive use is made of the lake by migratory waterfowl; ranging in importance from most to least use are coots, diving ducks (redheads and canvasbacks), puddle ducks, Canada geese and whistling swans. Nesting waterfowl include mallards, bluewing teal, greenwing teal and ringneck ducks. The lake is currently not attaining its Fish and Aquatic Life or Recreational uses due to algal blooms and eutrophication. A long-term NPS-focused lake management plan is recommended to directly address the legacy P in the lake sediments and manage the lakeshore to minimize further nutrient and sediment inputs.

The Straight River, in contrast, is listed by WIDNR as a trout water and is in attainment of its Cold Water Fish and Aquatic Life use. Total P data for the Straight River-South sampling station downstream of the lake shows 23% of all samples exceeding the WIDNR criteria and 68% exceeding the USEPA criteria, and data for the Straight River-North station upstream of the lake shows 22% of all samples exceeding the WIDNR criteria and 100% of all samples exceeding

the USEPA criteria, which are similar to or significantly exceeding the percentages in Big Round Lake. These sites, despite being on a high-quality river, are likely heavily influenced by the excess P in Big Round Lake. NPS recommendations are therefore tied to the recommendations for Big Round Lake, as well as protecting and restoring adjacent riparian and wetland areas along the Straight River upstream of Big Round Lake.

Pollutants of concern

- Phosphorus
- Sediment
- Nitrogen

Stressors of concern

Legacy P loading
Removal of streamside vegetation
Timber harvesting
Road construction and road use
Loss of wetland/riparian areas
agricultural runoff, erosion
Streambank erosion

NPS category focus areas

Wetland/Riparian Areas
Forestry
Agriculture

Sediment and Nitrogen Recommendations

Tribal sampling across all HUC12s in both the Upper and Lower St. Croix HUC8s shows large exceedances of turbidity (a proxy for suspended sediment) and nitrogen following USEPA Level III Ecoregion 51 thresholds. These parameters are not part of the state's water quality criteria for aquatic life use, but excess sediment can cloud waters, embed in substrates, and affect the ability for fish to breathe, while excess nitrogen in water bodies can lead to harmful algal blooms and other negative impacts on aquatic ecosystems. As sediment and nitrogen are important NPS pollutants, these have been listed as Pollutants of Concern for all HUC12s. Further monitoring is needed to identify whether these thresholds represent appropriate criteria for tribal water resources and work towards St. Croix goal of establishing their own federal water quality standards. Best practices for NPS nutrient reduction typically target both phosphorus and nitrogen as well as excess sediment, so implementation of BMPs in phosphorus-impaired tribal HUC12s will likely also reduce excess nitrogen and sediment.

Selection of NPS BMPs

This section discusses St. Croix process for selecting BMPs to address the NPS issues and concerns discussed in this Assessment. It provides an overview of the core participants that will participate in St. Croix's BMP selection process and the approaches for public participation and governmental coordination. Existing BMPs are also identified in this section.

7.1 Key Partners for BMP Selection

The St. Croix intends to lead the effort of BMP selection on trust lands in collaboration with key participants and partners. The nature of this collaboration may depend on the NPS category, the type of BMP, and the geographic location targeted for implementation. BMP selection on St. Croix trust lands will be made in collaboration with local, state, and federal agencies that could provide technical assistance, aid in education and outreach efforts, implement demonstration projects, or provide financial assistance to promote implementation. Table 23 presents the core participants, the mission of each agency, and their roles in BMP selection and implementation.

Table 23: Key partners for BMP selection

Partner	Mission	Role in BMP selection
St. Croix Chippewa Indians of Wisconsin		
St. Croix Tribal Council	Legislative Branch of St. Croix Chippewa Indians of Wisconsin	Provide funding and oversight, adopt/pass ordinances and laws, government to government relations.
St. Croix Environmental and Natural Resources Department (lead role)	Identify and alleviate any environmental hazards that may harm the health of the Tribal Members and surrounding natural resources	Lead role in BMP selection, implementation, and coordination
Federal		
USDA-NRCS also USGS	Deliver conservation solutions so agricultural producers can protect natural resources and feed a growing world.	Partner in identifying resource concerns, BMP selection and implementation; provide cost-sharing for conservation practices.
U.S. Environmental Protection Agency (USEPA), Region 5	Administers the Section 319 Nonpoint Source Management program	Technical assistance, partner in BMP selection, provide funding for BMP installation.
Bureau of Indian Affairs	Maintain government to government relationships with Tribes	Technical assistance and provide funding for BMP installation.
U.S. Army Corps of Engineers (USACE)	Assist tribes with water resources issues	BMP selection and implementation, permitting, funding, technical assistance.
U.S. Fish and Wildlife Service	Provide assistance for programs related to fish and wildlife resources.	Technical and financial assistance, permitting/review for T&E species, BMP selection for fish passage.

State and County		
WI Tribal Conservation Advisory Council	Provide a forum for the 11 Native American Tribes in Wisconsin to identify and solve natural resource issues on tribal lands.	Technical assistance with identification of resource concerns and selection of BMPs; BMP engineering services and oversight during construction.
County Land Conservation Departments	Develop strategies, implement programs, and provide technical assistance to protect and enhance the soil and water resources of the county.	Partner in BMP selection and implementation; provide cost-sharing for conservation practices.
WI Dept. of Transportation	Provide safe and effective transportation infrastructure	Technical assistance, partner in BMP selection and ROW management.
WI Dept. of Natural Resources	Assist tribes with water resources issues	Technical and financial assistance

7.2 Existing BMPs

The St. Croix have completed several NPS BMPs on tribal lands, including the following:

- The St. Croix Tribe has been protecting the shoreline along Big Sand Lake in areas owned by the tribe by partnering with the USDA-NRCS to place gabion structures filled with rock at the toe of the banks and rock lined waterways below culvert structures to reduce the amount of sediment being transported to the lake. The Tribe partnered with Burnett County, Big Sand Lake Preservation Association, the Town of Sand Lake, and the Wisconsin Department of Natural Resources to replace an outlet culvert in the northwest portion of Big Sand Lake. The culvert restricted the outflow of the lake and often flooded the town road crossing the creek which flows out of Big Sand Lake to the Yellow River. The culvert replacement caused an increase in water flow near the lake outlet, which is beneficial to wild rice growth.

- At Sand Lake, the Tribe has assisted the Sand Lake Association in the treatment of Eurasian watermilfoil with 2,4-D herbicide. The Tribe also stocks Sand Lake with walleye fingerlings.

- At Gaslyn Lake, the St. Croix Tribal Natural Resources Department constructed four half-acre ponds (400,000 gallon capacity) each in an abandoned field within 500 feet of Gaslyn Lake's south shore. These ponds are being used for St. Croix's walleye culture program. Fry walleye are stocked into the ponds in May and grown to fingerling size until July. A high capacity well (300 gpm) is used to fill the ponds along with a small amount (<1,200 gallons) of surface water from an unconnected pond for plankton. These ponds are drained for harvest into a common settling pond that can hold the drainwater until it either evaporates or infiltrates, which helps protect the surface water quality of Gaslyn Lake and Gaslyn Creek.

- The Tribe has also partnered with NRCS to implement forestry best management practices on tribal lands, and wild rice planting projects along priority wild rice lakes through their EQIP program.

7.3 Future BMP Selection

The St. Croix has developed a list of potential BMP types to address sources of NPS pollution. This list is based on current tribal staff capacity, implementation resulting from existing partnerships, and feedback from tribal members. The various departments and programs within the St. Croix will give input on BMP selection and the St. Croix will leverage existing planning efforts and reach out to specific non-tribal entities as needed.

The St. Croix is seeking TAS approval through the Section 319 Program to increase their staff capacity to more proactively manage the NPS pollution challenges. As previously mentioned, the ENRD developed a five-year QAPP to support data collection activities that will help assess NPS issues and aid in BMP selection. The QAPP also identifies unmet objectives and long-term needs of the ENRD. In addition, regional, state, and federal guidance exists to help select BMPs. Examples include the WIDNR's Wisconsin's Forestry Best Management Practices for Water Quality Field Manual that provides simple and cost-effective methods for protecting water quality in lakes, streams and wetlands from nonpoint source pollution and soil disturbance before, during and after forest management activities; the WIDNR's Nutrient Reduction Strategy to help identify specific sediment and nutrient reduction programs and activities; and the NRCS's Wisconsin-specific Field Office Technical Guide and the Forest Service Manual. Additional input and discussions with tribal departments and programs, and non-tribal area partners will refine existing goals.

The St. Croix will undertake the following process for evaluating and selecting BMPs to address NPS pollution. St. Croix staff will coordinate with the agencies listed above as well as interface with the public in order to select target BMPs. The steps to select BMPs include:

- Review monitoring data, recent watershed planning work, and other resources and use best professional judgment for determining which locations will be areas of initial focus.
- Consult with tribal partners regarding prioritization list, key NPS pollutants, relative magnitude of pollutants in each sub watershed, and opportunities for implementation.
- Identify applicable BMPs appropriate for the type and source of NPS pollution, with the technical assistance and consultation of partners.
- Narrow and rank the list of applicable BMPs using evaluation factors of estimated performance and feasibility.
- Identify BMPs that have the potential for collaborative, coordinated implementation with key partners.
- Pursue funding for approved suite of BMPs with tribal council, tribal member, and public support.

Existing NPS Control Programs

8.1 Available Programs for Controlling NPS Pollution

A wide range of local, state, and federal programs exist that could support the St. Croix as they address NPS pollution. For some of the funds the St. Croix can apply directly, while some opportunities will require additional partnership with non-tribal governmental units. Entities that have programs and may provide technical assistance are summarized below. Additional information on potential partnerships and opportunities for collaboration is provided in the Management Plan.

USEPA

CWA Section 106: Section 106 of the CWA authorizes USEPA to provide financial assistance to states, eligible interstate agencies, and eligible Tribes. USEPA provides this financial assistance in the form of water pollution control (Section 106) grants. Section 106 grants provide funding to build and sustain effective water quality programs that ensure the health of our nation's water bodies. The available funds are allocated, by formula, among the nine EPA Regions that have federally recognized tribes. Base allotment provides the Region with $65,167 per TAS-eligible tribe in the Region. Variable allotment provides the Region with a portion of the allotment based on three characteristics of federally recognized tribes in the Region: land area, population, and surface water area.
(https://www.epa.gov/water-pollution-control-section-106-grants/about-water-pollution-control-section-106-grant-program)

CWA Section 319: Under Section 319, states, territories, and Tribes receive grant money to support a wide variety of activities including training, technology transfer, demonstration projects, and monitoring to assess the success of specific nonpoint source implementation projects. Tribal governments with approved TAS for 319 can receive a non-competitive grant of $50,000 annually. (https://www.epa.gov/nps/319-grant-program-states-and-territories)

CWA Section 319 NPS Competitive CWA Grants: USEPA's National NPS Program solicits applications via a national competition from §319-eligible Tribes and intertribal consortia to implement on-the-ground projects to manage NPS pollution. Competitive §319 grants may be used to develop and/or implement watershed-based plans and other on-the-ground projects that will result in significant steps towards solving NPS impairments on a watershed-wide basis. Tribal applicants may request up to $100,000 in federal §319 funds through this competition. (https://www.epa.gov/nps/current-tribal-ss319-grant-information#:~:text=Competitive%20%C2%A7319%20grants%20may,319%20funds%20through%20this%20competition.)

CWA Section 104(b)(3) Wetlands Program Development Grants: Wetland Program Development Grants (WPDGs) provide eligible applicants an opportunity to conduct projects that promote the coordination and acceleration of research, investigations, experiments, training, demonstrations, surveys, and studies relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution. WPDGs assist state, tribal, local government agencies and interstate/intertribal entities in building programs to protect, manage and restore wetlands. Applicants for Wetland Program Development Grants will need to meet the applicable required 25% match at time of award. The 2023 grant round provided projects with funding between $75,000 and $220,000. (https://www.epa.gov/wetlands/wetland-program-development-grants-and-epa-wetlands-grant-coordinators)

CWA Tribal Set-Aside Program, Wastewater Infrastructure: The purpose of the Clean Water Act Indian Set-Aside Program is to provide funding for wastewater infrastructure to federally recognized tribal governments and Alaska Native Villages. Funds may be used for planning, design and construction of wastewater collection and treatment systems. The program is administered by the USEPA in cooperation with the Indian Health Service. Project components eligible for funding include:

- Project planning, design, and Preliminary Engineering Report
- Infrastructure construction and major sewer rehabilitation
- Wastewater treatment facilities (conventional or alternative)
- Correction of combined sewer overflows
- Collector sewer pipelines
- On-site wastewater treatment systems (e.g., SSTS, septic systems)
- Follow-up and as-built drawings of funded wastewater projects
- Operator training on new infrastructure equipment for first year

Since FY 2016, the CWISA appropriation from Congress has been either 2 percent of the CWSRF or $30 million, whichever is greater. This money is split between all applicants for the given year.
(https://www.epa.gov/small-and-rural-wastewater-systems/clean-water-indian-set-aside-program#:~:text=The%20Clean%20Water%20Indian%20Set,Indian%20Health%20Service%20(IHS).)

Environmental Education Grants: Under the Environmental Education Grants Program, EPA seeks grant applications from eligible applicants to support environmental education projects that promote environmental awareness and stewardship and help provide people with the skills to take responsible actions to protect the environment. This grant program provides financial support for projects that design, demonstrate, and/or disseminate environmental education practices, methods, or techniques. Since 1992, EPA has distributed between $2 and $3.5 million in grant funding per year, supporting more than 3,920 grants. EE grants are required to have a non-federal match of 25% of the total cost of the project. Additionally, 25% of EPA funding must be used for subawards, with each subaward having a value of $5,000 or less. (https://www.epa.gov/education/grants#awarded)

U.S. Fish and Wildlife Service Grants

U.S. Fish and Wildlife Service (USFWS) North American Wetlands Conservation Act: The U.S. Standard Grants Program is a competitive, matching grants (1:1) program that supports public-private partnerships carrying out projects in the United States that further the goals of the North American Wetlands Conservation Act. These projects must involve long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitats for the benefit of all wetland-associated migratory birds. (https://www.fws.gov/service/north-american-wetlands-conservation-act-nawca-grants-us-standard)

USFWS Tribal Wildlife Grants: Tribal Wildlife Grants are used to provide technical and financial assistance to Tribes for the development and implementation of programs that benefit fish and wildlife resources and their habitat. Activities may include but are not limited to planning for wildlife and habitat conservation, fish and wildlife conservation and management actions, fish and wildlife related laboratory and field research, natural history studies, habitat mapping, field surveys and population monitoring, habitat preservation, and public education that is relevant to the project. In 2023 the expected award amount was between $10,000 and $200,000. (https://fws.gov/nativeamerican/grants.html)

NRCS Grants

Environmental Quality Incentives Program (EQIP): EQIP provides financial and technical assistance through Conservation Innovation Grants (CIG) to agricultural producers and non-industrial forest managers to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, increased soil health and reduced soil erosion and sedimentation, improved or created wildlife habitat, and mitigation against drought and increasing weather volatility. Grants are a 1:1 match program with the maximum CIG award set annually by the NRCS Chief and historically has been either $1 million or $2 million. (https://www.nrcs.usda.gov/wps/portal/nrcs/main/national/programs/financial/eqip/)

Healthy Forests Reserve Program (HRFP): The HFRP helps landowners restore, enhance, and protect forestland resources on private lands through easements and financial assistance. HRFP aids the recovery of endangered and threatened species under the Endangered Species Act, improves plant and animal biodiversity and enhances carbon sequestration. HFRP provides landowners with 10-year restoration agreements and 30-year or permanent easements for specific conservation actions. For acreage owned by an American Indian Tribe, there is an additional enrollment option of a 30-year contract. (https://www.nrcs.usda.gov/programs-initiatives/hfrp-healthy-forests-reserve-program)

State of Wisconsin Grants

Wisconsin Department of Natural Resources: Surface Water Grants - The Surface Water Grant Program supports surface water management from start to finish. Tribal governing bodies are automatically eligible for these grants and can assist with outreach, data collection, planning, project design or implementation. The grants do have a cost share with the amounts variable depending on the grant. The award amounts also vary depending on the grant. The four grant categories are listed below and have multiple grants within each of them:

- Education and Planning Grants
- Aquatic Invasive Species Prevention and Management Grants
- Surface Water Restoration and Management Grants

(https://dnr.wisconsin.gov/aid/SurfaceWater.html)

Wisconsin Department of Natural Resources: Clean Water Fund - Grants provide financial assistance to municipalities for wastewater and stormwater infrastructure projects. It includes projects for compliance with a municipality's WPDES permit. The program funds are for reasonable and necessary costs directly related to the planning, design, & construction of eligible projects. Funds may be used to construct, improve, modify, purchase, replace, restore, and upgrade wastewater systems and infrastructure, such as collection, transmission, storage, treatment, and disposal. Specific funding priorities are identified each round, so not all projects may be eligible in a given funding round.
(https://dnr.wisconsin.gov/aid/EIF.html)

Wisconsin Department of Agriculture, Trade and Consumer Protection: Producer-Led Watershed Protection Grants - Grants provide support to groups to deliver cost share programs, on-farm demonstration and research projects, and education and outreach efforts on conservation systems and innovative practices that improve water quality to farmers and other community members within their local watersheds. Grants are a (1:1) cost share and the max award per group is $40,000. Each grant is for one group of at least five farmers within the same watershed and one collaborator from County Land Conservation, UW-Division of Extension, WI DNR, or nonprofit organization.
(https://datcp.wi.gov/Pages/Programs_Services/ProducerLedProjects.aspx)

Natural Resources Foundation of Wisconsin: C.D. Besadny Conservation Fund - This fund was established to invest in grassroots conservation and education projects that benefit Wisconsin's lands, waters, and wildlife, and that connect people to Wisconsin's natural resources. Grants range from $500 to $2,000 and require a (1:1) match and the total project budget cannot exceed $10,000. Proposals should address one or more of the following priorities:
Projects that benefit Wisconsin's most imperiled natural communities and native plant or wildlife species.

Projects that engage and impact underserved communities in Wisconsin and/or support diversity, equity and inclusion efforts within Wisconsin's conservation and environmental education sectors.
Projects that build climate resiliency of Wisconsin's natural resources through natural climate solutions or climate adaptation.
(https://www.wisconservation.org/grants/cd-besadny-conservation-grants/)

Conclusions

The St. Croix Chippewa Indians of Wisconsin are unique from most other Native American tribes in that they do not have one large contiguous reservation. The St. Croix Reservation comprises approximately 6,423 acres and is scattered within five (5) counties of Wisconsin.

The St. Croix seek to control NPS pollutants by implementing practices and changing behavior through an NPS management program. Tribal members utilize water resources for everyday needs including recreation, cultural practices and as a source of food. The St. Croix continually works to preserve the culture of their people and is therefore dedicated to protecting and improving water quality within their reservation. The Tribe has become increasingly concerned with surface water quality in recent years due to the increase in lakeshore development, agriculture, and overall shifts to more intensive land-uses within the watersheds containing tribal resources. With dramatic increases in development in northwestern Wisconsin, especially in lake frontage property, it is the goal of the St. Croix Tribe to re-establish waters of the reservation to more closely resemble pre-European settlement conditions, and to protect and enhance existing high-quality waters.

The NPS pollution issues affecting the St. Croix, as described in Sections 5 and 6 of this report, include nutrients (phosphorous, nitrogen) and sediment. The Tribe has performed some water quality monitoring (discussed in more detail in Section 3, Methodology) but there is a significant need to further assess waterbodies associated with St. Croix lands and refine assessment methodologies, with a goal towards establishing federally recognized tribal water quality standards. St. Croix assessment data often indicates that many waterbodies qualify as non-impaired for total phosphorus while turbidity and nitrogen remain high.

The St. Croix has many high-quality surface waters including streams and lakes that meet WIDNR and St. Croix designated uses. Goals and objectives of the St. Croix NPS program will focus on protecting, enhancing and restoring these water resources for future generations of the St. Croix Chippewa Indians of Wisconsin. The NPS program will also focus on environmental education and public outreach to raise awareness around the significance of these resources.

St. Croix Chippewa Indians of Wisconsin are committed to development of a NPS Management Program Plan that will detail the steps and measures to be taken to protect our sacred waters. The plan will build upon the information presented in this assessment report and ensure these resources are protected for future generations.

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Appendix A: Public Response Summary

Results from an NPS survey given out to St. Croix tribal members during public meetings held in February 2026, as described earlier in 2.5, Public Review Process.

Timestamp	Do you think water quality is a concern in your community?	If you selected 'Other' above, please specify your primary water quality concern.	How do you utilize your water resources?	Do you think local water resources need to be protected or improved?	What do you think is the biggest threat to water quality?	What BMPs have you seen in your community?	How has land use changed in the past 20 years?	Is there anything you would like to add about water quality?
2/11/2026 20:19:36	Low concern-water quality issues are minimal		Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I don't think water resources are being managed at all and we need to start	Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure	Less building and development	
2/12/2026 14:59:38	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Not at all I don't think the water is safe, Not at all i don't use local water resources	I don't think water resources are being managed at all and we need to start	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction	Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure, Forced to live in condemned homes	More tourism and recreation utilizing local water resources	
2/17/2026 15:36:14	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I don't think water resources are being managed at all and we need to start, I think some water resources are being managed but we should do more	Failing septic systems, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Culvert in driveway	Less building and development	
2/17/2026 15:37:45	Low concern-water quality issues are minimal		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems	Not sure	More building and development	
2/17/2026 19:53:05	Somewhat concerned-water quality issues are present and could become very concerning in the future		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Agricultural-minimizing herbicide applications, cover crops, no till or vegetative buffers, Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure, Developed Areas-Raingardens, low impact	More agricultural runoff and nutrients	

						development, permeable pavers, Forests-Planned harvesting, road management, fire management		
2/18/2026 10:21:22	Low concern-water quality issues are minimal		Recreational activities like swing, sport fishing or boating, Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Don't know enough information to give opinions on	More tourism and recreation utilizing local water resources	I'm very happy to see St Croix take more actions on protecting our waters, water is life!! Thank you
3/2/2026 9:18:01	High concern-water quality is an issue and we need a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I don't think water resources are being managed at all and we need to start	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Agricultural-minimizing herbicide applications, cover crops, no till or vegetative buffers, Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure, Developed Areas-Raingardens, low impact development, permeable pavers, Forests-Planned harvesting, road management, fire management	More tourism and recreation utilizing local water resources	
3/2/2026 9:18:28	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Agricultural-minimizing herbicide applications, cover crops, no till or vegetative buffers, Developed Areas-Raingardens, low impact development, permeable pavers	More tourism and recreation utilizing local water resources	
3/2/2026 9:18:59	Somewhat concerned-water quality issues are present and could become very concerning in the future		Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I don't think water resources are being managed at all and we need to start	Failing septic systems, Excessive soil erosion or loss of land, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Developed Areas-Raingardens, low impact development, permeable pavers	More building and development	
3/2/2026 9:19:41	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Food source-fish, wild rice, etc.	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics,	Agricultural-minimizing herbicide applications, cover crops, no till or vegetative buffers, Water Resources-Stream or lake restoration, maintenance of	Less building and development	Water is not safe to drink at all. I do not allow my family to drink it.

					personal care products or PFAS	dams or removal of infrastructure, Forests-Planned harvesting, road management, fire management		
3/2/2026 9:20:09	High concern-water quality is an issue and we need a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Failing septic systems, Excessive soil erosion or loss of land	Forests-Planned harvesting, road management, fire management	I have not seen a lot of change	
3/2/2026 9:20:44	High concern-water quality is an issue and we need a plan to improve water quality		Not at all i don't use local water resources	I think some water resources are being managed but we should do more	Excessive soil erosion or loss of land	N/A	More building and development	
3/2/2026 9:21:13	Somewhat concerned-water quality issues are present and could become very concerning in the future		Food source-fish, wild rice, etc.	I think some water resources are being managed but we should do more	Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Agricultural-minimizing herbicide applications, cover crops, no till or vegetative buffers	More building and development	
3/2/2026 9:21:38	Somewhat concerned-water quality issues are present and could become very concerning in the future		Food source-fish, wild rice, etc.	I think some water resources are being managed but we should do more	Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Agricultural-minimizing herbicide applications, cover crops, no till or vegetative buffers	More building and development	
3/2/2026 9:22:01	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Recreational activities like swing, sport fishing or boating	I don't think water resources are being managed at all and we need to start	Agricultural runoff and excess nutrients, algal blooms	Agricultural-minimizing herbicide applications, cover crops, no till or vegetative buffers	Less tourism and recreation utilizing local water resources	
3/2/2026 9:22:45	High concern-water quality is an issue and we need a plan to improve water quality		Food source-fish, wild rice, etc.	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Excessive soil erosion or loss of land	Unknown	More building and development	More water management. Safety of use. Outdated systems - tap water.
3/3/2026 8:33:53	Somewhat concerned-water quality issues are present and could become very concerning in the future		Food source-fish, wild rice, etc.	I don't think water resources are being managed at all and we need to start	Agricultural runoff and excess nutrients, algal blooms	Forests-Planned harvesting, road management, fire management	More tourism and recreation utilizing local water resources	
3/3/2026 8:34:21	High concern-water quality is an issue and we need a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc.	I don't think water resources are being managed at all and we need to start	Agricultural runoff and excess nutrients, algal blooms	No reponse	More building and development	

3/3/2026 8:34:45	Low concern-water quality issues are minimal		Recreational activities like swing, sport fishing or boating	I think some water resources are being managed but we should do more	Failing septic systems	Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure	More building and development	
3/3/2026 8:35:26	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I don't think water resources are being managed at all and we need to start, I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems	Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure	More building and development	The build up on house siding from agricultural field spraying which over time causes a hazard that clings to surfaces.
3/3/2026 8:36:05	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc.	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems	No response	More tourism and recreation utilizing local water resources	A water system is locally need in southern communites
3/3/2026 8:36:34	Very low concern-we don't have any water quality issues		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure, Forests-Planned harvesting, road management, fire management	More building and development	Grateful for my water!
3/3/2026 8:36:55	Very low concern-we don't have any water quality issues		Recreational activities like swing, sport fishing or boating	I think some water resources are being managed but we should do more	Excessive soil erosion or loss of land	Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure	More building and development	
3/3/2026 8:37:50	Somewhat concerned-water quality issues are present and could become very concerning in the future		Recreational activities like swing, sport fishing or boating, Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Forests-Planned harvesting, road management, fire management	More building and development	For above question they selected three and it will only let me pick one - More building and development, more ag run off and nutrients, and more tourism and rec utilizing water
3/3/2026 8:38:22	Somewhat concerned-water quality issues are present and could become very concerning in the future		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Excessive soil erosion or loss of land	Forests-Planned harvesting, road management, fire management	More building and development	Last question they also selected more tourism and rec but I could only pick one
3/3/2026 8:39:01	Somewhat concerned-water quality issues are		Recreational activities like swing, sport fishing or	I think some water resources are being	Agricultural runoff and excess nutrients, algal blooms, Excessive	Agricultural-minimizing herbicide applications,	More building and development	Last question also selected more tourism

	present and could become very concerning in the future		boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	managed but we should do more	soil erosion or loss of land, Mining or resource extraction; Example -sand extraction	cover crops, no till or vegetative buffers, Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure, Forests-Planned harvesting, road management, fire management		but I could only select one
3/3/2026 8:39:54	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I don't think water resources are being managed at all and we need to start	Agricultural runoff and excess nutrients, algal blooms, Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	None	More building and development	Last question also selected More ag run off and nutrients and more tourism and rec. Could only select one. Also said Water is Life!
3/3/2026 8:40:44	High concern-water quality is an issue and we need a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc.	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Water Resources-Stream or lake restoration, maintenance of dams or removal of infrastructure, Forests-Planned harvesting, road management, fire management	More building and development	Also selected More ag run off and more tourism and rec, could only select one tho.
3/3/2026 8:41:16	Somewhat concerned-water quality issues are present and could become very concerning in the future		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	No answer	More tourism and recreation utilizing local water resources	Also selected more building and development
3/3/2026 8:43:06	Very high concern-water quality is a major concern, we need to protect this resource and have a plan to improve water quality		Recreational activities like swing, sport fishing or boating, Food source-fish, wild rice, etc., Enjoy the aesthetics of the lakes or rivers	I think some water resources are being managed but we should do more	Agricultural runoff and excess nutrients, algal blooms, Failing septic systems, Excessive soil erosion or loss of land, Mining or resource extraction; Example -sand extraction, Emerging contaminants such as pharmaceuticals, microplastics, personal care products or PFAS	Forests-Planned harvesting, road management, fire management	More building and development	In last question, all the mores - more building and development, more ag runoff and nutrients, and more tourism and recreation