



PROGRESS REPORT 2017

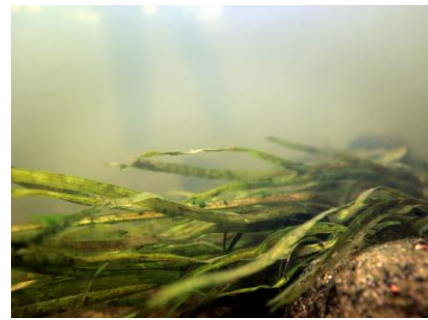
LAKE ST. CROIX TOTAL MAXIMUM DAILY LOAD

APRIL 2019



TABLE OF CONTENTS

OVERVIEW _____	3
Background _____	3
About the Watershed _____	4
Activities Summary _____	5
BASIN-WIDE PARTNERSHIP INITIATIVES _____	7
St. Croix Basin Water Resources Planning Team (Basin Team) _____	7
2017 St. Croix Basin Conference _____	7
Wisconsin Department of Natural Resources _____	8
United States Geological Survey _____	8
Metropolitan Council Environmental Services _____	9
Wisconsin Farmer - Led Councils _____	10
Minnesota Board of Water and Soil Resources _____	12
Natural Resource Conservation Service _____	15
Minnesota Department of Agriculture _____	17
County and Local Land Conservation Departments _____	17
POINT SOURCES _____	18
Municipal Wastewater Treatment Plants _____	18
CAFOs _____	19
RECOMMENDATIONS _____	20
PROJECTS REPORTED BY COUNTY STAFF _____	21
Minnesota _____	21
Wisconsin _____	27



Photos throughout this report were taken by artists involved in the program “In a New Light”. The project is a partnership between Northwest Passage and the St. Croix National Scenic Riverway, a unit of the National Park System, and was funded through an “America’s Best Idea” grant from the National Park Foundation

OVERVIEW

Background

The St. Croix River and Lake St. Croix are highly valued resources that provide exceptional recreational opportunities and support a highly diverse ecology of aquatic and terrestrial species. Home to 41 species of mussels, the watershed is the premier mussel watershed of the upper Mississippi River, and one of the premier freshwater mussel watersheds of the world.

Over the years, eutrophication, or nutrient enrichment, has occurred in Lake St. Croix due to excess phosphorus loading. In 2012, the US Environmental Protection Agency approved a Total Maximum Daily Load (TMDL) for Lake St. Croix, calling for a 38% reduction in the human-caused phosphorus carried to the rivers and streams of the basin.



This is the third progress report on phosphorus reduction activities in the St. Croix River basin by partners in Wisconsin and Minnesota. This document reports accomplishments primarily from survey responses from counties and local partners on Best Management Practices (BMPs) and educational efforts. It is very likely that many more projects were completed by a variety of partners and individuals than what is reported herein.

About the Watershed

The St. Croix River Basin (Figure 1) represents a large area, approximately 7,760 square miles with 44% of the basin land area located within Minnesota and 56% within Wisconsin. The St. Croix River begins near Solon Springs, Wisconsin, flowing west and south more than 160 miles until it joins the Mississippi River at Prescott, Wisconsin.

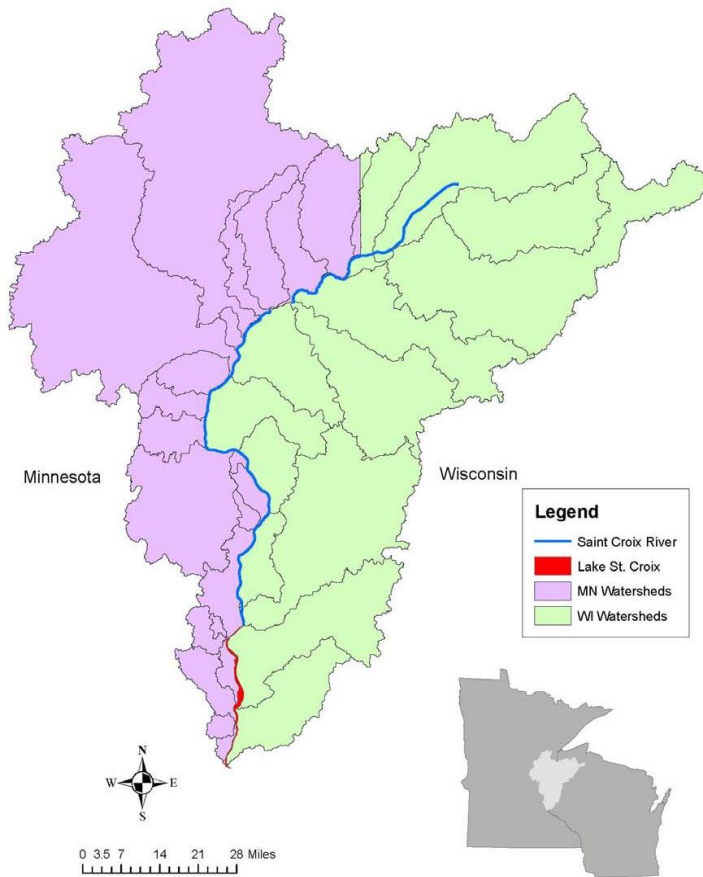


Figure 1: St. Croix Watershed

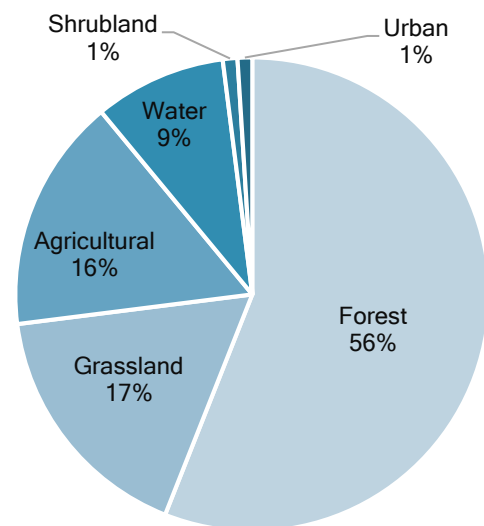
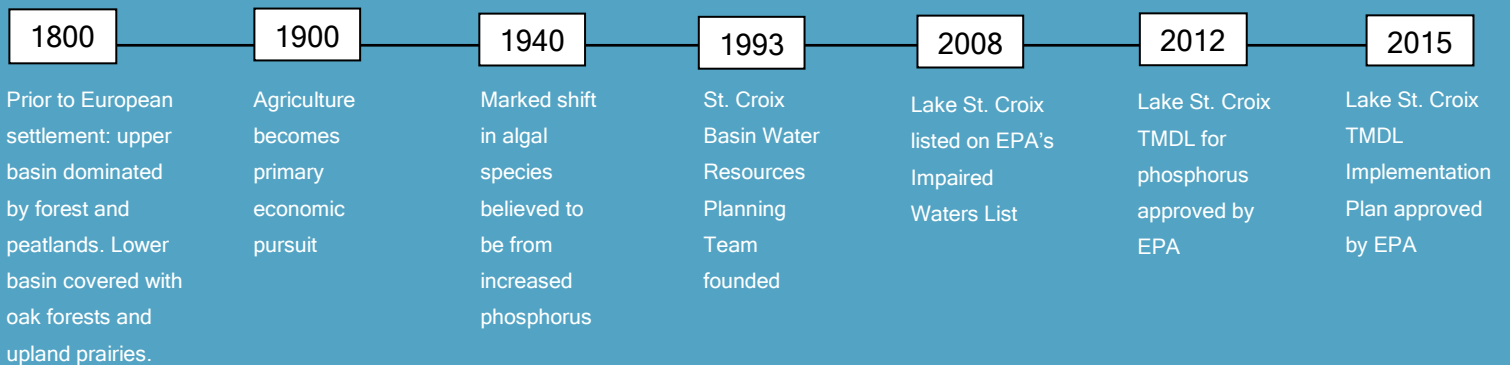


Figure 2: Land Use



Activities Summary

As with previous years, a wide range of practices were implemented to lower phosphorus within the St. Croix River basin and improve the health of these waters. These practices included:

FORESTRY



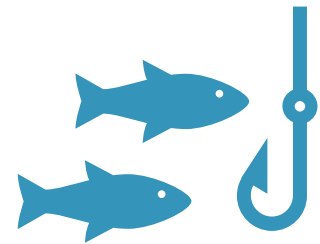
Prescribed burning management, and maintenance of riparian management zones

AGRICULTURE



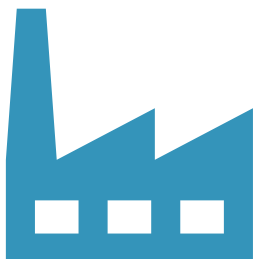
Soil health and tillage practice improvements, grassed waterways, stream crossing installations, nutrient management, and manure storage

SHORELINE



Lake management planning, shoreline buffer, and habitat restoration

URBAN



Installation of raingardens and infiltration strips

LAND PROTECTION



Land protection, native plantings, and prairie restoration

EDUCATION



Educational efforts in all categories

Tables 1 and 2 summarize these practices reported by both county staff in Wisconsin and Minnesota as well as the Minnesota Board of Water and Soil Resources eLINK system. All practices identified throughout this report have a final installation date that occurred in 2017. A more detailed list of this summary can be found at the end of the report.

Our continued challenge is to secure uniform quantification methods and a basin-wide tracking system for more complete and accurate reporting. There is not currently a consistent quantification method to assess phosphorus reductions in place between counties and states. As a result, phosphorus reduction estimates will not be included in this report as that could lead to misleading numbers that overestimate phosphorus reduction within the basin.

Table 1: Summary of **Minnesota** Management Practices and Activities

County	BMP Category	Total Practices Installed
Aitkin	Shoreline	1
Anoka	Shoreline	1
	Urban	1
Carlton	Shoreline	3
	Agricultural	1
	Forestry	1
	Urban	2
	Education	1
Chisago	Shoreline	3
	Agricultural	50
	Urban	7
	Education	2
Kanabec	Shoreline	4
	Agricultural	2
Mille Lacs	Shoreline	1
Pine	Agricultural	2
Washington	Shoreline	3
	Agricultural	10
	Urban	58
	Education	
Isanti Ramsey	No projects identified in 2017	

Table 2: Summary of **Wisconsin** Management Practices and Activities

County	BMP Category	Total Practices Installed
Burnett	Shoreline	22
	Agricultural	5
Pierce	Education	3
Polk	Shoreline	7
	Agricultural	7
	Education	8
St. Croix	Agricultural	12
	Urban	1
	Education	4
Washburn	Shoreline	6
	Agricultural	2
	Urban	1
	Education	13
Barron Bayfield Douglas Sawyer	No projects identified in 2017	

BASIN-WIDE PARTNERSHIP INITIATIVES

St. Croix Basin Water Resources Planning Team (Basin Team)

The St. Croix Basin Team unites the efforts of local, state, and federal partners in Minnesota and Wisconsin to protect the water quality and habitat of the St. Croix. The team meets quarterly to coordinate protection efforts. Shortly after the team was formed in 1993, it named excess nutrients to the basin as the number one threat to water quality and since then, has spearheaded development of both the TMDL and its Implementation Plan. In 2017, the team updated their Strategic Plan, reviewing goals, updating objectives, and highlighting next steps. This new Strategic Plan can be found at <https://www.pca.state.mn.us/sites/default/files/wq-b6-16.pdf>.

2017 St. Croix Basin Conference

On April 21 and 22, 2017 the 18th annual St. Croix Summit was held at the University of Wisconsin in River Falls. The theme of the conference was “Connecting the Dots: Creating Partnerships for Change”, with the goal of providing partners with inspiring examples of people working together to protect resources.

Summit speakers covered topics from opportunities for community involvement to the use of decision-making tools to guide land use decisions. Keynote speakers included Bob Ratcliffe, National Division Chief of Conservation and Outdoor Recreation from the National Park Service, and Sean McMahon, Executive Director of the Iowa Agriculture Water Alliance



2017 ST. CROIX SUMMIT

Connecting the Dots: Creating Partnerships for Change

Friday & Saturday
April 21 - 22, 2017

University of Wisconsin River Falls

Photo © Craig Blacklock



Wisconsin Department of Natural Resources

In the 1970s, the Wisconsin Department of Natural Resources (DNR) developed a baseline monitoring program that tracks and analyzes water quality trends over time in Wisconsin's rivers. In 2003, two sites on the St. Croix River (Figure 5) were added to the program. Since then, DNR staff continue to collect water samples from the St. Croix River on a quarterly basis, monitoring for a variety of parameters including total phosphorus. This long-term data set will be valuable in the future as more BMPs within the basin are implemented.

United States Geological Survey

United States Geological Survey (USGS) staff are developing a water quality model for Lake St. Croix and have been collecting and analyzing water samples from the lake at nine different sites. In addition, USGS also operates four stream gauges on the mainstem of the St. Croix and its major tributaries (Figure 5). The stream gauges are used to calculate nutrient loads entering and leaving Lake St. Croix, which is one method of monitoring the effectiveness of implemented practices to reduce nutrient loading into Lake St. Croix.

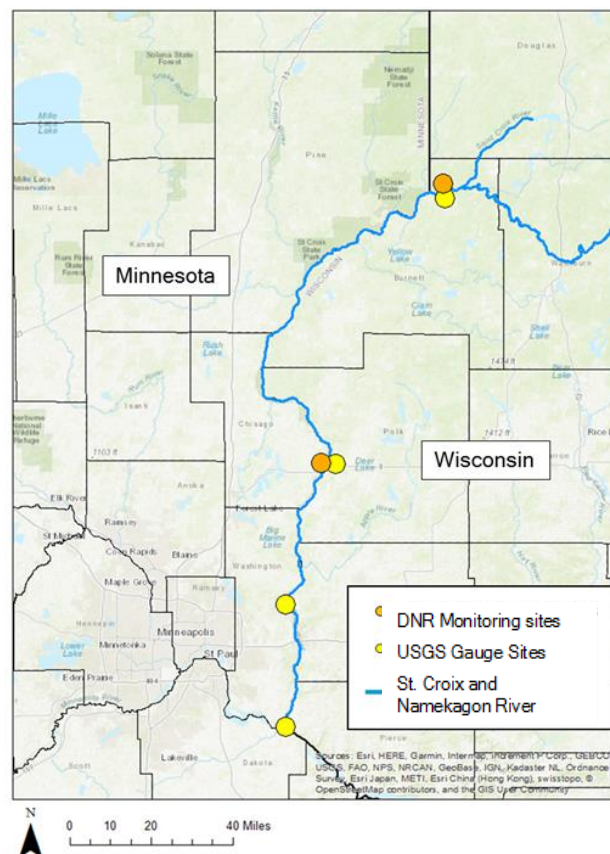


Figure 5: DNR Monitoring Sites & USGS Gauge Locations

Metropolitan Council Environmental Services

The Metropolitan Council is the regional policy-making body and planning agency for the Twin cities metropolitan region. Recently, the Metropolitan Council finished a study¹ examining the water quality of three major rivers, including the St. Croix River. From 1976-2015, water samples were collected from two sites on the St. Croix River (Figure 6). The study collected and analyzed data on 15 different parameters, including total phosphorus, total nitrogen, chloride, and sediment.

The study found that concentrations of sediment and phosphorus decreased from 1976 to 2015 (Figure 7). Nitrogen and chloride, on the other hand, increased, but the concentrations were generally low, and the increases were relatively small (Figure 8).



Figure 6: Metropolitan Council Monitoring Sites



Figure 7: Phosphorus and sediment

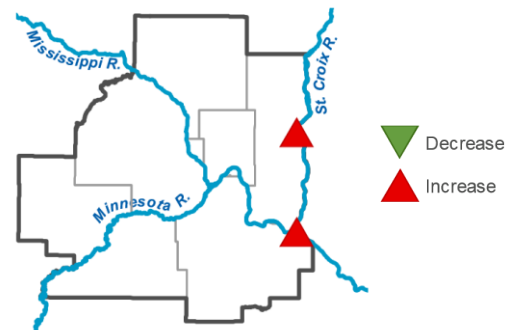


Figure 8: Nitrogen and chloride

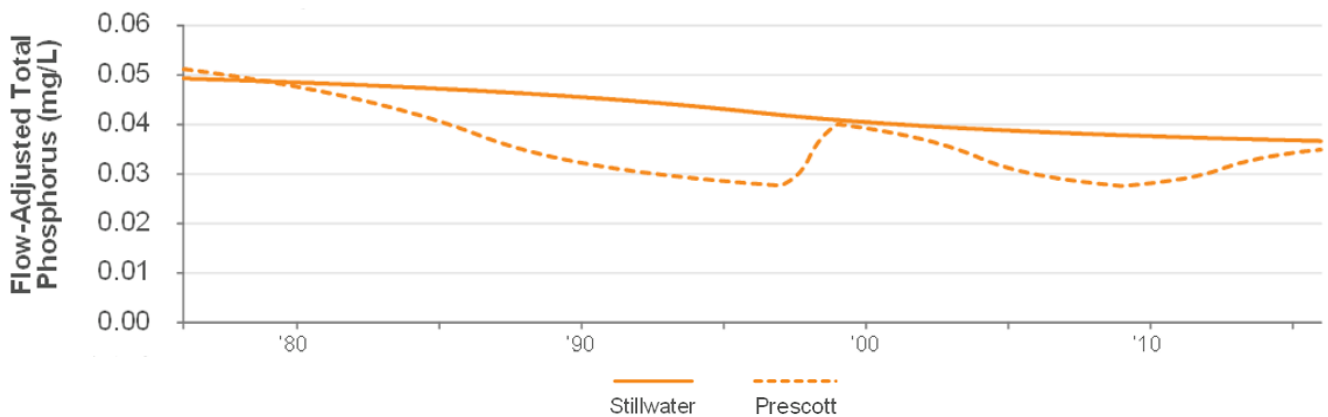


Figure 9: Long-Term Trend of St. Croix River Flow-Adjusted Concentrations of Total phosphorus, 1976-2015

¹ This study can be found at <https://metro council.org/Wastewater-Water/Publications-And-Resources/water-quality-monitor-assess/Regional-Assessment-of-River-Quality.aspx>

Wisconsin Farmer - Led Councils

The Farmer-Led Watershed Council program was originally developed by the University of Wisconsin Extension and the Wisconsin DNR to improve water quality in the Red Cedar and St. Croix River basins through reduced phosphorus and sediment loading while increasing farmer knowledge and leadership on water quality issues.

There are currently three Farmer- Led Watershed Councils (FLWCs) located in the St. Croix River Basin (Figure 10):

- Horse Creek Watershed (Polk County)
- Dry Run Creek Watershed (St. Croix County)
- South Kinnickinnic Watershed (Pierce County)

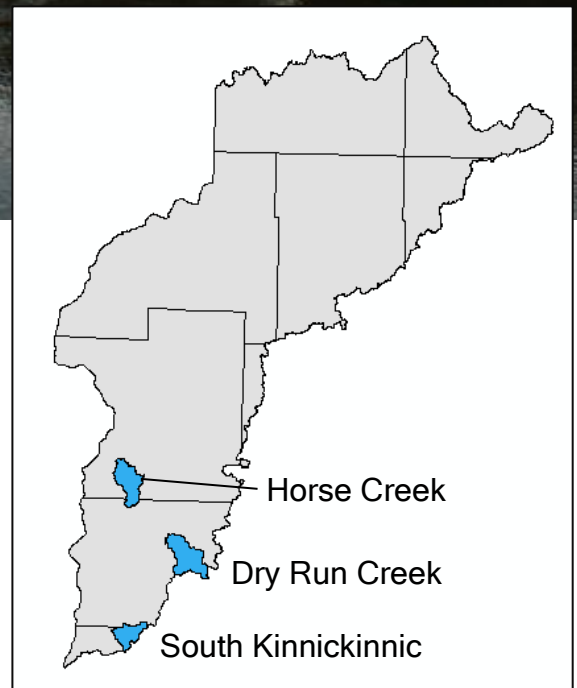


Figure 10: FLWC Locations

The Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) offers Producer-Led Watershed Protection Grants² to farmer-led groups that focus on ways to prevent and reduce runoff from farm fields. In 2017, DATCP awarded \$197,065 to eleven producer-led groups, with \$25,450 awarded to the FLWCs in the St. Croix River basin. This grant money allowed these groups to implement agricultural BMPs and provide educational outreach to other farmers as well as the local community. More details of these practices can be seen on the next page.

² More information about DATCP's Producer-Led Watershed Protection Grants can be found at https://datcp.wi.gov/Pages/Programs_Services/ProducerLedProjects.aspx



Horse Creek Farmer-Led Watershed

Polk County

\$15,450

of grant money
awarded

1,562

acres of cover
crops planted

1,425

acres of soil
sampled

1,388

acres of
phosphorus
indexing

ONE

24 acre cover crop
demonstration plot

Dry Run Creek Farmer-Led Council

St. Croix County

960

acres of cover
crops planted

5,800

feet of grassed
waterways

390

acres of soil
sampled

FOURTEEN

Farm walkthroughs
for BMP installation

South Kinnickinnic Farmer-Led Watershed Council

Pierce County

\$10,000

of grant money
awarded

379

acres of cover
crops planted

10,515

feet of grassed
waterways

25

acres of buffer
strips

285

acres of soil
sampled

Minnesota Board of Water and Soil Resources

The Minnesota Board of Water and Soil Resources (BWSR) was created in 1987, with the mission to improve and protect Minnesota’s water and soil resources by working in partnership with local organizations and private landowners. Agency programs to assist landowners and local government have resulted in less sediment and nutrients entering lakes, rivers and streams; more fish and wildlife habitat; and a drastic slowing of wetland losses.

In 2012, the BWSR began the development of a new web-based system to track statewide conservation projects (eLINK). With eLINK, the BWSR, local government partners, and stakeholders in conservation can track and manage grants, pollution reduction benefits, and map locations of projects occurring throughout the state.

According to eLINK, 118 practices were installed in 2017, with a total investment of \$520,000³. Figure 11 displays the relative percentage by category of these practices, while Figure 12 displays the relative percentage of funding source.

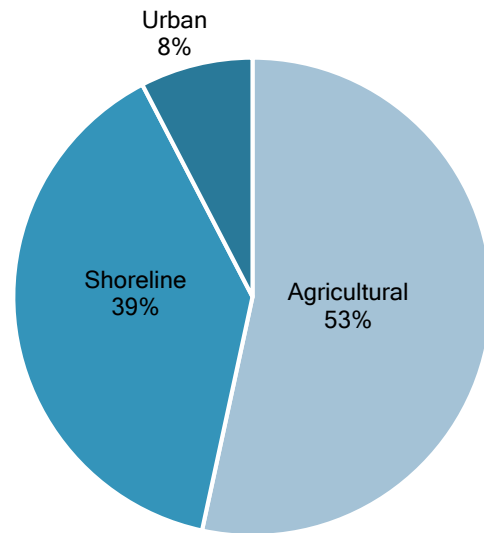


Figure 11: Relative Percentage of BMPs by Category from eLINK

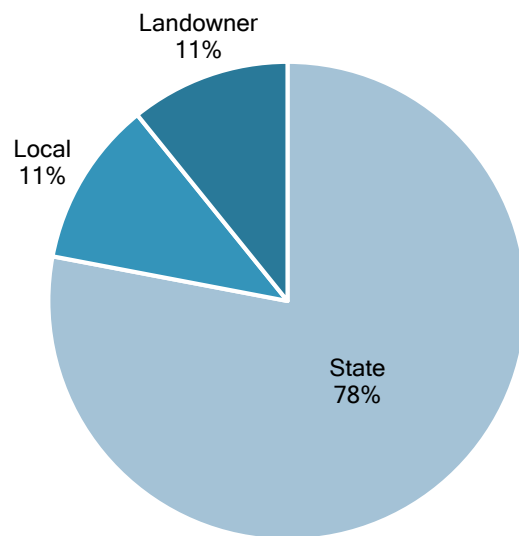


Figure 12: Relative Percentage of Funding Source for BMPs

³ Investment figure data was accessed on 3/11/2019 and found on the Minnesota Pollution Control Agency Website at <https://www.pca.state.mn.us/water/spending-watershed-implementation-projects>

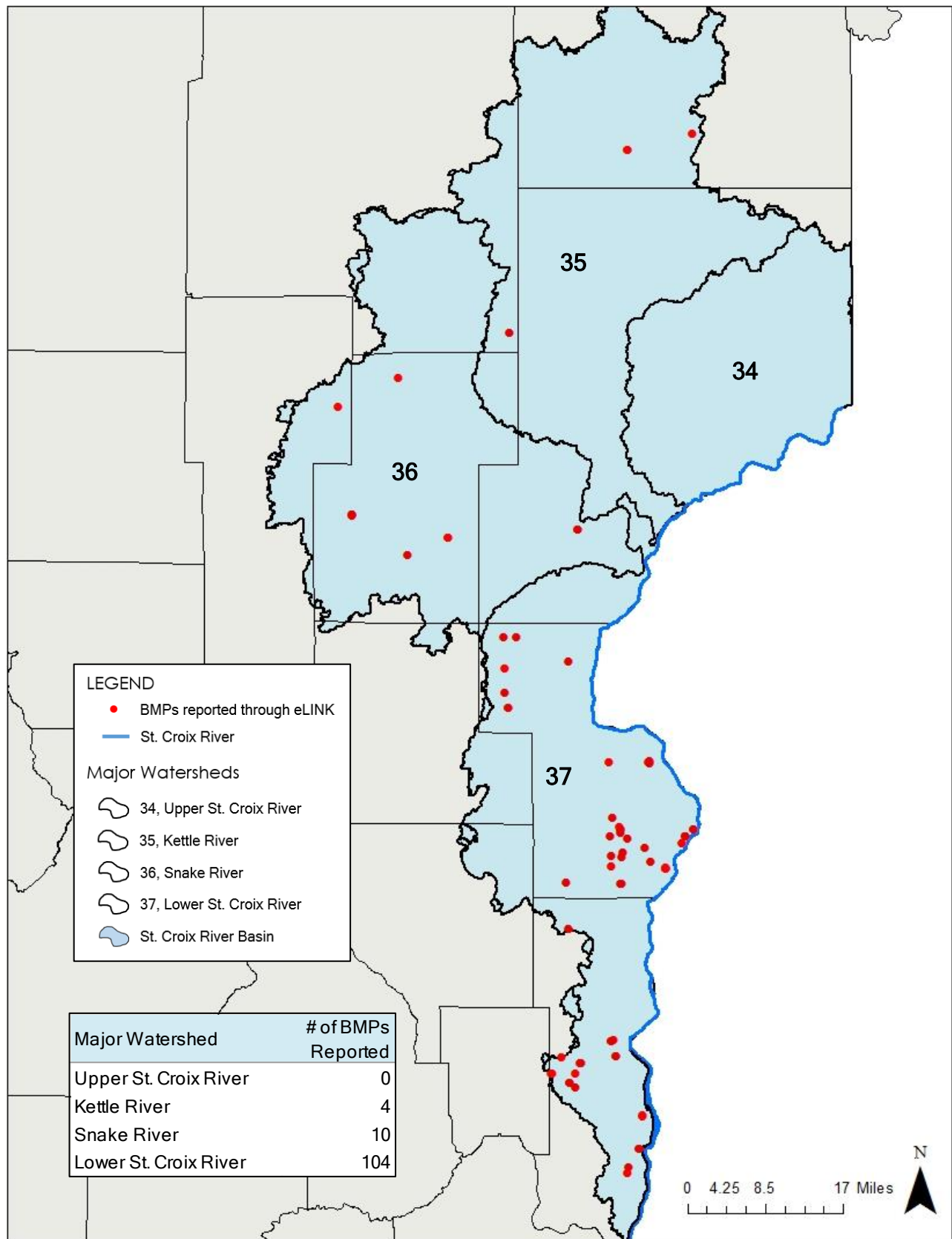


Figure 13: Location of Minnesota BMPs Tracked Through eLINK

Table 3: Minnesota BMP's tracked through eLINK

Major Watershed	County	BMP Category	BMP Description	Total Practices Installed	
Kettle River	Aitkin	Shoreline	Critical Area Planting	1	
	Carlton	Urban	Subsurface Sewage Treatment Systems	1	
			Septic System Improvement	1	
		Shoreline	Tree/Shrub Establishment	1	
Snake River	Kanabec	Shoreline	Shoreline Stabilization and Protection	2	
			Critical Area Planting	3	
		Agricultural	Livestock Waste Management	1	
			Agricultural Waste Pit Closure	1	
	Mille Lacs	Shoreline	Heavy Use Area Protection	1	
Pine	Agricultural	Gully Stabilization	2		
Lower St. Croix River		Urban	Subsurface Sewage Treatment Systems	4	
			Structure for Water Control	1	
			Bioretention Basin	1	
			Stormwater Management Practice	9	
	Chisago	Shoreline	Wetland Restoration / Creation		1
					1
		Agricultural	Filter Strip	1	
			Sediment Basin	13	
			Access Control	2	
			Diversion	3	
			Grassed Waterway Installations	2	
			Lined Waterway or Outlet	7	
			Grade Stabilization Structure	2	
			Gully Stabilization	18	
	Soil Erosion Control	2			
	Livestock Waste Management	1			
Washington	Urban		Subsurface Sewage Treatment Systems	16	
			Bioretention Basin	5	
			Permeable Surfaces	1	
			Well Decommissioning	5	
	Agricultural		Sediment Basin	1	
			Grade Stabilization Structure	1	
		Grassed Waterway Installations	8		

Natural Resource Conservation Service

The Natural Resource Conservation Service (NRCS) provides funding and technical support to landowners and local conservation departments.

Due to data privacy, public information is limited for NRCS funded projects. Table 4 provides a generalized list of the practices that occurred within the St. Croix River basin in Minnesota and Wisconsin. It is very likely that more projects were completed.

Table 4: NRCS Practices for Wisconsin and Minnesota

Practice Name	Minnesota	Wisconsin
Access Control	3,993 ac	- ac
Access Road	- no	1 no
Animal Mortality Facility	- no	1 no
Conservation Cover	- ac	96 ac
Conservation Crop Rotation	- ac	6,411 ac
Conservation Stewardship Program	5,478 ac	- ac
Cover Crop	75 ac	2,283 ac
Critical Area Planting	- ac	3 ac
Diversion	- ft	325 ft
Forestry Management Plan	4 no	- no
Grade Stabilization Structure	1 no	1 no
Grassed Waterway	- ac	5 ac
Gazing	249 ac	- ac
Heavy Use Area Protection	- ac	3 ac
Mulching	- ac	5 ac
Nutrient Management	1,544 ac	4,887 ac
Permanent Hay	25 ac	- ac
Pollinator planting	4 ac	- ac
Prescribed Burning	- ac	11 ac
Residue and Tillage Management, No-Till	- ac	1,617 ac
Residue and Tillage Management, Reduced Till	- ac	278 ac
Tree/Shrub Establishment	- ac	3 ac
Water and Sediment Control Basin	6 no	- no
Waterways	780 ac	- ft
Waste Transfer	1 no	4 no
Waste Facility Closure	1 no	- no
Wetland Restoration	- ac	0.5 ac
Wetland Wildlife Habitat Management	- ac	6 ac
Windbreak/Shelterbelt Establishment	- ft	407 ft

no - number
ac - acre
ft - feet

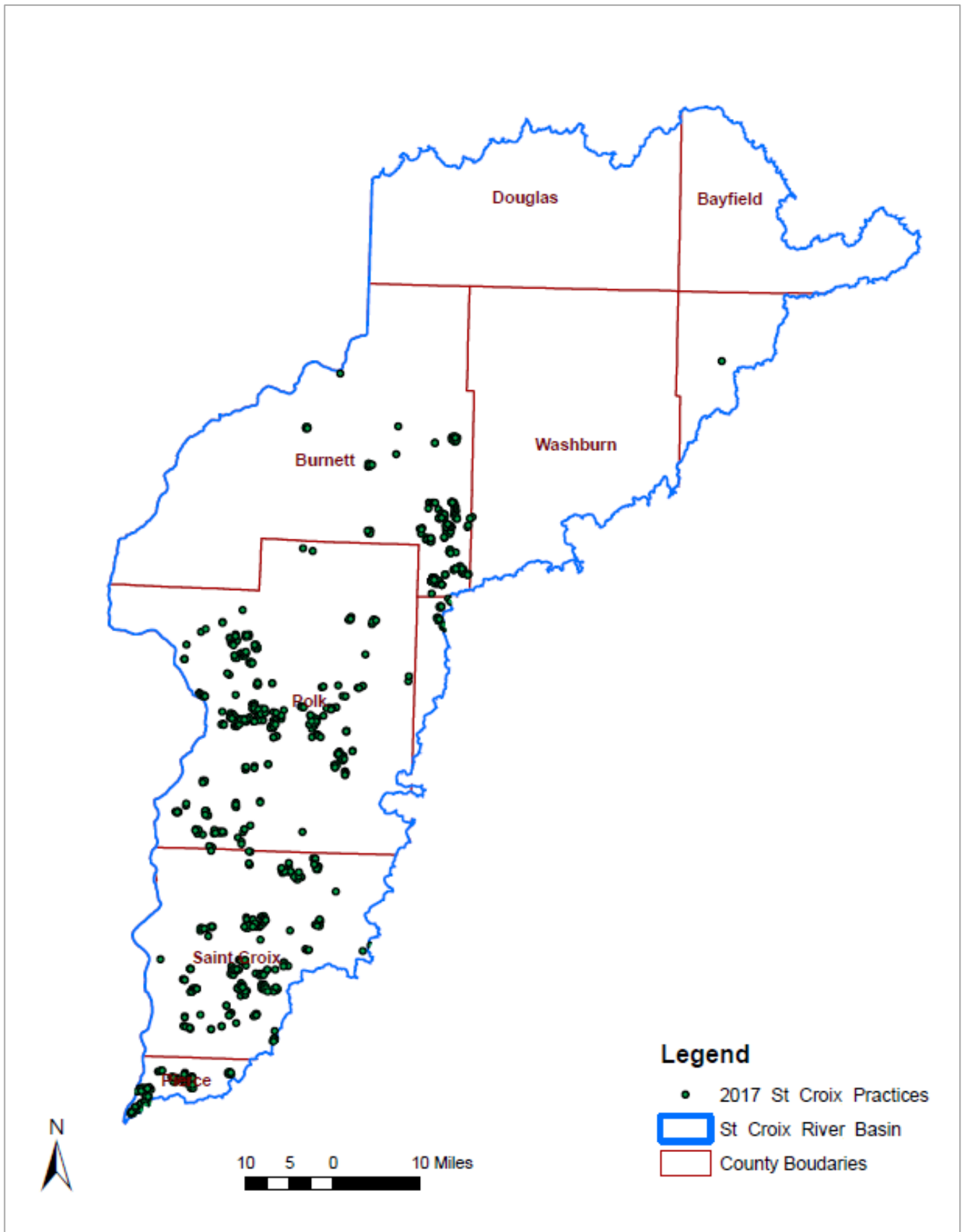


Figure 14: Location of Wisconsin NRCS funded practices

The Minnesota Department of Agriculture (MDA) coordinates a variety of agriculture conservation programs within the St. Croix River basin. The Minnesota Agricultural Water Quality Certification Program (MAWQCP)⁴ is one such program that allows farmers and agricultural landowners to take the lead in implementing conservation practices that protect waterbodies. Those who implement and maintain approved farm management practices will be certified and in turn obtain regulatory certainty for a period of ten years. Producers who are already certified or are actively seeking certification qualify for Financial Assistant Grants for implementing BMPs.

In 2017, 10 producers (3,292 acres) in the St. Croix River basin were certified through the program with another 17 producers in the assessment phase of the certification process.

In addition to the water quality certification program, the MDA has a Cropland Grazing Exchange (GCE) program that matches livestock farmers with crop farmers who have forage to harvest. By incorporating livestock into a cropping rotation, both the livestock farmer and the crop farmer benefit from improved soil health.

County and Local Land Conservation Departments

Activities reported by participating counties in Minnesota and Wisconsin are summarized later in this report in the “Projects Reported by County Staff” section.

⁴ More information about MAWQCP can be found at <https://www.mda.state.mn.us/environment-sustainability/minnesota-agricultural-water-quality-certification-program>

POINT SOURCES

Municipal Wastewater Treatment Plants

The wastewater treatment facilities on individual NPDES permits in the St. Croix River basin collectively discharged well below the Lake St. Croix TMDL Waste Load Allocation (WLA) in 2017. The total WLA for wastewater treatment discharges is 74,957 lbs/year, divided between Minnesota and Wisconsin facilities. A portion of each state's allocation is also combined as an "aggregate" allocation for smaller facilities. The facilities included in this category can either demonstrate compliance by meeting their individual allocation, or by showing that the combined discharge levels of all facilities in this group is less than the aggregate allocation. Figure 15 shows the respective WLAs and discharge levels for 2017 while Figure 16 shows the changes in phosphorus discharge from 2013 - 2017.

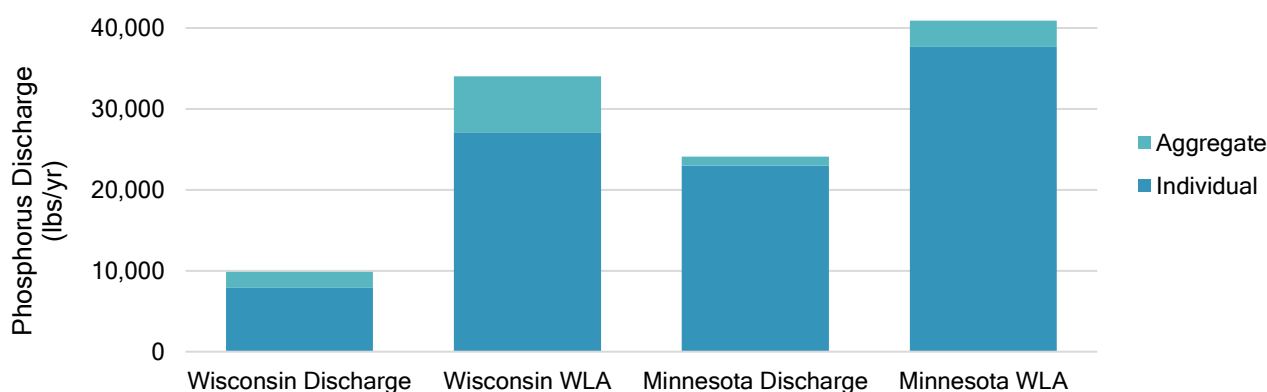


Figure 15: Minnesota and Wisconsin 2017 Phosphorus Discharge

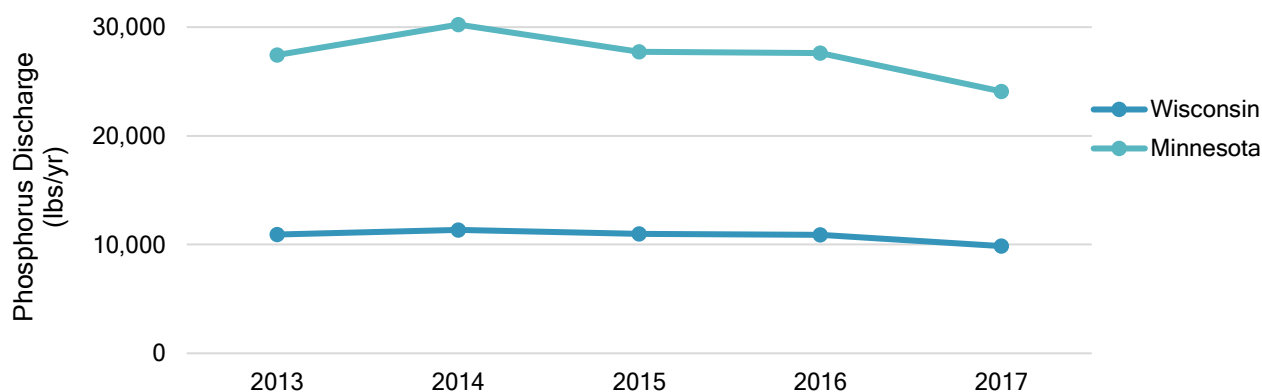


Figure 16: Minnesota and Wisconsin Phosphorus Discharge 2013 -2017

CAFOs

In 2017, there were 10 permitted Concentrated Animal Feeding Operations (CAFOs) in the St. Croix River basin, with 9 in Wisconsin and 1 in Minnesota (Figure 17). The number of CAFOs will fluctuate as farms expand, change operation, or stop production. Since there is no phosphorus allocation allowed for the production areas at CAFOs, and the permits require that the cropland be operated under a Nutrient Management Plan, it is not possible to quantify reductions for this sector. However, there is potential for soil conservation measures and non-point phosphorus reduction through proper manure handling, improved cropping practices (e.g. improved soil health, year-round cover crops, no-till planting, etc.) on the large farms as well as on the smaller ones that don't require CAFO permits.

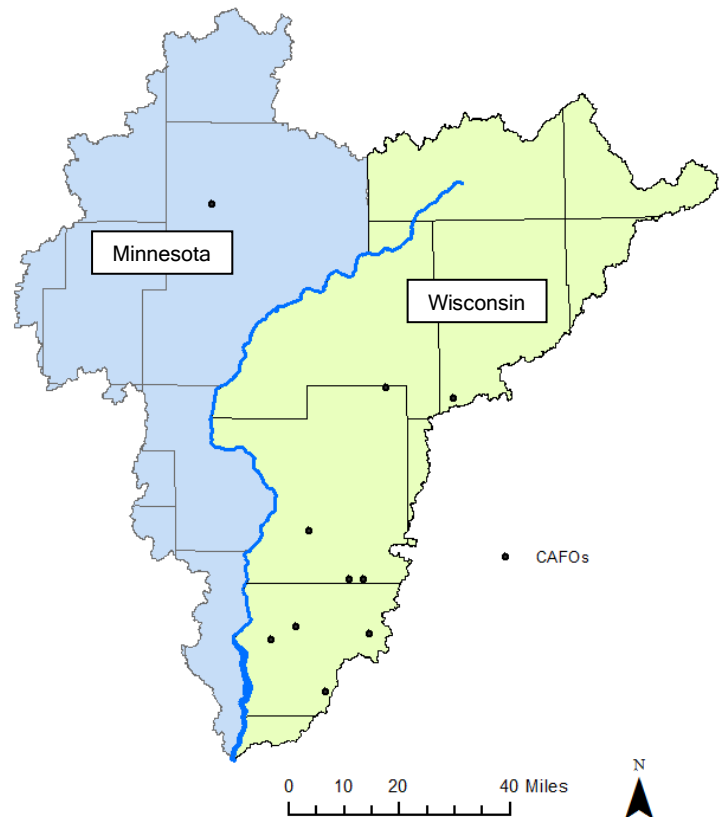


Figure 17: General CAFO locations within the St. Croix River basin





RECOMMENDATIONS

With steady effort from federal, state, local, and county partners, progress in the implementation of BMPs continues to be made within the St. Croix River basin. Over 290 new practices were identified by partners in 2017, with a high likelihood that many more projects were completed but not reported. While these estimates are encouraging, the problem of accurate reporting continues to remain.

Reporting on total phosphorus reduction numbers is not practical or appropriate without a consistent tracking, reporting, and modeling database. The state of Minnesota has one such database called eLINK where all the TMDL implementation partners in Minnesota can report their BMPs and model phosphorus reductions annually. Wisconsin does not currently have a statewide tracking and reporting database for BMPs. Many of the County Land and Water Conservation Departments within Wisconsin are asking for such a database, and it would help DNR staff when reporting numbers annually on implementation efforts.

We suggest that Wisconsin pursue a similar tracking, modeling, and reporting system for all the partners so we can report consistently on phosphorus reduction numbers for TMDL implementation reporting.



PROJECTS REPORTED BY COUNTY STAFF

The following pages display nonpoint source BMP data reported by county staff in both Minnesota and Wisconsin.

MINNESOTA

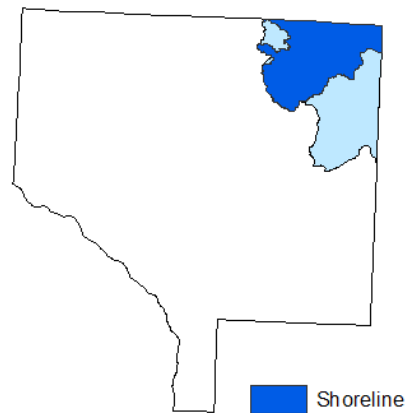
ANOKA COUNTY

TMDL Load Allocation: 3,300 lbs/year

Needed Reduction: 48%

Land Area in Basin: 36,912 acres

2017 Total Investment: \$20,800



Shoreline

Practice Type	Huc 12	Total Practices Installed	Details
Carp Removal	070300050405	1	2,322 Common carp removed from Typo Lake

Education

Practice Type	Huc 12	Audience Number
Lakeshore Stewardship Newsletter	070300050405	11,000

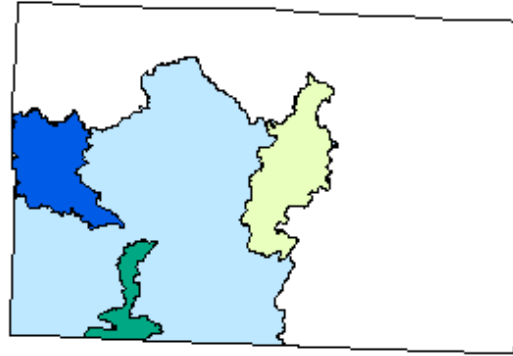
CARLTON COUNTY

TMDL Load Allocation: 23,000 lbs/year

Needed Reduction: 17%

Land Area in Basin: 229,671 acres

2017 Total Investment: \$1,500



Shoreline

Practice Type	Huc 12	Total Practices Installed	Details
Buffer Plantings	070300040403	1	0.2 acres
	070300030103	1	3 acres
Fertilizer Reduction	070300030103	1	65 acres

Agriculture

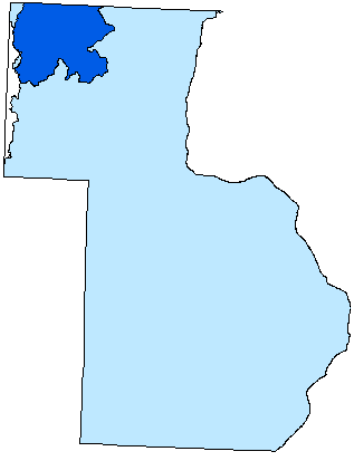
Practice Type	Huc 12	Total Practices Installed	Details
Cover Crops	070300040403	1	52 acres


Forestry

Practice Type	Huc 12	Total Practices Installed	Details
Forest Stand Improvement	070300030110	1	53 acres

Education

Practice Type	Huc 12	Audience Number
Arbor Day Youth Tree Planting	070300030201	500



 Shoreline

CHISAGO

TMDL Load Allocation: 46,400 lbs/yr

Needed Reduction: 47%

Land Area in Basin: 279,247 acres

Shoreline

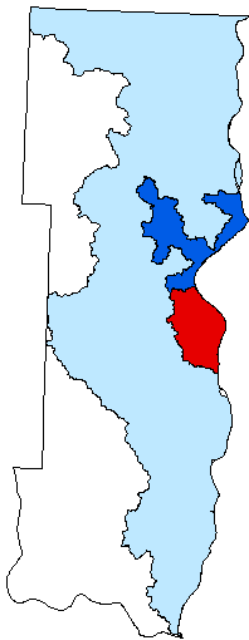
Practice Type	Huc 12	Total Practices Installed	Details
Buffer Plantings	070300050203	1	400 feet
Increase Infiltration	070300050203	1	30 feet

Agriculture

Practice Type	Huc 12	Total Practices Installed	Details
New SAFE and CRP Acreage	Countywide	1	32 acres

Education

Practice Type	Huc 12	Audience Number	Details
Lake Association Meeting		200	
Chisago County Soil Health Workshop	Countywide	50	Partnered with NRCS to host a workshop at Peterson Farms of Rush City, LLC



WASHINGTON

TMDL Load Allocation: 31,300 lbs/yr

Needed Reduction: 50%

Land Area in Basin: 180,582 acres

2017 Total Investment: \$114,119 & 1 Full Time Position

■ Urban ■ Shoreline

Shoreline

Practice Type	Huc 12	Total Practices Installed	Details
Erosion Control	070300050908	3	1 Gully Stabilization
	070300051201		2 Native Shoreline Restorations

Urban

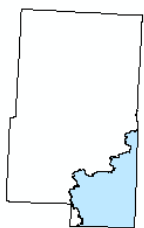
Practice Type	Huc 12	Total Practices Installed	Details
Installation of raingardens / wetlands / retention basins	070300050908	9	8 Infiltration and Filtration Practices
	070300051201		1 Wet Pond Installation
BMPs for Street and Road Construction and Development	070300050908	22	
	070300051201		

WASHINGTON COUNTY CONTINUED

Education

Practice Type	Huc 12	Audience Number	Details
Tree workshop		53	Taught in partnership with Minnesota DNR and US Forest Service
Green Landscaping workshops		113	Participants learned about lawn alternatives, raingardens, and shoreline plantings
Raingarden maintenance workshops		39	
Family nature events			Hands-on outdoor events that teach adults and children about lake and river health
Tree sale	County wide		
Master Water Stewards program		20	Program that teaches stewards about rural watershed issues and BMPs
AIS Detectors program		9	Program offers full day training to help citizens learn how to identify AIS
Stormwater and watershed education			School programs that teach children about water health
Newspaper articles			143 articles written in local newspapers promoting water health

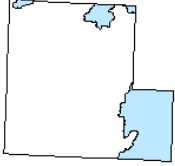
Submitted by East Metro Water Resource Education Program



AITKIN

TMDL Load Allocation: 15,300 lbs/yr
 Needed Reduction: 24%
 Land Area in Basin: 200,665 acres

No projects were reported by county staff for 2017



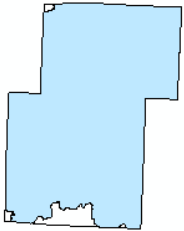
ISANTI

TMDL Load Allocation: 8,400 lbs/yr

Needed Reduction: 44%

Land Area in Basin: 51,492 acres

No projects were reported by county staff for 2017



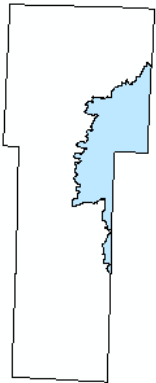
KANABEC

TMDL Load Allocation: 39,500 lbs/yr

Needed Reduction: 27%

Land Area in Basin: 329,189 acres

No projects were reported by county staff for 2017



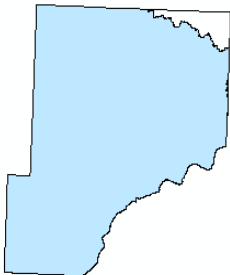
MILLE LACS

TMDL Load Allocation: 39,500 lbs/yr

Needed Reduction: 27%

Land Area in Basin: 329,189 acres

No projects were reported by county staff for 2017



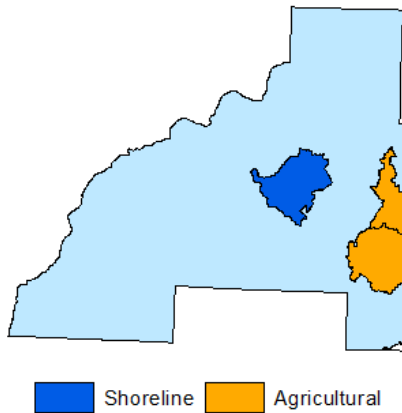
PINE

TMDL Load Allocation: 39,500 lbs/yr

Needed Reduction: 27%

Land Area in Basin: 329,189 acres

No projects were reported by county staff for 2017



BURNETT

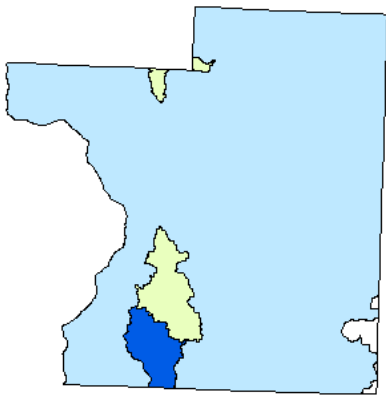
TMDL Load Allocation: 67,000 lbs/yr
 Needed Reduction: 31%
 Land Area in Basin: 562,172 acres
 2017 Total Investment: \$230,000 & 10,000 hrs

Shoreline

Practice Type	Huc 12	Total Practices Installed	Details
Erosion Control	070300010503	2	
Buffer Plantings	070300010501	20	2.7 acres

Agriculture

Practice Type	Huc 12	Total Practices Installed	Details
Cover Crops	070300010802	1	500 acres
Nutrient Management	070300010802	1	1,472 acres
Stream Crossings	070300010802	1	20 feet x 60 feet
Grazing	070300010503	1	
	070300010405	1	



POLK

TMDL Load Allocation: 108,000 lbs/yr

Needed Reduction: 49%

Land Area in Basin: 605,513 acres

2017 Total Investment: 1,016 hrs

■ Shoreline ■ Education

Shoreline

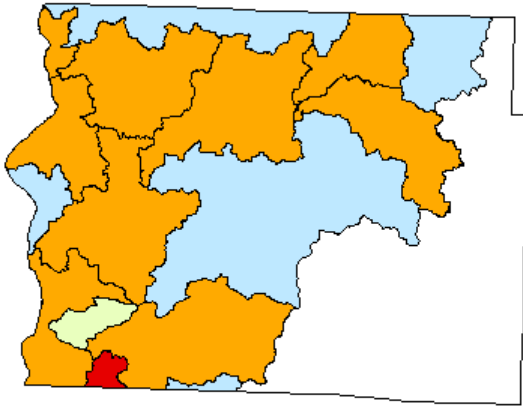
Practice Type	Huc 12	Total Practices Installed	Details
Buffer Plantings		4	
Increase Infiltration		2	
Cedar Lake Alum Treatment	040302021701		Ongoing treatment

Agriculture

Practice Type	Huc 12	Total Practices Installed	Details
Cover Crops	Countywide	1	6,946 acres
Nutrient Management		1	6,273 acres
Grade Stabilization Structure		3	Small dams installed
Manure Storage Closure		1	
Field Border		1	4.2 acres

Education

Practice Type	Huc 12	Audience Number	Details
Healthy Lakes Program	Countywide	24	Encourages lakeshore property owners to participate in habitat restoration and erosion control projects
Farmer-Led Field Days		90	
Council Meetings		20	
Farmer Written NMP Classes	Countywide	10	Horse Creek Area Watershed Council
Soil Health Seminar		9	
Rainfall Simulator CC Field Day		40	
Lotus Lake Management Plan	070300050804	6	
Long Trade Lake Shoreline Inventory	070300050503	5	



ST. CROIX

TMDL Load Allocation: 84,000 lbs/yr
 Needed Reduction: 58%
 Land Area in Basin: 335,485 acres

■ Urban
 ■ Education
 ■ Agricultural

Agriculture

Practice Type	Huc 12	Total Practices Installed	Details
Cover Crops	070300051105	8	4,371 acres
	070300051008		
	070300050809		
	070300051104		
	070300051007		
Nutrient Management	070300051004	19	19,300 acres
	070300050809		
	070300050908		
	070300050905		
	070300051205		
	070300050906		
	070300051206		
	070300051003		
	070300051104		
	070300051007		
Waterways	070300051004	3	7,450 feet
	070300051104		
	070300051105		
Stream Crossings	070300051105	3	
	070300051104		
Critical Area Stabilizations	070300050908	5	
	070300051004		
	070300051104		
Manure Storage Closure	070300051007	1	

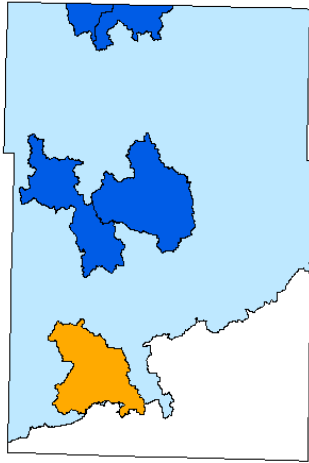
ST. CROIX CONTINUED

Urban

Practice Type	Huc 12	Total Practices Installed	Details
Installation of raingardens / wetlands / retention basins	070300051105	1	200 ft² Raingarden

Education

Practice Type	Huc 12	Audience Number	Details
Sanitary sytem required maintainance and reporting	Countywide	10,490	St. Croix County Private Onsite Wastewater Treatement (POWTS) 3-year pumping program to monitor mainenance
Shoreline Habitat Educaiton	070300051105	75	
Tree ID and Forest Education	070300051204	525	
Stormwater Education	070300051105 070300051204 070300051008	1,887	



WASHBURN

TMDL Load Allocation: 51,300 lbs/yr

Needed Reduction: 21%

Land Area in Basin: 434,610 acres

2017 Total Investment: \$180,700 & 4,000 hrs

Shoreline

Practice Type	Huc 12	Total Practices Installed	Details
Erosion Control	070300020402	5	551 feet of Shore and Stream Bank Protection
	070300020309		
	070300020207		
	070300020307		
Buffer Plantings	070300020402	1	100 feet of Vegetated Filter Strip

Agriculture

Practice Type	Huc 12	Total Practices Installed	Details
Nutrient Management	070300010403	1	2020 acres
Converting Crop Fields into Managed Rotationally Grazed pastures	070300010403	1	2.4 acres

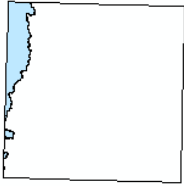
Urban

Practice Type	Huc 12	Total Practices Installed	Details
Installation of Rain gardens / Wetlands / Retention Basins	070300010403	1	Detention basin in 4 acres watershed area

WASHBURN CONTINUED

Education

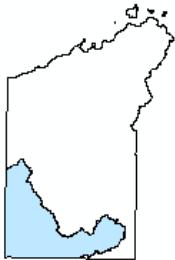
Practice Type	Huc 12	Audience Number	Details
Youth conservation speaking poster contest		20	Wisconsin Land and Water Conservation Association
Invasive species workshops		20	
CBCS / CLMN workshops	Countywide	30	
NW WI Conference - Committee		200	
Newspaper articles		200	
County website program information		200	
Tree / shrub / wildflower sale		200	
Grazing workshop	070300010403	40	
Land judging contest	070300010403	80	
Buckthorn workshops with private landowners		30	
School education and field day		40	
Lake association newsletter		200	
Lake association meetings		200	



BARRON

TMDL Load Allocation: 5,300 lbs/yr
Needed Reduction: 45%
Land Area in Basin: 35,545 acres

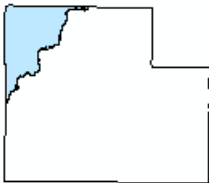
No projects were reported by county staff for 2017



BAYFIELD

TMDL Load Allocation: 15,300 lbs/yr
Needed Reduction: 10%
Land Area in Basin: 185,089 acres

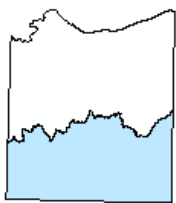
No projects were reported by county staff for 2017



SAWYER

TMDL Load Allocation: 10,300 lbs/yr
Needed Reduction: 0.1%
Land Area in Basin: 96,119 acres

No projects were reported by county staff for 2017



DOUGLAS

TMDL Load Allocation: 32,000 lbs/yr
Needed Reduction: 0.06%
Land Area in Basin: 365,876 acres

No projects were reported by county staff for 2017



MEMBER ORGANIZATIONS

St. Croix National Scenic Riverway - National Park Service
Minnesota Department of Natural Resources
Minnesota Pollution Control Agency
Wisconsin Department of Natural Resources
St. Croix Watershed Research Station - Science Museum of Minnesota
University of Wisconsin Extension
University of Wisconsin - River Falls
Wisconsin Department of Agriculture
Minnesota Department of Agriculture
The Nature Conservancy
East Metro Watershed Partners
Natural Resource Conservation Service
St. Croix River Association
Kinnickinnic River Land Trust
Wisconsin County Land and Water Resource Departments
Minnesota Board of Soil and Water Resources and local member organizations