

Northeast Lakeshore Volunteer Surface Water Monitoring Program

Northeast Lakeshore TMDL

2023 Data Summary



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Northeast Lakeshore Volunteer Surface Water Monitoring Program 2023 Data Summary

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Project Overview

The Northeast Lakeshore (NEL) Volunteer Surface Water Monitoring Program started in 2023 and is in support of the NEL Total Maximum Daily Load (TMDL). In 2023 the program monitored twelve surface water monitoring sites on twelve different rivers/streams throughout the NEL region. These rivers and streams contribute nutrients and sediment directly to Lake Michigan. The NEL is approximately 2,000 square miles and covers eight counties (Brown, Calumet, Door, Fond du lac, Kewaunee, Manitowoc, Ozaukee, and Sheboygan). There are three major river basins within the NEL: Kewaunee, Manitowoc, and Sheboygan basins.

The volunteer monitoring program relies on citizen volunteers to collect monthly surface water samples, there were twelve volunteers in the program in 2023. The samples are taken once a month during the growing season (May-October) and are analyzed for total phosphorus (TP), total suspended solids (TSS), dissolved reactive phosphorus (DRP), and total nitrogen (TN).

Phosphorus and sediment cause numerous impairments to waterways, including low dissolved oxygen concentrations, degraded habitat, and excessive turbidity. These impairments adversely impact fish and aquatic life, water quality, recreation, and potentially navigation.

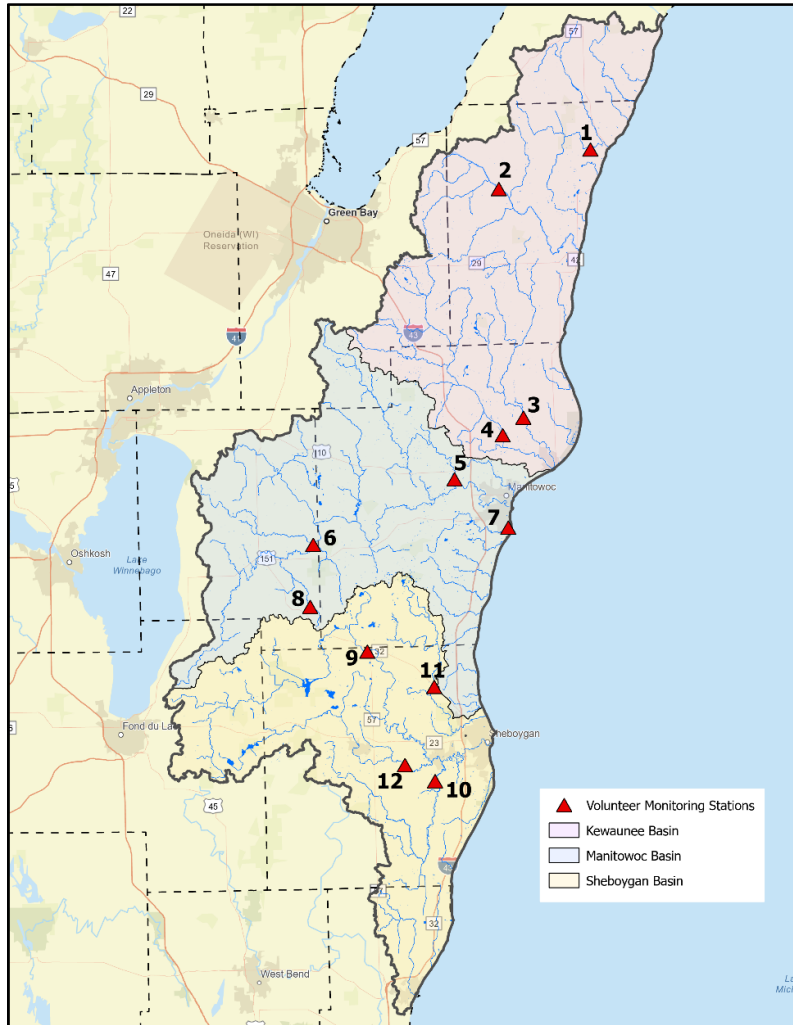
Phosphorus is an essential nutrient for plant growth. However, when excess amounts are introduced to a system, excess algae and aquatic plants can occur. Total phosphorus is a key indicator of water quality.

Project Goals

- 1) Increase public awareness and involvement of water quality issues by engaging the public in citizen science
- 2) The collection of reliable surface water quality data to assess long-term water quality trends/successes
- 3) Evaluate nutrient and sediment concentrations in the tributaries and streams discharging to Lake Michigan
- 4) Monitor the health of the watershed overtime
- 5) Provide a basis for evaluation of the long-term effectiveness of implementation of the NEL TMDL; are there water quality improvements in watersheds with the implementation of best management practices?
- 6) Share water quality data broadly among stakeholders to collectively assess water quality

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Median Total Phosphorus by Monitoring Site

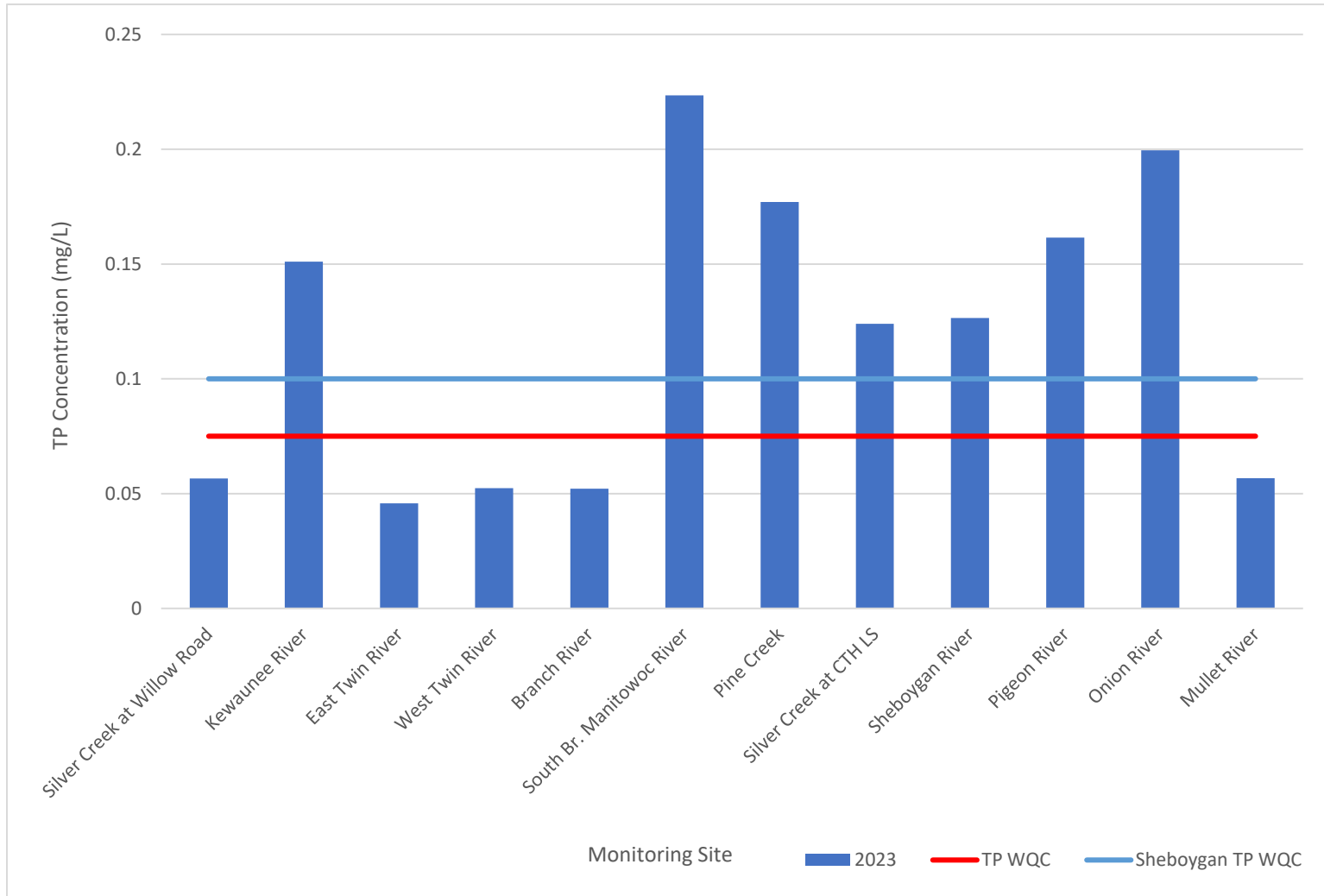


Median Total Phosphorus (2023)		
Map #	Monitoring Site	TP (mg/L)
1	Silver Creek at Willow Rd	0.0566
2	Kewaunee River at Hillside Rd	0.1510
3	East Twin River at Steiners Corners Rd	0.0458
4	West Twin River at CTH V	0.0524
5	Branch River at N Union Rd	0.0522
6	South Br. Manitowoc River at Lemke Rd	0.2235
7	Silver Creek at CTH LS	0.1240
8	Pine Creek at CTH T	0.1770
9	Sheboygan River at STH 57	0.1265
10	Onion River at Ourtown Rd	0.1995
11	Pigeon River at STH 42	0.1615
12	Mullet River at Sumac Rd	0.0568

The median is calculated for rivers and streams in accordance with Wisconsin Consolidated Assessment and Listing Methodology (WisCALM) protocol. Rivers and streams tend to have high variability in concentrations and medians are used for datasets with high variability.

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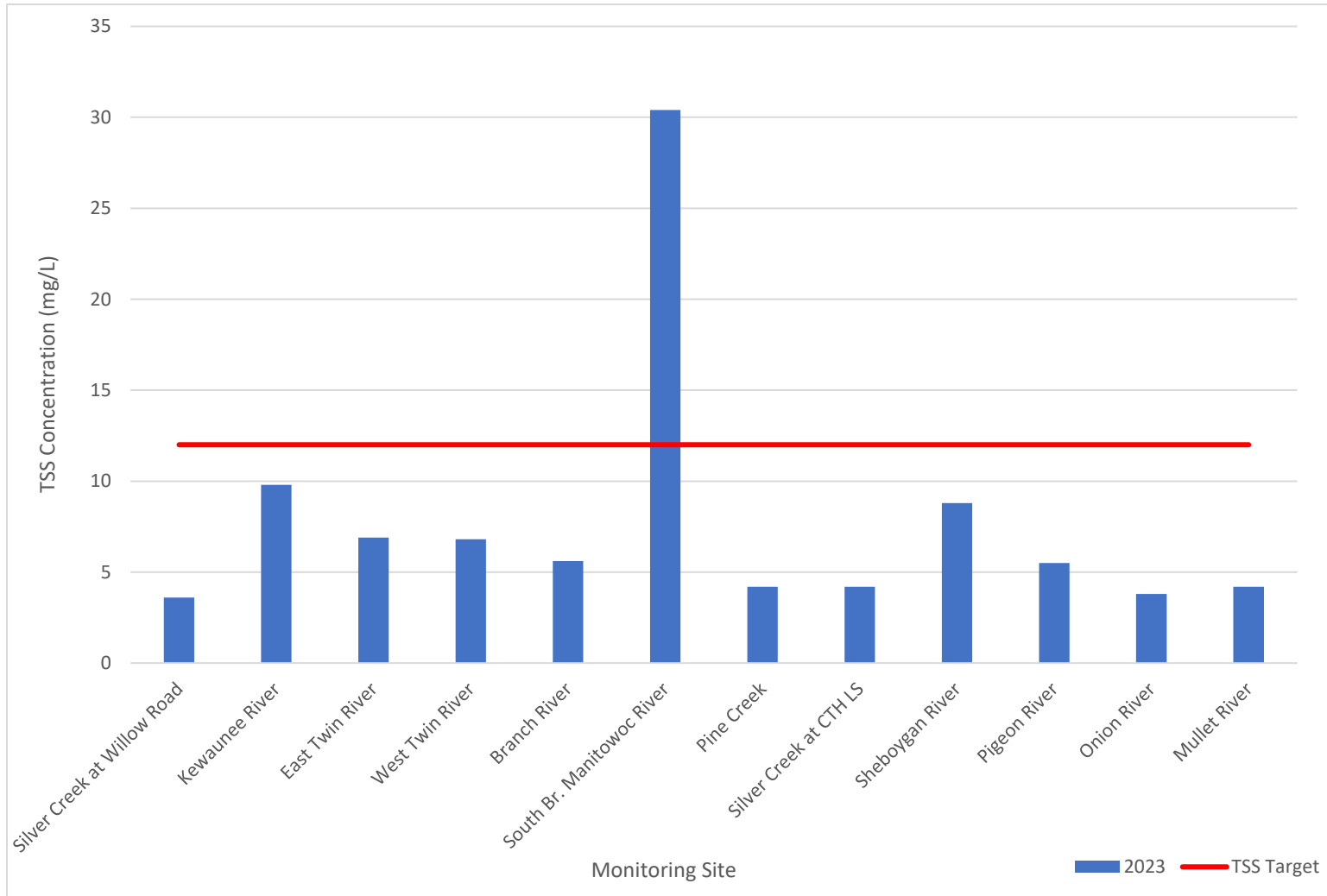
Annual Median Total Phosphorus Concentrations by Monitoring Site



TP WQC stands for TP Water Quality Criteria, which is 0.075mg/L for all sites except Sheboygan River. Sheboygan River TP WQC is 0.100 mg/L.

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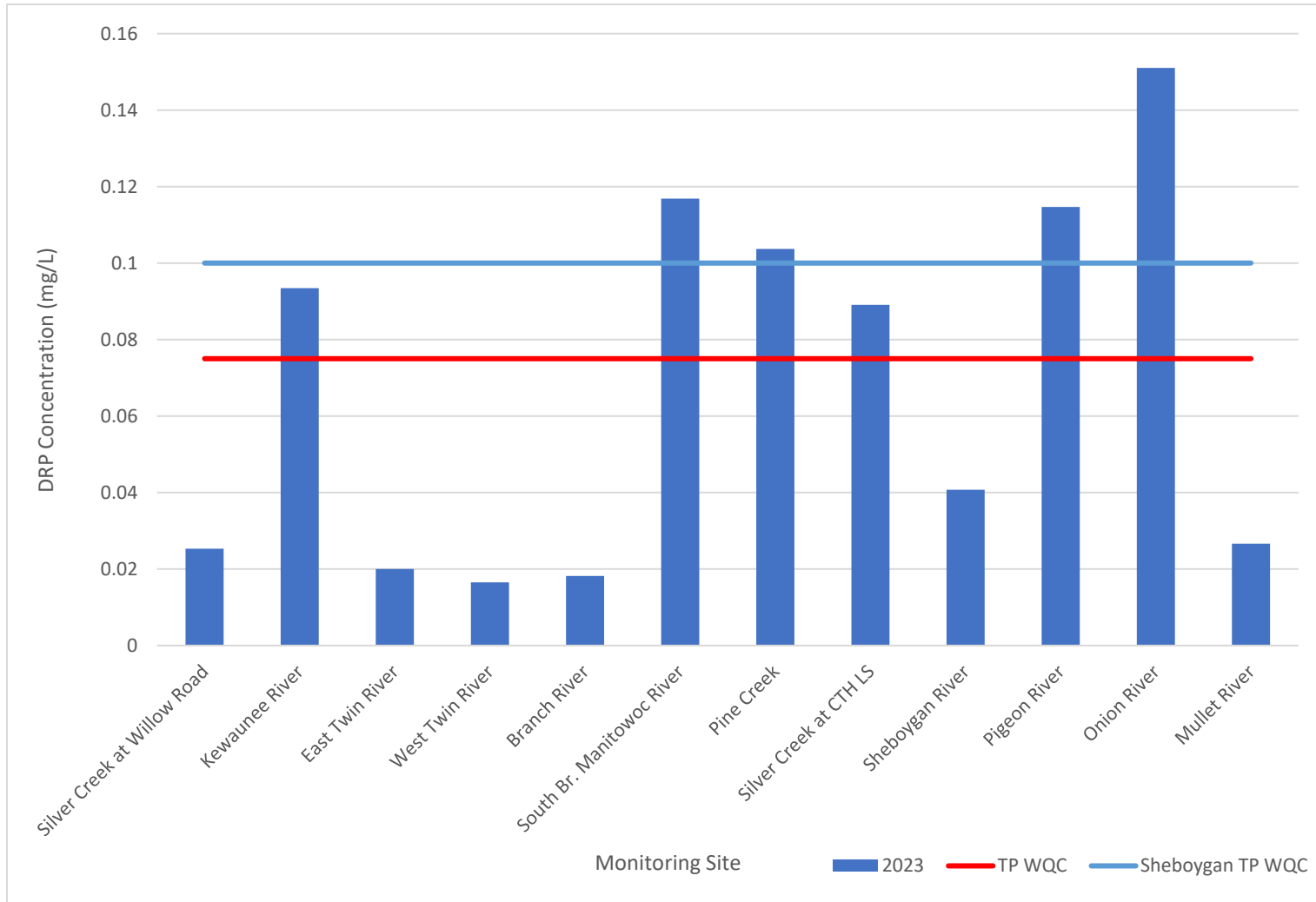
Annual Median Total Suspended Solids Concentrations by Monitoring Site



TSS Target is defined in the NEL TMDL as 12mg/L.

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Annual Median Dissolved Reactive Phosphorus Concentrations by Monitoring Site



TP WQC stands for TP Water Quality Criteria, which is 0.075mg/L for all sites except Sheboygan River. Sheboygan River TP WQC is 0.100 mg/L.

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Annual Median Total Nitrogen Concentrations by Monitoring Site

