

Upper Fox and Wolf River Basins Volunteer Monitoring Program

Upper Fox and Wolf Basins TMDL

2023 Data Summary



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Project Overview

The Upper Fox and Wolf River Basins (UFWB) volunteer monitoring program started in 2020 and is in support of the Upper Fox and Wolf Basins Total Maximum Daily Load (TMDL). The project area is located within the UFWB in northeast and central Wisconsin. The Upper Fox River Basin is 2,200 square miles and extends from the headwaters of the Fox River in Columbia and Adams Counties to the outlet of Lake Winnebago. The Upper Fox River Basin also includes the direct drainage areas to Lake Winnebago. The Wolf River Basin is 3,700 square miles and extends from the headwaters of the Wolf River in Forest County to the Wolf River confluence with Lake Butte des Morts in Winnebago County.

The UFWB volunteer monitoring program started in 2020 with 12 monitoring sites, as of 2023 there are 24 sites that were monitored by 22 volunteers. Surface water 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, harmful algal blooms can occur. Total phosphorus is a key indicator of water quality.

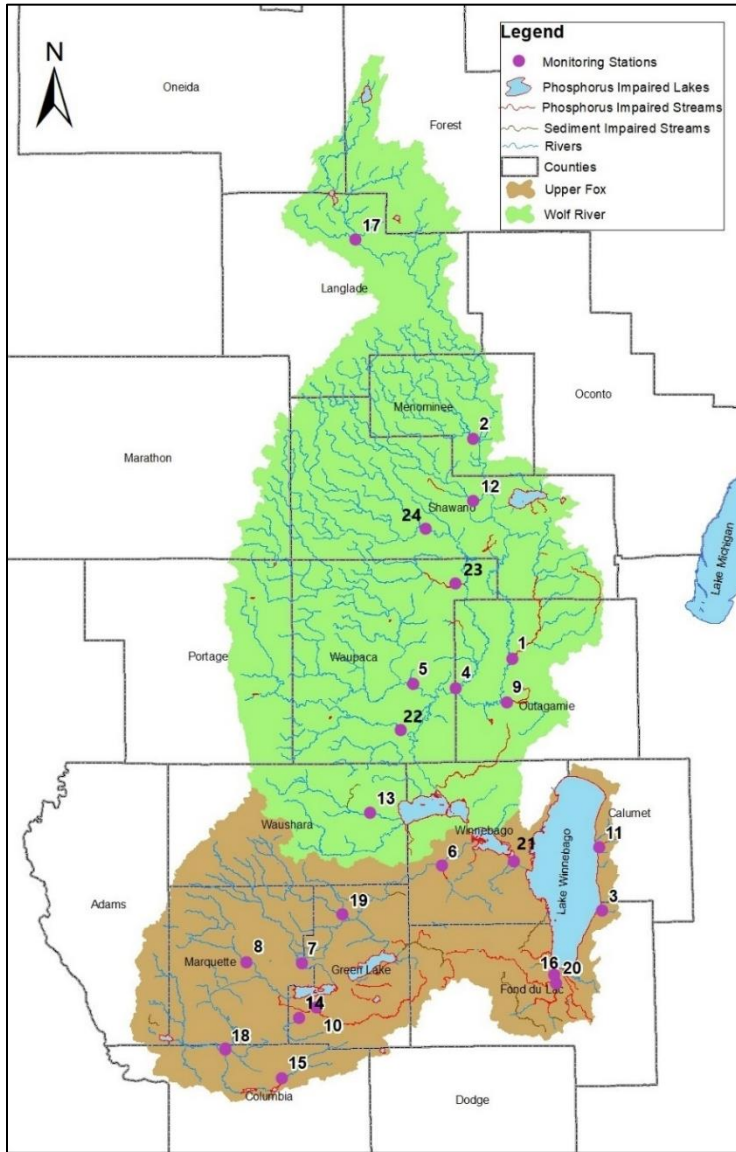
Project Goals

- 1) Increase public awareness and involvement in 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 discharging to the Upper Fox River, Wolf River, and Lake Winnebago
- 4) Monitor the health of the watershed overtime
- 5) Provide a basis for evaluation of the long-term effectiveness of implementation of the Upper Fox and Wolf Basins 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



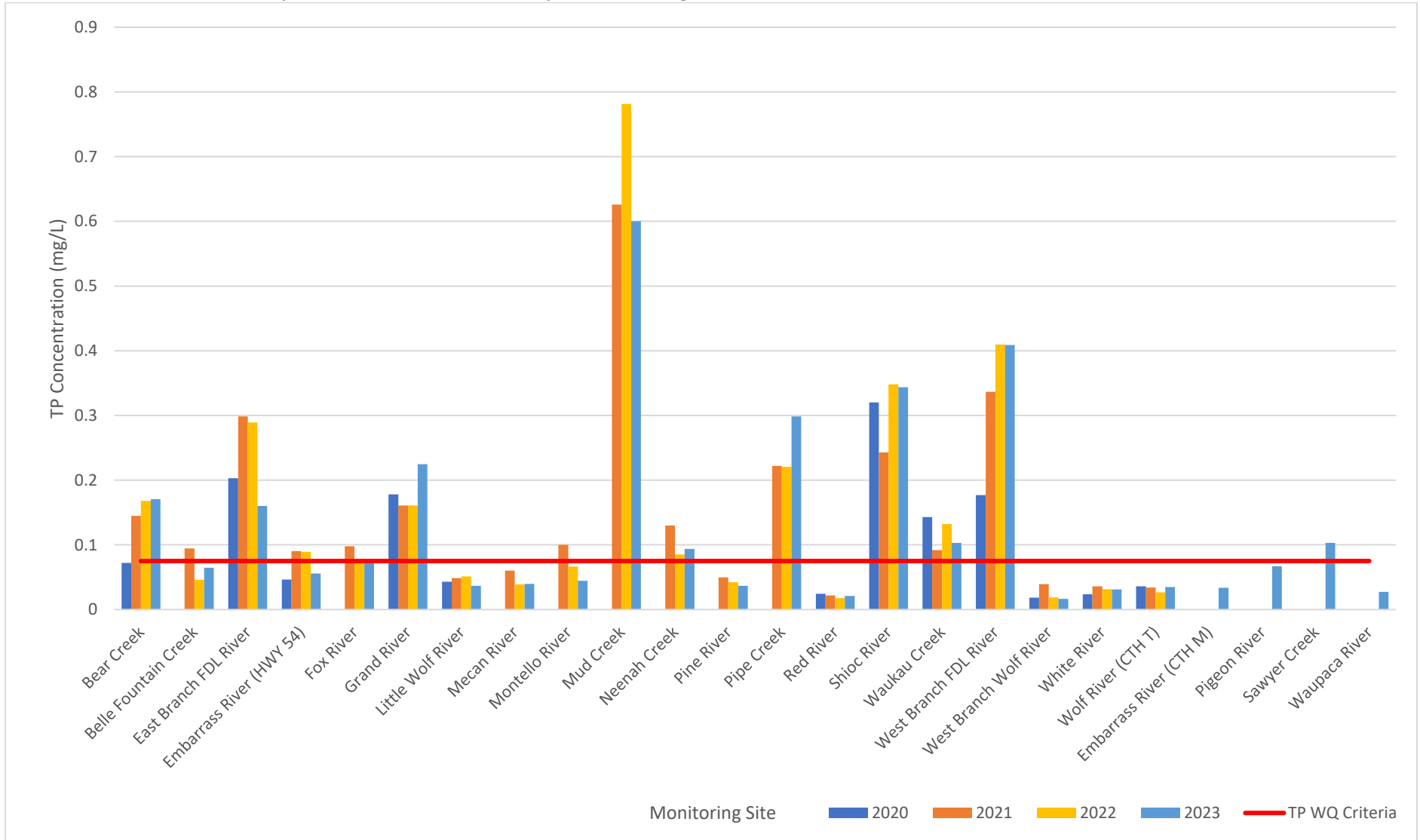
Median Total Phosphorus (mg/L)			
Map #	Monitoring Site	2020-2023	2023
1	Shioc River at STH 187	0.332	0.344
2	West Branch Wolf River at West Branch Rd	0.019	0.016
3	Pipe Creek- 30 ft above STH 151 Bridge	0.222	0.299
4	Embarrass River at New London STH 54	0.072	0.056
5	Little Wolf River at Royalton STH 54	0.046	0.037
6	Waukau Creek at CTH E USGS Site ID 04073970	0.118	0.103
7	Mecan River at CTH C	0.040	0.040
8	Montello River at 11 th St Bridge USGS Site ID 04072845	0.067	0.044
9	Bear Creek at STH 76	0.157	0.171
10	Grand River at CTH H Near Kingston, WI	0.170	0.225
11	Mud Creek at Mud Creek Rd	0.626	0.600
12	Red River at Maple Ave	0.021	0.021
13	Pine River at STH 49	0.042	0.037
14	Belle Fountain Creek at CTH B	0.065	0.065
15	Fox River at STH 33	0.075	0.075
16	West Branch Fond du Lac River at Forest Ave	0.019	0.409
17	Wolf River at CTH T	0.034	0.035
18	Neenah Creek at CTH CM	0.094	0.094
19	White River at White River Rd Landing	0.031	0.031
20	East Branch Fond du Lac River at 12 th St	0.246	0.160
21	Sawyer Creek at N Westfield St	0.103	0.103
22	Waupaca River at River Rd Weyauwega	0.027	0.027
23	Pigeon River at Klemp Rd	0.067	0.067
24	Embarrass River at CTH M	0.034	0.034

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 Concentration by Monitoring Site

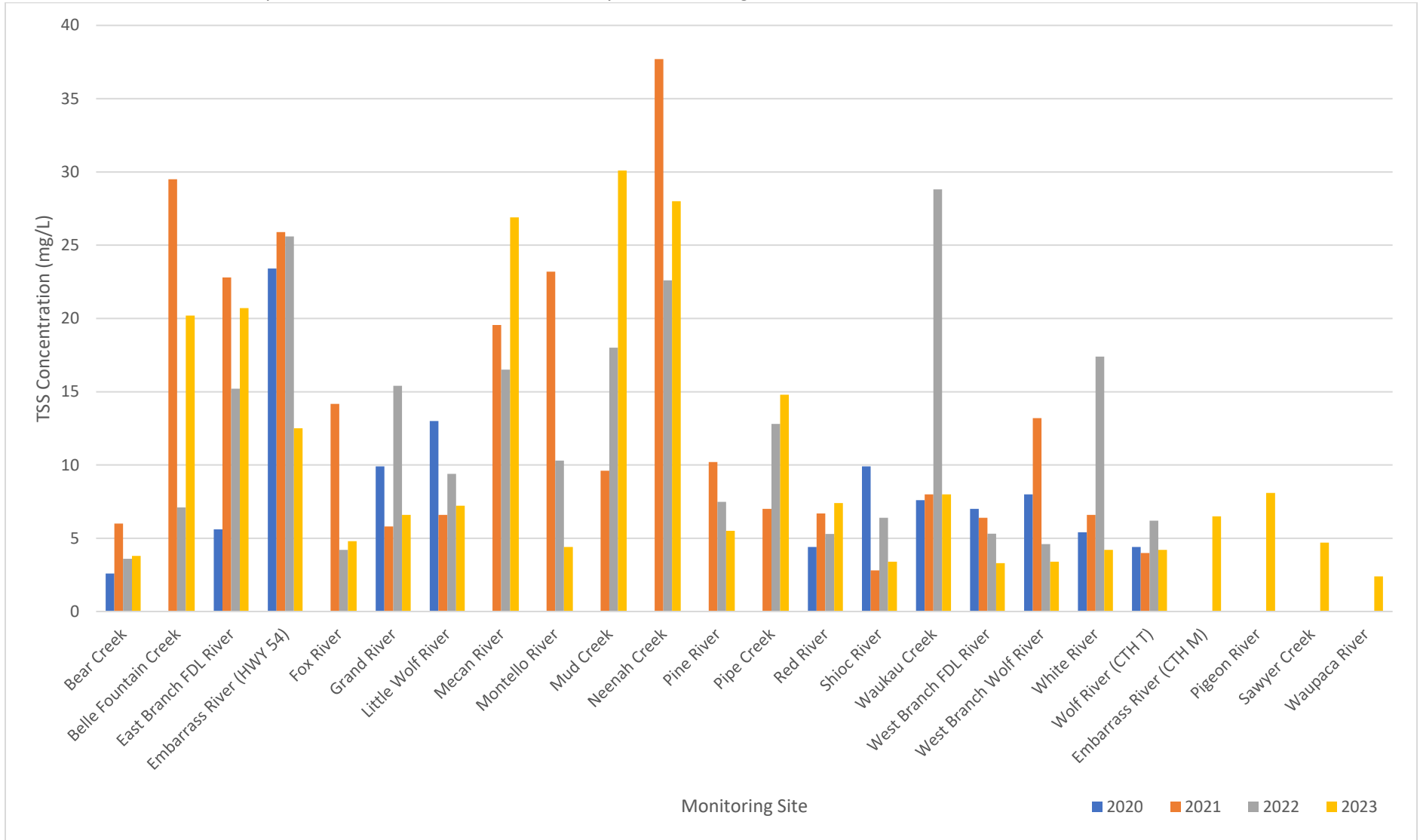


TP WQ Criteria stands for TP Water Quality Criteria, which is 0.075mg/L.

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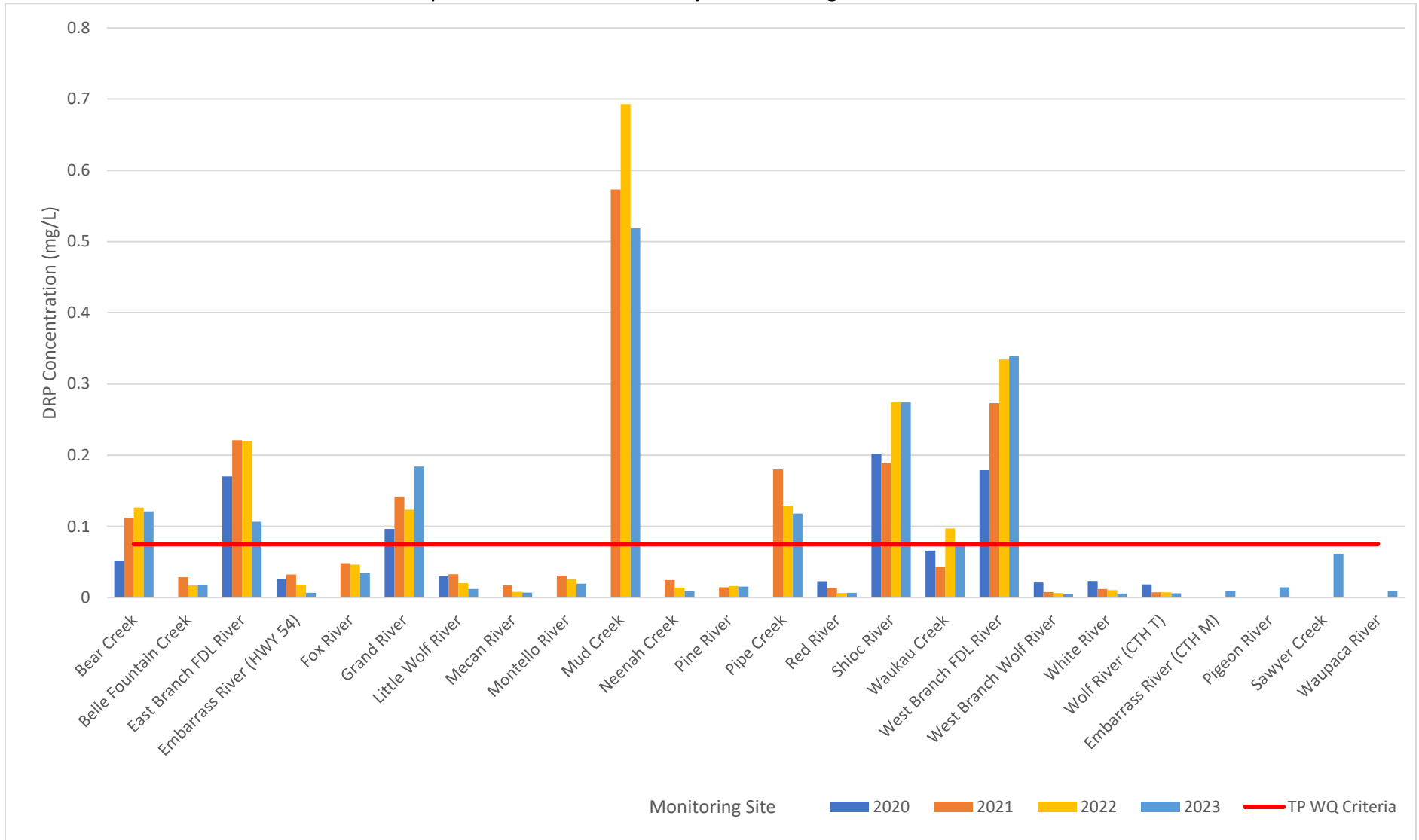
Annual Median Total Suspended Solids Concentration by Monitoring Site



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Annual Median Dissolved Reactive Phosphorus Concentration by Monitoring Site



TP WQ Criteria stands for TP Water Quality Criteria, which is 0.075mg/L.

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Annual Median Total Nitrogen Concentration by Monitoring Site

