Water Action Volunteers

Monitoring Site Quick Facts

SWIMS Station ID	10030352
WBIC	4350
County	Milwaukee
Watershed	Root River
Watershed Area	199 sq miles
Stream Miles in Watershed	306 miles
Downstream Waterbody	Root River

2016 Monitoring Results

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Minimum TP Value	0.035 mg/L
Maximum TP Value	2.18 mg/L
Median TP Value	0.47 mg/L
No. Samples > 0.075 mg/L	4
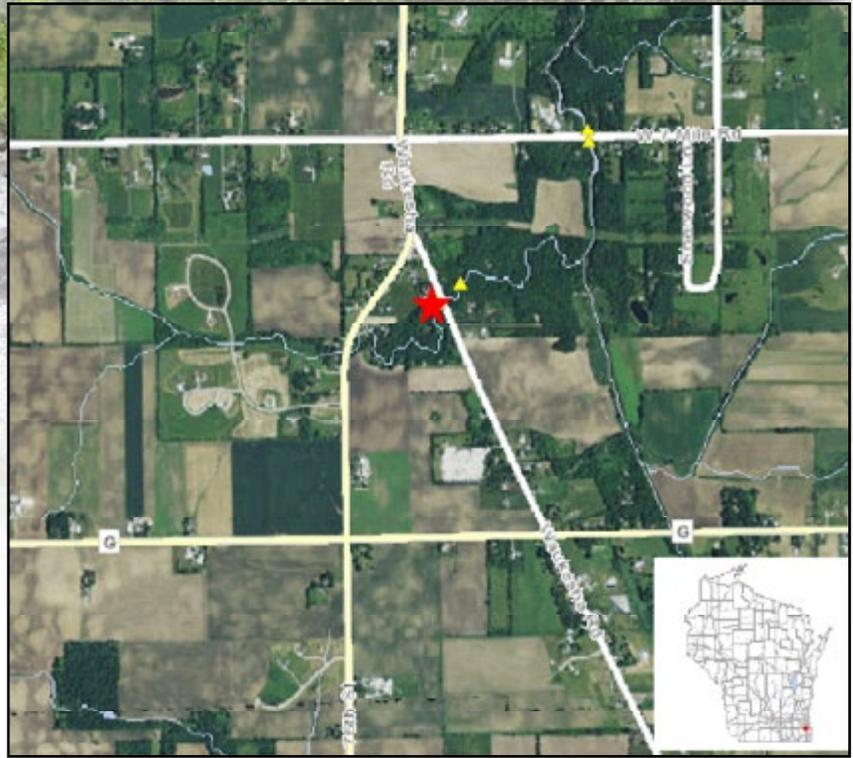
2016 Total Phosphorus Monitoring Program
Unnamed Tributary to the Root River at Waukesha Rd
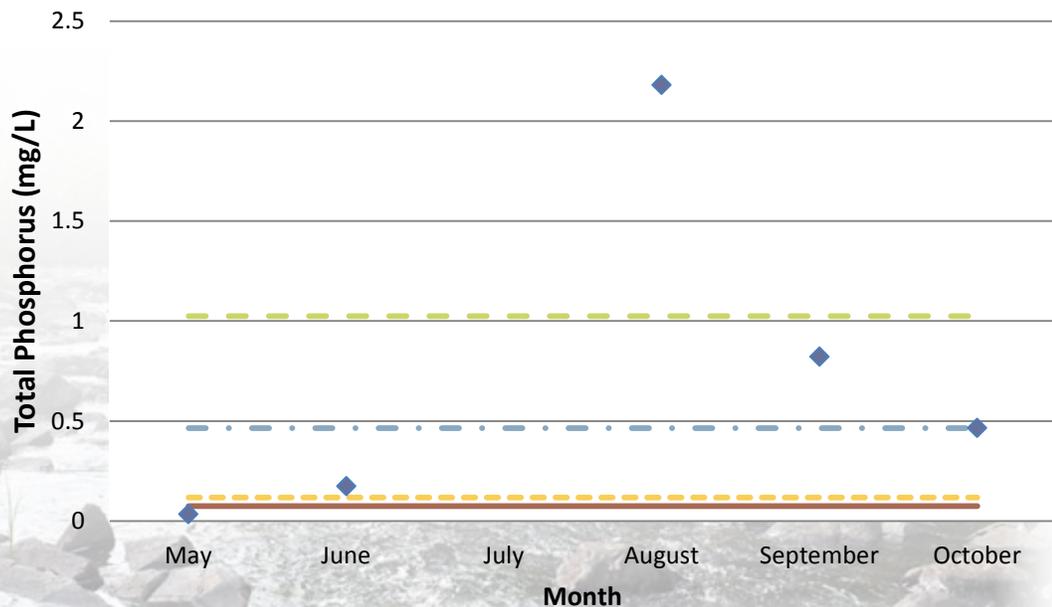
Chris Litzau and Great Lakes CCC

*The site was dry in July. No sample was taken. It is likely more data will be needed for decision-making.

Watch Waters

Approximate Watershed Land Use

Wetland 5%
Other 16%
Urban 14%
Grassland 16%
Agriculture 49%
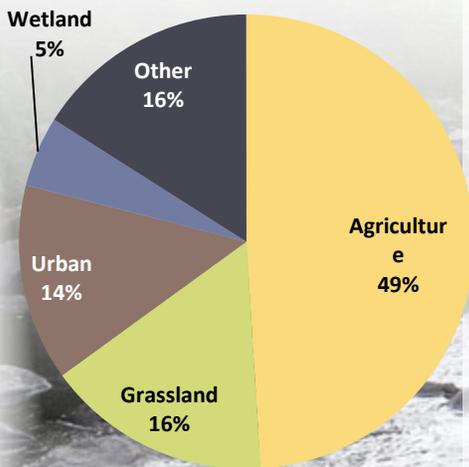
Total Phosphorus Concentration per Month

- Total Phosphorus Concentration
- Median Total Phosphorus Concentration
- High Range of Confidence Interval
- Low Range of Confidence Interval
- State Phosphorus Standard

Why Phosphorus?

Phosphorus is an essential nutrient responsible for plant growth, but it is also the most visible, widespread water pollutant in Wisconsin lakes. Small increases in phosphorus levels can bring about substantial increases in aquatic plant and algae growth, which in turn can reduce the recreational use and biodiversity. When the excess plants die and are decomposed, oxygen levels in the water drop dramatically which can lead to fish kills. Additionally, one of the most common impairments in Wisconsin's streams is excess sediment that covers stream bottoms. Since phosphorus moves attached to sediments, it is intimately connected with this source of pollution in our streams. Phosphorus originates naturally from rocks, but its major sources in streams and lakes today are usually associated with human activities: soil erosion, human and animal wastes, septic systems, and runoff from farmland or lawns. Phosphorus-containing contaminants from urban streets and parking lots such as food waste, detergents, and paper products are also potential sources of phosphorus pollution from the surrounding landscape. The impact that phosphorus can have in streams is less apparent than in lakes due to the overall movement of water, but in areas with low velocity, where sediment can settle and deposit along the bottom substrate, algae blooms can result.

Project Description

In 2016, the WAV Program opened funding to active volunteers that were concerned about elevated total phosphorus levels in their local streams. This effort includes first time monitoring of streams for total phosphorus as well as follow up monitoring at sites where our data suggests that there might be an impairment but we do not have the minimum data requirements to make an impairment decisions based on WisCALM guidance.

Photo credits to Matt Berg, David Seligman, Linda Warren, Adrian Konell

Volunteer Monitoring Protocol

To assess in-stream phosphorus levels, WAV volunteers collected water samples that were analyzed for total phosphosphorus (TP) at the State Lab of Hygiene during the growing season (May through October). Following Wisconsin Department of Natural Resources (WDNR) methods, six phosphorus water samples were collected at eash monitoring site - one per month for each of the six months during the growing season. The water samples were collected approximately 30 days apart and no samples were collected within 15 days of one another.

TP Criteria Exceeded   **Watch Waters**   **TP Criteria Met**

A stream site is considered "Criteria Exceeded" if: 1) the lower 90% confidence limit of the sample median exceeds the state TP criterion of 0.075 mg/L or 0.1 mg/L or 2) there is corroborating WDNR biological data to support an adverse response in the fish or macroinvertebrate communities. If there is insufficient data for either of these requirements, more data will need to be collected in subsequent years before a decision can be made. A site is designated as "Watch Waters" if the median total phosphorus concentration falls within the confidence limit and a site is considered to have "Met Criteria" if the upper limit of the confidence interval does not exceed the criterion.

PROJECT PARTNERS

WISCONSIN DEPT. OF NATURAL RESOURCES

Water Action Volunteers

ERC ENVIRONMENTAL RESOURCES CENTER

UW EXTENSION
University of Wisconsin-Extension