

Wisconsin's DRAFT Water Monitoring Strategy 2015 to 2020

Data Management

- State-sponsored work carried out by MR WQ Spec with assistance of MR staff (WQ planner, FH and WM staff).
- LTRM work carried out by La Crosse Field Station which is 100% federally funded by UMR Restoration Environmental Mgt. Program
- Team Leader, WQ spec, Fish spec, Veg spec. and 1 or 2 Techs/LTEs.
- Extensive data QA/QC conducted on an annual basis.
- User-friendly data browser and graphical tools accessible to both professionals and the public.

Program Gaps

While coverage of the main channel is generally comprehensive, thousands of acres of backwaters are not regularly monitored. The LTRMP sampling of Pools 4 and 8 provide a detailed assessment of the state of those specific backwaters as indicator sites. Through what is learned in from the LTRMP, EMAP-GRE, and the Department's lakes, nonwadeable rivers, and wetlands monitoring, a more comprehensive sampling design for the river may be constructed in the future if additional resources become available. Specifically, the following gaps have been identified. An implementation plan for the Mississippi River Monitoring is beyond the scope of this document.

- Need to implement the 2014 coordinated Clean Water Act Monitoring Strategy was endorsed by all five UMRS states (IA, IL, MN, MO and WI).
- Coordinated and consistent monitoring among the states will lead to more consistent and unified assessment and listing of impairment among the states.
- Funding mechanisms need to be identified for this effort.
- Insufficient funding for contaminant monitoring.
- Improvements to enhance the SWIMS and Fisheries data management systems and greater emphasis on training and knowledge to make better use of monitoring data by agency staff and the public.
- WQ assessment procedures need to be developed for off-channel aquatic areas including impounded, backwaters and wetlands.
- Need an improved process for capturing LTRM data and using it for state CWA assessments, including the Section 3.8 Monitoring Strategy for the Great Lakes Program.

Section 3.8 Monitoring Strategy for the Great Lakes

Table 27: Great Lakes Program Primary DNR Monitoring Studies

Study	Purpose: Public Health & Welfare, Fish and Aquatic Life, Recreation, Wildlife
Lake Michigan Major Tributary Phosphorus Loading	The sampling is needed to allow calculation of nutrient loads to Lake Michigan http://dnr.wi.gov/water/projectDetail.aspx?key=590070
Lake Superior Tributary Loading	The sampling is needed to allow calculation of nutrient loads to Lake Superior. http://dnr.wi.gov/water/projectDetail.aspx?key=62786687
Great Lakes Fishery Assessment	Example, Area of Concern: http://dnr.wi.gov/water/projectDetail.aspx?key=100696597
Pathogen Indicator Monitoring	Pathogen Monitoring on Great Lakes Beaches (see Beach Section).
Contaminated Sediment	Evaluation Monitoring and is widespread in the Great Lakes.
Cladophora/Nutrient	Monitoring of near shore waters of Lake Michigan is also conducted as a targeted program.
Public Water Intake monitoring	Lakes Superior and Michigan have 15 public water intakes are monitored using the same protocols as Public Drinking Water Well Monitoring.

Study Descriptions

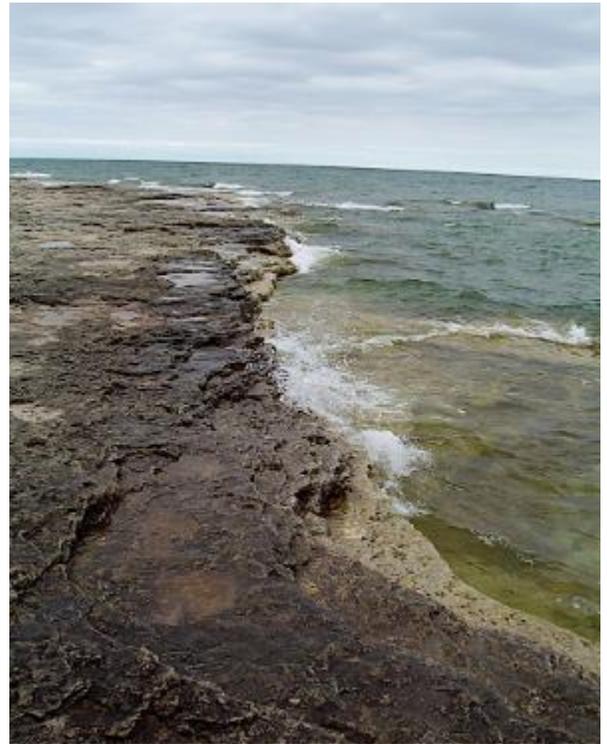
Lake Michigan Major Tributary Phosphorus Loading

Lake Superior Phosphorus Loading Study is designed to study Phosphorus loads to Lake Superior from major tributaries. Four tributaries will be monitored for nutrients and total suspended solids. These tributaries represent various land uses and a portion of Wisconsin's drainage areas in the Lake Superior basin. DNR staff will collect up to 25 water samples annually from locations towards the mouth of each tributary for analysis of at the Wisconsin State Lab of Hygiene (WSLH).

The objective is to obtain long term information about trends in phosphorus loading to Lake Superior from the tributary rivers in Wisconsin. Where discharge data is available it has been used to establish a combination of monthly sampling with flow proportional sampling protocol.

The project collects samples for the Lake Superior Tributary Phosphorus project year round, including during spring months and high flow events. The project design is detailed in the Lake Superior Phosphorus Loading project. The sampling is needed to allow calculation of nutrient loads to Lake Superior.

<http://dnr.wi.gov/water/projectDetail.aspx?key=62786687>



Great Lakes Shoreline

Lake Michigan Phosphorus Loading Study is designed to study Phosphorus loads to Lake Michigan from major tributaries. Approximately 24 samples are collected on a flow weighted basis from 5 major tributaries. Rivers included in the study are the Menominee, the Fox, the Manitowoc, the Sheboygan and the Milwaukee. The objective is to have long term information about the trends in phosphorus loading to Lake Michigan from the rivers contributing the majority of the phosphorus. Data collection began in 2006. We are working with the USGS to calculate initial phosphorus load calculations for the tributaries included in the study. <http://dnr.wi.gov/water/projectDetail.aspx?key=590070>

Great Lakes Fishery Assessment

Monitoring conducted to ascertain the health of the Great Lakes fishery.

- ▶ <http://dnr.wi.gov/topic/fishing/lakesuperior/>
- ▶ <http://dnr.wi.gov/wnrmag/2012/12/salmon.htm>
- ▶ <http://dnr.wi.gov/news/weekly/article/?id=1649>
- ▶ <http://dnr.wi.gov/wnrmag/2011/10/gift.htm>

Pathogen Indicator

<http://dnr.wi.gov/topic/beaches/>

Monitoring data collected through the [Beach Health Program](#), state parks monitoring and through local, state and federal partners provides the basis for assessment of beach conditions in relation to the state's water quality standards. Wisconsin lists and delists beach sites based on assessment protocols outlined in its [Wisconsin Assessment and Listing Methodology \(WisCALM\) \[PDF\]](#). The DNR uses these procedures to determine whether a beach is impaired.

Contaminated Sediment

- ▶ <http://dnr.wi.gov/topic/surfacewater/swims/greatlakesdata.html>

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Cladophora/Nutrient

In spring 2004, the Wisconsin DNR initiated a Cladophora Working Group to address the nuisance algal problem on Lake Michigan. The group's objectives include researching environmental factors causing the algal blooms to assist with developing long-term management plans, identifying short-term beach clean-up and odor mitigation options, and addressing public information needs. The Cladophora Working Group collaborates with others, including the University of Wisconsin-Extension, University of Wisconsin-Milwaukee's WATER Institute, UW Sea Grant, county health departments, and Centerville Cares, a Manitowoc County citizen's organization. This monitoring depends on the available resources and positions allocated through state and federal funding.

Public Water Intake Monitoring

- ▶ <http://dnr.wi.gov/topic/drinkingwater/ereportpublic.html>



Section 3.9 Source Water Assessment Monitoring

Table 28: Source Water Assessment Monitoring Studies

Study	Purpose, Supports: Public Health & Welfare, Fish and Aquatic Life
Lake Winnebago Assessment Monitoring	Develop a plan to routinely assess drinking water uses of Lake Winnebago, which was a recommendation from the US EPA Region 5 sponsored Public Water Supply Designated Use Assessment Workshop with Wisconsin DNR staff held in fall 2014. Meet the goals and requirements of the CWA as they relate to the Public Health and Welfare Designated Use.
Public Water Intake monitoring (See Great Lakes Monitoring)	Lakes Superior and Michigan have 15 public water intakes that are monitored according to the Safe Drinking Water Act, using the same protocols as Public Drinking Water Well Monitoring.

Study Descriptions

Lake Winnebago

Study objectives

The goal of this project is to develop a long term monitoring and assessment strategy for Lake Winnebago that addresses recreational, public health, and drinking water uses of the lake, with a particular focus on Harmful Algal Blooms and associated toxins. This work will also allow DNR to explore how to implement results from various studies that demonstrate linkages with commonly measured nutrient parameters, specifically Chlorophyll-a, to post-