

AQUATIC MONITORING PROGRAM – FAQs

Monitoring Our Waters. NEW Water's Aquatic Monitoring Program (AMP) has been collecting data on Northeast Wisconsin's waters since 1986, which has been shared with academia, governments, nonprofit organizations and other water quality entities regionally, nationally, and internationally. This dataset is one of the most extensive water quality datasets on the Great Lakes. In 2014, the program collected 277 samples and analyzed for 13 parameters in the Lab, for a total of 3,685 samples collected and analyzed. AMP continues to collaborate in grants and projects to stay connected with current research and water quality issues in Green Bay and the Great Lakes region.

Frequently Asked Questions:

What does AMP study?

- NEW Water's AMP has collected data on nutrients, contaminants, numerous physical parameters such as dissolved oxygen and temperature, light, suspended solids, and algal concentrations.

Isn't water quality improving in Green Bay?

- Since the passing of the Clean Water Act in 1972, industry has greatly improved the quality of their effluent into local waters. As such we have seen reductions in contaminants. The community is in final stages of a one billion dollar PCB clean-up project in the Fox River and great strides have been made in habitat restoration efforts along the Bay. The remediation of these issues has highlighted a larger issue of excess nutrient and sediment loading from our watersheds resulting in maintained poor water quality.

How is the health of the lower Green Bay?

- Water quality is improving; however there are still some *E. coli* concerns in algal mats that build up along shorelines. There are also toxins that can be produced by harmful algal blooms that if ingested can cause a health risk.

What is a "dead zone"?

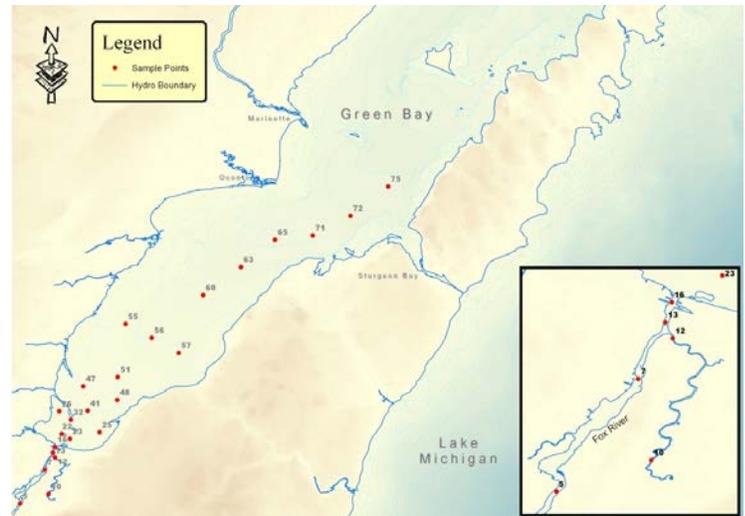
- A better term is "hypoxic zone" meaning without sufficient oxygen. Every year there are temporary regions in the bay of Green Bay that see periods of little to no oxygen during the summer months.

What do we know about these "hypoxic zones"?

- They are caused by excess nutrients from urban and rural inputs entering an already nutrient rich system causing nuisance and sometimes harmful algal blooms. These blooms then sink to the bottom where they are consumed by bacteria that use oxygen and expel carbon dioxide. These organisms can do this at a rate quicker than the oxygen can be re-incorporated, thus creating low oxygen regions.
- The physical parameters that allow for mixing and water movement are determined by the hydrodynamics of Green Bay as well as Lake Michigan. All of which are linked to changing regional weather patterns.
- The number of days with low oxygen levels is increasing each year.
- We are observing two distinct patterns in location. One region develops in July along the south eastern portion of Green Bay. A second region then develops in the central mid-bay area of Green Bay in August and into September.

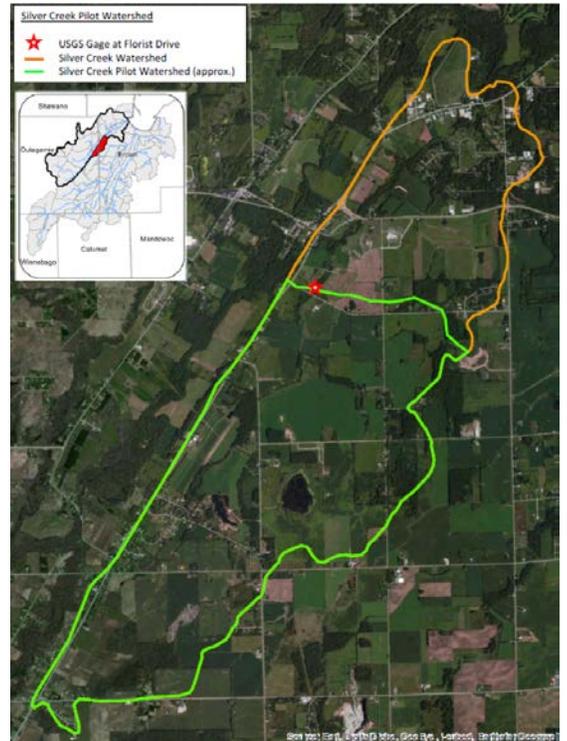
We have an excellent walleye fishery, and there's a "hypoxic zone"? How is this possible?

- Decreased contamination, improved spawning habitat, and stocking have helped game fish populations grow. Game fish are large enough to swim out of these hypoxic regions. Other fish such as the round goby or sculpin are bottom dwellers and have been observed beaching themselves in search of more oxygenated waters.



ADAPTIVE MANAGEMENT – FAQs

Striving to meet environmental compliance at the lowest possible cost to the community, NEW Water is working in the watershed “outside the fence” as never before. In efforts to reduce nutrient loading into our waters, the Wisconsin Department of Natural Resources (DNR) is implementing more stringent phosphorus discharge requirements for point sources –such as NEW Water. In the Bay of Green Bay, NEW Water is responsible for less than 3% of the total phosphorus loading, with 97% coming from other point sources, storm water, as well as nonpoint sources. To meet new phosphorus requirements, NEW Water would need to construct additional treatment processes which would cost upwards of \$220 million. DNR has offered another option: Adaptive Management (AM), which allows point sources to partner with nonpoint sources to reduce phosphorus. NEW Water has launched AM with a pilot project in Silver Creek, a predominantly agricultural sub-watershed of the Lower Fox River Basin. Over five years, NEW Water and its partners will attempt to reduce total phosphorus in the Creek. Project results may lead NEW Water to a long-term commitment to AM, which could mean cleaner waters for the community.



Frequently Asked Questions:

What is the Silver Creek Pilot Project?

- NEW Water's pilot project will evaluate the feasibility of nutrient and sediment runoff reduction in an agricultural watershed. The project will inventory, monitor, and implement conservation practices.
- Numerous grants and funding support have been contributed that will allow NEW Water and partners to test improved field practices, restore wetlands, and execute more detailed sampling and monitoring.
- About 950 soil samples and 800 water samples were taken in 2014 to serve as baseline data for phosphorus content and source. This data will help landowners identify areas for improvement on their property and select practices best suited to their fields.

Who is NEW Water partnering with on water quality solutions?

- NEW Water is partnering with numerous entities including industry, other wastewater treatment facilities, municipalities, counties, universities, tribes, academia, private agronomists, and agriculture. The Silver Creek Project is primarily an agricultural sub-watershed. Agriculture provides a great opportunity for achieving success in improving water quality.
- Agriculture offers win/win solutions to improve water quality and improve agriculture profitability through conservation practices like nutrient management, in-field practices, and edge-of-field practices.
- A high percentage of phosphorus and sediment delivery to Green Bay occurs from a small number of runoff events in the spring and early summer when the soil is unprotected. Land management practices can help prevent this.
- Partnering with nonpoint sources can yield less costly, and more environmentally sustainable water quality solutions for a community.

Why would a wastewater treatment facility be working outside its facility or service area?

- NEW Water is evaluating nutrient reduction options that have the greatest impact on phosphorus and sediment delivery to Green Bay and are the most cost effective options for its customers.