

Wisconsin's 2024 Water Quality Report to Congress

Executive Summary

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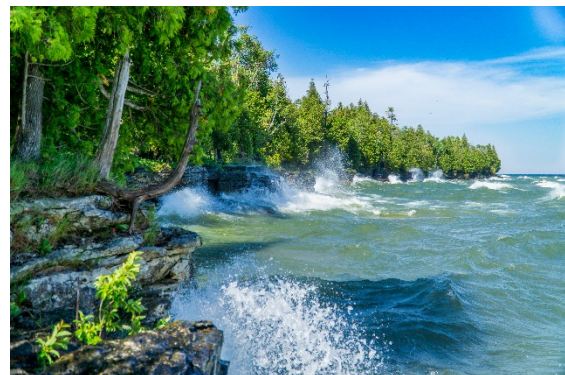
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Previous reports were published in 2022, 2020, 2018, 2016, 2014, 2012, 2010, 2008 (data submittal only), 2006, 2004, 2002, 2000, 1996, 1994, 1992, 1990, 1988, 1987, and earlier. WDNR's earlier documents, prior to 2000, are available for review at the GEF II building, 101 S. Webster Street, Madison. Later versions are available electronically.



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Introduction

Wisconsin is a state bountiful with natural resources, including many and varied lakes, streams, wetlands, aquifers, and springs. Every other year, the Wisconsin Department of Natural Resources (WDNR) provides reports on the quality of the State's water resources to the United States Environmental Protection Agency (EPA), which in turn, shares this information with the United States Congress. The information provided may be considered as a tool for rule making, budget appropriations, and program evaluation by federal legislators.

Key Findings

- 82% of evaluated waters are healthy, by waterbody/ assessment unit (AU) count (Figure 2).
- 84 listings on 82 waters were added to the Impaired Waters List and Restoration Waters List.
- Top four newly listed pollutants: phosphorus (43%), aquatic plants (19%), E. coli (11%), and PFOS (11%).
- 38 listings were removed, and 89 listings were covered by the newly approved Northeast Lakeshore TMDL.

Wisconsin's Water Quality

There are over five and a half million people in Wisconsin that share the state's bountiful water resources. Wisconsin has approximately 1.2 million lake and impoundment acres and approximately 88,000 river and stream miles. Despite the abundance of water resources in Wisconsin, many are threatened by human-induced stressors.

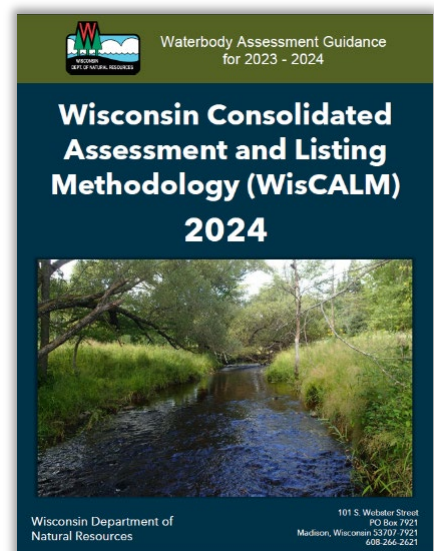
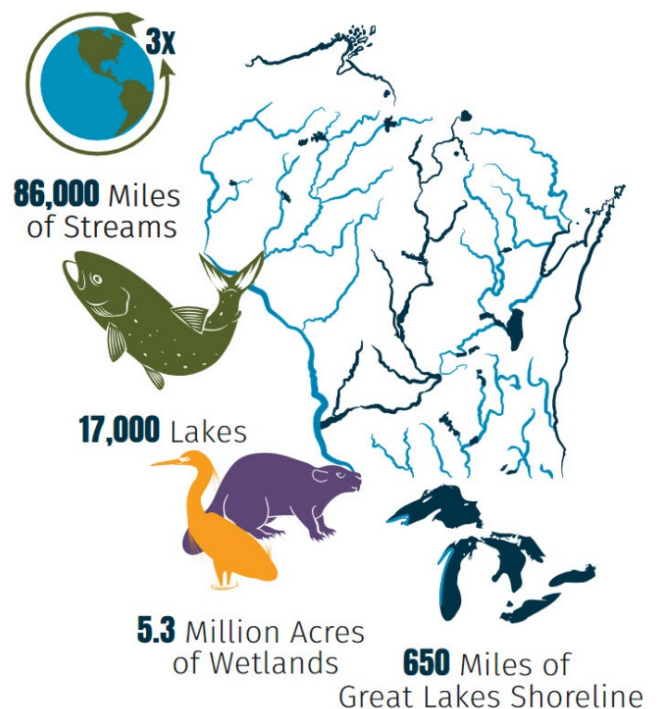
Data Used for Assessments

Waters were assessed using quality-assured data originating from WDNR's monitoring program, county and state partners, university partners, and the public. All data used for assessment met WDNR's quality assurance requirements and local WDNR staff determined whether available data were representative of a water's condition.

Assessment Methodology

WDNR built upon its 2022 assessment methodology work by creating a revised [Wisconsin Consolidated Assessment and Listing Methodology \(WisCALM\)](#) to conduct assessments in 2024 for determining the attainment of designated uses. The most significant updates were:

- Changed the "Healthy Waters" list to "Waters Attaining Standards".
- Changed the "Restoration Waters" list title to "Waters In Restoration".
- Surface water thresholds for PFOS and PFOA; published August 2022.
- Biological assessment thresholds; published October 2022.



Assessed Parameters

Trophic State Index (TSI) is the single most assessed parameter across the state (Figure 1); this is made possible by the combination of multi-year satellite lake image processing and volunteer clarity sampling (secchi and chlorophyll-a). The high percentage of assessed lakes can be in part attributed to general assessments based on TSI.

Combined bioassessments of fish and macroinvertebrate ('bug') communities account for the most evaluated parameters in rivers and streams. The number of AUs with these parameters meeting criteria far outweighs those where they did not meet criteria (Degraded Biology, Figure 1).

Total phosphorus is the most evaluated chemical parameter. WDNR released its [Nutrient Reduction Strategy](#) in 2013 and the numeric water quality criteria for assessments were established in 2010. The combination of focus and benchmarks allowed for many AUs to be evaluated for phosphorus, with about half not meeting criteria.

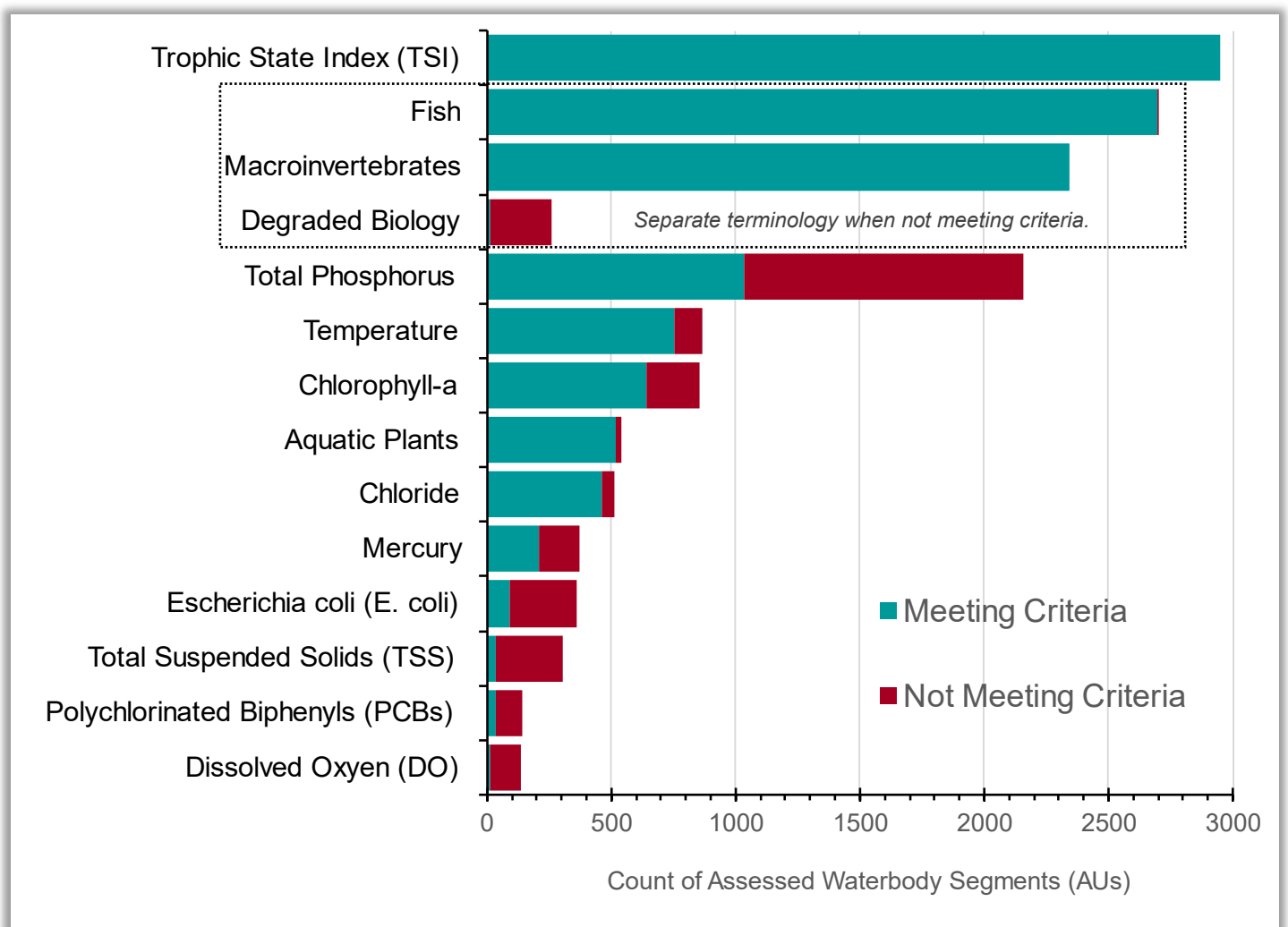


Figure 1. The most assessed parameters by count of assessment units (AU); only showing those with more than 100 AUs. These parameters were largely assessed over the course of five cycles (2014 – 2024); unless new information is collected a parameter's status determination is kept cycle to cycle. Parameters not meeting criteria have assessments back to the 1998 cycle. Degraded Biology is a listing term used for fish and/or macroinvertebrate bioassessments that did not meet criteria.

2024 Water Condition Lists

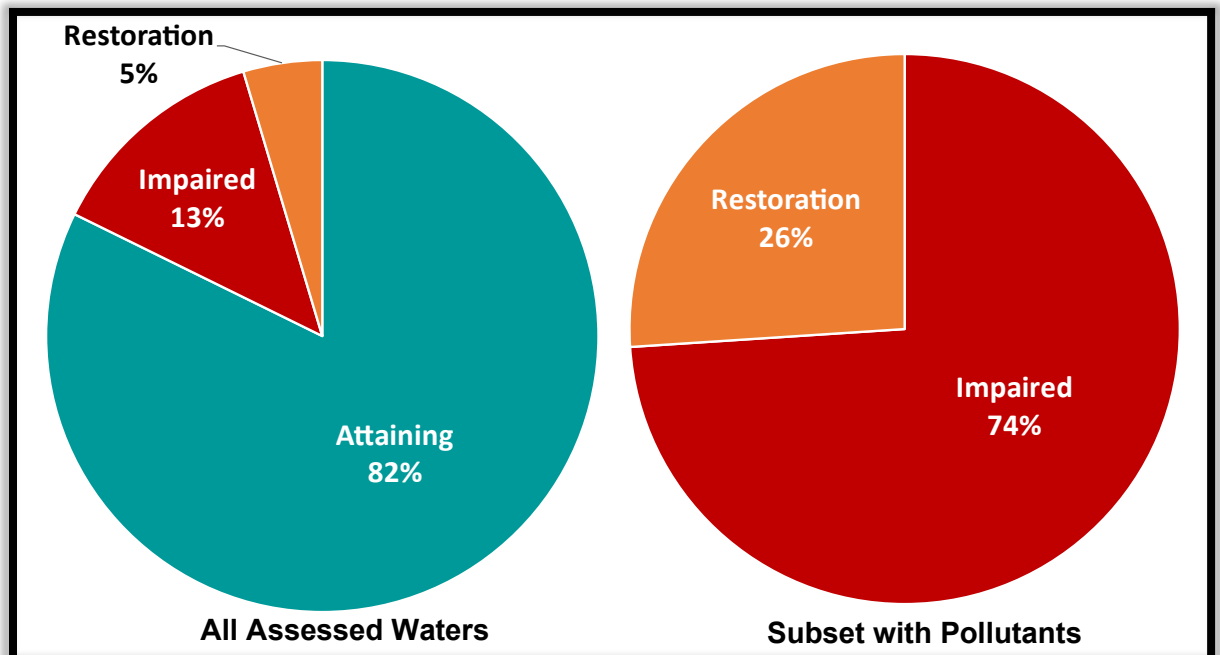
These Water Condition Lists serve as a record of water quality across the state and are a starting point for water resource management. Changes in the Water Condition Lists are the result of restoration planning work, advances in monitoring and assessment technology, additional monitoring data, and water quality restorations.

In the 2024 cycle the list with the greatest net increase was the Waters Attaining Standards List (Table 1). General assessments of biology on newly sampled waters contributed to this increase. The majority of AUs, 82%, are on the Waters Attaining Standards List (Figure 2). This cycle the official Impaired Waters List (CWA 303(d) List) had a net decrease in AUs and listings. This shift is mainly due to the approval of a large basin TMDL, moving many waters and listings to the Waters In Restoration List.

2024 Water Condition List	# Waters Net Change	# Listings Net Change
Attaining	7,934 +197	NA
Impaired	1,265 -35	1,491 -51
In Restoration	444 +67	671 +103

Table 1. Summary of AUs and listings counts on each of the Water Condition Lists.

Figure 2. Percentage of assessed AUs on each list. Of the AUs with a pollutant listing, 31% have a restoration plan.



Waters Attaining Standards List

The Waters Attaining Standards List (formerly named Healthy Waters List) contains 82% of assessed waters. A total of 230 waters were newly assessed and determined to be on the attaining standards. There were 205 river and stream segments evaluated with biotic indices, phosphorus, chloride, or temperature data. There were 24 lakes, reservoirs, and impoundments evaluated for multiple parameters and 1 beach evaluated for E. coli.

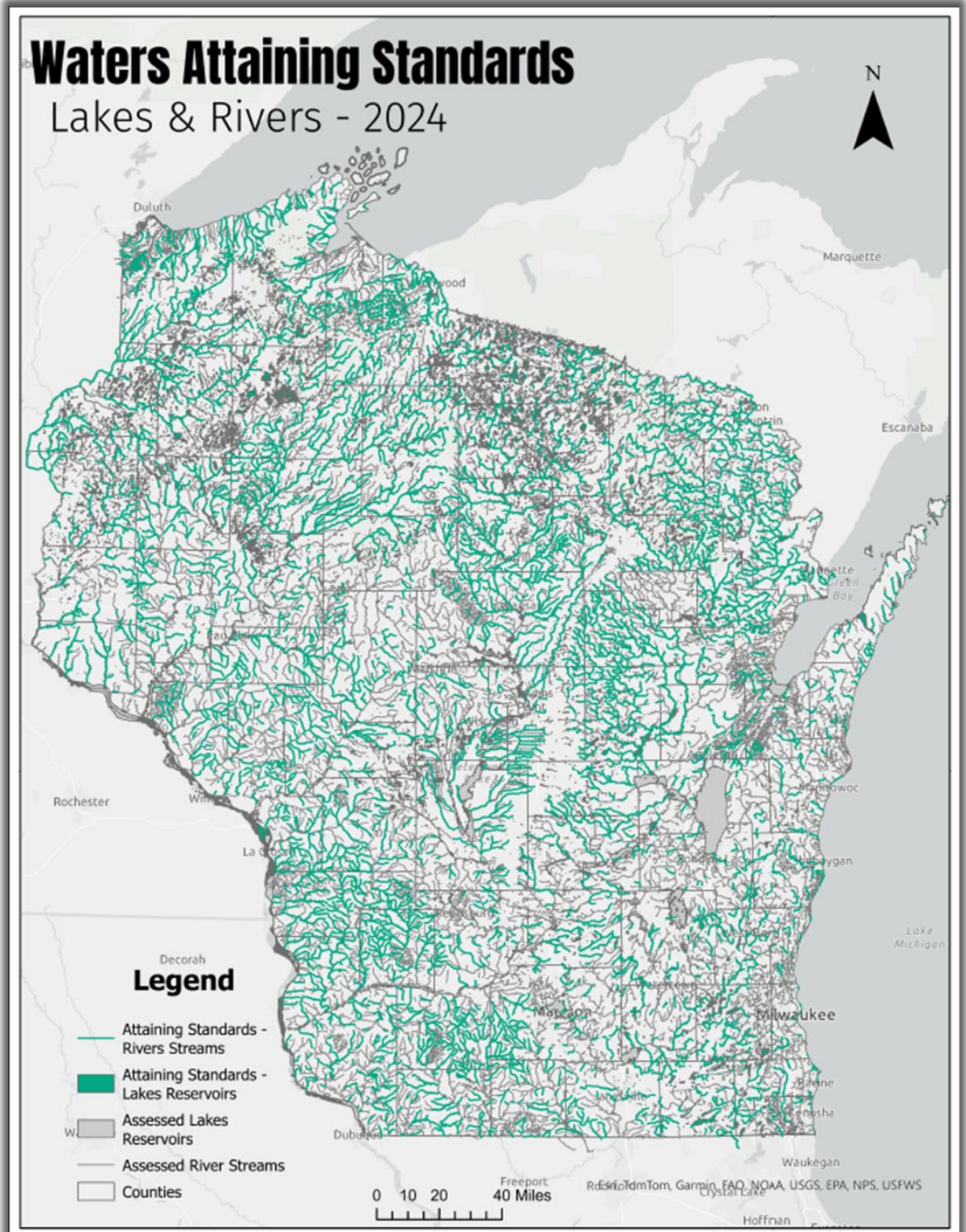


Figure 3. Location of all waters on the Waters Attaining Standards List across the state of Wisconsin.

Impaired Waters List

The majority of pollutant listings, nearly 50%, are for phosphorus (Nutrients in Figure 4). This corresponds with the state's focus on nutrient reduction in our waterways (see [Wisconsin's Nutrient Reduction Strategy](#)).

Mercury and PCBs are at the next highly listed pollutants (Figure 5). The majority of these are based on fish consumption advisories.

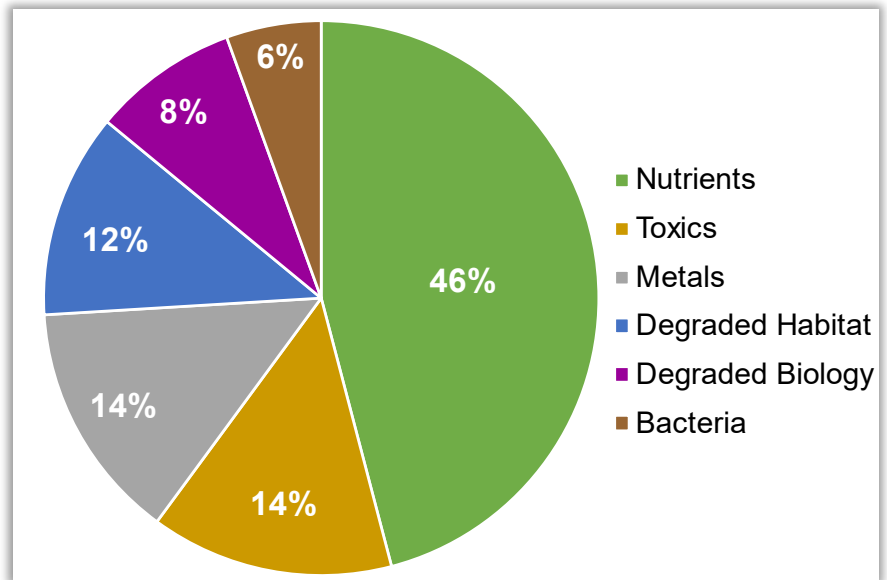


Figure 4. Types of listings on the 2024 Impaired Waters List.

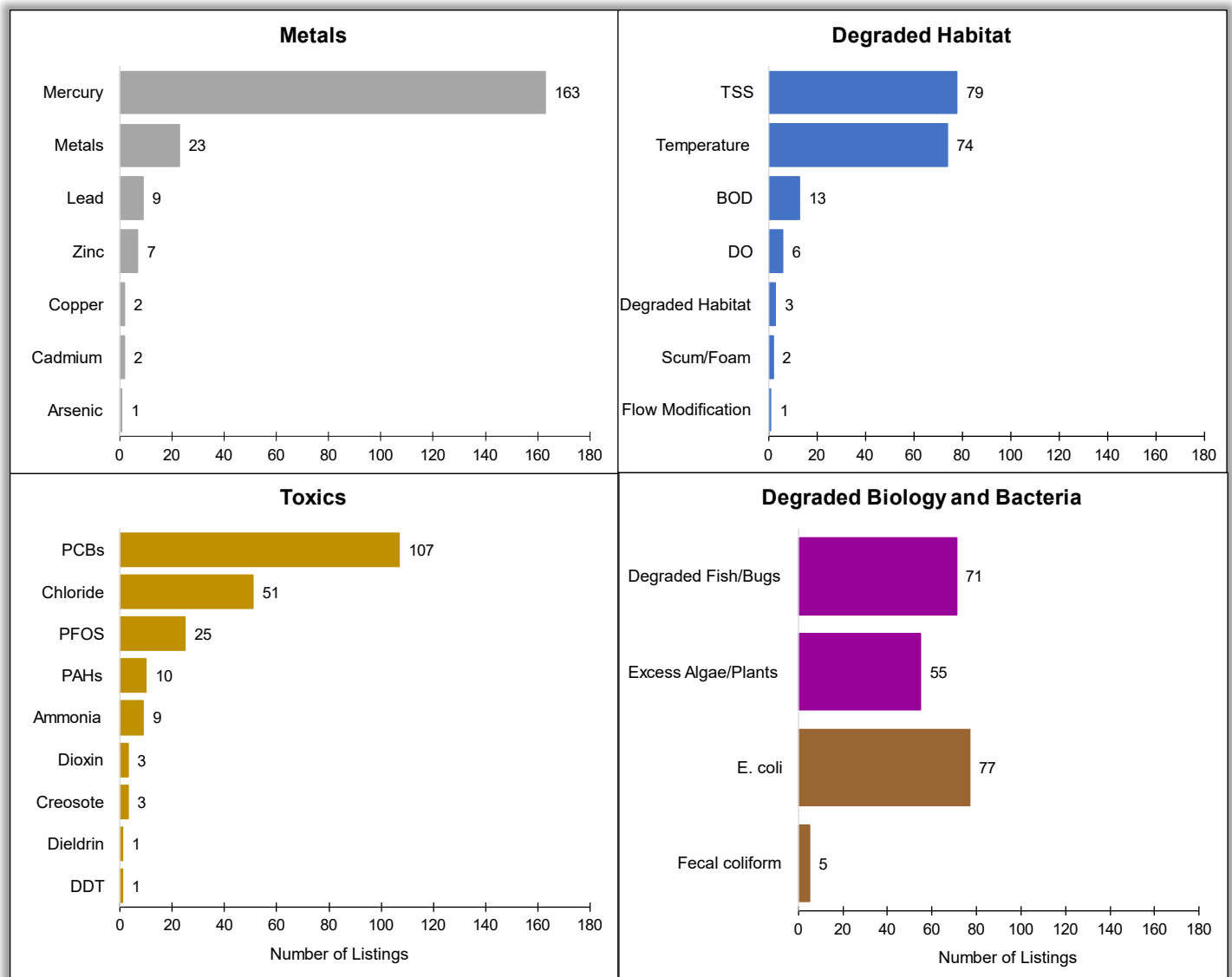


Figure 5. Breakdown of pollutants in each group on the 2024 Impaired Waters List. Degraded Biology listings are those with an Unknown Pollutant.

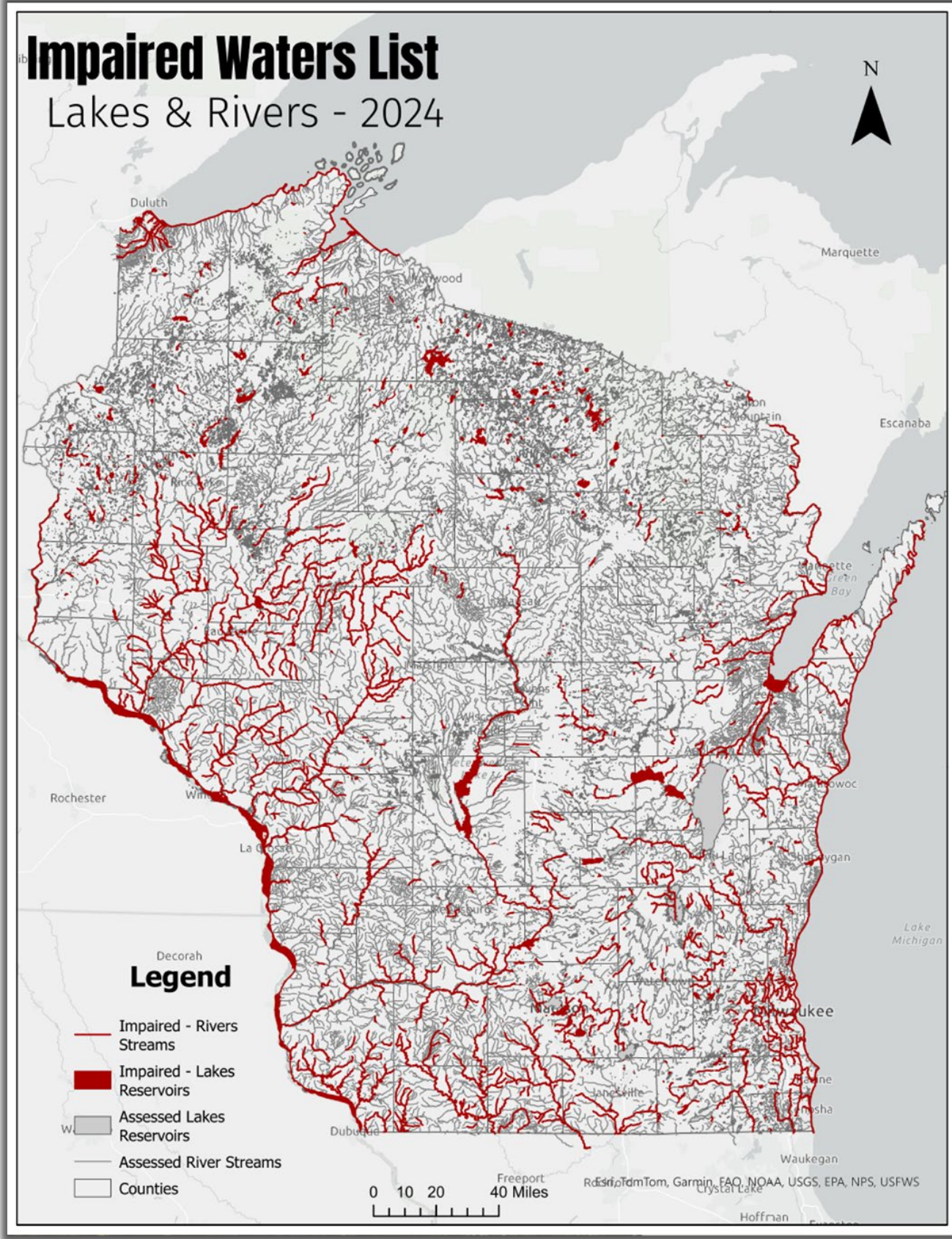


Figure 6. Location of impaired waters across the state in the 2024 cycle

Restoration Waters List

Phosphorus (Nutrients) and TSS (Degraded Habitat) make up the majority of parameters covered by TMDLs (Figure 7). The majority of additions to the Waters In Restoration List, 88 listings, were waters within the Northeast Lakeshore TMDL. Several new listings were added to three existing, and one recently approved, basin TMDLs: Milwaukee River, Wisconsin River, and Upper Fox-Wolf River.

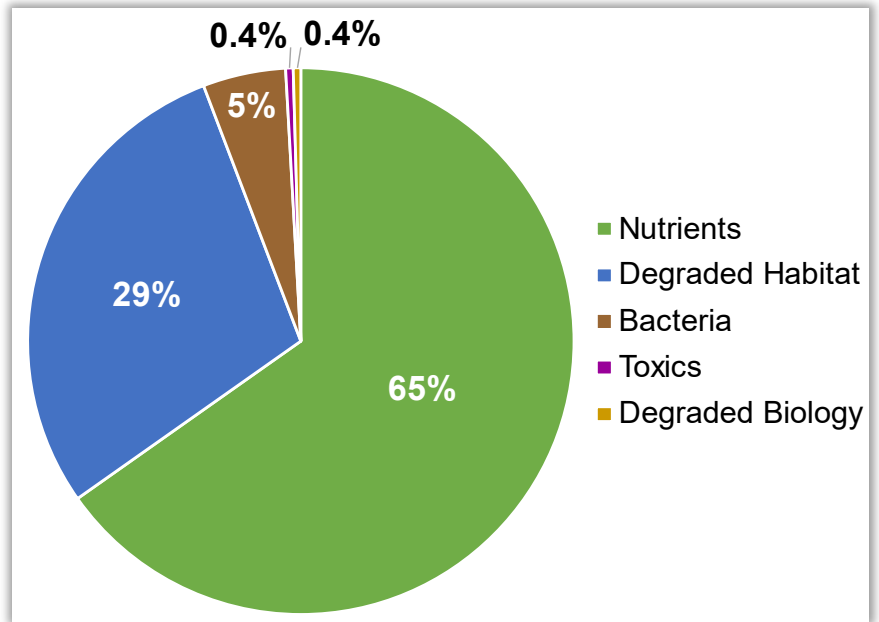


Figure 7. Types of listings on the 2024 Waters In Restoration List.

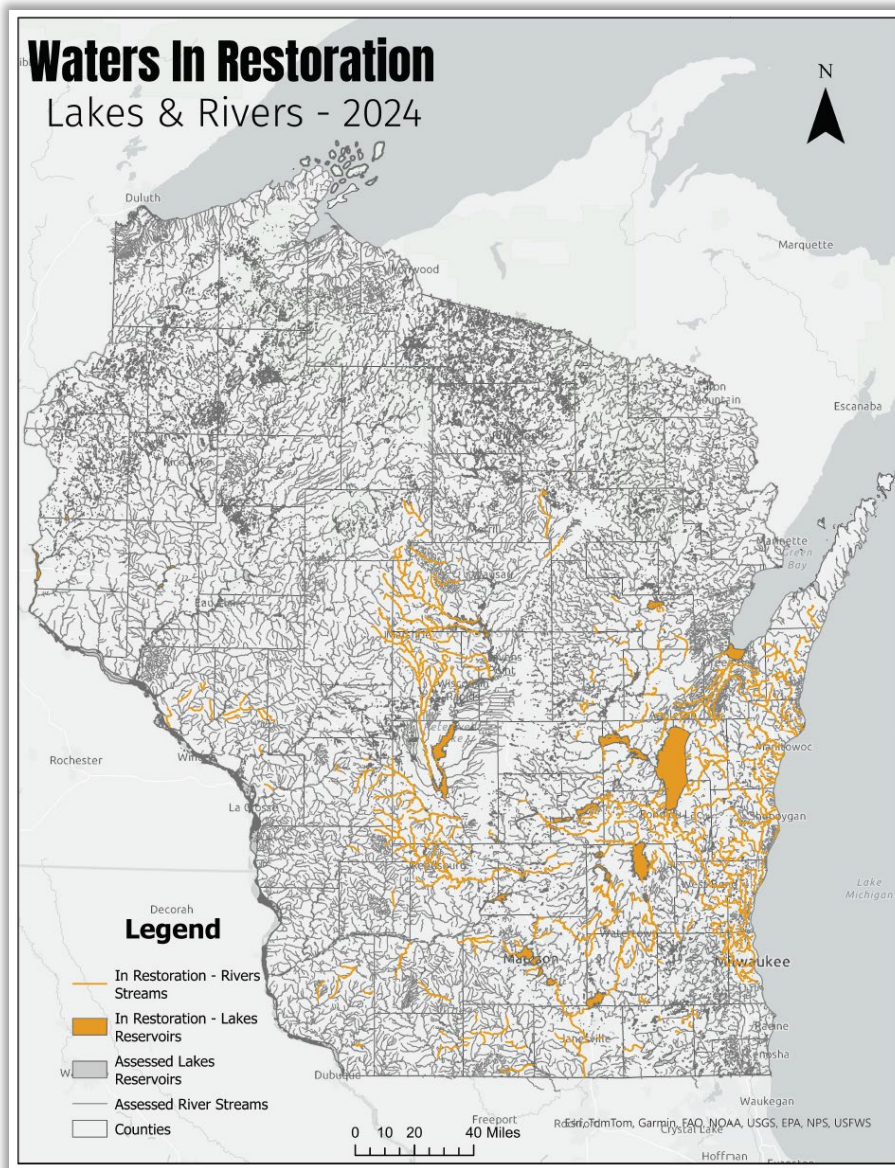


Figure 8. Location of waters on the Waters In Restoration List across the state in the 2024 cycle.

New Pollutant Listings

In the 2024 assessment cycle there were 85 listings added to the Impaired and Restoration Waters Lists (Table 2). Figure 9 breaks down the listings by parameter and the available restoration plans (Nine Key Element Watershed Plan or a Total Maximum Daily Load (TMDL)). There were 8 listings with a Nine Key Element Plan, part of the Impaired Waters List. There were 16 listings that were part of existing TMDLs, making them part of the Waters In Restoration List.

Table 2. Number of new waterbodies and listings add during the 2024 assessment cycle.

2024 Water Condition List	# New Listings
Impaired	69
In Restoration	16

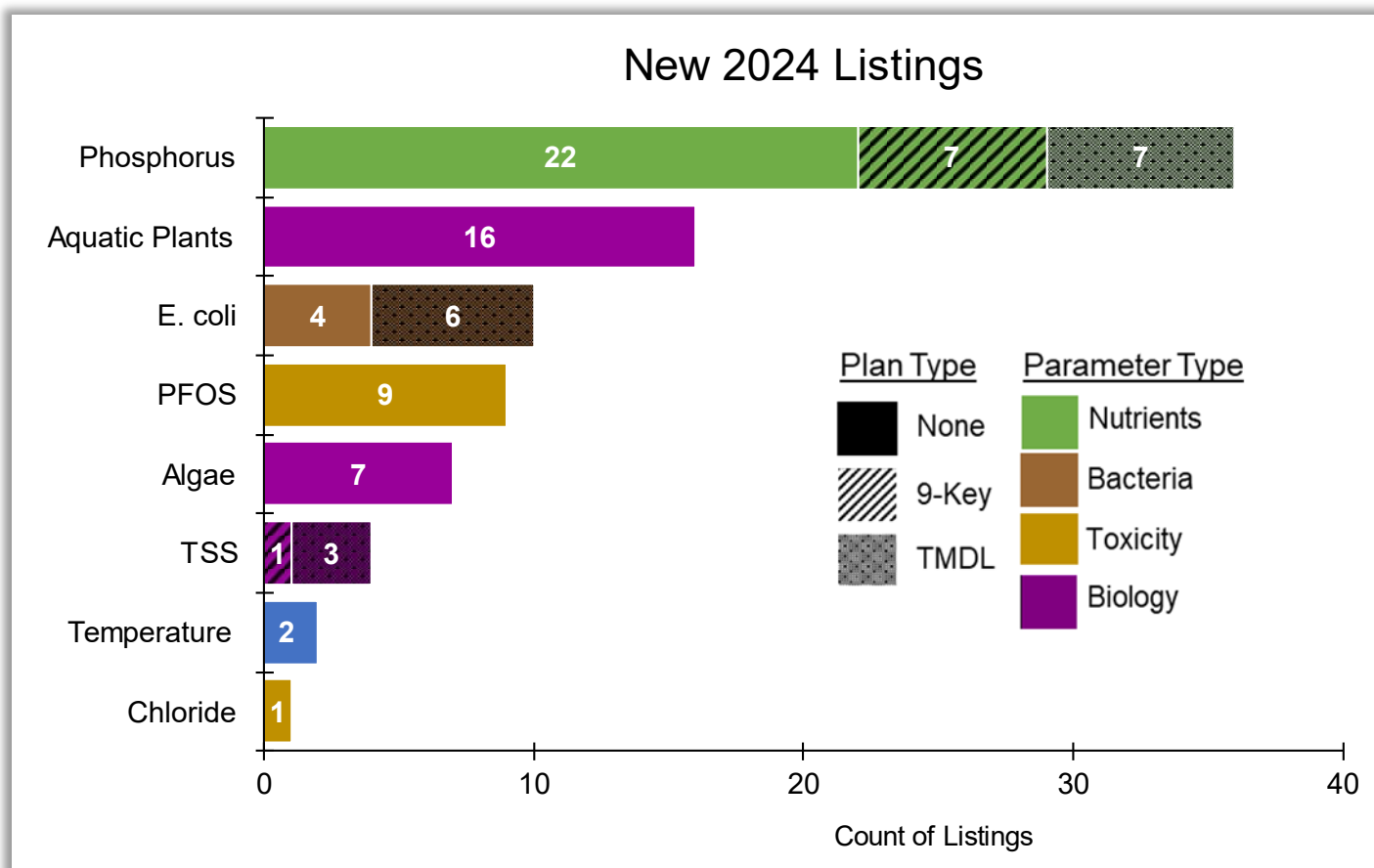


Figure 9. Number of new listings by parameter with available plan type applied.

New Listings in TMDL Areas

Sixteen of the new listings were in basins with TMDLs (Table 3). The four basin TMDLs where allocations were already sufficiently outlined for newly listed waters were the Milwaukee, Upper Fox-Wolf, Wisconsin, and the Northeast Lakeshore. Appendices were made for each basin TMDL, to outline which waters were now included and which allocations applied: [Milwaukee River Basin TMDL](#), [Wisconsin River Basin TMDL](#), [Fox-Wolf Basins TMDL](#), and [Northeast Lakeshore TMDL](#). These appendices were given to the public for comment prior to review and approval by EPA. This was the second assessment cycle where TMDL updates were included in the process.

Table 3. New 2024 listings within TMDL areas.

Waterbody Name	WBIC	WDNR AU ID	EPA AU ID	Pollutant	Impairment(s)	TMDL Basin
Kinnickinnic River	15100	9974	WI10008007	E. coli	Recreational Restrictions - Pathogens	Milwaukee River Basin
Kinnickinnic River	15100	3899425	WI10027436	E. coli	Recreational Restrictions - Pathogens	
Menomonee River	16000	6876527	WI6876528	Phosphorus	Degraded Fish Community	
Menomonee River	16000	10017	WI10026421	E. coli	Recreational Restrictions - Pathogens	
Menomonee River	16000	8104655	WI8104656	E. coli	Recreational Restrictions - Pathogens	
South 43rd Street Ditch	15900	9981	WI10000209	E. coli	Recreational Restrictions - Pathogens	
Wilson Park Creek	15200	9975	WI10000203	E. coli	Recreational Restrictions - Pathogens	
Zablocki Park Creek	5036633	3987849	WI10028282	Phosphorus	Impairment Unknown	
Barr Creek	50200	18212	WI10006211	Phosphorus	High Phosphorus Levels	Northeast Lakeshore
Horseshoe Lake	64200	9853	WI10000119	Phosphorus	Impairment Unknown	
Stony Creek	96100	10219	WI10025681	Phosphorus	Impairment Unknown	
Unnamed	5026964	3992145	WI10028615	Phosphorus	Degraded Habitat, Degraded Biological Community	Upper Fox/Wolf River Basins
Unnamed	5026964	3992145	WI10028615	Total Suspended Solids (TSS)	Degraded Habitat	
Unnamed	147700	5476567	WI10030965	Total Suspended Solids (TSS)	Degraded Habitat	
Unnamed	146900	5476590	WI10030980	Total Suspended Solids (TSS)	Degraded Biological Community	
Webster Creek	1305700	13072	WI10008112	Phosphorus	Impairment Unknown	Wisconsin River Basin

PFOS

Across the state there were several PFOS based fish consumption advisories established based on recent fish tissue sampling (Figure 10). The majority of the new 9 listings were associated with the consumption advisories for Green Bay and its tributaries, issued in January 2022. The waters were added to the Impaired Waters List due to not meeting Fish Consumption use (Table 4).

The new surface water criteria for PFOS were used for assessments; elevated PFOS were identified in Lake Monona and two segments of Starkweather Creek. These waters were already listed for PFOS, but the use Public Health and Welfare was updated to 'Not Supporting'.

Figure 10. Fish consumption advisories for PFOS (yellow) from the 2024 – 2026 “Choose Wisely: A Health Guide for Eating Fish in Wisconsin”.

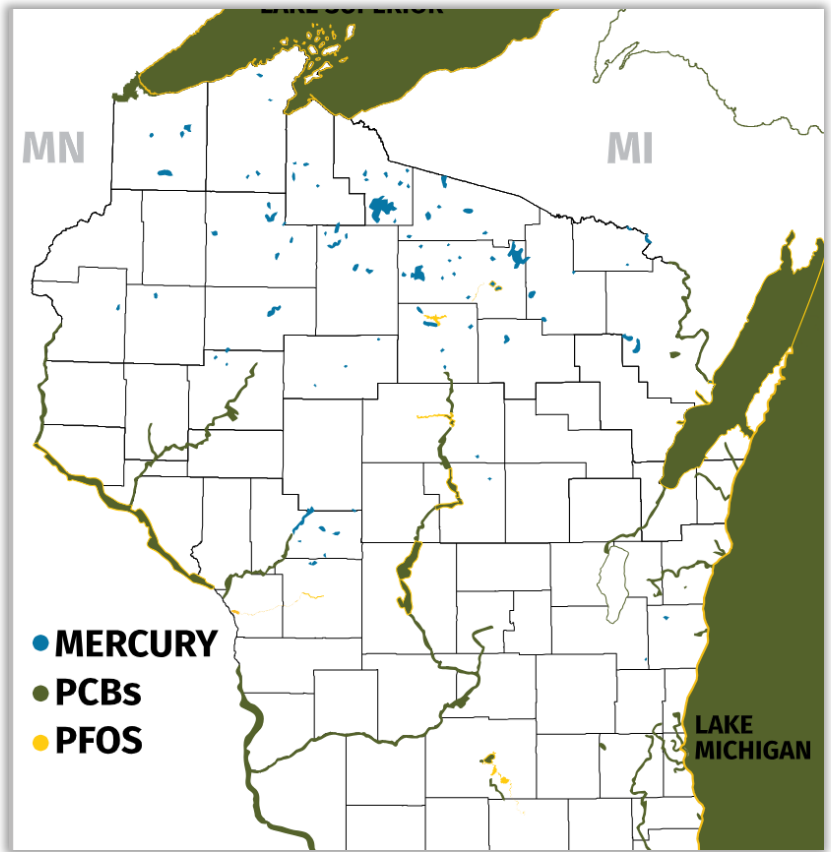


Table 4. Waterbodies with new PFOS based fish consumption advisories and impairment listings.

Waterbody Name	Water Type	Counties	WBIC	WDNR AU ID	EPA AU ID
Angelo Pond	IMPOUNDMENT	Monroe	1660400	14028	WI10003029
Castle Rock Lake	RESERVOIR	Adams, Juneau	1345700	424081	WI10008631
Green Bay (GI Shoreline)	GREAT LAKES SHORELINE	Brown, Door, Kewaunee, Oconto, Marinette	70	483034	WI10008823
Oconto River	RIVER	Oconto	440200	10870	WI10000858
Oconto River	RIVER	Oconto	440200	884729	WI10008824
Peshtigo River	RIVER	Marinette	515500	884803	WI10008826
Menominee River	RIVER	Marinette	609000	12050	WI10026844
Green Bay (Inner Bay, AOC)	BAY/HARBOR	Brown	70	357876	WI10008497
Lake Mohawksin	IMPOUNDMENT	Lincoln	1515400	127977	WI10007160

Pollutant Removals

There were 38 listings removed during the 2024 cycle (Figure 11):

- Over half of the delistings were for phosphorus and the majority of those were lakes.
 - Nine lakes were delisted and placed on the Waters Attaining Standards List.
 - Five lakes remain listed for degraded biology (algae or plant community).
 - Four lakes only have a mercury listing remaining (5B).
 - One lake only has a PCBs listing remaining.
- Seven delistings were for lakes with excess algal growth without elevated phosphorus; all were added to the Waters Attaining Standards List.
- Four Great Lake Beaches, three on Lake Michigan and one on Lake Superior, met bacteria standards and were moved to the Waters Attaining Standards List.
- Two streams in the Milwaukee area were delisted for Chloride.
- One lake delisted for phosphorus was also delisted for mercury based on new fish tissue samples.

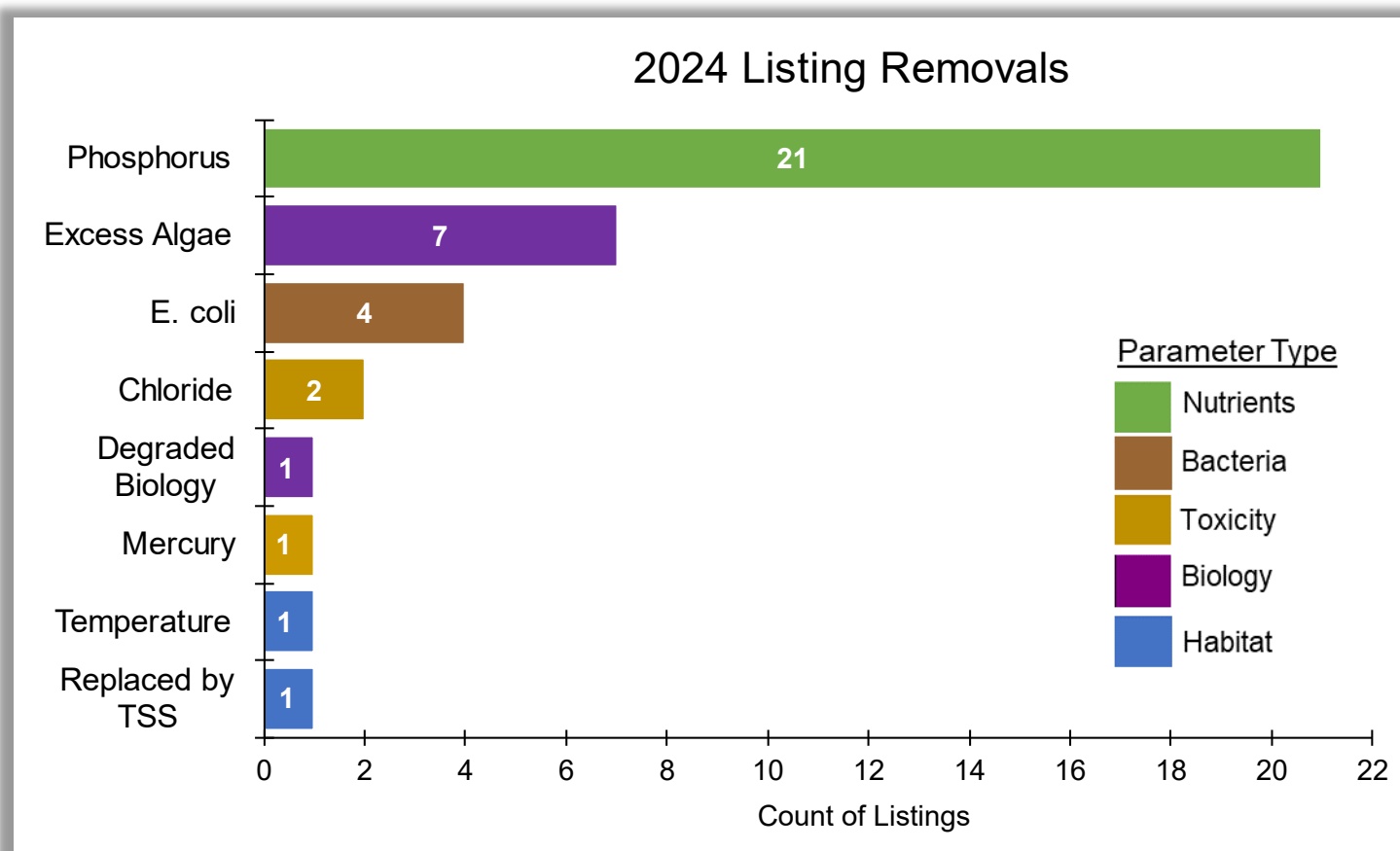


Figure 11. Listings removed in the 2024 cycle

Dead Pike Lake, Vilas County

Dead Pike Lake (DPL) is a 308.6-acre lake in Vilas County in northern Wisconsin. The lake is bordered by private residences, the Powell Marsh State Wildlife Area (PMSWA) and Northern Highlands American Legion State Forest with state lands covering about 60% of the shoreline. Dead Pike Lake is managed through a partnership between the Dead Pike Lake Association (DPLA), the Town of Manitowish Waters, and the WDNR.

Dead Pike Lake was placed on the Impaired Waters List in 2016 for total phosphorus. The listing was confirmed in the 2018 cycle with even higher phosphorus levels. A management plan was finished in 2018, with the goal of reducing phosphorus and iron loading to the lake.

The mean phosphorus level has decreased since 2018, and phosphorus levels are now clearly below the criterion for the first time. Additionally, chlorophyll-a is consistently low and aquatic plant surveys from 2017, 2020, and 2021 showed plant communities in good condition. Oxygen and temperature profiles from 2020 and 2021 indicate sufficient habitat for cisco, a coldwater fish species in the lake. New water column mercury data from 2020 and 2021 and previous fish tissue data showed that mercury levels also attain criteria. Though high iron and manganese have been found in the lake, toxicity tests in 2017 did not find negative impacts on aquatic organisms.

Based on this new and existing information we can conclude that Dead Pike Lake is supporting all of its uses: Aquatic Life, Recreation, Public Health and Welfare, and Wildlife. The delisting of phosphorus and support of all uses changes the lake's categorization from 5A (Impaired Waters) to Category 1, the highest condition possible on the list of Waters Attaining Standards. Dead Pike Lake is the first to be placed in this category for the state.



Dead Pike Lake, August 2013. Photo: Katie Hein

Kentuck Lake, Forest and Vilas Counties

Kentuck Lake, in the Brule River Watershed, is a 1,001-acre lake that falls in Forest and Vilas Counties. Volunteers have been collecting annual water quality data since 1986 and WDNR's long term trend monitoring has been collecting data since 1988. Kentuck Lake was originally placed on the state's Impaired Waters List in 1998 due to mercury concentrations in fish tissue. Phosphorus and excess algal growth listings were added in 2014. The lake had elevated phosphorus every two-year assessment cycle from 2014 to 2022 stemming from poor water quality in 2011, 2013, 2015 and 2016. The Kentuck Lake Protection & Rehabilitation District, with a WDNR grant and a consultant group, created the Kentuck Lake Comprehensive Management Plan in 2015. The goal of the lake management group and the plan was to consider the resource as a whole ecosystem, rather than solely a recreation resource.

The lake has been in a clear water state and meeting phosphorus and chlorophyll water quality standards for aquatic life (AL) use since 2017. Along with lower phosphorus levels, the lake is being managed for a strong walleye population under a joint WDNR-Tribal management plan. This has led to a food-web effect of increasing large Daphnia zooplankton in the lake, which graze on algae and thereby reduce algae levels. This has led to better water clarity and a great improvement and expansion of the aquatic plant community. Additionally, fish tissue samples taken in fall of 2023 had low enough mercury levels to warrant removal of the specific fish consumption guidance and delisting of the mercury impairment.

As a result of these successful management efforts, in the 2024 cycle the impairment listings are being removed for phosphorus, eutrophication, excess algal growth, organic enrichments, mercury, and mercury in fish tissue. This moves it from Category 5A (Impaired Waters) to Category 2A, reflecting that it is attaining all the uses it has been assessed for (Aquatic Life, Recreation, and Public Health and Welfare). Ongoing monitoring will continue to document trends into the future.



Kentuck Lake. Photo: <http://www.kentucklakedistrict.org/index.php/photos/>

Public Participation - Monitoring

Citizens provide a vital resource for gathering water quality data all across the state of Wisconsin. There are multiple programs available for training and monitoring through the DNR, University of Wisconsin, and environmental groups.

Citizen Lake Monitoring Network (CLMN)

Wisconsin's Citizen Lake Monitoring Network (CLMN) provides a bond between the Wisconsin Department of Natural Resources, University of Wisconsin Extension Lakes Program, and about 1,000 volunteer citizens. WDNR and Extension staff provide training, support and equipment, and cover the cost of laboratory analysis of water samples. CLMN volunteers enter their own data into a statewide database, which automatically generates public-facing, annual summary reports for each lake.



In 2023 volunteers gathered monitoring data for 1,031 distinct sites.

In 2023, 862 CLMN volunteers had entered their data into the database as of December 4th, 2023. The Citizen Lake Monitoring Network requests that data be entered by November 1st, but data tend to come in through early spring of the following year for various reasons. Data was entered for 1,031 distinct monitoring sites in 2023, with water clarity data being the most common. Over 500 volunteers also collected data on total phosphorus, chlorophyll-a, and temperature profiles. Wisconsin is very lucky to have such a devoted network of volunteers partnering with the WDNR to monitor conditions on our lakes to provide a wealth of assessment data.

Water Action Volunteers (WAV)

Participants in the Water Action Volunteers (WAV) volunteer stream monitoring program range far and wide across the state of Wisconsin. WAV is a collaboration of the WDNR and the University of Wisconsin–Madison Division of Extension. The participatory science program relies heavily on partnerships with local WAV coordinators at participating organizations to help recruit, train and support volunteers in their local area on the WAV methods. Since its founding in 1996, volunteers have collected data in all 72 counties. In 2023, WAV supported over 600 volunteers and 41 partner groups in stream monitoring statewide.



Volunteers monitor nearly 600 stream sites each year.



Sue Ristow assisting with WAV youth education.

Public Participation - Comment Periods

Public comments were sought during multiple points of the assessment process. These included for updated assessment methods, Wisconsin Consolidated Assessment & Listing Methodology (WisCALM) 2024 Draft, January 12 – February 24, 2023, and the draft 2024 water condition lists, November 6 – December 6, 2023. A [full summary of list comments](#) and [WDNR responses](#) can be found on the WDNR webpage (dnr.wi.gov).

Restoration of Wisconsin's Waters

One of the underlying goals of the Clean Water Act is to restore all impaired waters. Wisconsin uses multiple tools to achieve this goal including TMDLs, Adaptive Management Plans, Water Quality Trading, and sediment remediation, among others.

The most recently approved basin TMDL was the Northeast Lakeshore TMDL in October 2023. The listings associated with this TMDL were categorized as having a restoration plan (Category 4) in the 2024 Water Condition Lists. Work

is ongoing on Wisconsin's next projects which include the Fox-Illinois Basin TMDL and the Lake Pepin TMDL and finalizing Wisconsin's draft 2022 – 2032 Water Quality Restoration and Protection Prioritization Framework (Vision 2.0).

TMDLs in Development

Fox Illinois TMDL

Located in Southeast Wisconsin, this TMDL will cover TSS and phosphorus impairments in the Fox (IL) River, the Des Plaines River, and other smaller basins in the region. River, stream, and lake impairments will be addressed. A multi-year monitoring and data collection effort for the TMDL development process has been completed, and watershed modeling is underway. Stakeholder groups are currently being assembled to provide input and allow for a robust stakeholder process throughout the development process. In addition, the WDNR has evaluated the potential impact of downstream TMDLs located in Illinois immediately south of the Wisconsin border. The Fox River flows into a series of lakes in Illinois that are both listed as impaired for phosphorus and have criteria lower than that of the Fox River and thus must be factored into the TMDL analysis. WDNR is targeting the end of 2025 as a completion date for the TMDL.



Des Plaines River near Highway K crossing.

Lake Pepin TMDL

Located along the Mississippi and above Lake Pepin, this TMDL will address sediment, TSS, and phosphorus reductions needed to meet water quality criteria for contributing waterbodies and targets for Lake Pepin itself. In reviewing the TMDL for Lake Pepin, recently submitted by Minnesota Pollution Control Agency (MPCA) and approved by EPA, WDNR found anomalies in allocations and loadings for the watersheds in Wisconsin that necessitate an update to the analysis. WDNR is incorporating the necessary wasteload allocations identified in the MPCA TMDL and refining the load allocations and reductions that are vaguely laid out in MPCA's TMDL to cover the Wisconsin portion of the Lake Pepin drainage basin. Currently, WDNR is working with an EPA funded contractor to refine the load allocations, develop edge of field targets to aid agricultural implementation, and identify critical areas and fields that could be prioritized for nonpoint implementation. It is expected that this work will be completed in 2023 with the goal of submitting a TMDL to the EPA in 2024 as part of Wisconsin's Bridge Metrics and Commitments to the EPA.



Lake Pepin at sunset.

St. Louis River Watershed and Estuary TMDL

WDNR is providing technical support and modeling review to MPCA for the development of a mercury TMDL for the St. Louis River and Estuary. The TMDL will determine the mercury reductions needed for lakes and rivers in the St. Louis River watershed to meet the water quality standard for mercury and support healthy consumption of fish. Mercury is toxic to humans; people can be exposed when eating fish pulled from waters with mercury contamination. The MPCA is undertaking this TMDL study for many reasons, including the cultural and economic importance of fishing in the watershed and the exercise of tribal treaty rights. The St. Louis River forms part of the border between Minnesota and Wisconsin and both states have a shared interest in addressing the mercury impairments.



St. Louis River Estuary Source: St. Louis River Alliance

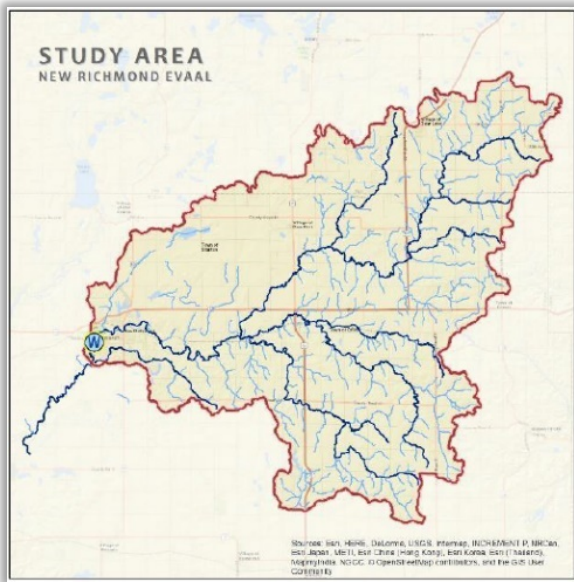
Adaptive Management

Adaptive management is a phosphorus compliance option that allows point and nonpoint sources (e.g. agricultural producers, storm water utilities, developers) to work together to improve water quality in those waters not meeting phosphorus water quality standards. This option recognizes that the excess phosphorus accumulating in our lakes and rivers comes from a variety of sources, and that reductions in both point and nonpoint sources are frequently needed to achieve water quality goals. By working in their watershed with landowners, municipalities, and counties to target sources of phosphorus runoff, point sources can minimize their overall investment while helping achieve compliance with water quality-based criteria and improve water quality.

The new plan for New Richmond targets a total phosphorus reduction of 2,300 lbs/year.

Throughout the 2022-2023 biennium, 21 WPDES permittees continued to implement adaptive management efforts in their local watersheds. WDNR approved one new adaptive management plan, in 2022, led by the City of New Richmond. The plan commits to a total phosphorus reduction of 2,300 pounds/year to be achieved within four WPDES permit terms. This magnitude of nonpoint source reduction is estimated to be sufficient to achieve the phosphorus criterion in the Willow River. Phosphorus reductions will be achieved via streambank stabilization, harvestable buffers, and barnyard practices installed at prioritized high-loading sites. Partners include the Saint Croix County Land Conservation Department, Trout Unlimited – Kiap TU Wish Chapter, and the Dry Run Farmer Led Group.

All permittees engaged in adaptive management monitor the receiving water to track implementation progress, which is reflected in monitoring requirements found in the WPDES permit. New partnerships between municipalities, agricultural producers, and environmental organizations have formed around adaptive management, as common restoration interests bring resources to the table to achieve common goals.



New Richmond's adaptive management action area encompassing the Willow River Watershed.

Water Quality Trading

Water Quality Trading (WQT) may be used by WPDES permit holders to demonstrate compliance with WQBELs. Generally, water quality trading involves a point source facing relatively high pollution reduction costs compensating another party to achieve a less costly pollution reduction with the same or greater water quality benefit. In other words, water quality trading provides point sources with the flexibility to acquire pollutant reductions from other sources in the watershed to offset their point source load so that they will comply with their own permit requirements. In Wisconsin, stringent phosphorus and TSS limits drive interest in WQT. Agricultural sources of phosphorus and TSS are prevalent in many Wisconsin watersheds. As such, the majority of trades involve nonpoint source pollutant reductions.

A total of 13 plans were approved, many focusing on streambank stabilization.

Statewide, WPDES permittees and their consultants are gaining experience in establishing relationships with credit generators, quantifying nonpoint source pollution offsets, and executing projects in tandem with permit deadlines. At the conclusion of 2023, over 70 permittees formally indicated that WQT will be used to comply with phosphorus limits. Of these, 59 permittees have submitted an approvable water quality trading plan to WDNR. During the 2022-2023 biennium, 13 new water quality trade plans were approved.

In March of 2023, the Wisconsin Department of Administration formally selected a third party to operate the state's first water quality trading clearinghouse, as authorized under s.



Nature Preserve. Photo: Katherine Murray, 2016

16.9685, Wis. Stats. The Clearinghouse is intended to serve as a hub for credit generators and buyers to facilitate water quality trading amongst more parties. The Clearinghouse entity, Wisconsin Clearinghouse LLC, has created an [online portal](#) to display available credits and handle transactions.

Projects designed to reduce nonpoint source pollution for WQT purposes provide several ancillary benefits. A commonly employed WQT practice, conversion of fields from high-intensity agriculture to perennial prairie vegetation, may also provide atmospheric carbon sequestration, habitat for insects and wildlife, and improve hydrology. Pollutants other than the traded pollutant, such as nitrogen and sediment, may also be kept from entering waterways. Projects occurring in years 2022 and 2023 restored hundreds of acres of perennial vegetation and resulted in adoption of lower-impact agricultural practices (e.g. cover crops, no-till, or nutrient management). Nine water quality trades restored

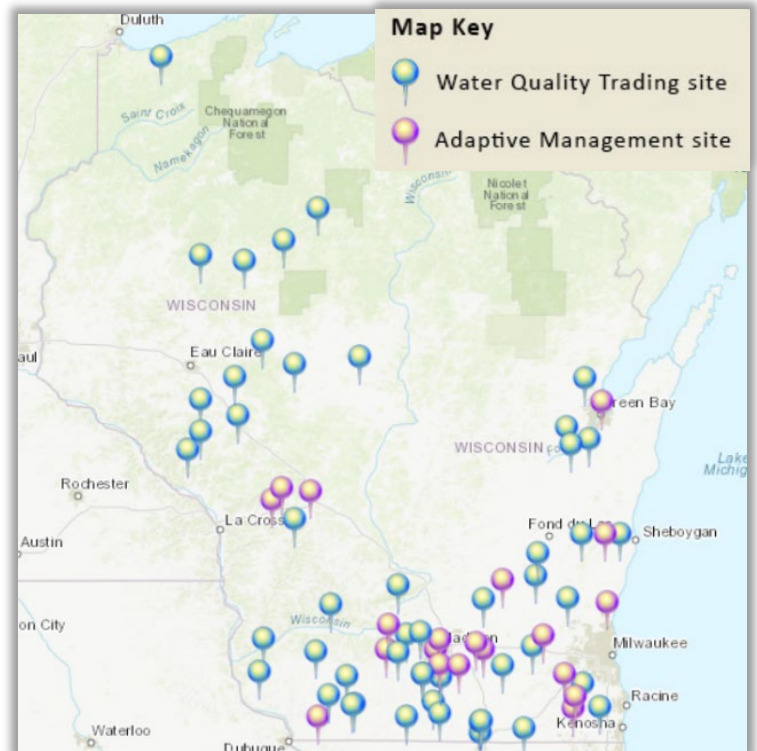


Figure 12. Locations of Adaptive Management Plans and Water Quality Trading sites across the state.

eroding streambanks, stabilizing over three miles of streambank in total. In-stream habitat benefits also stem from WQT practices, particularly those that reduce sediment loading to waterways. Several WQT projects employed in-stream habitat restoration practices to further mitigate the effects of excess sediment in the system.

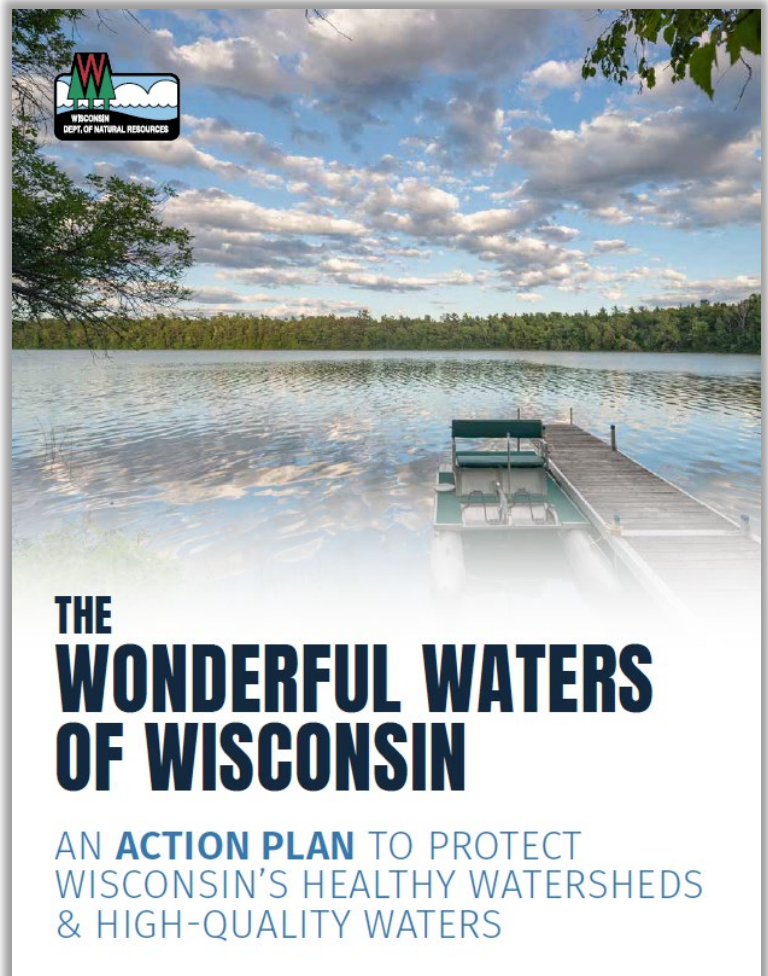
The provisions of all water quality trades are incorporated into the discharger's WPDES permit, with a monthly accounting process for the use of pollutant credits. All nonpoint source best management practices are inspected regularly and conform to a NRCS or WDNR performance standard. Many wastewater dischargers throughout Wisconsin look to WQT for long-term compliance solutions. These nonpoint source pollution control efforts leverage new partners and funding to address runoff issues.

Protection of Wisconsin's Waters

[Healthy Watersheds, High-Quality Waters](#) provides a road map for how to strike an improved balance between restoration and protection, all while emphasizing and celebrating the Wonderful Waters of Wisconsin.

The [Healthy Watersheds, High-Quality Waters Action Plan, launched in spring 2022](#), includes the actions suggested by a majority of partner groups, including businesses, lake, river, and watershed groups, local units of government, and fish and wildlife conservation organizations. Partners will work together through 2030 to implement specific strategies with a goal of keeping 100% of the watersheds prioritized for protection, and the high-quality waters within them, healthy.

The [2023 Progress Report](#) describes accomplishments during year one of this exciting initiative. Ongoing Action Plan implementation efforts include linking HWHQW to monitoring projects and local and regional planning efforts, creating alternative watershed-based planning guidance for protection, and expanding grant funding eligibility and review/ranking criteria for HWHQW projects.



Wisconsin's Action Plan to keep 100% of the watersheds identified as priorities for protection--and the high-quality waters within them—healthy through 2030.

Conclusions

With bountiful water resources, over 5 million residents, and up to 112 million annual visitors, the state of Wisconsin works diligently to protect water quality, biological integrity, and recreation opportunities. The Water Condition Lists are a first step in managing Wisconsin's waters, determining if protection or restoration is required. Monitoring was done across the state, resulting in new pollutant listings and delistings. The majority of new listings were for phosphorus and aquatic plants. There were 38 listing removals for seven different parameters. A total of 230 waters were newly assessed and determined to be on the Waters Attaining Standards List.

Many WDNR programs and partners continue to work together to manage the state's water resources; a significant amount of work was done during the 2024 reporting cycle. In 2023 volunteers gathered water quality data for over 1,000 lake sites (CLMN program) and over 600 stream sites (WAV program). WDNR staff collected long-term trend and project data across the state. Monitoring for the Fox Des-Plaines TMDL was completed. The Northeast Lakeshore TMDL was approved by the EPA. A new Adaptive Management plan targeted a total phosphorus reduction of 2,300 lbs/year. A total of 13 Water Quality Trading plans were approved, curtailing nonpoint source phosphorus loading. Two water quality criteria packages were passed and close to \$6 million dollars in surface water grants were awarded. The full magnitude of monitoring, restoration, and protection work done in Wisconsin was briefly summarized in the [full 2024 Water Quality Report to Congress](#).



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