



Wisconsin's Great Lakes Beach Monitoring & Notification Program 2022 Beach Season Summary



**Office of Great Waters
Wisconsin Department of Natural Resources
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Thanks to everyone who helps make Wisconsin's Great Lakes Beach Program a success!

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Bayfield County Health Department
Brown County Health and Human Services
City of Milwaukee Health Department
City of Oak Creek Health Department
Door County Health and Human Services
Douglas County Health and Human Services
Iron County Health Department

Kenosha County Division of Health
Kewaunee County Public Health Department
Manitowoc County Health Department
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Compiled by:

Diane Packett, Ph.D., Wisconsin Beach Program Manager
Wisconsin Department of Natural Resources
Office of Great Waters

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2022 Beach Season: Program Highlights

Wisconsin's Great Lakes Beach Monitoring & Notification Program has operated since 2002 making the summer of 2022 its 20th season.

Each year, the beach program collaborates with local stakeholders to evaluate the beach list for accuracy and prioritize beaches for monitoring. The beach list is posted on the DNR website with specific notes of program changes. This includes the following:

- Are there coastal beaches missing from the list (e.g. new parks with beach areas)?
- Is the location for the beach and its measurements correct?
- Have conditions surrounding the beach changed (e.g. restoration, drainage, water levels)?
- How is the water quality? Do we have historical data?
- How many people use the beach? What do local people call (name) the beach?
- Are nowcasts or other same-day tools in place to improve the timing for posting advisories?
- Is the monitoring frequency appropriate for the usage, conditions, and public notification tools in place?
- Have beach program contacts changed?

The beach program coordinator reached out to local cooperators and health departments in advance of the beach season to identify needed adjustments. Coastal processes change beach dimensions over time, individual beaches may be improved or restored, and beach usage patterns can also change, so local beach managers are given an opportunity to re-evaluate their priority classification and update their information annually. Beach tier, the existence of an operational Nowcast, and impairment status are major considerations in determining the frequency for monitoring and thus in determining funding allocations.



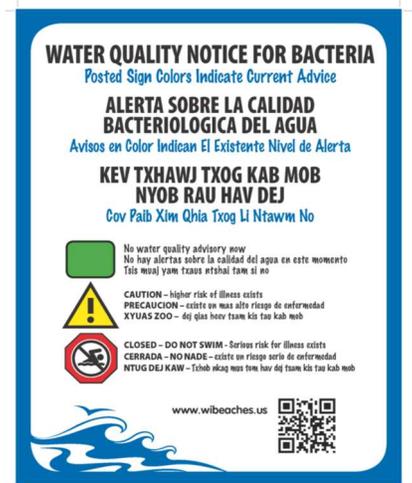
The federal fiscal year 2021 BEACH Act grant of \$239,000 from the United States Environmental Protection Agency (EPA) supported monitoring and public notification programs in 13 of the 15 coastal counties in 2022. The 2022 beach list identified 194 coastal beaches extending 57.8 beach miles. The BEACH grant funded public notification of water quality conditions at 103 locations, and all 24 Tier 1 beaches participated in the program. Basic sanitary survey information, *E. coli* results, and the status of the beach (open, advisory, or closure) were posted to the Wisconsin Beach Health website (www.wibeaches.us). Various communities supplemented their allocated funding to intensify monitoring, investigate contaminant sources through sanitary surveys or source identification through DNA testing, and evaluate effectiveness of restorations.

Wisconsin's Great Lakes Beach Monitoring & Notification Program relies on local public health organizations along the coastline for primary outreach and communication. These organizations are the primary point of contact for answering questions and responding to requests for information about beach water quality. However, on-the-ground beach management is often the purview of parks departments, which coordinate closely with local public health organizations. Additionally, beaches are often adjacent to public infrastructure, so developing effective management practices may involve public works or transportation departments. When considering the number of departments with functions that may affect beach management, our stakeholders have come to appreciate the importance of coordinating beyond the usual department boundaries, particularly for implementing best management practices (BMPs), addressing sources of contamination, and implementing beach restorations.

During the winter of 2020-2021, Wisconsin Department of Natural Resources (DNR) Office of Great Waters took over management and ownership of the Beach Health website and database. DNR contractors completely re-designed the database and user interface and transferred all historical records from the United States Geological Survey (USGS) into the new system on DNR servers. DNR beach managers also redesigned the Beach Health website, providing new information about monitoring and reporting. After extensive testing the website and data portal were deployed for the start of the 2021 beach season, so 2022 was its second year of use. DNR continued working with users to assist with data entry, increase functionality based on user feedback, and address issues. In late 2021 and 2022, DNR worked with EPA to adapt and refine the data reporting files to accommodate the new system structure. This work was completed with BEACH Act funds and Great Lakes Protection Fund money provided by the Office of Great Waters. The Beach Program would like to thank the DNR staff, IT contractors, USGS, EPA, and website testers that made the transition to the new Beach Health website and database so successful.

Water Quality Signage

The program uses color-based signs to indicate status of monitored beaches. Green signs are used to indicate that the beach is open and there is no known water quality exceedance. Yellow advisory signs are posted when bacteria levels exceed 235 colonies/100 mL or conditions indicate that an advisory is warranted (e.g. after a rain event). The red beach closure signs are posted when conditions are judged unsafe for swimming. Examples of conditions when these signs may be used include bacteria levels exceeding 1000 colonies/100 mL, following heavy rainfall or flooding, chemical spills, toxins present, or dangerous (rip) current warnings are in effect.



Distribution of the signage is coordinated with Wisconsin State Parks so consistent messaging occurs at inland beaches that use the program's monitoring and notification systems. Inland communities are encouraged to implement the program voluntarily. Sign templates are made available to inland communities upon request.

Monitoring Summary Results

Summary data in this section provides information for each county and statewide (Table 1) followed by data for each monitored beach organized by county and grouped by lake. Statistics for the *E. coli* monitoring results were derived from the Wisconsin's Beach Health database. As a function of Wisconsin's prioritizing monitoring at impaired waters and more intensive monitoring at beaches with higher numbers of exceedances, our monitoring program is inherently biased toward locations with higher risk of exceeding the water quality standard. Beach managers may issue advisories based on local conditions or modeled results and some locations sample more frequently to minimize the length of time an advisory may be in effect. Advisories or closures remain in effect until the next monitoring or modeling result indicate that water quality has improved.

Table 1. 2022 Annual sample percentages that exceed the *E. coli* advisory level of 235 CFU (or MPN) /100mL and closure level of 1000 CFU (or MPN)/100mL

County	# of Monitored Beaches	Samples Collected	Beach Action Days*	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Ashland	4	137	43	16	9	11.7	6.6
Bayfield	13	268	19	9	2	3.4	0.7
Brown	2	29	17	1	0	3.4	0.0
Door	32	1100	101	79	29	7.2	2.6
Douglas	6	120	11	7	1	5.8	0.8
Iron	3	42	0	0	0	0.0	0.0
Kenosha	5	168	12	12	1	7.1	0.6
Kewaunee	2	100	38	30	13	30.0	13.0
Manitowoc	11	369	129	71	16	19.2	4.3
Milwaukee	9	260	124	39	14	15.0	5.4
Ozaukee	4	171	54	22	9	12.9	5.3
Racine	5	181	54	20	7	11.0	3.9
Sheboygan	7	208	19	11	3	5.3	1.4
Grand total	103	3153	621	317	104	10.1	3.3

*Beach action days may result from a number of hazardous conditions including bacterial contamination, algal blooms, dangerous currents, etc.

Note: In Douglas County, beach conditions at Shafer Beach were based on adjacent sampling at Dutchman Creek. In Kewaunee County, beach conditions at Selner and Pioneer Parks were based on results from the same sample. In Manitowoc County composite sampling was considered and approved for Point Beach based on statistical assessment of the water quality data.

Table 2. Historic Summary of Percentages that exceed the advisory level of 235 CFU/100mL

Blue highlighted cells indicate fewer beach action days in 2022 compared to 2021

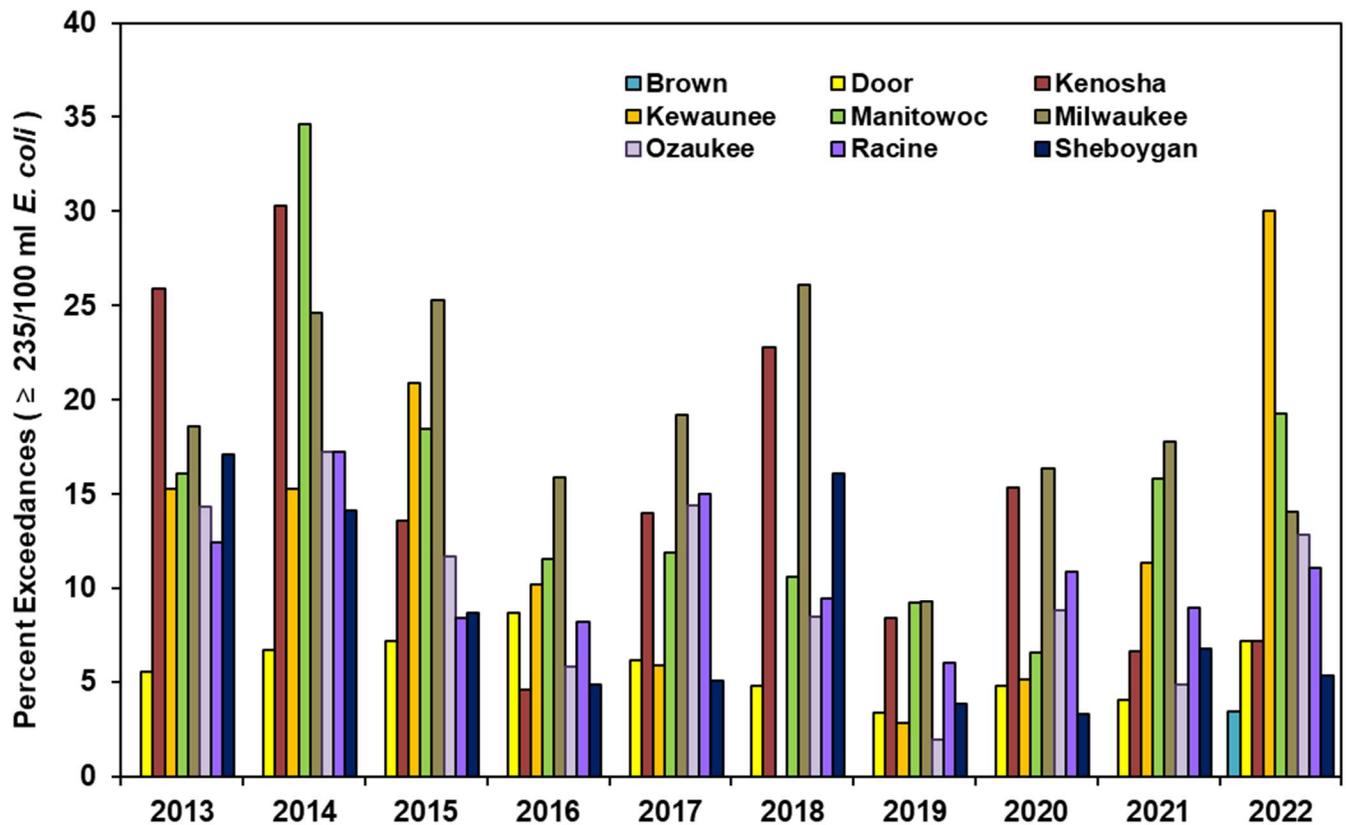
COUNTY	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Ashland	3.3	4.0	5.8	8.9	13.1	18.8	20.6	20.1	23.4	14.9	34.4	13.1	21.0	19.4	11.7
Bayfield	3.1	0.8	5.8	8.0	5.2	4.0	5.6	2.4	8.6	2.9	8.2	2.6	5.4	2.0	3.4
Brown	0.0	5.2	5.9	2.1	8.7	0.0	NA	NA	NA	NA	NA	0.0	0.0	0.0	3.4
Door	6.3	8.1	4.7	6.0	4.1	5.5	6.7	7.2	8.7	6.1	4.8	3.3	4.8	4.0	7.2
Douglas	18.8	1.5	18.4	23.3	29.7	12.0	29.8	25.7	20.3	26.1	27.7	13.6	6.7	4.9	5.8
Iron	0.0	0.0	7.1	10.5	11.4	16.7	22.2	0.0	NA	NA	NA	0.0	0.0	2.5	0.0
Kenosha	31.7	23.5	24.0	11.7	18.6	25.9	30.3	13.6	4.6	14.0	22.8	8.3	15.3	6.6	7.1
Kewaunee	11.1	9.1	10.9	33.2	8.1	15.3	15.3	20.9	10.2	5.9	0.0	2.8	5.1	15.8	30.0
Manitowoc	31.3	5.3	16.3	18.9	16.1	16.1	34.6	18.5	11.6	11.9	9.8	9.1	6.6	17.8	19.2
Milwaukee	22.4	12.7	26.1	19.4	25.1	18.6	24.6	25.3	15.9	19.2	26.1	9.2	16.3	17.8	15.0
Ozaukee	24.0	4.8	22.9	6.4	26.1	14.3	17.2	11.7	5.8	14.4	8.5	2.0	8.8	4.8	12.9
Racine	6.7	6.4	0.7	6.8	8.8	12.4	17.2	8.3	8.2	15.0	9.5	6.0	10.9	8.9	11.0
Sheboygan	18.1	13.6	22.7	8.2	17.1	17.1	14.1	8.6	4.9	5.1	16.1	3.8	3.3	6.8	5.3
Coastal Average	14.4	7.3	12.4	11.8	14.4	11.0	18.1	12.6	10.0	10.3	12.2	5.7	7.8	7.9	10.1

In 2022 only four of 13 counties monitored along both Lake Superior and Lake Michigan coasts experienced the same or fewer *E. coli* exceedances than in 2021, and there was a 27% increase in the percentage of exceedances overall. There was also an appreciable increase in the number of beach action days: 621 days in 2022 compared to 516 in 2021. This increase occurred mainly in the Lake Michigan Counties and reflect increased closures for rainfall events and dangerous currents, as well as substantial increases in *E. coli* exceedances in Kewaunee and Ozaukee Counties.

Lake Michigan

Seventy-seven beaches in nine counties were monitored along Lake Michigan in 2022. Marinette and Oconto County beaches are identified in Tier 4 with no monitoring and do not receive BEACH Act funding. Maps for all Lake Michigan beaches can be found on the [WDNR beaches webpage](#). There were 548 beach action days in 2022, compared to 405 in 2021. Most of the increase was due to *E. coli* exceedances in Kewaunee County.

Lake Michigan Counties 2013-2022



Brown County

This was the 4th year of monitoring at Bayshore County Park, which was added to the list of monitored beaches in 2019 because of its high use. There were no *E. coli* exceedances at Bayshore Beach during the 2022 season, but there was a 16-day beach closure due to an algae bloom. In 2022, Brown County Public Health began monitoring and reporting at Sunset Beach Road Beach.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Brown	29	17	0	0	3.4,k,,,,,	0.0
Bayshore Park Beach	14	16	0	0	0.0	0.0
Sunset Beach Road	15	1	1	0	6.7	0.0

Door County

Door County, with 12 Tier 1 beaches, has the highest number of coastal beaches in the State, making it one of the most popular summer tourist destinations in Wisconsin. Door County places an emphasis on regular monitoring, regularly testing 32 of 54 coastal beaches on the peninsula as well as Washington and Rock Islands throughout the summer. As with past years, the county used a combination of BEACH Act support and local funding to implement their program. Door County beaches had 101 total beach action days, compared to 47 in 2021. There were high percentages of exceedances at Otumba Park Beach (36.8%), Fish Creek Beach (21.4%) and Ephraim Beach (18.5%). Sixteen monitored beaches had no beach action days during the swimming season, compared to 21 in 2021.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Door	1100	101	79	29	7.1	0.0
Anclam Park Beach	28	4	2	0	7.1	0.0
Baileys Harbor Ridges Park Beach	53	6	4	1	7.5	1.9
Clay Banks Beach 2	26	0	0	0	0.0	0.0
Egg Harbor Beach	54	3	3	2	5.6	3.7
Ellison Bay Town Park Beach	52	0	0	0	0.0	0.0
Ephraim Beach	54	18	10	4	18.5	7.4
Europe Bay Beach 1	28	0	0	0	0.0	0.0
Europe Bay Beach 3	28	0	0	0	0.0	0.0
Fish Creek Beach	56	16	12	2	21.4	3.6
Gislason Beach	15	1	1	1	6.7	6.7
Haines Park Beach	27	0	0	0	0.0	0.0
Hotz Memorial Park (Europe Bay #2)	25	0	0	0	0.0	0.0
Jackson Harbor Ridges	15	1	1	0	6.7	0.0
Lakeside Park Beach	28	0	0	0	0.0	0.0
Lily Bay Boat Launch Beach	14	0	0	0	0.0	0.0
Murphy Park Beach	55	10	8	2	14.5	3.6
Newport Bay Beach	51	0	0	0	0.0	0.0
Nicolet Beach	54	8	6	1	11.1	1.9
Otumba Park Beach	57	31	21	15	36.8	26.3
Percy Johnson Memorial Park Beach	14	1	1	0	7.1	0.0
Portage Park Beach	28	0	0	0	0.0	0.0
Robert E LaSalle Park	42	4	4	1	3.7	3.7
Rock Island State Park Beach*	15	0	0	0	0.0	0.0
Sand Bay Beach 1	28	1	1	0	3.6	0.0
Sand Dune Beach	14	0	0	0	0.0	0.0

Sandy Bay Town Park Beach	27	0	0	0	0.0	0.0
School House Beach	14	1	1	0	7.1	0.0
Sister Bay Beach	52	2	2	0	3.8	0.0
Sturgeon Bay Ship Canal Nature Preserve	27	0	0	0	0.0	0.0
Sunset Park Beach Sturgeon Bay	53	2	2	1	3.8	1.9
Whitefish Bay Boat Launch Beach	24	0	0	0	0.0	0.0
Whitefish Dunes Beach	42	0	0	0	0.0	0.0



Kenosha

County

BEACH Act monitoring for Kenosha County beaches continues to be done through an assistance agreement with the City of Racine, enabling the program to fund summer staff to collect samples. The Lakeshore Drive beaches, Prairie Shores and Lakeshore Park North, remain on the beach list but were unmonitored because continuing high water levels on Lake Michigan limited safe access for both recreation and monitoring. The number of beach action days was similar to 2021.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Kenosha	168	12	12	1	7.1	0.6
Alford Park Beach	29	3	3	0	10.3	0.0
Eichelman Beach	42	2	2	0	4.8	0.0
Lakeshore Park North	NA	NA	NA	NA	NA	NA
Pennoyer Park Beach	30	4	4	1	13.3	3.3
Simmons Island Beach	41	3	3	0	7.3	0.0
Southport Park Beach	26	0	0	0	0.0	0.0

*Lakeshore Park North remained inaccessible in 2022 due to high water levels on Lake Michigan.

Kewaunee County

Sampling and analyses for Kewaunee and Manitowoc Counties are contracted with the University of Wisconsin – Oshkosh. Two of the 5 Kewaunee County beaches were monitored in 2022. Pioneer Park, separated by one city lot from Selner Park, was added to the beach list in 2017. Kewaunee County Public Health Department indicated that more people visit and swim at Selner Park. Considering its proximity, they chose to use the monitoring results from Selner Park to post advisories at Pioneer Park Beach. The percentage of exceedances for the county was double that in 2021, and the highest recorded since 2011 (Table 2).

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Kewaunee	100	35	30	13	30.0	13.0
Crescent Beach	45	18	13	4	28.9	8.9
Selner Park/Pioneer	55	17	17	9	30.9	16.4

Manitowoc County

UW – Oshkosh monitored 11 of 17 beaches in 2022, including Lakefront Park Beach (formerly Warmwater Beach), which was added to the Beach List in 2021 and monitored weekly. The shoreline at Memorial Drive/Mariner’s Trail at Waldo was designated as “open” at the request of the Manitowoc County Health Department, but was not monitored because high water made access unsafe. The Concession Stand Beach at Point Beach State Forest was not monitored in 2021, and monitoring did not commence until mid-July 2022.

There were slightly more exceedances in 2022 than 2021, but the number of Beach action days remained the same (127 in 2022 vs. 129 in 2021). The majority of beach action days resulted from multi-day exceedances at Fisher and Hika Park beaches.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Manitowoc	369	127	71	16	19.2	4.3
Blue Rail Marina Beach	50	9	8	2	16.0	4.0

Fischer Park Beaches	27	43	11	5	40.7	18.5
Hika Park Bay	26	31	9	4	34.6	15.4
Lakefront Park Beach	36	12	12	4	33.3	11.1
Memorial Drive Parkway	30	2	2	0	6.7	0.0
Memorial Drive Thiede	29	1	1	0	3.4	0.0
Neshotah Beach	50	7	6	0	12.0	0.0
Point Beach State Forest – Concession Stand Beach	14	0	2	0	14.3	0.0
Point Beach State Forest - Lakeshore Picnic Area Beach*	30	3	3	0	10.0	0.0
Point Beach State Forest - Lighthouse Picnic Area Beach*	27	3	2	0	7.4	0.0
Red Arrow Park Beach Manitowoc	50	16	15	1	30.0	2.0

* Composite sampling was approved for Point Beach based on statistical assessment of the water quality data.



Milwaukee County

Multiple government jurisdictions have responsibility for monitoring and making public health decisions for 13 Milwaukee County Great Lakes beaches. The City of Milwaukee continued its partnership with the University of Wisconsin – Milwaukee (UWM) to monitor Bradford, McKinley, South Shore, and Watercraft beaches. McKinley Beach has had ongoing issues with rip currents

and was closed during the 2022 season while the County worked to address recreational safety at that location. Bradford, South Shore, and Watercraft Beaches experienced roughly the same number of exceedances, but significantly more beach action days in 2022 than in 2021. All were preemptively closed for 8 days due to rainfall. The 70 beach action days at South Shore Beach included a 12-day contamination advisory at the beginning of the season. The County has continued to evaluate and implement additional options for addressing the number of advisories at South Shore Beach.

Northshore Health Department is responsible for monitoring northern beaches (Atwater, Klode, and Doctor's Park). Bay View, Bender, and Grant Park beaches in the South Milwaukee/Oak Park jurisdictions were monitored through an arrangement with Racine Public Health.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Milwaukee	260	124	39	14	15.0	5.4
Atwater Park Beach	28	7	2	1	7.1	3.6
Bay View Park Beach	18	4	2	0	11.1	0.0
Bender Beach	30	1	1	1	3.3	3.3
Bradford Beach	41	8	0	0	0.0	0.0
Grant Park Beach	32	5	4	1	12.5	3.1
Klode Park Beach	28	15	4	1	14.3	3.6
McKinley Beach	NA	NA	NA	NA	NA	NA
South Shore Beach	41	60	23	9	56.1	22.0
Tietjen Beach/ Doctor's Park	28	4	1	1	3.6	3.6
Watercraft Beach	14	22	2	0	14.3	0.0

Ozaukee County

The Ozaukee-Washington Health Department (OWHD) monitors the 5 beaches including two in Harrington Beach State Park. The high number of beach action days relative to the number of exceedances at Harrington State Park North and South was an artifact of the schedule of sampling twice weekly on subsequent days, resulting in several 6-day actions. Upper Lake Park beach remained closed for most of the 2022 season because high water levels made access and sampling of the beach unsafe.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Ozaukee	171	54	22	9	12.9	5.3
Concordia University	27	0	0	0	0.0	0.0
Harrington State Park - North	58	20	9	4	15.5	6.9
Harrington State Park - South	58	27	11	5	19.0	8.6
South Beach	28	7	2	0	7.1	5.3
Upper Lake Park (aka North Beach)	NA	NA	NA	NA	NA	NA

* Upper Lake Park beach was inaccessible and unmonitored because of high Lake Michigan water levels.



Racine County

The City of Racine places a high priority on monitoring its beaches and uses rapid methods and multiple tools to determine water quality conditions. Racine typically uses a weight of evidence approach at North and Zoo beaches that includes sanitary surveys, *E. coli* testing, qPCR and Nowcasting. Four action days at both North and Zoo beaches were closures due to dangerous currents and nearshore conditions forecast by the National Weather Service. Seven of the 23 beach action days at North Beach and 6 of the 24 days at Zoo Beach were due to *E.coli* exceedances, but the majority were due to dangerous currents.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Racine	181	54	20	7	11.1	3.9
Myers Park Beach	18	4	4	4	22.2	22.2
North Beach	65	23	7	0	10.8	0.0
Parkway Beach	17	2	2	1	11.8	5.9
Wind Point Lighthouse Beach	16	1	1	1	6.3	6.3
Zoo Beach	65	24	6	1	9.2	1.5

Sheboygan County

Sheboygan County monitors 7 of 14 coastal beaches including two at Kohler-Andrae State Park. The park implemented a redesign plan to address erosion and stormwater from the parking lot at the North Picnic beach. Shoreline dunes have been re-established and vegetation was planted in the rain garden. Storms that occurred during the construction period demonstrated that the rain garden functions as designed. The number of exceedances and beach action days was nearly identical in 2021 and 2022.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Sheboygan	208	19	11	3	5.3	1.4
Amsterdam Beach	15	11	4	2	23.5	11.8
Blue Harbor Beach	30	2	2	0	6.5	0.0
Deland Park Beach	34	1	1	0	3.5	0.0
General King Park Beach	28	3	3	1	9.4	3.1
Kite Surfing Area - Clara Ave	17	1	0	1	0.0	0.0
Kohler Andrae State Park North/Nature Center Beach	43	1	1	0	2.4	0.0
Kohler Andrae State Park Picnic Beach North and South	40	0	0	0	0.0	0.0

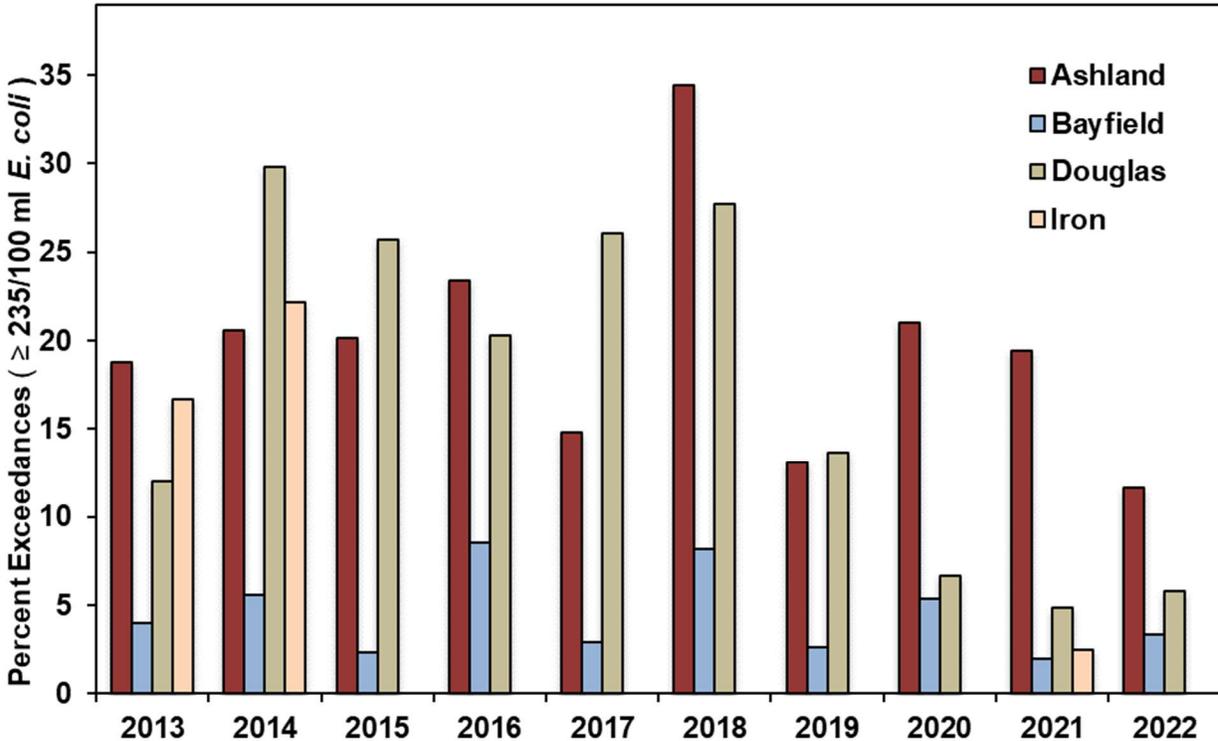


Kohler Andrae SP Boardwalk | Matthew Jim Koepnick

Lake Superior

While storms continue to be an issue in Lake Superior, all beaches were open and monitored during the 2022 season. Ashland and Iron Counties saw a decrease in the number of beach action days compared with 2021. Maps for all Lake Superior beaches can be found on the [WDNR beaches webpage](#).

Lake Superior Counties 2013-2022



Ashland County

Monitoring of 4 of 8 coastal beaches in Ashland County is contracted with Northland College with approval of Ashland County Health and Human Services. The Ashland Parks director is an active participant in the Wisconsin Coastal Beach Working Group and has worked to develop effective public messaging for their beaches. The number of exceedances and closures was lower than in 2021, and the number of beach action decreased by 50%.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Ashland	137	40	16	9	11.7	6.6
6th Ave W Beach	28	4	1	1	3.6	3.6
Bayview Park Beach	20	2	2	1	10.0	5.0
Kreher Park Beach	31	30	11	7	35.5	22.6
Maslowski Beaches	58	4	2	0	3.4	0.0



Bayfield County

Bayfield County received BEACH Act funding to monitor 13 of 20 BEACH Act beaches. The Bayfield County Health Department began monitoring at Washburn Marina Beach and Memorial Park Beach in Washburn for the first time since 2013. Neither of these beaches experienced any exceedances. Beach action days increased from 13 in 2021 to 19 in 2022, mainly due to 6-day advisories at Herbster and Port Wing West that occurred prior to a weekend, precluding re-sampling.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Bayfield	268	19	9	2	3.4	0.7
Broad Street Beach	16	4	2	1	12.5	6.3
Herbster Beach	27	6	2	0	7.4	0.0
Little Sand Bay Beach	15	1	1	0	6.7	0.0
Memorial Park Beach Washburn	13	0	0	0	0.0	0.0
Port Wing Beach East	15	1	1	0	6.7	0.0
Port Wing Beach West	15	6	2	0	13.3	0.0
Sioux River Beach North	28	0	0	0	0.0	0.0
Sioux River Beach South	28	0	0	0	0.0	0.0
Siskiwit Bay Beach East	28	0	0	0	0.0	4.5

Siskiwit Bay Beach West	27	0	0	0	0.0	0.0
Thompson West End Park	28	1	1	1	3.6	3.6
Washburn Marina Beach	14	0	0	0	0.0	0.0
Washington Avenue	14	0	0	0	0.0	0.0

Douglas County

Monitoring at Douglas County beaches was performed by the Lake Superior Research Institute at UW-Superior, with approval from Douglas County Health and Human Services. In 2019, work was completed along Wisconsin Point to consolidate shoreline access areas and redesign the Lot 1 parking area to provide better stormwater infiltration. Since then, beaches on the Point have seen a significant decrease in beach action days; there was an increase from 5 days in 2021 to 10 days in 2022, but numbers are still well below the 33 iaction days in 2019. Due to budget constraints and similar water quality conditions at Dutchman’s Creek and Shafer Beach, Shafer Beach was not monitored in 2022.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Douglas	120	11	7	1	5.8	0.8
Barker's Island Inner Beach	37	4	0	0	0.0	0.0
Wisconsin Point Dutchman Creek	17	2	2	0	11.8	0.0
Wisconsin Point Lighthouse (# 5)	15	0	0	0	0.0	0.0
Wisconsin Point Lot 1 (#1)	18	3	3	1	16.7	5.6
Wisconsin Point Lot 3 (formerly Lot 12)	17	2	2	0	11.8	0.0
Wisconsin Point Lot 4 (SE of Breakwater)	16	0	0	0	0.0	0.0
Wisconsin Point Shafer Beach (#2)*	NA	NA	NA	NA	NA	NA

*Shafer Beach was not sampled or posted in 2022.

Iron County

Iron County beaches were rebuilt following storm damage in 2016, and were re-opened in 2019. Since then, water quality has been excellent. In this third full year post-restoration, there were no *E. coli* exceedances. Beaches were monitored weekly by the ERIC Lab at UW-Oshkosh.

County/Beach	Samples Collected	Beach Action Days	<i>E. coli</i> Exceedances (>235)	<i>E. coli</i> Closures (>1000)	% Exceedances	% Closures
Iron	42	0	0	0	0.0	0.0
Oronto Bay Beach	14	0	0	0	0.0	0.0
Saxon Harbor Beach East	14	0	0	0	0.0	0.0
Saxon Harbor Beach West	14	0	0	0	0.0	0.0



The View at Saxon Harbor | Diane Piispanen

Wisconsin Coastal Beaches Working Group

During 2021, the Wisconsin Coastal Beaches Workgroup (WCBW) steering committee met virtually because of the COVID-19 pandemic. In 2022 the committee did not meet formally due to lack of capacity, but members continued to work on initiatives such as plans for revising and improving the Virtual Beach training materials.

Funding Priorities and Budget

Funding for monitoring considered the beach priority (Tier), ability to leverage other funding or partnership arrangements, locations with operational Nowcasts, travel considerations, and status on the 303(d) impaired waters list. The highest priority for funding continued to be upgrading and maintaining the new Wisconsin Beach Health database and website, a central tool for notifying the public about beach conditions and managing the data reported to EPA as required by the grant. State funds supplement the BEACH Act funding to cover operational costs and provide access to the site for inland counties who report their monitoring data voluntarily. Many counties supplement the funding available through the grant to increase the number of beaches monitored or sample beyond the minimum frequency specified by contract.

Table 3. Allocation of Beach Act Funds for the 2022 Season

Participating Locations/Counties	Contracted \$
Ashland County (Northland College)	\$6,500
Bayfield County	\$11,500
Brown County	\$1,500
Door County	\$65,000
UW – LSRI (Douglas County)*	\$13,000
UW – Oshkosh (Iron, Kewaunee, and Manitowoc Counties)	\$20,000
Milwaukee, City of	\$11,000
Northshore/Shorewood (Milwaukee County)	\$5,500
Ozaukee County	\$15,000
City of Racine, (Racine, Kenosha and South Milwaukee)	\$28,000
Sheboygan County	\$15,000
Total	\$192,000

Lessons Learned and Improvement Opportunities

Multiple organizations (e.g. parks, public works, public health, transportation) are involved in beach management or have operations that affect water quality at the beach. Their operations and budgets may not be connected on the local level which may require extra coordination and communication. Through Wisconsin statutes, public health departments have the authority to issue advisories and closures based on conditions at the beaches. Beach program operations and communications must consider those authorities and relationships.

The beach program provides a uniform mechanism to evaluate water quality and report data. Should funding be withdrawn entirely, counties have little incentive to report their data to EPA. Some communities have robust beach monitoring programs but may not use the Beach Health website as part of their notification process. Existing funding is stretched extremely thin, with most grant dollars distributed through contracts for local implementation. Many communities have limited resources to supplement program activities.

The supplemental funding that supported Nowcasting and local skills development ended in 2017, with a significant effect on this effort in Wisconsin. Although a few communities have developed expertise to calibrate models, many do not have the resources needed to perform model recalibration work. If EPA provided this expertise or allocated funding to this purpose, this cost-effective tool would be more sustainable. Additionally, repercussions of USGS' decommissioning of the EnDDaT system in 2019 continue to be felt. In previous years, EPA and state funding were used to develop this system and integrate it into Nowcast models. Without support for this system, many of the nowcast models were unable to function properly in 2019 and those that were, needed significant work to recalibrate and redevelop models with alternate data. This represents a significant step backward for Nowcasting in Wisconsin's beach program, and greatly impacts the ability of local beach managers to forecast conditions for the protection of public health.

Communities are increasingly interested in addressing the issue of dangerous currents, and beach managers are particularly interested in how the public notifications for dangerous currents dovetail with those issued for recreational water quality. There is a strong need to provide coordinated,

consistent messaging so that the public understands what conditions exist at the beach and manages personal risk effectively. In Wisconsin, the policy is that the more conservative and protective beach action be issued when considering multiple conditions. For example, beaches will be closed for dangerous waves and currents even though the water quality is good or marginal; likewise, even if waters are calm a beach will be under advisory or closure for poor water quality. SwimSmart Technologies, a Michigan-based startup that manufactures “traffic light” signs to automatically activate red, yellow, or green lights based on National Weather Service data, contacted DNR in 2022. They requested data in certain formats (such as RSS) from the Beach website to integrate with their dangerous currents warning system. This functionality was not available in the database, and database architect time was limited as core functions were still being maintained and improved. In summer 2022 SwimSmart began outreach to coastal health departments, including Door and Racine Counties, for input on integrating use of electronic warning signage into their beach monitoring programs.



“Go Fly a Kite” | William Pohlman