

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER RESOURCES DIVISION  
MARCH 2017

STAFF REPORT

MICHIGAN BEACH MONITORING  
YEAR 2016 ANNUAL REPORT

## INTRODUCTION

The Michigan Department of Environmental Quality (MDEQ) Surface Water Quality Monitoring Program is summarized in the January 1997 report entitled, "A Strategic Environmental Quality Monitoring Program for Michigan's Surface Waters" (Strategy) (MDEQ, 1997). The objectives of the beach monitoring component of the Strategy are listed below:

1. Assist local health departments to implement and strengthen beach monitoring programs.
2. Create and maintain a statewide database.
3. Determine whether waters of the state are safe for total body contact recreation.
4. Compile data to determine overall water quality.
5. Evaluate the effectiveness of MDEQ programs in attaining Water Quality Standards (WQS) for pathogen indicators.

### 1. ASSIST LOCAL HEALTH DEPARTMENTS TO IMPLEMENT AND STRENGTHEN BEACH MONITORING PROGRAMS

#### Beach Monitoring

The monitoring of beaches in Michigan is voluntary and is conducted by the local health departments. Health departments are required to comply with Michigan's WQS according to R 333.12544 of the Public Health Code, 1978 PA 368 (Act 368), as amended. According to R 333.12541 of Act 368, a local health officer or an authorized representative of a local health department that conducts tests at bathing beaches is required to notify the MDEQ and other entities of the test results within 36 hours of conducting a test or evaluation. This rule also states that the local health department may petition the circuit court for an injunction ordering the owners of a beach to close the beach. Owners of public bathing beaches must post a sign that states whether or not the bathing beach has been tested, and if so, where the test results may be accessed.

The MDEQ awards grants to local health departments to monitor and report levels of *E. coli* in the swimming areas of public beaches. In selecting recipients for grant awards, the MDEQ considers all of the following:

- Location and frequency of beach use.
- History of beach monitoring and bacterial contamination.
- Ability to communicate results to the public in an efficient manner.
- Ability to respond and take appropriate action in the event of beach contamination.
- Proximity of beach to a known bacterial contamination source.
- Innovativeness and feasibility of proposed project.
- Ability to reduce time delay between sampling and results.

## Funding for Beach Monitoring

Prior to 2000, health departments relied on local funding to conduct beach monitoring programs. Local funding was often not sufficient to execute a comprehensive statewide monitoring program. Beginning in 2000, funding became available from the Clean Michigan Initiative-Clean Water Fund (CMI-CWF). In 2003, the United States Environmental Protection Agency (USEPA) began awarding funds from the Beaches Environmental Assessment and Coastal Health Act (BEACH Act) for monitoring Great Lakes beaches. In 2015, the MDEQ provided \$500,000 for the purchase of rapid testing equipment and \$58,000 for quantitative polymerase chain reaction (QPCR) training. In 2016, the MDEQ provided an additional \$24,183 from the CMI-CWF for ongoing QPCR training.

### *CMI-CWF Grants*

The MDEQ distributed CMI-CWF funds to aid in the development and implementation of inland lake beach monitoring programs throughout the state. In 2000 and 2001, CMI-CWF funds were distributed for inland lakes and Great Lakes beach monitoring programs. In 2002, no CMI-CWF funds were distributed, but future funding was designated for inland beaches due to the availability of BEACH Act funding for Great Lakes beaches.

The CMI-CWF grant funds are awarded by the MDEQ to local health departments and nonprofit entities, which include county, city, township, and village agencies, watershed and environmental action councils, universities, regional planning agencies, and incorporated nonprofit organizations. The majority of grants are awarded to local health departments. If a group other than a local health department is awarded a grant, the MDEQ requires the group to work closely with their local health department.

The CMI-CWF offered reliable funding for the monitoring of surface water over a period of approximately 15 years. Since 2000, the MDEQ has awarded \$1,862,205. This amount includes 13 awards totaling \$200,000 (Appendix A) for monitoring beaches in 2015 and 2016 with a supplement of 12 more awards totaling \$150,000 for testing selected beaches in 2016 with QPCR methods.

### *BEACH Act Grants*

The MDEQ distributes BEACH Act funds to aid in the development and implementation of Great Lakes beach monitoring programs. State, local, and tribal governments having coastal waters are eligible to apply for the BEACH Act grants. The USEPA (2014) revised the performance criteria that must be met by grant recipients. Since the BEACH Act was initiated in 2003, the MDEQ has allocated \$3,291,494 including 24 awards in 2016 totaling \$157,107 for beach monitoring using the culture-based and/or QPCR method (Appendix B).

## New Equipment and Methods

Michigan will be the first state to monitor beaches statewide using a new, rapid testing method for water quality to quickly address potential public health concerns and keep people safe. The new QPCR method quickly identifies and measures *E. coli* DNA in a beach water sample. The method provides results on the same day that a sample is collected. To implement the QPCR method, local health departments received \$500,000 worth of equipment and grants from the MDEQ. Ten labs statewide will use this equipment to begin testing with the QPCR method and comparing results to traditional culture-based methods. Dr. Joan Rose, Michigan State University, received funding from the MDEQ to provide specialized training for the QPCR method and beach water testing.

## 2. CREATE AND MAINTAIN A STATEWIDE DATABASE

The MDEQ developed a centralized statewide database, BeachGuard, which includes beach locations and maps, beach monitoring *E. coli* test results, notification data, and routine sanitary survey data. These data are available electronically to the public via the MDEQ's Web site (<http://www.deq.state.mi.us/beach/>).

The Web site provides the following information about individual beaches:

- location information (county, water body, and coordinates for latitude and longitude)
- frequency of testing
- monitoring history
- beach closures
- monitoring efforts
- search tools
- options for data export
- information for beach monitoring procedures and methods
- additional links to beach monitoring resources
- contact information for federal, state, and local beach monitoring staff

BeachGuard is also connected to a beach application for mobile phones that was created by the Great Lakes Commission. The beach application is called *MyBeachCast* and retrieves beach locations and their status from BeachGuard. The beach application is available from (*link broken, removed*) and a mobile-enhanced Web site is available on the Great Lakes Information Network (*link broken, removed*) that offers information for Web viewers, iPhones, and other mobile devices.

## 3. DETERMINE WHETHER WATERS OF THE STATE ARE SAFE FOR TOTAL BODY CONTACT RECREATION

### Pathogens

Pathogens are microorganisms (bacteria, protozoans, or viruses) that cause disease. Most waterborne pathogens are readily found in the feces of humans and other warm-blooded animals. Gastroenteritis is the most common illness associated with swimming in contaminated water, although other illnesses can occur. The severity of the disease or illness depends on the amount of exposure and the type of pathogen (Appendix C) (USEPA, 2001). The USEPA (1986 and 2012) has determined that *E. coli* and *Enterococci* are appropriate indicators for the presence of waterborne pathogens in fresh water.

### Routine Sanitary Surveys

As part of the BEACH Act, local health departments conducted 1,165 routine sanitary surveys at 130 Great Lakes beaches and access points to identify sources of pollution that adversely impact beach water quality. Corrective actions have been taken as sources of pollution have been identified. In addition, local health departments conducted 1,161 routine sanitary surveys at 105 inland locations to identify sources of pollution that adversely impact beach water quality at inland lakes. Data for routine sanitary surveys for all of these beaches and locations are available on BeachGuard.

## Sources of Bacterial Contamination

Combined Sewer Overflows (CSOs) are discharges of raw or inadequately treated sewage from sewer systems that are designed to carry both domestic sewage and storm water to wastewater treatment plants (WWTPs). When a storm event occurs and the volume of wastewater is larger than the WWTP can process, the excess untreated sewage and storm water are discharged into local waterways.

Sanitary Sewer Overflows are discharges of raw or inadequately treated sewage (MDEQ, 2016) from municipal sanitary sewer systems, which are designed to carry domestic sanitary sewage but not storm water. Systems that contain cracks, obstructions, storm water connections, or that are undersized with sewers and pumps too small to carry all the sewage may leak or overflow raw sewage from manholes, bypass pump stations, and WWTPs into the surrounding waters, particularly during extreme hydrologic events.

Failing septic systems can cause leaching and/or runoff into the waterways, causing bacterial contamination. Urban storm water runoff from roads, roofs, construction sites, parking lots, etc., may contain fecal matter from pets and wildlife. Excessive waterfowl near the beaches and animal waste runoff from farms and fields can contribute to elevated bacterial levels. Illicit connections of pipes containing sewage to storm sewers or surface waters are also a potential source of bacterial contamination.

### *E. coli* WQS

The MDEQ requires beaches to be monitored according to the Part 4 rules, WQS, promulgated under Part 31, Water Resources Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, as follows:

#### R 323.1062 Microorganisms

Rule 62(1): All waters of the state protected for total body contact recreation shall not contain more than 130 *E. coli* per 100 milliliters (ml), as a 30-day geometric mean. Compliance shall be based on the geometric mean of all individual samples taken during 5 or more sampling events representatively spread over a 30-day period. Each sampling event shall consist of 3 or more samples taken at representative locations within a defined sampling area. At no time shall the waters of the state protected for total body contact recreation contain more than a maximum of 300 *E. coli* per 100 ml. Compliance shall be based on the geometric mean of 3 or more samples taken during the same sampling event at representative locations within a defined sampling area.

All surface waters of the state are protected for total body contact according to the Part 4 rules, as follows:

#### R 323.1100 Designated Uses

Rule 100(2): All surface waters of the state are designated and protected for total body contact recreation from May 1 to October 31 in accordance with the provisions of R 323.1062. Total body contact recreation immediately downstream of wastewater discharges, areas of significant urban runoff, CSOs, and areas influenced by certain agricultural practices is contrary to prudent public health and safety practices, even though WQS may be met.

## Beach Notification

The public will be warned of unsafe water conditions by beach notifications such as advisories or closures (collectively referred to as an action). These actions are based on beach data, which can show risks due to riptides, spills, harmful algal blooms, an *E. coli* result exceeding the WQS, or other potential threats to public health. Advisories or closures are most commonly issued because of elevated counts of *E. coli* in water samples collected from the shoreline of a water body. Health departments use the daily and 30-day geometric mean to determine if a beach closure or advisory should be issued. The health department notifies the owner of the beach when a beach should be closed. If necessary, the health department can petition the court for an injunction to force the owner to close the beach. The beach closure or advisory remains in effect until additional tests meet the WQS.

The MDEQ developed a centralized statewide database, BeachGuard, which includes bathing beach monitoring *E. coli* test results and notification data. These data are available electronically to the public via BeachGuard (<http://www.deq.state.mi.us/beach/>).

## Reporting Beach Monitoring and Notification Data

According to R 333.12541(2), all local health departments are required to report their beach monitoring test results to the MDEQ within 36 hours of conducting the test or evaluation. Health departments receiving beach monitoring grants are required to enter their data on the MDEQ's Web site, while non-grant receiving health departments are encouraged to report their data on the Web site.

As a requirement of the BEACH Act, the MDEQ submits beach monitoring data to the USEPA. The USEPA has created several Web pages for beach information that can be found at <http://water.epa.gov/type/oceb/beaches/>, along with an online directory of information regarding the water quality at our nation's beaches entitled, "Beach Advisory Closing On-line Notification," that can be found at <http://watersgeo.epa.gov/beacon2/>.

## 4. COMPILE DATA TO DETERMINE OVERALL WATER QUALITY

### List of Beaches

Michigan beaches identified by local health departments and the MDEQ are listed in Appendices D.1 (Inland lakes-monitored), D.2 (Inland lakes-not monitored), E.1 (Great Lakes-monitored), and E.2 (Great Lakes-not monitored). They are also listed on the MDEQ's beach Web site. The beaches are arranged alphabetically by county, then water body, then location (site name). There are 614 identified public beaches on inland lakes and rivers and 614 identified public beaches on the Great Lakes.

### Synopsis of Data

Monitoring and notification data reported for beaches included results of *E. coli* tests, number of advisories or closures (actions) posted, and the number of days for each posting. In 2016, monitoring was conducted at 417 public beaches in 53 counties. Local beach managers collected 4,761 daily water samples and 188 (4 percent) exceeded Michigan's WQS (Appendices F.1 and F.2). A numerical summary of all monitored public beaches and samples exceeding WQS is found below in Table 1. The number and percent of samples exceeding WQS in 2016 are similar to the previous years.

Table 1. Number and percent of monitored public beaches and water samples in Michigan exceeding the daily geometric mean of 300 *E. coli* per 100 ml.

Year	2012	2013	2014	2015	2016	10-Year Average
Number of Beaches with Exceedances	114	98	76	98	80	94
Percent of Beaches with Exceedances	27	24	23	25	19	21
Number of Samples Exceeding WQS	224	162	129	212	188	191
Percent of Samples Exceeding WQS	4	3	4	5	4	4

Notification data in 2016 for beach actions are shown in Table 2. A total of 340 of the 417 public beaches (82 percent) that were monitored were open during the entire swimming season. The number of beaches reporting an action was 77. The number of beaches with exceedances differed from the number of beaches with actions due to any of the following reasons: (1) water samples were tested before or after the swimming season; (2) delays in receiving test results; (3) a second test (follow-up sample) was used to confirm an exceedance; (4) preemptive closures or advisories were issued; or (5) contamination advisories were issued for potential chemical or oil discharge.

Table 2. Summary of monitored beaches with and without actions.

Year	2012	2013	2014	2015	2016	10-Year Average
Total Actions For All Beaches	166	112	112	147	122	128
Total of Monitored Beaches with an Action	112	84	74	96	77	84
Percent of Monitored Beaches with an Action	26	20	22	25	18	20
Total of Monitored Beaches with no Action	311	329	260	291	340	333
Percent of Monitored Beaches with no Action	74	80	78	75	82	72

### Synopsis of Data from Great Lakes Beaches

In 2016, 2,527 daily samples were collected at 209 Great Lakes public beaches in 35 counties in Michigan. A summary of WQS exceedances and closures/advisories for Great Lakes beaches is provided in Table 3. Exceedances and actions for Great Lakes beaches were of short duration. The number of monitored Great Lakes beaches is similar as previous years while the number of beaches with an action has decreased (Table 4).

Table 3. Number of exceedances and actions for Great Lakes beaches monitored in 2016.

a. Number of exceedances Reported per Beach	b. Number of Beaches with Exceedances	Total Number of Exceedances (a*b)	c. Number of Closures of Advisories per Beach	d. Number of Beaches with Closures or Advisories	Total Number of Closures or Advisories (c*d)
1	17	17	1	26	26
2	10	20	2	10	20
3	7	21	3	3	9
4	4	16	4	1	4
5	2	10	5	3	15
6	2	12			
8	1	8			
10	1	10			
<b>Total</b>	44	<b>114</b>	<b>Total</b>	43	<b>74</b>

Table 4. Number of monitored Great Lakes beaches with and without an action.

Year	2012	2013	2014	2015	2016	10-Year Average
GL Monitored Beaches with an Action	89	54	50	65	43	54
GL Monitored Beaches with no Action	171	185	110	138	166	165
Total GL Monitored Beaches	260	239	160	203	209	218

A summary of the 2016 beach action data for each of the Great Lakes, Lake St. Clair, and connecting channels is provided in Table 5. A summary of sources of contamination reported for actions in the Great Lakes, Lake St. Clair, and connecting channels is provided in Table 6.

Table 5. Data summary for the Great Lakes, Lake St. Clair, and connecting channels.

Summary	Lake Erie	Lake Huron	Lake Michigan	Lake Superior	Lake St. Clair	Great Lakes Connecting Channels	Total
Number of Public Beaches	2	170	305	119	4	14	614
Number of Monitored Beaches	2	52	127	19	4	5	209
Number of Beaches with exceedance	2	17	19	2	2	2	44
Number of exceedances	6	47	28	8	14	11	114
Number of Beaches with Actions	2	18	18	1	2	2	43
Number of Actions	4	28	25	1	10	6	74
Total Number of Days with Actions	69	89	34	2	70	9	273

Table 6. Contamination sources reported for advisories and closures, days affected, and the number of beaches for the Great Lakes, Lake St. Clair, and connecting channels for the specific cause of the beach action.

Contamination Source	Number of Actions with reporting Source	Number of Days Affected by Source	Number of Beaches Reporting Source
Storm Water	10	16	10
Runoff	1	2	1
Sanitary Sewer Overflow	4	12	4
Wildlife	2	2	1
Other	1	1	1
Unknown	56	240	27
<b>Total</b>	<b>74</b>	<b>273</b>	<b>44*</b>

\*Multiple sources reported for some beaches.

### Synopsis of Data from Inland Beaches

In 2016, 2,234 daily samples were collected at 208 inland lake public beaches in 37 counties in Michigan. Of the 34 beaches that reported actions, 6 beaches contributed 76 percent of the total days impacted by an action. The remaining 28 beaches issued an action lasting 1 to 20 days and contributed 24 percent of the total days impacted by an action.

A summary of WQS exceedances and closures/advisories for inland beaches is provided in Table 7. As seen with Great Lakes Beaches, exceedances and actions for inland beaches were of short duration. The number of monitored inland beaches varies by year and Table 8 shows the number of beaches with an action was about the same in 2016 as compared to previous years. A summary of sources of contamination reported for beach actions for inland lakes is provided in Table 9.

Table 7. Number of exceedances and actions for inland beaches monitored in 2016.

a. Number of exceedances Reported per beach	b. Number of Beaches with Exceedances	Total Number of exceedances(a*b)	c. number of actions per beach	d. number of beaches with actions	Total Number of Actions (c*d)
1	22	22	1	23	23
2	8	16	2	8	16
3	2	6			
4	1	4	3	3	9
7	1	7			
9	1	9			
10	1	10			
<b>Total</b>	<b>36</b>	<b>74</b>	<b>Total</b>	<b>34</b>	<b>48</b>

Table 8. Number of monitored inland lake beaches with and without an action.

Year	2012	2013	2014	2015	2016	10-Year Average
Inland Lake Monitored Beaches with an Action	22	28	24	31	34	33
Inland Lake Monitored Beaches with no Action	137	146	150	153	174	168
Total Inland Lake Monitored Beaches	163	174	174	184	208	201

Table 9. Contamination sources reported for actions, days affected, and the number of beaches reporting the specific cause of an action for inland lakes.

Contamination Source	Number of Actions with reporting Source	Number of Days Affected by Source	Number of Beaches Reporting Source
Storm Water	12	21	10
Runoff	1	2	1
Wildlife	5	46	4
Unknown	30	323	21
<b>Total</b>	<b>48</b>	<b>392</b>	<b>36*</b>

\*Multiple sources reported for some beaches.

## 5. EVALUATE THE EFFECTIVENESS OF MDEQ PROGRAMS IN ATTAINING WQS FOR PATHOGEN INDICATORS

### Beach Water Quality Data that do not meet WQS

Water quality protection continues to be a great concern in Michigan and depends on the collective efforts of multiple pollution prevention programs. As part of the beach monitoring program, health departments and the MDEQ routinely review beach water quality data. This



information is used in federal, state, and local pollution prevention programs to determine which water bodies are not meeting WQS and to help identify sources of pollution that affect beach water quality.

Section 303(d) of the federal Clean Water Act and the USEPA's Water Quality Planning and Management Regulations (Title 40 of the Code of Federal Regulations, Part 130) require states to develop Total Maximum Daily Loads (TMDLs) for water bodies that are not meeting WQS. The TMDL process establishes the allowable loadings of pollutants to a water body based on the relationship between pollution sources and water quality conditions. TMDLs provide a basis for determining the pollutant reductions necessary from both point and nonpoint sources to restore and maintain the quality of the water resources.

Waters associated with public beaches are considered to not be attaining WQS when *E. coli* monitoring data collected by county health departments during the total body contact recreation season of May 1 to October 31 (as described by R 323.1100(2)) meet one or more of the following decision elements:

- Ten percent of the monthly geometric mean samples exceed the monthly geometric mean WQS of 130 *E. coli* per 100 ml based on weekly samples collected over a minimum of 5 weeks.
- Ten percent of the daily geometric mean samples exceed the daily maximum WQS of 300 *E. coli* per 100 ml based on weekly samples collected over a minimum of 5 weeks.
- Two or more sample results collected at any time during the total body contact recreation season of May 1 to October 31 exceed the partial body WQS of 1,000 *E. coli* per 100 ml.

The water bodies that exceed WQS and require a TMDL are placed on the Section 303(d) list and TMDL development schedule. A water body is not placed on the TMDL development schedule if a remedial action plan is already in place. The beaches that exceed WQS per the decision elements are listed on the Section 303(d) list, which is available in the most recent "Water Quality and Pollution Control in Michigan Sections 303(d), 305(b), and 314 Integrated Report."

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- MDEQ. 2016. Sanitary Sewer Discharge Information. <http://www.deq.state.mi.us/csosso/>.

Appendix A. CMI-CWF Grants for Inland Lake Beaches 2015-2016.

<b>2015-2016 CMI-CWF Grantees</b>	<b>Granted Amount</b>	<b>Total Monitored Beaches</b>
Barry-Eaton District Health Department	\$9,739.37	4
Central Michigan District Health Department	\$23,200.00	14
Chippewa County Health Department	\$6,700.00	3
District Health Department #2	\$32,200.00	20
District Health Department #4	\$6,700.00	3
Health Department of Northwest Michigan	\$20,540.00	16
Luce-Mackinac-Alger-Schoolcraft District Health Department	\$5,200.00	2
Macomb County Health Department	\$5,200.00	2
Oakland County Health Department	\$45,079.48	45
Watershed Center Grand Traverse Bay	\$15,700.00	9
Wayne County Health Department	\$9,800.00	5
Western UP District Health Department	\$8,753.15	6
Wexford County Drain Commission	\$11,188.00	6
Total	\$200,000.00	135

Appendix B. 2016 BEACH Act Grants for Great Lakes Beaches.

Local Health Department	Allocated Amount
Allegan County Health Department	\$5,000
Bay County Health Department	\$5,000
Berrien County Health Department	\$8,135
Central Michigan District Health Department	\$7,688
Chippewa County Health Department	\$6,344
Delta-Menominee District Health Department	\$5,000
Detroit Belle Isle (DNR)	\$2,500
District Health Department #2	\$9,031
District Health Department #4	\$7,688
District Health Department #10	\$9,703
Huron County Health Department	\$7,912
Luce-Mackinac-Alger-Schoolcraft District Health Department	\$5,000
Macomb	\$5,000
Marquette (City of Marquette)	\$5,000
Monroe County Health Department	\$5,000
Muskegon County Health Department	\$7,912
Northwest Michigan Community Health Agency	\$11,943
Ottawa County Health Department	\$7,016
St. Clair County Health Department	\$8,359
Sanilac County Health Department	\$5,000
Van Buren/Cass District Health Department	\$5,000
Watershed Center (Grand Traverse & Benzie-Leelanau)	\$7,912
Wayne County Health Department	\$2,500
Western Upper Peninsula District Health Department	\$7,464
<b>Total</b>	<b>\$157,107</b>

Appendix C. Waterborne Pathogens

Pathogen		Disease	Effects
Bacteria	Escherichia coli (enteropathogenic)	Gastroenteritis	Vomiting, diarrhea, death in susceptible populations
	Helicobacter pylori	Gastritis	Diarrhea. Peptic ulcers are a long-term sequela
	Legionella pneumophila	Legionellosis	Acute respiratory illness
	Leptospira	Leptospirosis	Jaundice, fever
	Pseudomonas	Infections in immunocompromised individuals	Urinary tract infections, respiratory system infections, dermatitis, soft tissue infections, bacteremia, and a variety of systemic infections
	Salmonella typhi	Typhoid fever	High fever, diarrhea, ulceration of the small intestine
	Salmonella	Salmonellosis	Diarrhea, dehydration
	Shigella		Bacterial dysentery
	Vibrio cholera	Cholera	Extremely heavy diarrhea, dehydration
	Yersinia enterocolitica	Yersinosis	Diarrhea
Protozoans	Balantidium coli	Balantidiasis	Diarrhea, dysentery
	Cryptosporidium	Cryptosporidiosis	Diarrhea
	Entamoeba histolytica	Ameobiasis (amoebic dysentery)	Prolonged diarrhea with bleeding, abscesses of the liver and small intestine
	Giardia lamblia	Giardiasis	Mild to severe diarrhea, nausea, indigestion
	Naegleria fowleri	Amoebic meningoencephalitis	Fatal disease; inflammation of the brain
Viruses	Adenovirus (31 types)	Respiratory disease	Eye infections, diarrhea
	Astroviruses	Gastroenteritis	Vomiting, diarrhea
	Enteroviruses (67 types, e.g., polio, echo, and Coxsackie viruses)	Gastroenteritis	Diarrhea. Heart anomalies and meningitis are long-term sequela and are very rare
	Hepatitis A and E	Infectious hepatitis	Jaundice, fever
	Caliciviruses (Norwalk- and Sapporo-like viruses)	Gastroenteritis	Vomiting, diarrhea
	Reovirus	Gastroenteritis	Vomiting, diarrhea
	Rotavirus	Gastroenteritis	Vomiting, diarrhea

Source: USEPA, 2001

Appendix D.1. Inland Beaches Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>1</b>	<b>Alcona</b>	Alcona Pond	1	Alcona Park East Campground
	Alcona	Brownlee Lake	2	Village of Lincoln Park
	Alcona	Cedar Lake	3	Greenbush Township beach
	Alcona	Hubbard Lake	4	Caledonia Township Park
<b>2</b>	<b>Alpena</b>	Long Lake	1	Long Lake Park
<b>3</b>	<b>Antrim</b>	Central Lake	1	Thurston Park
	Antrim	Ellsworth Lake	2	Wooden Shoe Park
	Antrim	Lake Bellaire	3	Richardi Park
	Antrim	Torch Lake	4	Day Park
	Antrim	Torch Lake	5	Eastport
<b>4</b>	<b>Arenac</b>	Oasis Lake	1	Oasis Lake County Park
<b>5</b>	<b>Barry</b>	Gun Lake	1	Main Beach - Day Use Area
	Barry	Gun Lake	2	Yankee Springs Recreation Area Campground Beach
	Barry	Thornapple Lake	3	Charlton Park
<b>6</b>	<b>Bay</b>	Kawkawlin River	1	Boat Launch on Kawkawlin River
	Bay	Saginaw River	2	Vet's Park North Bay City
<b>7</b>	<b>Benzie</b>	Crystal Lake	1	Bellows Beach
	Benzie	Crystal Lake	2	Beulah Beach
	Benzie	Otter Creek	3	Sleeping Bear Dunes -Otter Creek
	Benzie	Lake Ann	4	Almira Township Park Beach
<b>8</b>	<b>Charlevoix</b>	Thumb Lake	1	Thumb Lake Beach
	Charlevoix	Walloon Lake	2	Melrose Township Park
<b>9</b>	<b>Chippewa</b>	Dukes Lake	1	Dukes Lake
	Chippewa	Kinross Lake	2	Kinross Lake
	Chippewa	Monocle Lake	3	Monocle Lake
<b>10</b>	<b>Clare</b>	Budd Lake	1	Wilson State Park
	Clare	Crooked Lake	2	Crooked Lake/Camp Neyati Beach
<b>11</b>	<b>Eaton</b>	Fox Memorial Park Beach	1	Fox Memorial Park
<b>12</b>	<b>Emmet</b>	Crooked Lake	1	Little Traverse Township Beach
	Emmet	Crooked Lake	2	Oden Beach
	Emmet	Pickerel Lake	3	Camp Petosega
	Emmet	Pickerel Lake	4	Channel Beach
	Emmet	Larks Lake	5	Poiner Picnic Park
	Emmet	Walloon Lake	6	Resort Pike Road Beach
<b>13</b>	<b>Gladwin</b>	Cedar River	1	Gladwin City Park
	Gladwin	Ross Lake	2	Beaverton City Park
<b>14</b>	<b>Gogebic</b>	Lake Gogebic	1	Gogebic County Park
	Gogebic	Lake Gogebic	2	Lake Gogebic State Park Beach
	Gogebic	Sunday Lake	3	Sunday Lake Beach
<b>15</b>	<b>Grand Traverse</b>	Duke Lake	1	Interlochen State Park
	Grand Traverse	Long Lake	2	Gilbert Beach
	Grand Traverse	Long Lake	3	Taylor Park
	Grand Traverse	North Twin Lake	4	Twin Lakes Camp Beach
<b>16</b>	<b>Houghton</b>	Lake Roland	1	Twin Lakes State Park

Appendix D.1. Inland Beaches Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>17</b>	<b><u>Ingham</u></b>	Burchfield Pond	1	Burchfield Park
45	Ingham	Hawk Island	2	Hawk Island County Park
46	Ingham	Lake Lansing	3	Lake Lansing Park South
47	Ingham	Valhalla Pond	4	Valhalla Park
48				
<b>18</b>	<b><u>Iosco</u></b>	Footo Pond	1	Old Orchard Park
49	Iosco	Long Lake	2	Long Lake Public Access
50	Iosco	Sand Lake	3	Sand Lake- Sand Lake Road Access
51	Iosco	Van Ettan Lake	4	Oscoda Township Park- Van Ettan Lake
52				
<b>19</b>	<b><u>Isabella</u></b>	Borrow Pit	1	Herrick County Park
53	Isabella	Chippewa River	2	Deerfield County Park
54	Isabella	Coldwater Lake	3	Coldwater Park
55	Isabella	Halls Lake	4	Halls Lake
56	Isabella	Littlefield Lake	5	Littlefield Lake
57				
<b>20</b>	<b><u>Kalamazoo</u></b>	Blue Lake	1	Cold Brook County Park
58	Kalamazoo	Campbell Lake	2	Robert Morris Park
59	Kalamazoo	Eagle Lake	3	Fort Custer Recreation Area Beach
60	Kalamazoo	Gull Lake	4	Ross Township Park
61	Kalamazoo	Hogsett Lake	5	Prairie View County Park
62	Kalamazoo	Long Lake	6	Ramona Park
63	Kalamazoo	Sunset Lake	7	Sunset Lake Park
64	Kalamazoo	Swimmers Lake	8	Markin Glen County Park
65	Kalamazoo	Woods Lake	9	Woods Lake Beach
66				
<b>21</b>	<b><u>Leelanau</u></b>	Lake Leelanau	1	Nedow's (Barthalomew) Beach
67	Leelanau	Inland Lake-	2	Sleeping Bear Dunes-Little Glen Lake
68	Leelanau	Inland lake-	3	Sleeping Bear Dunes-north Bar Lake
69	Leelanau	South Bar Lake	4	South Bar Lake- South End
70	Leelanau	Good Harbor Creek Outlet	5	Good Harbor Creek
71				
<b>22</b>	<b><u>Livingston</u></b>	Bishop Lake	1	Brighton State Recreation Area
72	Livingston	Chenango Lake	2	Camp Talahi
73	Livingston	Church Lake	3	Wildwood Ranch
74	Livingston	Cook Lake	4	Taylor's Beach
75	Livingston	Kent Lake	5	Island Lake Recreation Area - Kent Lake
76	Livingston	Lake Chemung	6	Lake Chemung Outdoor Resort
77	Livingston			Waldenwoods Resort
78	Livingston	Pleasant Lake	8	Howell Nature Center
79	Livingston	Sandy Bottom Lake	9	Water's Edge Camp
80	Livingston	Spring Mill Pond	10	Island Lake Recreation Area
81	Livingston	Thompson Lake	11	Howell City Park
82	Livingston	Cordley Lake	12	Varsity Day Camp* - PV
83	Livingston	Haynor Lake	13	Hamburg Fitness Center & Camp* - PV
84	Livingston	Patterson Lake	14	North Star Reach Camp* - PV
85	Livingston	Winans Lake	15	Lakelands Golf & Country Club* - PV
86				
<b>23</b>	<b><u>Macomb</u></b>	Stony Creek Lake-Impoundment	1	Stony Creek Metropark-Baypoint Beach
87	Macomb	Stony Creek Lake-Impoundment	2	Stony Creek Metropark-Eastwood Beach
88				
<b>24</b>	<b><u>Marquette</u></b>	Dead River Reservoir	1	Marquette Tourist Park Beach
89				
<b>25</b>	<b><u>Oakland</u></b>	Adams Lake	1	Addison Oaks County Park
90	Oakland	Big Seven Lake	2	Seven Lakes Park
91	Oakland	Bush Lake	3	Holly Village Beach
92	Oakland	Carter Lake	4	Thelma Spencer Park
93	Oakland	Cass Lake	5	Dodge Park #4
94	Oakland	Cass Lake	6	Keego Harbor City Beach
95	Oakland	Cass Lake	7	Pontiac Yacht Club
96	Oakland	Commerce Lake	8	Log Cabin Sub.
97	Oakland	Crooked Lake	9	Independence Oaks County Park
98				

Appendix D.1. Inland Beaches Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
99	Oakland	Deer Lake	10	Independence Township Village Beach
100	Oakland	Fish Lake	11	Camp Ohiyesa - North
101	Oakland	Green Lake	12	Bay Court Park
102	Oakland	Green Lake	13	Camp Wathana
103	Oakland	Green Lake	14	Green Acres/ Green Valley Park
104	Oakland	Green Lake	15	Clear Water Resort
105	Oakland	Haas Lake	16	Haas Lake Park #1
106	Oakland	Haas Lake	17	Haas Lake Park #2
107	Oakland	Haas Lake	18	Haas Lake Park #3
108	Oakland	Haas Lake	19	Haas Lake Park #4
109	Oakland	Handsome Lake	20	Crossroads For Youth
110	Oakland	Harvery Lake	21	Harvery Lake Heights
111	Oakland	Heron Lake	22	Holly Recreation Area - Heron Beach
112	Oakland	Kent Lake	23	Kensington - Martindale Beach
113	Oakland	Kent Lake	24	Kensington- Maple Beach
114	Oakland	Long Lake	25	Christ the King Church Camp
115	Oakland	Loon Lake	26	Indianwood
116	Oakland	Loon Lake	27	Birch Park
117	Oakland	Lower Trout	28	Bald Mountain Recreation Area
118	Oakland	Mill Pond	29	Davisburg Village Beach (Hart Community Center)
119	Oakland	Orchard lake	30	Country Club (5000 W. Shore Dr)
120	Oakland	Orion Lake	31	Greens Park Village Beach
121	Oakland	Phillips Lake	32	Camp Dearborn - Lake #1
122	Oakland	Phillips Lake	33	Camp Dearborn - Lake #5
123	Oakland	Phipps Lake	34	Camp Maas - Rodecker
124	Oakland	Phipps Lake	35	Camp Maas- Sobell Beach
125	Oakland	Pontiac Lake	36	Pontiac Recreation Area
126	Oakland	Prince Lake	37	Upland Hills Farm
127	Oakland	Proud Lake	38	Proud Lake Recreation Area Campground
128	Oakland	Round Lake	39	Scripter Village Park Township Beach
129	Oakland	Sand Lake	40	Seven Lakes State Park - Campground
130	Oakland	Scotch Lake	41	Scotch Lake Residents
131	Oakland	Stewart Lake	42	Groveland Oaks County Park - Paradise Beach
132	Oakland	Stony Lake	43	Stony Lake Park
133	Oakland	Sun Lake	44	Finnish Day Camp
134	Oakland	Sylvan Lake	45	Ferndale
135	Oakland	Teeple Lake	46	Teeple Lake Recreation Area- Highland State Park
136	Oakland	Tipsico Lake	47	Brown's Landing Mobile Home Park
137	Oakland	Tommys Lake	48	Camp Agawam Boy Scout Camp
138	Oakland	Walled Lake	49	E.V. Mercer City Beach
139	Oakland	Walled Lake	50	Lakeshore Park
140	Oakland	Walnut Lake	51	Bloomfield Parks and Recreation/West Hills M.S.
141	Oakland	Woodhull Lake	52	Woodhull Lake Civic Association
142	Oakland	Allen Lake	53	Fox Bay Civic Association*-Pv
143	Oakland	Chalmers Lake	54	Woodcrest Farms Subdivision - Claridion Street*- PV
144	Oakland	Charlick Lake	55	Highland Hills - Charlick Outlot*- PV
145	Oakland	Childs Lake	56	Child Lake Estates*-PV
146	Oakland	Commerce Lake	57	Oakley Park*- PV
147	Oakland	Commerce Lake	58	Van Stone #1* - Private
148	Oakland	Crescent Lake	59	Crescent Lake Sub. Association*- PV
149	Oakland	Duck Lake	60	Axford Acres - Ramada Road*- PV
150	Oakland	Duck Lake	61	Seven Craven Association*- PV
151	Oakland	Eagle Lake	62	Eagle Lake Road- PV
152	Oakland	Eagle Lake	63	Lakeland Estates*- PV
153	Oakland	Flanders Lake	64	Flanders Lake Beach Association*- PV
154	Oakland	Gilbert Lake	65	Gilbert Lake Estates*- PV
155	Oakland	Gilbert Lake	66	Lone Pine Estates* - PV
156	Oakland	Schoolhouse Lake	67	Indian Manor Subdivision*- PV
157	Oakland	Shorewood Lake	68	Shorewood Hills*- PV
158	Oakland	Square Lake	69	Square Lake Hills Apt. #2 * PV
159	Oakland	Square Lake	70	Square Lake Hills Apt/Bloomfield Square Lake Condo* -PV
160	Oakland	Troy Lake	71	Troy Lake Estates*-PV



Appendix D.1. Inland Beaches Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
161	Oakland	Williams Lake	72	Crest Beach - Landowners* PV
162	Oakland	Wolverine Lake	73	Spring Lake Heights*-PV
163	Oakland	Wolverine Lake	74	Wolverine Lake Manor*-PV
164	Oakland	Wormer Lake	75	Lake Angelus - Golfview Estates*-PV
<b>26</b>	<b><u>Ogemaw</u></b>	Grousehaven Lake	1	Rifle River Recreation Area Campground Beach
166	Ogemaw	Rifle Lake	2	Shady Shores Park Subdivision Beach
167	Ogemaw	Skidway Lake	3	Skidway Lake
168	Ogemaw	Devoe Lake	4	Rifle River Recreation Area
169	Ogemaw	Elbow Lake	5	Mills Township Park
170	Ogemaw	Hardwood Lake	6	Hardwood Lake
<b>27</b>	<b><u>Ontonagon</u></b>	Lake Gogebic	1	Bergland Township Park
172	Ontonagon	Lake Gogebic	2	Ontonagon County Park
<b>28</b>	<b><u>Osceola</u></b>	Big Lake	1	Crittenden Park
174	Osceola	Center Lake	2	Center Lake Park
175	Osceola	Muskegon River	3	Crawford Park
176	Osceola	Rose Lake	4	Rose Lake County Park
<b>29</b>	<b><u>Oscoda</u></b>	Perry Lake	1	Comins Township Park
178	Oscoda	Smith Lake	2	Oscoda County Park
<b>30</b>	<b><u>Otsego</u></b>	Big Lake	1	Big Lake
180	Otsego	Otsego Lake	2	Arbutus Beach
181	Otsego	Otsego Lake	3	Otsego County Park
182	Otsego	Otsego Lake	4	Otsego State Park
183	Otsego	Otsego Lake	5	WahWah Soo Beach
<b>31</b>	<b><u>Presque Isle</u></b>	Grand Lake	1	Grand Lake Public Access
<b>32</b>	<b><u>Roscommon</u></b>	Higgins Lake	1	North Higgins State Park
186	Roscommon	Higgins Lake	2	South Higgins Lake State Park
187	Roscommon	Houghton Lake	3	Denton Township Public Beach
188	Roscommon	Houghton Lake	4	Houghton Lake Heights
189	Roscommon	Lake St. Helen	5	Richfield Township Public Fishing Site
<b>33</b>	<b><u>St.Clair</u></b>	Emmett K.O.A Pond	1	Emmett K.O.A.
<b>34</b>	<b><u>Schoolcraft</u></b>	Quarry Lake	1	Quarry Beach
192		Indian lake	2	Indian Lake State Park
<b>35</b>	<b><u>Washtenaw</u></b>	Bruin Lake	1	Pinckney Recreation Area
194	Washtenaw	Half Moon Lake	2	Pinckney Recreation Area
195	Washtenaw	Independence Lake	3	Independence Lake County Park
196	Washtenaw	Silver Lake	4	Pinckney Recreation Area
197	Washtenaw	Sugarloaf Lake	5	Waterloo Recreation Area
<b>36</b>	<b><u>Wayne</u></b>	Belleville Lake	1	Van Buren Township Park
199	Wayne	Newburgh Lake	2	Newburgh and Sumac Pointes - Hines Park
200	Wayne	Sherwood Lake	3	Sherwood Park
201	Wayne	Blue Heron Pond	4	Blue Heron Condominiums Pond*- Private
202	Wayne	Silver Spring Lake	5	Silver Spring Lake*- Private
<b>37</b>	<b><u>Wexford</u></b>	Billings Lake	1	Manton Park
204	Wexford	Lake Cadillac	2	Cadillac City Dock
205	Wexford	Lake Cadillac	3	City Park
206	Wexford	Lake Cadillac	4	Kenwood Park
207	Wexford	Lake Meauwataka	5	Colfax Township Park
208	Wexford	Lake Mitchell	6	Mitchell State Park

Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>1</b>	1 <b>Alcona</b>	Alcona Pond	1	Hubbard Lake- Alcona Township Park
	2 Alcona	Alcona Pond	2	Alcona Pond West Campground
<b>2</b>	3 <b>Alger</b>	AuTrain Lake Campground	1	AuTrain Lake Campground USFS
	4 Alger	Corner Lake	2	Corner Lake Campground
	5 Alger	Deer Lake Park	3	Deer Lake Park
	6 Alger	Kingston Lake	4	Kingston Lake State Forest Campground
	7 Alger	Petes Lake	5	Petes Lake Campground
<b>3</b>	8 <b>Allegan</b>	Dumont Lake	1	Dumont Lake County Park Beach
	9 Allegan	Ely Lake	2	Ely Lake Campground Beach
	10 Allegan	Gun Lake	3	Gun Lake County Park Beach
	11 Allegan	Little John Lake	4	Little John Lake County Park Beach
	12 Allegan	Swan Creek Pond	5	Pine Point Campground Beach
<b>4</b>	13 <b>Alpena</b>	Beaver Lake	1	Beaver Lake Park
	14 Alpena	Lake Avalon	2	Lake Avalon Public Access
	15 Alpena	Long Lake	3	Long Lake Day Use
<b>5</b>	16 <b>Antrim</b>	Torch Lake	1	Torch River Bridge
	17 Antrim	Torch River	2	Torch River Sand Bar
<b>6</b>	18 <b>Arenac</b>	AuGres River	1	AuGres River-DNR Access at Pier
	19 Arenac	Man-Made Pond	2	Big Bend Campground
	20 Arenac	Man-Made Pond	3	Outdoor Adventures
	21 Arenac	Pine River	4	Pine River - Arenac County
	22 Arenac	Rifle River	5	Rifle River
<b>7</b>	23 <b>Barry</b>	Gull Lake	1	Prairieville Township Park
	24 Barry	Gun Lake	2	Old Beach- Day Use Area
<b>8</b>	25 <b>Bay</b>	Saginaw River	1	Independence Bridge
<b>9</b>	26 <b>Benzie</b>	Crystal Lake	1	South Shore near Beulah
	27 Benzie	Otter Creek beach	2	Otter Creek Beach
	28 Benzie	Otter Creek beach	3	Sleeping Bear Dunes national Lakeshore
	29 Benzie	Otter Creek beach	4	Sleeping Bear Dunes National Lakeshore
<b>10</b>	30 <b>Berrien</b>	Paw Paw Lake	1	Independence Bridge
	31 Berrien	St. Joseph River	2	Vet's Park South River Road
	32 Berrien	St. Joseph River	3	Niles - French Paper
	33 Berrien	St. Joseph River	4	Niles - Marmont

Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>11</b> 34	<b>Branch</b>	First Lake	1	Quincy Park
35	Branch	Messenger Lake	2	Memorial Park
<b>12</b> 36	<b>Calhoun</b>	Duck Lake	1	Springport
37	Calhoun	Goguac Lake	2	Willard Beach in Battle Creek
<b>13</b> 38	<b>Charlevoix</b>	Huffman Lake	1	Hudson Township Park
<b>14</b> 39	<b>Cheboygan</b>	Black Lake	1	Bluffs Beach
40	Cheboygan	Burt Lake	2	Burt Lake State Park
41	Cheboygan	Burt Lake	3	Devoe Beach
42	Cheboygan	Burt Lake	4	Hoppie's Launch
43	Cheboygan	Burt Lake	5	Maple Bay Park
44	Cheboygan	Douglass Lake	6	Ryder's Landing
45	Cheboygan	Mullett Lake	7	Aloha State Park
46	Cheboygan	Mullett Lake	8	Boy Scout Launch
47	Cheboygan	Mullett Lake	9	Foot Road Park
48	Cheboygan	Mullett Lake	10	Grand View Beach
49	Cheboygan	Mullett Lake	11	Hobert's Launch
50	Cheboygan	Mullett Lake	12	Orchard Beach
51	Cheboygan	Mullett Lake	13	Polish Line Beach
52	Cheboygan	Mullett Lake	14	Topinabee Park
53	Cheboygan	Webber Lake	15	Webber Lake State Park
54	Cheboygan	Black Lake	16	Black Lake S.F.C.G.
<b>15</b> 55	<b>Chippewa</b>	Caribou Lake	1	Caribou Lake
56	Chippewa	Carp Lake	2	Trout Lake
57	Chippewa	Soldiers Lake	3	Soldiers Lake
<b>16</b> 58	<b>Clare</b>	Arnold Lake	1	Arnold Lake Beach
59	Clare	Bertha Lake	2	Bertha Lake Beach
60	Clare	Cranberry lake	3	Cranberry Lake South
61	Clare	Crooked Lake	4	Hillcrest Public Landing
62	Clare	Doc and Tom Lake	5	Lake of the Pines
63	Clare	Dodge Lake	6	Dodge Lake Beach
64	Clare	George Lake	7	Lake George Public Landing
65	Clare	Grass Lake	8	Sandy Shores Beach
66	Clare	Hayes Lake (Cranberry Lake)	9	Oak Hills Children's Camp
67	Clare	Lilly Lake	10	Lilly Lake Beach
68	Clare	Long Lake	11	Long Lake Beach
69	Clare	Muskegon River	12	Muskegon River Township Park
70	Clare	Sand Lake	13	Sand Lake Beach
71	Clare	Shingle Lake	14	Shingle Lake Park
72	Clare	Silver Lake	15	Silver Lake Park
73	Clare	Townline Lake	16	Cedar Shores Beach

Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>17</b> 74	<b>Clinton</b>	Lake Ovid	1	Sleepy Hollow State Park Beach
<b>18</b> 75	<b>Eaton</b>	Grand River	1	Lincoln Brick Park
<b>19</b> 76	<b>Emmet</b>	Crooked Lake	1	Oden Roadside Park
<b>20</b> 77	<b>Genesee</b>	Barnum Lake	1	Barnum Lake
78	Genesee	Buell Lake	2	Boat Ramp at Buell Lake
79	Genesee	Byram Lake	3	Clover Beach
80	Genesee	Copneconic Lake	4	Camp Copneconic
81	Genesee	Copneconic Lake	5	Copneconic Day Beach
82	Genesee	Covenant Hill Camp	6	Covenant Hill Camp
83	Genesee	Fenton Lake	7	DNR Boat Dock-Fenton Lake
84	Genesee	Fenton Lake	8	Fenton Lake Marina
85	Genesee	Fenton Lake	9	Township Hall
86	Genesee	Flagstone Point	10	Flagstone Point Beach
87	Genesee	Golden Rod Lake	11	Golden Rod Beach
88	Genesee	Hasler Lake	12	Beach at Hasler Lake
89	Genesee	Hasler Lake	13	Hasler Lake Campground
90	Genesee	Holloway Reservoir	14	Walleye Pike Dock
91	Genesee	Holloway Reservoir	15	Buttercup Beach
92	Genesee	Kelly Lake	16	Kelly Lake
93	Genesee	Kearsley Reservoir	17	Kearsley Reservoir Beach
94	Genesee	Lake Helene	18	Lake Helene Beach
95	Genesee	Lake Linda	19	Lake Linda
96	Genesee	Lake Ponemah	20	DNR Boat Launch at Lake Ponemah
97	Genesee	Lake Shinangaug	21	Lake Shinangaug
98	Genesee	Linden Mill Pond	22	Linden Mill Pond Beach
99	Genesee	Lobdell Lake	23	DNR Boat Launch at Lobdell Lake
100	Genesee	McCaslin Lake	24	McCaslin Lake Beach
101	Genesee	McKane Lake	25	McKane Lake Beach
102	Genesee	Mott Lake	26	Bluegill Boat Ramp
103	Genesee	Mott Lake	27	Mott Lake Beach
104	Genesee	Mott Lake Stepping Stone	28	Mott Lake Stepping Stone Beach
105	Genesee	Mott Lake	29	Bluebell Beach
106	Genesee	Myers Lake	30	Myers Lake
107	Genesee	Otter Lake	31	Griswold Park
108	Genesee	Pinewood Lake	32	Beach at Pinewood Lake
109	Genesee	Silver Lake	33	City Park Beach
110	Genesee	Silver Lake	34	Silver Lake Marina
111	Genesee	Smokerise Lake	35	Smokerise Beach
112	Genesee	Thread Lake	36	Thread Lake Beach
113	Genesee	West Sister Lake	37	West Sister Lake
<b>21</b> 114	<b>Gladwin</b>	Cedar River	1	Cedar River Campground Beach
115	Gladwin	Cedar River	2	Gladwin North Park

Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
116	Gladwin	Flowing well/pond	3	Gilman Springs Swimming Area
117	Gladwin	Hoister Lake	4	Hoister Lake Beach
118	Gladwin	House Lake	5	House Lake
119	Gladwin	Lake Four	6	Lake Four
120	Gladwin	Lake Lancer	7	Sugar Springs/Lake Lancer
121	Gladwin	Lyle Drain/Tobacco River	8	Lost Haven Beach
122	Gladwin	Pratt Lake	9	Pratt Lake
123	Gladwin	Secord Lake	10	Secord Lake
124	Gladwin	Secord Lake	11	Secord Lake - East
125	Gladwin	Secord Lake	12	West River Drive Boat Launch
126	Gladwin	Tittabawassee River	13	Estey Road Access
127	Gladwin	Tittabawassee River	14	Gilman Springs Canoe Launch
128	Gladwin	Tittabawassee River	15	Good News Camp
129	Gladwin	Tittabawassee River	16	Pine Street Public Access
130	Gladwin	Trout Lake	17	Trout Lake SFCG
131	Gladwin	Wiggins Lake North	18	Wiggins Lake Road to Boat Launch
132	Gladwin	Wiggins Lake South	19	Clendering Road
133	Gladwin	Wixon Lake	20	Wixon Lake - West
<b>22</b>	<b>Hillsdale</b>	Baw Beese Lake	1	Sandy Beach
134	Hillsdale	Bird lake	2	Bird Lake Beach
135				
<b>23</b>	<b>Iosco</b>	Chain Lake	1	Chain Lake Beach
136	Iosco	Foot Pond	2	Footsite Park
137	Iosco	Loon Lake	3	Loon Lake Park
138				
<b>24</b>	<b>Isabella</b>	Millpond	1	Millpond Park
139				
<b>25</b>	<b>Jackson</b>	Clark Lake	1	Clark Lake County Park
140	Jackson	Clear Lake	2	Clear Lake County Park
141	Jackson	Gilletts Lake	3	Gilletts Lake County Park
142	Jackson	Grass Lake	4	Grass Lake County Park
143	Jackson	Lime Lake	5	Lime Lake County Park
144	Jackson	Little Wolf Lake	6	Little Wolf Lake County Park
145	Jackson	Pleasant Lake	7	Pleasant Lake County Park & Campground
146	Jackson	Portage Lake	8	Portage Lake County Park
147	Jackson	Round Lake	9	Round Lake County Park
148	Jackson	Swains Lake	10	Swains Lake County Park
149	Jackson	Vandercook Lake	11	Vandercook Lake County Park
150	Jackson	Vineyard Lake	12	Vineyard Lake County Park
151				
<b>26</b>	<b>Kalamazoo</b>	Timber Lake	13	Timber Lake Campground
152				
<b>27</b>	<b>Kent</b>	Lincoln Lake	1	Lincoln Lake Baptist Camp
153	Kent	Lincoln Lake	2	Lincoln Pines Resort
154				

Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
155	Kent	Long Lake	3	Long Lake County Park
156	Kent	Myers Lake	4	Myers Lake County Park
157	Kent	Reeds Lake	5	Collins Park
158	Kent	Scalley Lake	6	Scalley Lake Park
159	Kent	Versluis Lake	7	Versluis Park
160	Kent	Wabasis Lake	8	Wabasis Lake County Park
<b>28</b>	<b><u>Leelanau</u></b>	Lake Leelanau	1	Leelanau Township Park Beach
162	Leelanau	Lake Leelanau	2	Popp Road End
<b>29</b>	<b><u>Livingston</u></b>	Dibrova Lake	1	Green Valley Camp
164	Livingston	Bentley Lake	2	Camp Innisfree
<b>30</b>	<b><u>Luce</u></b>	Bass Lake	1	Bass Lake SFC
166	Luce	Bodi Lake	2	Bodi Lake SFC
167	Luce	Culhane Lake	3	Culhane Lake SFC
168	Luce	HeadQuarters SFC	4	HeadQuarters SFC
169	Luce	Holland Lake SFC	5	Holland Lake SFC
170	Luce	Muskallonge Lake	6	Muskallonge Lake SFC
171	Luce	Perch Lake	7	Perch Lake SFC
172	Luce	Pretty Lake	8	Pretty Lake SFC
173	Luce	Luke County Park	9	Luce County Park Campground
174	Luce	Pike Lake	10	Pike Lake SFC
<b>31</b>	<b><u>Manistee</u></b>	Bear Lake	1	Bear Lake-13 mile road Beach
176	Manistee	Bear Lake	2	bear Lake-7th Street Beach
177	Manistee	Bear Lake	3	Bear Lake- Hopkins Park
178	Manistee	Bear Lake	4	Bear Lake-Myers Road Beach
179	Manistee	Bear Lake	5	Bear Lake _Pleasanton Twn.Park Beach
180	Manistee	Bear Lake	6	Bear Lake-South Shore Beach
<b>32</b>	<b><u>Mackinac</u></b>	Brevort Lake	1	Brevort Lake Campground Beach
182	Mackinac	Garnet Lake	2	Garnet Lake SFC
183	Mackinac	Little Brevort Lake	3	Little Brevort Lake State Campground North
184	Mackinac	Little Brevort Lake	4	Little Brevort Lake State Campground South
185	Mackinac	Milakokia Lake	5	Milakokia Lake SFC
186	Mackinac	Millecoquins Lake	6	Millecoquins Lake SFC
187	Mackinac	South Manistique Lake	7	South Manistique Lake SFC
<b>33</b>	<b><u>Menominee</u></b>	Hermansville lake	1	Hermansville Beach
189	Menominee	Shakey Lakes	2	Shakey Lakes Campground
<b>34</b>	<b><u>Midland</u></b>	Sandord Lake	1	Sanford Lake Park

Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>	
<b>35</b>	<b>191</b>	<b>Monroe</b>	Camp Lord Willing Pond	1	Camp Lord Willing
	<b>192</b>	Monroe	Covered Wagon Campground Pond	2	Covered Wagon Campground
	<b>193</b>	Monroe	Heath Beach Pond	3	Heath Beach
	<b>194</b>	Monroe	K.C. Campground Pond	4	K.C. Campground
	<b>195</b>	Monroe	Man-Made Pond	5	Totem Pole Campground Pond
	<b>196</b>	Monroe	Monroe KOA Campground Pond	6	Monroe K.O.A. Campground
	<b>197</b>	Monroe	Pirollis Campground Pond	7	Pirolli's Campground
	<b>198</b>	Monroe	The Vine Campground Pond	8	The Vine
	<b>199</b>	Monroe	Wilderness Retreat Campground Pond	9	Wilderness Retreat Campground
<b>36</b>	<b>200</b>	<b>Montmorency</b>	Clear Lake	1	Clear Lake Day Use
	<b>201</b>	Montmorency	Clear Lake	2	Clear Lake State Park
	<b>202</b>	Montmorency	Crooked Lake	3	Crooked Lake Beach
	<b>203</b>	Montmorency	East Twin Lake	4	East Twin Beach/Albert Township Park
	<b>204</b>	Montmorency	Ess Lake	5	Ess Lake State Campground
<b>37</b>	<b>205</b>	<b>Muskegon</b>	Goose Egg Lake	1	Kattulpa
	<b>206</b>	Muskegon	Bear Lake	2	Laketon Township Beach
	<b>207</b>	Muskegon	Big Blue Lake	3	Blue Lake County Park Beach
	<b>208</b>	Muskegon	Duck Lake	4	Duck Lake State Park Beach
	<b>209</b>	Muskegon	Fox Lake	5	Fox Lake Park Beach
	<b>210</b>	Muskegon	Half Moon Lake	6	Moore County Park Beach
	<b>211</b>	Muskegon	Mona Lake	7	Mona Lake Park Beach
	<b>212</b>	Muskegon	Mona Lake	8	Ross Park Beach
	<b>213</b>	Muskegon	Muskegon Lake	9	Harbor Towne Beach
	<b>214</b>	Muskegon	Muskegon Lake	10	Muskegon State Park- Muskegon Lake Side
	<b>215</b>	Muskegon	Muskegon Lake	11	Water Sports Park
	<b>216</b>	Muskegon	Twin Lake	12	Twin Lake County Park Beach
	<b>217</b>	Muskegon	West Lake	13	Paddley Park
	<b>218</b>	Muskegon	White Lake	14	Maple Park
	<b>219</b>	Muskegon	Wolf Lake	15	Sunset Park
	<b>220</b>	Muskegon	Wolf Lake	16	Wolf Lake County Park
<b>38</b>	<b>221</b>	<b>Oakland</b>	Bass Lake	1	Idlewild Subdivision
	<b>222</b>	Oakland	Bogie Lake	2	Bogie Lake Property Owners - Beryl Drive
	<b>223</b>	Oakland	Bogie Lake	3	Pinecrest Shores
	<b>224</b>	Oakland	Brendel Lake	4	Brendle Heights - Hillwood
	<b>225</b>	Oakland	Carpenter Lake	5	Lakeview Recreation
	<b>226</b>	Oakland	Carpenter Lake	6	Silver Valley Subdivision

Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
227	Oakland	Cass Lake	7	Keego Harbor Trailer Park
228	Oakland	Cass Lake	8	Cass Lake Woods
229	Oakland	Cass Lake	9	Sylvan-on-the-Lakes
230	Oakland	Cass Lake	10	Willow Beach Subdivision
231	Oakland	Cedar Island Lake	11	Cedar Crest Subdivision
232	Oakland	Cedar Island Lake	12	Sunset Subdivision
233	Oakland	Clear Lake	13	Lakeland Improvement Association -Keith Street
234	Oakland	Charnwood Lake	14	Charnwood
235	Oakland	Cranberry Lake	15	Cranberry Lake Village
236	Oakland	Crescent Lake	16	Crescent Highlands
237	Oakland	Crescent Lake	17	Crescent Lake Park
238	Oakland	Darb Lake	18	Mission Springs Subdivision
239	Oakland	Davis Lake	19	Meagher Park/Woodland Manor
240	Oakland	Deer Lake	20	Deer Lake Estates
241	Oakland	Ekelund Lake	21	Camp Gordanwood
242	Oakland	Elizabeth Lake	22	ECHPOA
243	Oakland	Elizabeth Lake	23	Cass-Elizabeth Heights
244	Oakland	Elizabeth Lake	24	Elizabeth Lake Estates Improvement Assocl
245	Oakland	Elizabeth Lake	25	Elizabeth Lakeshore
246	Oakland	Elizabeth Lake	26	Elizabeth Shores
247	Oakland	Elizabeth Lake	27	Rangate Park
248	Oakland	Elizabeth Lake	28	Terrace
249	Oakland	Elizabeth Lake	29	Walters
250	Oakland	Emerald Lake	30	Emerald Lake Homeowners Assoc. - Lyster Road
251	Oakland	Fox Lake	31	Cloister-on-the-Lakes
252	Oakland	Geneva Lake	32	Lakewood Farms - Crocus Street
253	Oakland	Geneva Lake	33	Lakewood Farms - Sharon Street
254	Oakland	Hammond Lake	34	Hammond Estates
255	Oakland	Harvey Lake	35	Harvey Lake Estates
256	Oakland	Huntoon Lake	36	Burlingham Lake Park I
257	Oakland	Huntoon Lake	37	Burlingham Lake Park II
258	Oakland	Huntoon Lake	38	Broadway Civic Association
259	Oakland	Huntoon Lake	39	Huntoon Village
260	Oakland	Indian Lake	40	Indian Lake Improvement Association
261	Oakland	Lakeville Lake	41	Doll's Dock (Skip's Landing)
262	Oakland	Long Lake	42	Annex 1
263	Oakland	Long Lake	43	Bunny Run C.C.
264	Oakland	Long Lake	44	Twin Shores Subdivision
265	Oakland	Loon Lake	45	Sandy Beach
266	Oakland	Lotus Lake	46	Harris Park
267	Oakland	Lotus Lake	47	Lotus Park
268	Oakland	Lotus Lake	48	Mountain View
269	Oakland	Lower Straits	49	Maple Point



Appendix D.2. Inland Beaches Not Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
270	Oakland	Lower Straits Lake	50	Lower Straits Beach Club
271	Oakland	Maceday Lake	51	Mountain View C.C. Subdivision
272	Oakland	Maceday Lake	52	Whitfield-Maceday Association - North
273	Oakland	Maceday Lake	53	Whitfield-Maceday Association - South
274	Oakland	Marion Lake	54	Locklin Pines Association
275	Oakland	Meadow Lake	55	Meadow Lake Association
276	Oakland	Middle Straits Lake	56	Crystal Echo
277	Oakland	Middle Straits Lake	57	Crystal Echo (the point)
278	Oakland	Middle Straits Lake	58	Stony Beach
279	Oakland	Middle Straits Lake	59	Tripps Subdivision Park
280	Oakland	Middle Straits Lake	60	Twin Beach Park
281	Oakland	Middle Straits Lake	61	West Acres
282	Oakland	Morgan Lake	62	Lake Angelus Lakeview Estates
283	Oakland	Mud Lake	63	Rose Hill Center
284	Oakland	Narrin Lake	64	Camp Narrin
285	Oakland	Neva Lake	65	Lakewood Village Subdivision
286	Oakland	Oakland Lake	67	Bird Island Subdivision
287	Oakland	Oakland Lake	68	Lake Oakland Heights
288	Oakland	Oakland Lake	69	Lake Oakland Shores
289	Oakland	Orchard Lake	70	St. Mary's Park
290	Oakland	Orion Lake	71	Lake Orion Heights
291	Oakland	Orion Lake	72	Sunset Club
292	Oakland	Pine Lake	73	Pine Lake Manor
293	Oakland	Reed Lake	74	Reed Lake Property Owners
294	Oakland	Round Lake	75	Family Park
295	Oakland	Rowe Lake	76	Jacksina Subdivision
296	Oakland	Silver Lake	78	Silver Hill Road
297	Oakland	Sherwood Lake	79	Ledgewood
298	Oakland	Sherwood Lake	80	Sherwood Boat Ramp
299	Oakland	Sherwood Lake	81	Sherwood Property Owners
300	Oakland	Square Lake	82	Pleasant View Subdivision
301	Oakland	Square Lake	83	Pleasant View Subdivision- Kempster St.
302	Oakland	Sugden Lake	84	Oakridge Subdivision
303	Oakland	Sylvan Lake	85	Cunningham Park
304	Oakland	Sylvan Lake	86	Pioneer Highlands
305	Oakland	Sylvan Lake	87	Sylvan Shores Improvement Association
306	Oakland	Sylvan Lake	88	Lakeview
307	Oakland	Tan Lake	89	Mary K. Subdivision
308	Oakland	Union Lake	90	Alpha Beach
309	Oakland	Union Lake	91	Burley & Barnsbury Streets
310	Oakland	Union Lake	92	Union Lake Beach Club
311	Oakland	Union Lake	93	Union Lake Heights Subdivision #2
312	Oakland	Upper Pettibone Lake	94	657 Dunleavy
313	Oakland	Upper Straits Lake	95	Banker's Subdivision

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	<b>County</b>	<b>Water Body</b>		<b>Location</b>
314	Oakland	Upper Straits Lake	96	Bayside Beach Association
315	Oakland	Upper Straits Lake	97	Outlet A
316	Oakland	Upper Straits Lake	98	Shady Beach
317	Oakland	Van Norman Lake	99	Waterford Hill
318	Oakland	Voorheis Lake	100	Keatington Subdivision - Eaton Gate - off Baldwin
319	Oakland	Voorheis Lake	101	Keatington Subdivision - Joslyn Court
320	Oakland	Walled Lake	102	Beachwalk Apartments
321	Oakland	Walnut Lake	103	Finnish American Club of Detroit
322	Oakland	Walnut Lake	104	Shenandoah Farms Association
323	Oakland	Walnut Lake	105	Walnut Lake Park
324	Oakland	Walnut Lake	106	North Cove
325	Oakland	Walters Lake	107	Sunny Beach #1 - Eston Road
326	Oakland	Walters Lake	108	Sunny Beach #2 - Clarkston Road
327	Oakland	Watkins Lake	109	Heitch Street
328	Oakland	Watkins Lake	110	Lanarh Street
329	Oakland	Watkins Lake	111	Whitney Street
330	Oakland	Waumegah Lake	112	Lake Waumegah Homeowners Association
331	Oakland	Whipple Lake	113	Whipple Shores Subdivision
332	Oakland	White Lake	114	Rolling Acres
333	Oakland	White Lake	115	Stanley Beach
334	Oakland	Wildwood Lake	116	Holly Recreation Area - Wildwood Beach
335	Oakland	Wing Lake	117	Wing Lake Farms Association
336	Oakland	Wing Lake	118	Wing Lake Property Owners Association
337	Oakland	Walnut Lake	119	Finnish American Club of Detroit
338	Oakland	Walnut Lake	120	Shenandoah Farms Association
339	Oakland	Walnut Lake	121	Walnut Lake Park
<b>39</b>	<b><u>Ogemaw</u></b>	Grousehaven Lake	1	Rifle River Recreation Area Day Use Area
341	Ogemaw	Lake George	2	Lake George Campground
<b>40</b>	<b><u>Osceola</u></b>	Center Lake	1	Center Lake Bible Camp
343	Osceola	Center Lake	2	Kettunen Center
344	Osceola	Diamond Lake	3	Diamond Lake
345	Osceola	Diamond Lake	4	DNR Access Diamond Lake
346	Osceola	Hicks Lake	5	DNR Access Hicks Lake
347	Osceola	McCoy Lake	6	DNR Access McCoy Lake
348	Osceola	Muskegon River	7	City of Evert Campground
349	Osceola	Muskegon River	8	Hersey Road Access
350	Osceola	Rose Lake	9	Rose Lake Youth Camp
351	Osceola	Sunrise Lake	10	Sunrise Lake Park
352	Osceola	Todd Lake	11	DNR Access Todd Lake

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	<b>County</b>	<b>Water Body</b>		<b>Location</b>
353	Osceola	Wells Lake	12	DNR Access Wells Lake
<b>41</b> 354	<b>Oscoda</b>	Mio Pond	1	Mio Pond Campground
<b>42</b> 355	<b>Otsego</b>	Bear Lake	1	Bear Lake State Forest Campground
356	Otsego	Dixon Lake	2	Dixon Lake Access
357	Otsego	Otsego Lake	3	Otsego Lake State Park North
358	Otsego	Pickeral Lake	4	Pickeral Lake State Forest Campground
<b>43</b> 359	<b>Ottawa</b>	Lake Macatawa	1	Fallen Leaf Park
360	Ottawa	Crockery Lake	2	Grose Park
361	Ottawa	Georgetown Lake	3	Georgetown Community Park
362	Ottawa	Lake Macatawa	4	Dunton Park
363	Ottawa	Lake Macatawa	5	Holland State Park
364	Ottawa	Maplewood Lake	6	Maplewood Lake Park
365	Ottawa	Pottawattomie Bayou	7	Pottawattomie Park
366	Ottawa	Spring Lake	8	Lakeside Beach
<b>44</b> 367	<b>Presque Isle</b>	Black Lake	1	Onaway State Park
368	Presque Isle	Grand Lake	2	Grand Lake Northwest
369	Presque Isle	Lake May	3	Lake May Public Access
370	Presque Isle	Ocquoec River	4	Millersburg Park
371	Presque Isle	Ocquoec River	5	Ocquoec Falls Park
372	Presque Isle	Shoepac Lake	6	Shoepac Lake Campground
373	Presque Isle	Sunken Lake	7	Sunken Lake County Park
374	Presque Isle	Tomahawk Lake	8	Tomahawk Lake Campground
<b>45</b> 375	<b>Roscommon</b>	Backus Pond	1	Backus Township Park
376	Roscommon	Bambi Lake/Sinkhole Lake	2	Bambi Lake Camp
377	Roscommon	Higgins Lake	3	Beaver Creek Road End
378	Roscommon	Higgins Lake	4	DNR Public Fishing Site
379	Roscommon	Higgins Lake	5	Gerrish Township Park
380	Roscommon	Higgins Lake	6	Higgins Lake Public Fishing Site
381	Roscommon	Higgins Lake	7	Kelly Beach
382	Roscommon	Higgins Lake	8	Phoenix Park
383	Roscommon	Higgins Lake	9	Sam-O-Set Road End
384	Roscommon	Houghton Lake	10	Houghton Lake DNR Boat Launch and Park
385	Roscommon	Houghton Lake	11	Houghton Lake Public Fishing Site
386	Roscommon	Houghton Lake	12	Houghton Lake State Forest Campground
387	Roscommon	Houghton Lake	13	Old 27 DNR Access
388	Roscommon	Owens Lake	14	Camp Co-Be-Ac
<b>46</b> 389	<b>Saginaw</b>	Haithco Lake	1	Haithco Recreation Area

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	<b>County</b>	<b>Water Body</b>		<b>Location</b>
390	Saginaw	Lake of Dreams	2	Lake of Dreams Campground
<b>47</b> 391	<b><u>Sanilac</u></b>	Forester Creek	1	Forester Creek
<b>48</b> 392	<b><u>Schoolcraft</u></b>	Clear Lake	1	Clear Lake Camp
393	Schoolcraft	Clear Lake	2	Cowell Lake Campground
394	Schoolcraft	Gulliver Lake	3	Gulliver Lake
395	Schoolcraft	Swan lake	4	Swan Lake
396	Schoolcraft	Triangle Lake	5	Triangle Lake Site #1
397	Schoolcraft	Triangle Lake	6	Triangle Lake Site #2
<b>49</b> 398	<b><u>St. Clair</u></b>	Fort Trodd Lake	1	Fort Trodd Campground North
399	St. Clair	Fort Trodd Lake	2	Fort Trodd South
400	St. Clair	Kimball Pond	3	Kimball Township Pond
401	St. Clair	Ruby Campground Pond	4	Ruby Campground
<b>50</b> 402	<b><u>St. Joseph</u></b>	Cade Lake	1	Cade Lake Beach
403	St. Joseph	Palmer Lake	2	Palmer Lake Beach
404	St. Joseph	Sand Lake	3	Nottawa Park
<b>51</b> 405	<b><u>Tuscola</u></b>	Murphy Lake	1	Murphy Lake
<b>52</b> 406	<b><u>Wayne</u></b>	Newburgh Lake	1	Newburgh Lake

Appendix E.1. Great Lakes Beaches Monitored 2016.

		<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>1</b>	1	<b>Alcona</b>	Lake Huron	1	Harrisville State Park
	2	Alcona	Lake Huron	2	Greenbush Township
<b>2</b>	3	<b>Allegan</b>	Lake Michigan	1	Casco Township Park
	4	Allegan	Lake Michigan	2	Douglas Beach
	5	Allegan	Lake Michigan	3	Laketown Township Park
	6	Allegan	Lake Michigan	4	Oval Beach
	7	Allegan	Lake Michigan	5	Pier Cove Beach
	8	Allegan	Lake Michigan	6	Saugatuck Dunes State Park Shoreline Beach
	9	Allegan	Lake Michigan	7	West Side County Park Beach
<b>3</b>	10	<b>Alpena</b>	Lake Huron	1	Blair Street Park
	11	Alpena	Lake Huron	2	Starlite Beach
<b>4</b>	12	<b>Antrim</b>	Lake Michigan	1	Barnes Park
	13	Antrim	Lake Michigan	2	Elk Rapids
	14	Antrim	Lake Michigan	3	Veterans Memorial Park
	15	Antrim	Lake Michigan	4	Antrim County Day Park South
	16	Antrim	Lake Michigan	5	Banks Township Park
	17	Antrim	Lake Michigan	6	Echo Township Park
<b>5</b>	18	<b>Arenac</b>	Saginaw Bay-Lake Huron	1	Arenac County Park
	19	Arenac	Saginaw Bay-Lake Huron	2	Bessinger Road Beach
	20	Arenac	Saginaw Bay-Lake Huron	3	Cemetery Beach
	21	Arenac	Saginaw Bay-Lake Huron	4	Dyer Road Beach
	22	Arenac	Saginaw Bay-Lake Huron	5	Foster Road Beach
	23	Arenac	Saginaw Bay-Lake Huron	6	Hammel Beach Road Access
	24	Arenac	Saginaw Bay-Lake Huron	7	Singing Bridge Beach
	25	Arenac	Saginaw Bay-Lake Huron	8	Twining Road Beach
	26	Arenac	Saginaw Bay	9	Whites Beach
<b>6</b>	27	<b>Baraga</b>	Keweenaw Bay/Lake Superior	1	L'Anse Waterfront Park
<b>7</b>	28	<b>Bay</b>	Saginaw Bay-Lake Huron	1	Bay City State Recreation Area
	29	Bay	Saginaw Bay-Lake Huron	2	Brissette Beach Township Park
	30	Bay	Saginaw Bay-Lake Huron	3	Pinconning Park
	31	Bay	Saginaw Bay-Lake Huron	4	South Linwood Beach Township Park
	32	Bay	Saginaw Bay-Lake Huron	5	Wenona Beach
<b>8</b>	33	<b>Benzie</b>	Lake Michigan	1	Frankfort: Anchor Road Beach
	34	Benzie	Lake Michigan	2	Sleeping Bear Dunes- Esch Road Beach
	35	Benzie	Lake Michigan	3	Sleeping Bear Dunes- Platte point Bay
	36	Benzie	Lake Michigan	4	Sleeping Bear Dunes- Platte River Outlet

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	<b>County</b>	<b>Water Body</b>		<b>Location</b>	
<b>9</b>	<b>37</b>	<b><u>Berrien</u></b>	Lake Michigan	1	Cherry Beach
	<b>38</b>	Berrien	Lake Michigan	2	Grand Beach
	<b>39</b>	Berrien	Lake Michigan	3	Hagar Township Park
	<b>40</b>	Berrien	Lake Michigan	4	Jean Klock Park
	<b>41</b>	Berrien	Lake Michigan	5	Lions Park
	<b>42</b>	Berrien	Lake Michigan	6	Michiana Village
	<b>43</b>	Berrien	Lake Michigan	7	New Buffalo City
	<b>44</b>	Berrien	Lake Michigan	8	Silver Beach
	<b>45</b>	Berrien	Lake Michigan	9	Tiscornia Park
	<b>46</b>	Berrien	Lake Michigan	10	Union Pier - Townline Road
	<b>47</b>	Berrien	Lake Michigan	11	Warren Dunes Beach
	<b>48</b>	Berrien	Lake Michigan	12	Lincoln Township Park
	<b>49</b>	Berrien	Lake Michigan	13	Weko Beach
	<b>50</b>	Berrien	Lake Michigan	14	Rocky Gap
<b>10</b>	<b>51</b>	<b><u>Charlevoix</u></b>	Lake Charlevoix	1	Elm Point Beach
	<b>52</b>	Charlevoix	Lake Charlevoix	2	Fisherman's Island State Park
	<b>53</b>	Charlevoix	Lake Charlevoix	3	Young State Park Beach
	<b>54</b>	Charlevoix	Lake Michigan	4	Lake Michigan Beach
	<b>55</b>	Charlevoix	Lake Michigan	5	Whiting Park Beach
	<b>56</b>	Charlevoix	Lake Charlevoix	6	Depot Beach
	<b>57</b>	Charlevoix	Lake Charlevoix	7	East Jordan Tourist Park
	<b>58</b>	Charlevoix	Lake Charlevoix	8	Ferry Beach
	<b>59</b>	Charlevoix	Lake Charlevoix	9	Glenwood Beach
	<b>60</b>	Charlevoix	Lake Charlevoix	10	Hayes Township Park
	<b>61</b>	Charlevoix	Lake Charlevoix	11	Peninsula Beach
	<b>62</b>	Charlevoix	Lake Charlevoix	12	Tannery Park
	<b>63</b>	Charlevoix	Lake Charlevoix	13	Washington Street Beach
	<b>64</b>	Charlevoix	Lake Michigan	14	Michigan Avenue
	<b>65</b>	Charlevoix	Lake Michigan	15	Norwood Township Park
<b>11</b>	<b>66</b>	<b><u>Chippewa</u></b>	Lake Superior	1	Brimley State Park
	<b>67</b>	Chippewa	Lake Superior	2	Sherman Park
	<b>68</b>	Chippewa	St. Mary's River	3	Four Mile Beach
	<b>69</b>	Chippewa	St. Mary's River	4	Sugar Island Township Beach
<b>12</b>	<b>70</b>	<b><u>Delta</u></b>	Lake Michigan	1	Escanaba Bathing Beach
	<b>71</b>	Delta	Lake Michigan	2	Gladstone Bathing Beach/Van Cleve Park
<b>13</b>	<b>72</b>	<b><u>Emmet</u></b>	Lake Michigan	1	Petoskey State Park
	<b>73</b>	Emmet	Lake Michigan	2	Zorn Park - Harbor Springs
	<b>74</b>	Emmet	Lake Michigan	3	Cross Village Beach
	<b>75</b>	Emmet	Lake Michigan	4	Mackinaw City Beach #1
	<b>76</b>	Emmet	Lake Michigan	5	Mackinaw City Beach #2

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	<b>County</b>	<b>Water Body</b>		<b>Location</b>
77	Emmet	Lake Michigan	6	Magnus Park
78	Emmet	Lake Michigan	7	Middle Village Park
79	Emmet	Lake Michigan	8	Readmond Township Beach
80	Emmet	Lake Michigan	9	Sturgeon Bay Township Beach
81	Emmet	Lake Michigan	10	Wilderness State Park
82	Emmet	Lake Michigan	11	Zoll Street Beach
<b>14</b>	<b><u>Grand</u></b>	Grand Traverse Bay-East	1	Bayside Acme Township Park
84	Grand Traverse	Grand Traverse Bay-East	2	East Bay Park (Milliken Park)
85	Grand Traverse	Grand Traverse Bay-East	3	Traverse City State Park
86	Grand Traverse	Grand Traverse Bay-West	4	Bryant Park Beach
87	Grand Traverse	Grand Traverse Bay-West	5	Clinch Park
88	Grand Traverse	Grand Traverse Bay-East	6	Sayler Park
89	Grand Traverse	Grand Traverse Bay-West	7	West End Beach
90	Grand Traverse	Grand Traverse Bay-West	8	Sunset Park
91	Grand Traverse	Grand Traverse Bay-West	9	Senior Center
92	Grand Traverse	Grand Traverse (West Bay)	10	Volleyball Court Beach
<b>15</b>	<b><u>Houghton</u></b>	Lake Superior	1	Agate Beach
94	Houghton	Lake Superior	2	McLain State Park Beach
95	Houghton	Pike Bay at Portage Canal/Lake Superior	3	Chassell Beach
96	Houghton	Portage Canal/Lake Superior	4	Houghton City Beach
97	Houghton	Portage Canal/Lake Superior	5	Hancock City Beach
98	Houghton	Portage Canal/Lake Superior	6	Sandy Bottom Beach/Dollar Bay
99	Houghton	Torch Lake/Portage Canal/Lake Superior	7	Lake Linden Campground Beach
<b>16</b>	<b><u>Huron</u></b>	Lake Huron	1	Bird Creek County Park
101	Huron	Lake Huron	2	Caseville County Park
102	Huron	Lake Huron	3	Harbor Beach City Park
103	Huron	Lake Huron	4	Jenks County Park
104	Huron	Lake Huron	5	Lighthouse County Park
105	Huron	Lake Huron	6	McGraw County Park
106	Huron	Lake Huron	7	Oak Beach County Park
107	Huron	Lake Huron	8	Philp County Park
108	Huron	Lake Huron	9	Port Crescent State Park - Camping Area
109	Huron	Lake Huron	10	Port Crescent State Park - Day Use
110	Huron	Lake Huron	11	Sleeper State Park
111	Huron	Lake Huron	12	Thompson Park
112	Huron	Lake Huron	13	Veterans Park
<b>17</b>	<b><u>Iosco</u></b>	Lake Huron	1	Au Sable Township Park
114	Iosco	Lake Huron	2	MDOT Roadside Park - Three Mile Park

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	<b>County</b>	<b>Water Body</b>		<b>Location</b>
115	Iosco	Lake Huron	3	Oscoda Township Beach
116	Iosco	Lake Huron	4	Tawas Point State Park Campground
117	Iosco	Lake Huron	5	Tawas Point State Park-Day Use area
118	Iosco	Lake Huron (Tawas Bay)	6	Gateway Park Beach
119	Iosco	Tawas Bay	7	East Tawas City Park
120	Iosco	Tawas Bay	8	Tawas City Park
121	Iosco	Lake Huron	9	Alabaster Township Douglas Drive Beach Use Area
<b>18</b>	<b><u>Keweenaw</u></b>	Lake Superior	1	Eagle Harbor Beach
123	Keweenaw	Lake Superior	2	Eagle River Beach
<b>19</b>	<b><u>Leelanau</u></b>	Grand Traverse Bay-West	1	Elmwood/Greilikville Park and Beach
125	Leelanau	Grand Traverse Bay-West	2	Northport Bay Marina
126	Leelanau	Grand Traverse Bay-West	3	Suttons Bay Marina Park and Beach South
127	Leelanau	Grand Traverse Bay-West	4	Suttons Bay Park
128	Leelanau	Lake Michigan	5	Empire Municipal Beach
129	Leelanau	Grand Traverse Bay- West	6	Omena Beach and Park
130	Leelanau	Lake Michigan	7	Sleeping Bear Dunes- CR 669 Good
131	Leelanau	Lake Michigan	8	Sleeping Bear Dunes- CR 651 Good
132	Leelanau	Lake Michigan	9	Sleeping Bear Dunes- Glen Haven Beach
133	Leelanau	Lake Michigan	10	Sleeping Bear Dunes- North Bar Lake MI Beach
<b>20</b>	<b><u>Mackinac</u></b>	Lake Huron	1	Kiwanis Beach
135	Mackinac	Lake Michigan	2	US-2 Sand Dunes Beach (East of Brevort)
<b>21</b>	<b><u>Macomb</u></b>	Lake St. Clair	1	H.C.M.A. - Lake St. Clair Metropark Beach
137	Macomb	Lake St. Clair	2	New Baltimore Park Beach
138	Macomb	Lake St. Clair	3	St. Clair Shores Memorial Park Beach
<b>22</b>	<b><u>Manistee</u></b>	Lake Michigan	1	Arcadia Park
140	Manistee	Lake Michigan	2	Bar Lake Outlet
141	Manistee	Lake Michigan	3	Fifth Avenue Beach
142	Manistee	Lake Michigan	4	First Street Beach
143	Manistee	Lake Michigan	5	Magoon Creek
144	Manistee	Lake Michigan	6	Onkama Township Beach
145	Manistee	Lake Michigan	7	Orchard Beach State Park
146	Manistee	Lake Michigan	8	Pierport Township Beach
147	Manistee	Lake Michigan	9	Sundling Park
<b>23</b>	<b><u>Marquette</u></b>	Lake Superior	1	Marquette South Beach



Appendix E.1. Great Lakes Beaches Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
149	Marquette	Lake Superior	2	McCarty's Cove
150	Marquette	Lake Superior	3	North Beach
151	Marquette	Lake Superior	4	North of Picnic Rocks
152	Marquette	Lake Superior	5	Shiras Park Beach
<b>24</b>	<b><u>Mason</u></b>	Lake Michigan	1	Bass Lake Outlet Beach
154	Mason	Lake Michigan	2	Buttersville Park Beach
155	Mason	Lake Michigan	3	Ludington State Park Campground Beach
156	Mason	Lake Michigan	4	South Pier Beach
157	Mason	Lake Michigan	5	South Summit Beach - Sunset Boulevard
158	Mason	Lake Michigan	6	Stearns Park Beach
159	Mason	Lake Michigan	7	Summit Township Beach
<b>25</b>	<b><u>Menominee</u></b>	Lake Michigan	1	Henes Park
161	Menominee	Lake Michigan	2	Memorial Beach
<b>26</b>	<b><u>Monroe</u></b>	Lake Erie	1	Luna Pier City Beach
163	Monroe	Lake Erie	2	Sterling State Park
<b>27</b>	<b><u>Muskegon</u></b>	Lake Michigan	1	Bronson/Kruse Park
165	Muskegon	Lake Michigan	2	Meinert County Park
166	Muskegon	Lake Michigan	3	Muskegon State Park
167	Muskegon	Lake Michigan	4	P.J. Hoffmaster State Park - Public Beach Area
168	Muskegon	Lake Michigan	5	Pere Marquette Park
169	Muskegon	Lake Michigan	6	Lake Harbor Park
170	Muskegon	Lake Michigan	7	Lighthouse/Sylvan Beach
171	Muskegon	Lake Michigan	8	Medbury Park Beach
172	Muskegon	Lake Michigan	9	Muskegon State Park- North Campground Beach
173	Muskegon	Lake Michigan	10	Old Channel Beach
174	Muskegon	Lake Michigan	11	P.J. Hoffmaster State Park- Campground
175	Muskegon	Lake Michigan	12	Pioneer County Park
176	Muskegon	Lake Michigan	13	Duck Lake Channel Beach
<b>28</b>	<b><u>Oceana</u></b>	Lake Michigan	1	Claybanks Township Park
178	Oceana	Lake Michigan	2	Lighthouse Beach at Silver Lake State Park
179	Oceana	Lake Michigan	3	Mears State Park
180	Oceana	Lake Michigan	4	Whiskey Creek
181	Oceana	Stony Lake and Lake Michigan	5	Stony Lake Channel
<b>29</b>	<b><u>Ontonagon</u></b>	Lake Superior	1	Ontonagon Township Park and Campground

Appendix E.1. Great Lakes Beaches Monitored 2016.

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
183	Ontonagon	Lake Superior	2	Porcupine Mountains State Park- Union Bay
<b>30</b>	<b>Ottawa</b>	Lake Michigan	1	Grand Haven State Park
185	Ottawa	Lake Michigan	2	Grand Haven City Beach
186	Ottawa	Lake Michigan	3	Holland State Park
187	Ottawa	Lake Michigan	4	Tunnel Park
188	Ottawa	Lake Michigan	5	Windsnest Park
<b>31</b>	<b>Sanilac</b>	Lake Huron	1	Forester County Park
190	Sanilac	Lake Huron	2	Forestville Beach
191	Sanilac	Lake Huron	3	Lexington Beach
192	Sanilac	Lake Huron	4	Lexington County Park
193	Sanilac	Lake Huron	5	Port Sanilac Park
<b>32</b>	<b>Schoolcraft</b>	Lake Michigan	1	Public Shoreline Beach-Thompson
195	Schoolcraft	Lake Michigan	2	Rogers Park-MDOT
<b>33</b>	<b>St. Clair</b>	Lake Huron	1	Lakeport State Campground
197	St. Clair	Lake Huron	2	Conger-Lighthouse Beach
198	St. Clair	Lake Huron	3	Fort Gratiot County Park
199	St. Clair	Lake Huron	4	Holland Road Beach
200	St. Clair	Lake Huron	5	Lakeside Beach
201	St. Clair	Lake Huron	6	Keewadhin Road Beach
202	St. Clair	St. Clair River	7	Chrysler Park Beach
203	St. Clair	St. Clair River	8	Marine City Beach
<b>34</b>	<b>Van Buren</b>	Lake Michigan	1	Covert Township Park Beach
205	Van Buren	Lake Michigan	2	South Haven North Beach
206	Van Buren	Lake Michigan	3	South Haven South Beach
207	Van Buren	Lake Michigan	4	Van Buren State Park Beach
<b>35</b>	<b>Wayne</b>	Detroit River	1	Belle Isle Beach
209	Wayne	Lake St. Clair	2	Pier Park

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>1</b>	<b>Alcona</b>	Lake Huron	1	Black River Public Access
2	Alcona	Lake Huron	2	Negwegon State Park
3	Alcona	Lake Huron	3	Point Road Beach
4	Alcona	Lake Huron	4	Public Shoreline Beach-Huron National Forest North
5	Alcona	Lake Huron	5	Public Shoreline Beach-Huron National Forest South
6	Alcona	Lake Huron	6	Trask Lake Road Beach
7	Alcona	Lake Huron	7	Harrisville Public Access
<b>2</b>	<b>Alger</b>	Lake Superior	1	Au Train Beach
9	Alger	Lake Superior	2	Bay Furnance Recreation Area Beach
10	Alger	Lake Superior	3	Christmas Beach
11	Alger	Lake Superior	4	Grand Marais Harbor Beach
12	Alger	Lake Superior	5	Grand Marais Township Beach
13	Alger	Lake Superior	6	Hurricane Campground Beach
14	Alger	Lake Superior	7	Miners Beach
15	Alger	Lake Superior	8	Munising Beach
16	Alger	Lake Superior	9	Public Shoreline Beach-Au Train Bay
17	Alger	Lake Superior	10	Public Shoreline Beach-Au Train to Five
18	Alger	Lake Superior	11	Public Shoreline Beach-East County Border
19	Alger	Lake Superior	12	Public Shoreline Beach-Grand Sable Dunes
20	Alger	Lake Superior	13	Public Shoreline-Grand Portal Point
21	Alger	Lake Superior	14	Public Shoreline-Sand Point to Miners
22	Alger	Lake Superior	15	Rathfoot Park Beach
23	Alger	Lake Superior	16	Roadside Park
24	Alger	Lake Superior	17	Sand Point
25	Alger	Lake Superior	18	Twelve-Mile Beach
<b>3</b>	<b>Alpena</b>	Lake Huron	1	Bay View Park
27	Alpena	Lake Huron	2	Elcajon Bay
28	Alpena	Lake Huron	3	Issineke Hardwood Point
29	Alpena	Lake Huron	4	Michekewis Beach
30	Alpena	Lake Huron	5	Negwegon State Park-Ossineke South Point
31	Alpena	Lake Huron	6	3-Ossineke Beach
32	Alpena	Lake Huron	7	Ossineke Campground
33	Alpena	Lake Huron	8	Ossineke State Park
34	Alpena	Lake Huron	9	Partridge Point
35	Alpena	Lake Huron	10	Rock Port Beach
36	Alpena	Lake Huron	11	Thompson Park
37	Alpena	Lake Huron	12	WhiteFish Bay
<b>4</b>	<b>Antrim</b>	Grand Traverse Bay-East	1	Petobego Pond Area
39	Antrim	Lake Michigan	2	Antrim County Day Park North
40	Antrim	Lake Michigan	3	Antrim Creek Natural Area
41	Antrim	Lake Michigan	4	Elk Rapids Park
42	Antrim	Lake Michigan	5	Erickson Road

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
43	Antrim	Lake Michigan	6	Lore Road End Beach
44	Antrim	Lake Michigan	7	Michigan Trail
45	Antrim	Lake Michigan	8	Nature Preserve
46	Antrim	Lake Michigan	9	North Bay Shore (Conservancy)
47	Antrim	Lake Michigan	10	O'Dell Road
48	Antrim	Lake Michigan	11	Road Crossing near Winters Road
<b>5</b>	<b><u>Arenac</u></b>	Inner Saginaw Bay	1	Augres Township Park Beach
50	Arenac	Inner Saginaw Bay	2	Booth Road Beach
51	Arenac	Inner Saginaw Bay	3	City of Au Gres Public Access
52	Arenac	Inner Saginaw Bay	4	Gordon Road Beach
53	Arenac	Inner Saginaw Bay	5	Terrace Road
54	Arenac	Saginaw Bay	6	Whites Beach - Circle Rd Camp
55	Arenac	Saginaw Bay	7	Whites Beach - Isle Rd Ramp
56	Arenac	Saginaw Bay	8	Whites Beach - Point Rd - Culvert
57	Arenac	Saginaw Bay	9	Whites Beach - Wenonah Rd - West Ramp
58	Arenac	Saginaw Bay Inner-Lake Huron	10	Au Sable State Forest- Greens Point
59	Arenac	Saginaw Bay- Lake Huron	11	16th Street Beach
60	Arenac	Saginaw Bay- Lake Huron	12	28th Street Beach
<b>6</b>	<b><u>Baraga</u></b>	Huron Bay-Lake Superior	1	Arvon Township Park
62	Baraga	Keweenaw Bay-Lake Superior	2	Baraga State Park
63	Baraga	Keweenaw Bay-Lake Superior	3	First Sand Beach
64	Baraga	Keweenaw Bay-Lake Superior	4	L'Anse Township Park
65	Baraga	Keweenaw Bay-Lake Superior	5	Second Sands Beach
66	Baraga	Lake Superior	6	Keweenaw Bay Village Public Roadside
67	Baraga	Lake Superior	7	Mouth of the Huron River
68	Baraga	Lake Superior	8	Public Shoreline Beach-Cooper Country
69	Baraga	Lake Superior	9	Public Shoreline Beach-Northwest Abbaye Peninsula
70	Baraga	Lake Superior	10	Public Shoreline Beach-Point Abbaye
71	Baraga	Lake Superior	11	Public Shoreline Beach-Sand Point
<b>7</b>	<b><u>Bay</u></b>	Saginaw Bay	1	Nayanquing Point Wildlife Area
<b>8</b>	<b><u>Benzie</u></b>	Lake Michigan	1	Elberta Village Beach & Bluffs
74	Benzie	Lake Michigan	2	County Road # 669
75	Benzie	Lake Michigan	3	Sleeping Bear Dunes- Otter Creek Beach
76	Benzie	Lake Michigan	4	Platte River Point
77	Benzie	Lake Michigan	5	Point Betsie Lighthouse Beach
78	Benzie	Lake Michigan	6	Zettenberg Preserve
<b>9</b>	<b><u>Berrien</u></b>	Lake Michigan	1	Galien River Park
80	Berrien	Lake Michigan	2	Gordon Beach
81	Berrien	Lake Michigan	3	Grand Mere State Park- Rosemary Beach
82	Berrien	Lake Michigan	4	Grand Mere State Park- Shoreline Beach
83	Berrien	Lake Michigan	5	Grand Mere State Park- Waverland Beach

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
84	Berrien	Lake Michigan	6	Harbert Beach
85	Berrien	Lake Michigan	7	Mizpah Park
86	Berrien	Lake Michigan	8	Warren Dunes State Park North
<b>10</b> 87	<b>Charlevoix</b>	Lake Michigan	1	Bill Wagner Memorial Campground Beach
88	Charlevoix	Lake Michigan	2	Cables Bay Beach
89	Charlevoix	Lake Michigan	3	Donegal Bay
90	Charlevoix	Lake Michigan	4	Harbor Beach
91	Charlevoix	Lake Michigan	5	Iron Ore Bay Beach
92	Charlevoix	Lake Michigan	6	Mt. McSauba Beach
<b>11</b> 93	<b>Cheboygan</b>	Lake Huron	1	Alexander Henry Park
94	Cheboygan	Lake Huron	2	Cheboygan City Park
95	Cheboygan	Lake Huron	3	Cheboygan State Park Duncan Bay
96	Cheboygan	Lake Huron	4	Cheboygen State Park- Lighthouse Point
97	Cheboygan	Lake Huron	5	Ditta Park
98	Cheboygan	Lake Huron	6	Huron Street Beach
99	Cheboygan	Lake Huron	7	Mackinaw City Beach
100	Cheboygan	Lake Huron	8	Mackinaw City Lighthouse Park
101	Cheboygan	Lake Huron	9	Mill Creek Public Access
102	Cheboygan	Lake Huron	10	Pinewood Circle Road End Beach
103	Cheboygan	Lake Huron	11	Roadside Park MDOT, US-23
104	Cheboygan	Lake Huron	12	Stoney Point Road End Beach
105	Cheboygan	Lake Huron	13	Wawatam City Park
<b>12</b> 106	<b>Chippewa</b>	Lake Huron	1	Bass Cove Beach-Drummond Island
107	Chippewa	Lake Huron	2	Betsey Seaman Memorial Park-Drummond
108	Chippewa	Lake Huron	3	Big Shoal Cove
109	Chippewa	Lake Huron	4	De Tour State Park Shoreline Beach
110	Chippewa	Lake Huron	5	Detour Albany Beach
111	Chippewa	Lake Huron	6	Drummond Island Township Park
112	Chippewa	Lake Huron	7	Sand Bay Beach-Drummond Island
113	Chippewa	Lake Superior	8	Back Bay Boat Launch
114	Chippewa	Lake Superior	9	Bayview Campground
115	Chippewa	Lake Superior	10	Big Pines Day Use Area
116	Chippewa	Lake Superior	11	Hiawatha National Forest- Nodoway Point
117	Chippewa	Lake Superior	12	Hiawatha National Forest- North of Big Pine
118	Chippewa	Lake Superior	13	Hiawatha National Forest- Pendills Bay
119	Chippewa	Lake Superior	14	Hiawatha National Forest- Pendills Lake
120	Chippewa	Lake Superior	15	Hiawatha National Forest- Point Iroquois
121	Chippewa	Lake Superior	16	Hiawatha National Forest- Tahquamenon
122	Chippewa	Lake Superior	17	Hiawatha National Forest- West of Salt
123	Chippewa	Lake Superior	18	Pendills Beach
124	Chippewa	Lake Superior	19	Public Shoreline Beach-Browns Creek Area
125	Chippewa	Lake Superior	20	Public Shoreline Beach-Marsh Lake Area
126	Chippewa	Lake Superior	21	Public Shoreline Beach-Northwest of Two

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
127	Chippewa	Lake Superior	22	Public Shoreline Beach-Weatherhog Lake East Area
128	Chippewa	Lake Superior	23	Public Shoreline Beach-Weatherhog Lake
129	Chippewa	Lake Superior	24	Public Shoreline Beach-West of Whitefish
130	Chippewa	Lake Superior	25	Superior Township Public Access
131	Chippewa	Lake Superior	26	Tahquamenon Falls State Park-River Mouth
132	Chippewa	St. Mary's River	27	Dunbar Park
133	Chippewa	St. Mary's River	28	Hiawatha National Forest- North Pond
134	Chippewa	St. Mary's River	29	Hiawatha National Forest- Waiska Bay
135	Chippewa	St. Mary's River	30	Lake Superior State Forest- Munuscong
136	Chippewa	St. Mary's River	31	Public Shoreline Beach-Brush Point
137	Chippewa	St. Mary's River	32	Public Shoreline Beach-Point Aux Frenes
138	Chippewa	St. Mary's River	33	Public Shoreline Beach-Raber Bay stretch
139	Chippewa	St. Mary's River	34	Wilderness Beach
140	Chippewa	Lake Superior	35	Whitefish Bay picnic area
<b>13</b>	<b>Delta</b>	Fishdam River	1	Big Bay De Noc/Fishdam River Public
142	Delta	Lake Michigan	2	Fayette State Park
143	Delta	Lake Michigan	3	Fuller Park
144	Delta	Lake Michigan	4	Little Bay De Noc Public Beach Access
145	Delta	Lake Michigan	5	Portage Bay Forest Campground
146	Delta	Lake Michigan	6	Public Shoreline Beach-Charboneau Point
147	Delta	Lake Michigan	7	Public Shoreline Beach-County Road 481
148	Delta	Lake Michigan	8	Public Shoreline Beach-East Wilsey Bay
149	Delta	Lake Michigan	9	Public Shoreline Beach-Fishdam River
150	Delta	Lake Michigan	10	Public Shoreline Beach-Gilnet Haven
151	Delta	Lake Michigan	11	Public Shoreline Beach-Indian Point
152	Delta	Lake Michigan	12	Public Shoreline Beach-Indian Town Lake
153	Delta	Lake Michigan	13	Public Shoreline Beach-Jacks Bluff
154	Delta	Lake Michigan	14	Public Shoreline Beach-Martin Bay
155	Delta	Lake Michigan	15	Public Shoreline Beach-Nahma
156	Delta	Lake Michigan	16	Public Shoreline Beach-North End of Gregg
157	Delta	Lake Michigan	17	Public Shoreline Beach-North of Stonington
158	Delta	Lake Michigan	18	Public Shoreline Beach-Ogontz Bay
159	Delta	Lake Michigan	19	Public Shoreline Beach-Peninsula Point
160	Delta	Lake Michigan	20	Public Shoreline Beach-Point Detour
161	Delta	Lake Michigan	21	Public Shoreline Beach-Portage Bay
162	Delta	Lake Michigan	22	Public Shoreline Beach-Portage Peninsula
163	Delta	Lake Michigan	23	Public Shoreline Beach-St. Vital's Island
164	Delta	Lake Michigan	24	Public Shoreline Beach-USFS West Wilsey
165	Delta	Lake Michigan	25	Public Shoreline Beach-West Side of Gregg
166	Delta	Lake Michigan	26	Sac Bay County Park
167	Delta	Lake Michigan	27	Twin Springs Campground and Bathing
<b>14</b>	<b>Emmet</b>	Lake Michigan	1	Bliss Township Beach
169	Emmet	Lake Michigan	2	Church Beach
170	Emmet	Lake Michigan	3	Colonial Michilimackinac State Park

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
171	Emmet	Lake Michigan	4	Forest Beach
172	Emmet	Lake Michigan	5	Petoskey Harbor
173	Emmet	Lake Michigan	6	The Headlands County Park
174	Emmet	Lake Michigan	7	Thorne Swift Preserve
175	Emmet	Lake Michigan	8	Wilderness State Park-East of the Beach
176	Emmet	Lake Michigan	9	Wilderness State Park-Sturgeon Bay
177	Emmet	Lake Michigan	10	Wilderness State Park-West of Beach
<b>15</b> 178	<b>Gogebic</b>	Lake Superior	1	Black River Harbor Beach
179	Gogebic	Lake Superior	2	Little Girls Point Park
180	Gogebic	Lake Superior	3	Mouth of the Montreal River
181	Gogebic	Lake Superior	4	Porcupine Mountain State Park-North
182	Gogebic	Lake Superior	5	Presque Isle Beach
183	Gogebic	Lake Superior	6	Presque Isle State Campground
184	Gogebic	Lake Superior	7	Public Shoreline Beach-West of Black River
<b>16</b> 185	<b>Grand Traverse</b>	Grand Traverse Bay	1	Archie Park
186	Grand Traverse	Grand Traverse Bay	2	Old Mission - Center Road Natural Area
187	Grand Traverse	Grand Traverse Bay	3	Old Mission - MDOT Right of Way-South of
188	Grand Traverse	Grand Traverse Bay	4	Old Mission - Old Mission Point State Park
189	Grand Traverse	Grand Traverse Bay-East	5	Acme Roadside Park (DNR)
190	Grand Traverse	Grand Traverse Bay-East	6	Acme Roadside Park and Beach MDOT
191	Grand Traverse	Grand Traverse Bay-East	7	Deep Water Point
192	Grand Traverse	Grand Traverse Bay-East	8	East Bay Township Four Mile Road
193	Grand Traverse	Grand Traverse Bay-East	9	Yuba Beach
194	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	10	Bowers Harbor Public Access
195	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	11	DNR Launch/Beach Center Road
196	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	12	Haserot Beach
197	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	13	Kroupa Road Access M-22 South of Crain Hill Road
198	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	14	Leffingwell Point Beach
199	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	15	Old Mission Lighthouse
200	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	16	Old Mission Peninsula Twp Park-East of Light House
201	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	17	Old Mission Peninsula Twp Park-West of Light House
202	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	18	Old Mission Road
203	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	19	Peninsula Volunteer Fire Station Point #2
204	Grand Traverse	Grand Traverse Bay-Old Mission Peninsula	20	Swaney Road
205	Grand Traverse	Grand Traverse Bay-West	21	Mouth of Boardman

## Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
206	Grand Traverse	Grand Traverse Bay-West	22	Power Island Bay Park
207	Grand Traverse	Grand Traverse Bay-West	23	Rose Street Access at Peninsula Drive
<b>17</b> 208	<b>Houghton</b>	Lake Superior	1	Calument Waterworks Beach
209	Houghton	Lake Superior	2	Mink Farm
210	Houghton	Lake Superior	3	Public Shoreline Beach-Le Chance Creek
211	Houghton	Lake Superior	4	Public Shoreline Beach-Mc Lain State Park
212	Houghton	Lake Superior	5	Public Shoreline Beach-S. of Portage Entry
213	Houghton	Lake Superior	6	Public Shoreline Beach-Southwest County
214	Houghton	Lake Superior	7	White City
<b>18</b> 215	<b>Huron</b>	Lake Huron	1	County Road End
216	Huron	Lake Huron	2	Geiger Road Public Access
217	Huron	Lake Huron	3	Grindstone Public Access
218	Huron	Lake Huron	4	Harbor Beach Marina
219	Huron	Lake Huron	5	Helena Road End
220	Huron	Lake Huron	6	Kinch Road End
221	Huron	Lake Huron	7	Larned Road End
222	Huron	Lake Huron	8	Lighthouse County Park-South
223	Huron	Lake Huron	9	Mud Creek Public Access
224	Huron	Lake Huron	10	Stafford County Park
225	Huron	Lake Huron	11	Wagener County Park
<b>19</b> 226	<b>Iosco</b>	Lake Huron	1	Alabaster Township-Alabaster Road
227	Iosco	Lake Huron	2	Au Sable Point Beach
228	Iosco	Lake Huron	3	Interlake Road
229	Iosco	Lake Huron	4	Lake To Lake Road
230	Iosco	Lake Huron	5	Tawas Point State Park-Central
231	Iosco	Lake Huron (Tawas Bay)	6	County Road End off Tawas Beach Road
232	Iosco	Lake Huron (Tawas Bay)	7	MDNR Access E. Tawas - Boat Launch
<b>20</b> 233	<b>Keweenaw</b>	Lake Superior at Bete de Gris Bay	1	Bete de Gris Beach
234	Keweenaw	Lake Superior	2	Brunette Park
235	Keweenaw	Lake Superior	3	Cat Harbor Beach
236	Keweenaw	Lake Superior	4	Cooper Harbor Lighthouse Complex
237	Keweenaw	Lake Superior	5	Fort Wilkins State Park
238	Keweenaw	Lake Superior	6	Fort Wilkins State Park-East
239	Keweenaw	Lake Superior	7	Fort Wilkins State Park-West
240	Keweenaw	Lake Superior	8	Great Sands Bay Beach
241	Keweenaw	Lake Superior	9	Mouth of the Gratiot River Beach
242	Keweenaw	Lake Superior	10	Point Isabelle Beach
243	Keweenaw	Lake Superior	11	Public Shoreline Beach-Big Traverse Bay
244	Keweenaw	Lake Superior	12	Public Shoreline Beach-Gay Park
<b>21</b> 245	<b>Leelanau</b>	Grand Traverse Bay	1	Boughy Park and Beach
246	Leelanau	Grand Traverse Bay-West	2	Cathead Bay, Leelanau State Park



Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
247	Leelanau	Grand Traverse Bay-West	3	Christmas Cove
248	Leelanau	Grand Traverse Bay-West	4	Graham Green Park
249	Leelanau	Grand Traverse Bay-West	5	Hendryx County Roadside Park
250	Leelanau	Grand Traverse Bay-West	6	M-22 at M-72 Public Access
251	Leelanau	Grand Traverse Bay-West	7	MDOT Roadside Park and Beach
252	Leelanau	Grand Traverse Bay-West	8	MDOT Roadside Park and Beach M-22 North of Cherry Bend Drive
253	Leelanau	Grand Traverse Bay-West	9	Northport 4th Street Beach
254	Leelanau	Grand Traverse Bay-West	10	Northport 5th Street Beach
255	Leelanau	Grand Traverse Bay-West	11	Northport 7th Street Beach
256	Leelanau	Grand Traverse Bay-West	12	Northport Haserot Beach, Rose Street
257	Leelanau	Grand Traverse Bay-West	13	Stoney Point County Roadside Park
258	Leelanau	Grand Traverse Bay-West	14	Suttons Bay North Shore Park
259	Leelanau	Lake Michigan	15	Bay Front Park
260	Leelanau	Lake Michigan	16	Cedar Street Beach
261	Leelanau	Lake Michigan	17	G. Marsten Dame Marina
262	Leelanau	Lake Michigan	18	Gils Pier
263	Leelanau	Lake Michigan	19	Glen Arbor/Manitou Boulevard Beach
264	Leelanau	Lake Michigan	20	Lake Street Beach, Glen Arbor
265	Leelanau	Lake Michigan	21	Leelanau State Park, Lighthouse
266	Leelanau	Lake Michigan	22	Leland Harbor
267	Leelanau	Lake Michigan	23	North Bar
268	Leelanau	Lake Michigan	24	North Street Beach
269	Leelanau	Lake Michigan	25	Peterson Park
270	Leelanau	Lake Michigan	26	Reynolds Street Beach
271	Leelanau	Lake Michigan	27	Smith Street Beach Northport
272	Leelanau	Lake Michigan	28	Thompson Street Beach
273	Leelanau	Shalda Creek	29	Sleeping Bear Dunes -Shalda Creek
<b>22</b> 274	<b>Luce</b>	Lake Superior	1	Blind Sucker River #1
275	Luce	Lake Superior	2	Blind Sucker River #2
276	Luce	Lake Superior	3	Crisp Point Lighthouse
277	Luce	Lake Superior	4	Lake Superior Campground Beach
278	Luce	Lake Superior	5	Mouth of the Two Hearted River
279	Luce	Lake Superior	6	Public Shoreline Beach-Blind Sucker
280	Luce	Lake Superior	7	Public Shoreline Beach-Coast Guard Line
281	Luce	Lake Superior	8	Public Shoreline Beach-County Road 407
282	Luce	Lake Superior	9	Public Shoreline Beach-County Road 412 and Crisp Point
283	Luce	Lake Superior	10	Public Shoreline Beach-Little Sucker/Two Hearted River
284	Luce	Lake Superior	11	Public Shoreline Beach-Three Mile Creek
285	Luce	Lake Superior	12	Public Shoreline Beach-West County Border
286	Luce	Lake Superior	13	Unnamed Road End #1
287	Luce	Lake Superior	14	Unnamed Road End #2
288	Luce	Lake Superior	15	Unnamed Road End #3

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
<b>23</b> 289	<b><u>Mackinac</u></b>	Lake Huron	1	American Legion Memorial Park
290	Mackinac	Lake Huron	2	Antoine Road End
291	Mackinac	Lake Huron	3	Boot Island
292	Mackinac	Lake Huron	4	Coast Guard Pier Boat Launch and City
293	Mackinac	Lake Huron	5	Foley Creek Campground
294	Mackinac	Lake Huron	6	Government Island-Hiawatha National
295	Mackinac	Lake Huron	7	Harbour Light
296	Mackinac	Lake Huron	8	Hazelton Road End
297	Mackinac	Lake Huron	9	Hiawatha National Forest- Carp River
298	Mackinac	Lake Huron	10	Horseshoe Bay Wilderness-North
299	Mackinac	Lake Huron	11	Horseshoe Bay Wilderness-South
300	Mackinac	Lake Michigan	12	Big Knob State Forest Campground
301	Mackinac	Lake Michigan	13	Black River State Forest Campground
302	Mackinac	Lake Michigan	14	Epoufette Bay Campground
303	Mackinac	Lake Michigan	15	Hog Island Campground
304	Mackinac	Lake Michigan	16	Lake Michigan US-2 Campground Beach
305	Mackinac	Lake Michigan	17	MDOT Overlook
306	Mackinac	Lake Michigan	18	MDOT Roadside Park on US-2
307	Mackinac	Lake Michigan	19	Mouth of Cut River Roadside Beach
308	Mackinac	Lake Michigan	20	Naubinway Bay Access
309	Mackinac	Lake Michigan	21	Public Shoreline Beach #2-Little Hog Island
310	Mackinac	Lake Michigan	22	Public Shoreline Beach #2-Manitou Paymen Highbanks
311	Mackinac	Lake Michigan	23	Public Shoreline Beach #3-Little Hog Island
312	Mackinac	Lake Michigan	24	Public Shoreline Beach #4-Little Hog Island
313	Mackinac	Lake Michigan	25	Public Shoreline Beach #5-Little Hog Island
314	Mackinac	Lake Michigan	26	Public Shoreline Beach-Epoufette Bay
315	Mackinac	Lake Michigan	27	Public Shoreline Beach-Fox Point Area
316	Mackinac	Lake Michigan	28	Public Shoreline Beach-Little Hog Island
317	Mackinac	Lake Michigan	29	Public Shoreline Beach-Manitou Paymen Highbanks
318	Mackinac	Lake Michigan	30	Public Shoreline Beach-MDNR Matrix Point
319	Mackinac	Lake Michigan	31	Public Shoreline Beach-Morean Township, Section 25
320	Mackinac	Lake Michigan	32	Public Shoreline Beach-Naubinway Area
321	Mackinac	Lake Michigan	33	Public Shoreline Beach-Pointe Aux Chenes
322	Mackinac	Lake Michigan	34	Public Shoreline Beach-Seiners Point
323	Mackinac	Lake Michigan	35	Public Shoreline Beach-South of Brevort
324	Mackinac	Lake Michigan	36	Public Shoreline Beach-State Forest Matrix
325	Mackinac	Lake Michigan	37	Sand Point
326	Mackinac	Lake Michigan	38	State Roadside Park Beach
327	Mackinac	Lake Huron	39	Straits State Park
<b>24</b> 328	<b><u>Manistee</u></b>	Lake Michigan	1	Portage Park
<b>25</b> 329	<b><u>Marquette</u></b>	Lake Superior	1	Public Shoreline Beach-Big Huron River
330	Marquette	Lake Superior	2	Public Shoreline Beach-Little Presque Isle

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>	
<b>26</b>	<b>331</b>	<b>Mason</b>	Lake Michigan	1	Ludington State Park Public Shoreline
	332	Mason	Lake Michigan	2	Ludington State Park Public Shoreline
	333	Mason	Lake Michigan	3	Manistee National Forest Campground
	334	Mason	Lake Michigan	4	Manistee National Forest-Public Shoreline Beach North
	335	Mason	Lake Michigan	5	Manistee National Forest-Public Shoreline Beach South
	336	Mason	Lake Michigan	6	Pere Marquette Harbor
<b>27</b>	<b>337</b>	<b>Menominee</b>	Lake Michigan	1	Airport Park
	338	Menominee	Lake Michigan	2	Fox Park
	339	Menominee	Lake Michigan	3	Klienke Park
	340	Menominee	Lake Michigan	4	Public Shoreline Beach-Cedar River
	341	Menominee	Lake Michigan	5	Public Shoreline Beach-Fox village
	342	Menominee	Lake Michigan	6	Wells State Park
<b>28</b>	<b>343</b>	<b>Oceana</b>	Lake Michigan	1	Cedar Point County Park
	344	Oceana	Lake Michigan	2	Silver Lake State Park
	345	Oceana	Silver Lake-Lake Michigan	3	Silver Creek Channel
<b>29</b>	<b>346</b>	<b>Ontonagon</b>	Lake Superior	1	Green Park
	347	Ontonagon	Lake Superior	2	Gull Point Beach
	348	Ontonagon	Lake Superior	3	Mouth of the Big Iron River Beach
	349	Ontonagon	Lake Superior	4	Porcupine Mountain State Park
	350	Ontonagon	Lake Superior	5	Porcupine Mountains Wilderness State Park
	351	Ontonagon	Lake Superior	6	Public Shoreline Beach-Misery Bay
	352	Ontonagon	Lake Superior	7	Public Shoreline Beach-Sleeping Bay
	353	Ontonagon	Lake Superior	8	Public Shoreline Beach-Wolf Point
	354	Ontonagon	Lake Superior	9	Union Bay Beach
<b>30</b>	<b>355</b>	<b>Ottawa</b>	Lake Michigan	1	Kouw Park
	356	Ottawa	Lake Michigan	2	Mountain Beach
	357	Ottawa	Lake Michigan	3	P.J. Hoffmaster State Park- Shoreline
	358	Ottawa	Lake Michigan	4	Kirk Park
	359	Ottawa	Lake Michigan	5	North Beach Park
	360	Ottawa	Lake Michigan	6	Rosy Mound Recreation Area
<b>31</b>	<b>361</b>	<b>Presque Isle</b>	Lake Huron	1	40 Mile Point Park
	362	Presque Isle	Lake Huron	2	Ball Diamond Park
	363	Presque Isle	Lake Huron	3	Bell Bay
	364	Presque Isle	Lake Huron	4	Evergreen Beach
	365	Presque Isle	Lake Huron	5	Golden Beach
	366	Presque Isle	Lake Huron	6	Grace Access Site
	367	Presque Isle	Lake Huron	7	Hammond Bay Access Site
	368	Presque Isle	Lake Huron	8	Hammond Bay Harbor
	369	Presque Isle	Lake Huron	9	Hoeft State Park-North
	370	Presque Isle	Lake Huron	10	Hoeft State Park-South

Appendix E.2. Great Lakes Beaches Not Monitored 2016

	<b>County</b>	<b>Water Body</b>		<b>Location</b>
371	Presque Isle	Lake Huron	11	Lakeside Park in Rogers City
372	Presque Isle	Lake Huron	12	Lakeview Park Beach
373	Presque Isle	Lake Huron	13	Manitou Beach
374	Presque Isle	Lake Huron	14	New Lighthouse Park
375	Presque Isle	Lake Huron	15	Presque Isle Harbor
376	Presque Isle	Lake Huron	16	Presque Isle Harbor Beach
377	Presque Isle	Lake Huron	17	Public Shoreline Beach-False Presque Isle
378	Presque Isle	Lake Huron	18	Seagull Point Park
379	Presque Isle	Lake Huron	19	Thompson's Harbor State Park
380	Presque Isle	Lake Huron	20	US-23 Hammond Bay
381	Presque Isle	Lake Huron	21	US-23 Roger City
382	Presque Isle	Lake Huron	22	Lakeside Park Beach
<b>32</b>	<b>Sanilac</b>	Lake Huron	1	Birch Beach
384	Sanilac	Lake Huron	2	Birch Beach Middle #2
385	Sanilac	Lake Huron	3	Birch Beach North #3
386	Sanilac	Lake Huron	4	Delaware Park
387	Sanilac	Lake Huron	5	Great Lakes Beach
388	Sanilac	Lake Huron	6	Great Lakes Beach #1
389	Sanilac	Lake Huron	7	Sanilac County Park #4
390	Sanilac	Lake Huron	8	Sanilac County Roadside Park #1
391	Sanilac	Lake Huron	9	Blue Water Beach
<b>33</b>	<b>Schoolcraft</b>	Lake Michigan	1	Doyle Township Access
393	Schoolcraft	Lake Michigan	2	Goudreau's Harbor Seul Choix Point-Boat
394	Schoolcraft	Lake Michigan	3	Lakeview Park
395	Schoolcraft	Lake Michigan	4	Manistique Township Park
396	Schoolcraft	Lake Michigan	5	Public Shoreline Beach-South of McDonald
397	Schoolcraft	Lake Michigan	6	Public Shoreline Beach-Thompson Village
398	Schoolcraft	Lake Michigan	7	Roadside Park Beach
<b>34</b>	<b>St. Clair</b>	Lake Huron	1	Burthville Township Park
400	St. Clair	Lake Huron	2	Jeddo Road Beach
401	St. Clair	Lake Huron	3	Krafft Road Beach
402	St. Clair	Lake Huron	4	Lakeport State Park
403	St. Clair	Lake Huron	5	Metcalf Road Beach
404	St. Clair	Lake Huron	6	Washington Street Park
405	St. Clair	St. Clair River	7	Marine City Diving Area

Appendix F.1. Daily Water Samples from Inland Lake Beaches that Exceeded Michigan's WQS.

	<b>County</b>		<b>Location</b>	<b>Sampling Date</b>	<b>E. coli Test Results</b>
<b>1</b>	<b>Antrim</b>	1	Thurston Park	8/17/16	1046.2
	Antrim	2	Richard Park	8/17/16	579.4
<b>2</b>	<b>Barry</b>	1	Charlton Park	8/22/16	394.0795
	Barry	2	Charlton Park	8/29/16	355.8368
<b>3</b>	<b>Bay</b>		Vet's Park North Bay City- Saginaw River	8/17/16	410.602
<b>4</b>	<b>Benzie</b>	1	Beulah Beach	8/17/16	457
<b>5</b>	<b>Clare</b>	1	Wilson State Park	7/7/16	1143.639
<b>6</b>	<b>Chippewa</b>	1	Kinross Lake	8/17/16	1633.768
<b>7</b>	<b>Emmet</b>	1	Camp Petosega	7/26/16	2419.6
<b>8</b>	<b>Isabella</b>	1	Herrick County Park	8/24/16	1644.262
	<b>Isabella</b>	2	Deerfield County Park	8/16/16	590.4156
<b>9</b>	<b>Kalamazoo</b>	1	Sunset Lake Park	6/29/16	2265.569
	Kalamazoo	2	Sunset Lake Park	6/6/16	668.3849
	Kalamazoo	3	Sunset Lake Park	6/20/16	600.3207
	Kalamazoo	4	Sunset Lake Park	6/27/16	579.3166
	Kalamazoo	5	Sunset Lake Park	6/7/16	512.9062
	Kalamazoo	6	Sunset Lake Park	6/22/16	461.279
	Kalamazoo	7	Sunset Lake Park	6/8/16	454.0618
<b>10</b>	<b>Leelanau</b>	1	Good Harbor Creek Outlet	8/16/16	1327
	Leelanau	2	Good Harbor Creek Outlet	6/29/16	1146
<b>11</b>	<b>Macomb</b>	1	Stony Creek Metropark-Baypoint Beach	8/31/16	410.53
	Macomb	2	Stony Creek Metropark-Baypoint Beach	8/24/16	320.09
<b>12</b>	<b>Oakland</b>	1	Dodge Park #4	8/10/16	656
	Oakland	2	Dodge Park #4	8/3/16	590
	Oakland	3	Log Cabin Sub.	6/7/16	526
	Oakland	4	Christ the King Church Camp	7/25/16	320
	Oakland	5	Davisburg Village Beach (Hart Community Center)	7/13/16	1684
	Oakland	6	Davisburg Village Beach (Hart Community Center)	7/14/16	347
	Oakland	7	Pontiac Recreation Area	8/2/16	359
	Oakland	8	Scotch Lake Residents	7/6/16	461

Appendix F.1. Daily Water Samples from Inland Lake Beaches that Exceeded Michigan's WQS.

	<b>County</b>		<b>Location</b>	<b>Sampling Date</b>	<b>E. coli Test Results</b>
31	Oakland	9	Scotch Lake Residents	6/7/16	373
32	Oakland	10	Teeple Lake Recreation Area - Highland State Park	8/1/16	332
33	Oakland	11	Woodhull Lake Civic Association	6/8/16	338
34	Oakland	12	Fox Bay Civic Association	6/6/16	325
35	Oakland	13	Fox Bay Civic Association	6/20/16	338
36	Oakland	14	Fox Bay Civic Association	6/21/16	467
37	Oakland	15	Fox Bay Civic Association	6/23/16	321
38	Oakland	16	Fox Bay Civic Association	7/5/16	373
39	Oakland	17	Fox Bay Civic Association	7/6/16	347
40	Oakland	18	Fox Bay Civic Association	7/11/16	359
41	Oakland	19	Fox Bay Civic Association	7/13/16	488
42	Oakland	20	Fox Bay Civic Association	7/14/16	625
43	Oakland	21	Fox Bay Civic Association	7/25/16	558
44	Oakland	23	Seven Craven Association	8/9/16	358
45	Oakland	24	Seven Craven Association	8/10/16	398
46	Oakland	25	Eagle Lake Road	7/13/16	351
47	Oakland	26	Lakeland Estates	8/3/16	903
48	Oakland	27	Lakeland Estates	8/4/16	323
49	Oakland	28	Lakeland Estates	8/10/16	1513
50	Oakland	29	Lakeland Estates	8/11/16	868
51	Oakland	30	Lakeland Estates	8/16/16	1331
52	Oakland	31	Lakeland Estates	8/29/16	307
53	Oakland	32	Lakeland Estates	8/30/16	749
54	Oakland	33	Lakeland Estates	9/6/16	360
55	Oakland	34	Lakeland Estates	9/8/16	626
<b>13</b>	<b><u>Osceala</u></b>	1	Crawford Park	6/16/16	526.8588
57	Osceala	2	Beaverton City Park	8/2/16	591.1946
58	Osceala	3	Beaverton City Park	8/4/16	501.4695
<b>14</b>	<b><u>Otsego</u></b>	1	Otsego State Park	7/13/16	435.2
<b>15</b>	<b><u>Roscommon</u></b>	1	Houghton Lake Heights	7/28/16	2419.6
61	Roscommon	2	Richfield Township Public Fishing Site	7/7/16	344.8059
<b>16</b>	<b><u>Schoolcraft</u></b>	1	Indian Lake State Park	5/31/16	515.9639
63	Schoolcraft	2	Indian Lake State Park	6/7/16	365.8998
64	Schoolcraft	3	Indian Lake State Park	7/6/16	552.151
<b>17</b>	<b><u>Washtenaw</u></b>	1	Pinckney Recreation Area	6/10/16	873.0706
<b>18</b>	<b><u>Wayne</u></b>	1	Van Buren Township Park	7/25/16	389.0586
67	Wayne	2	Newburgh and Sumac Pointes - Hines Park	7/11/16	729.1505

Appendix F.1. Daily Water Samples from Inland Lake Beaches that Exceeded Michigan's WQS.

	<b>County</b>		<b>Location</b>	<b>Sampling Date</b>	<b><i>E. coli</i> Test Results</b>
68	Wayne	3	Newburgh and Sumac Pointes - Hines Park		
69	Wayne	4	Newburgh and Sumac Pointes - Hines Park	6/6/16	387.8135
70	Wayne	5	Blue Heron Condominiums Pond	9/1/16	521
<b>19</b> 71	<b><u>Wexford</u></b>	1	Manton Park	8/23/16	478
72	Wexford	2	Manton Park	6/17/16	336.2
73	Wexford	3	Manton Park	6/16/16	320.5
74	Wexford	4	Manton Park	6/14/16	313.1

Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

		County		Location	Water Body	Sampling Date	E. coli Test Results
<b>1</b>	1	<b><u>Allegan</u></b>	1	Oval Beach	Lake Michigan	7/25/16	488.4
	2	Allegan	2	West Side County Park Beach	Lake Michigan	7/25/16	344.8
<b>2</b>	3	<b><u>Arenac</u></b>	1	Singing Bridge Beach	Saginaw Bay-Lake Huron	6/20/16	526.8193
	4	Arenac	2	Singing Bridge Beach	Saginaw Bay-Lake Huron	8/31/16	477.63
	5	Arenac	3	Singing Bridge Beach	Saginaw Bay-Lake Huron	8/1/16	345.3372
	6	Arenac	4	Singing Bridge Beach	Saginaw Bay-Lake Huron	8/17/16	338.4763
<b>3</b>	7	<b><u>Bay</u></b>	1	Brissette Beach Township Park	Saginaw Bay-Lake Huron	7/28/16	2419.6
	8	Bay	2	South Linwood Beach Township Park	Saginaw Bay-Lake Huron	7/28/16	2419.6
	9	Bay	3	Bay City State Recreation Area	Saginaw Bay-Lake Huron	7/28/16	1986.3
	10	Bay	4	Bay City State Recreation Area	Saginaw Bay-Lake Huron	7/28/16	1553.1
	11	Bay	5	South Linwood Beach Township Park	Saginaw Bay-Lake Huron	6/23/16	1413.6
	12	Bay	6	Wenona Beach	Saginaw Bay-Lake Huron	7/28/16	1203.3
	13	Bay	7	South Linwood Beach Township Park	Saginaw Bay-Lake Huron	6/16/16	727
	14	Bay	8	Wenona Beach	Saginaw Bay-Lake Huron	7/26/16	547.5
	15	Bay	9	Bay City State Recreation Area	Saginaw Bay-Lake Huron	6/16/16	387.3
	16	Bay	10	Wenona Beach	Saginaw Bay-Lake Huron	8/10/16	360.9
	17	Bay	11	Bay City State Recreation Area	Saginaw Bay-Lake Huron	6/16/16	344.8
	18	Bay	12	Brissette Beach Township Park	Saginaw Bay-Lake Huron	6/16/16	325.5
<b>4</b>	19	<b><u>Berrien</u></b>	1	Warren Dunes Beach	Lake Michigan	7/18/16	1344.226
	20	Berrien	2	Warren Dunes Beach	Lake Michigan	6/20/16	664.9737
	21	Berrien	3	Warren Dunes Beach	Lake Michigan	6/27/16	558.4933
	22	Berrien	4	New Buffalo City	Lake Michigan	8/8/16	452.2998
	23	Berrien	5	Union Pier - Townline Road	Lake Michigan	7/25/16	360
	24	Berrien	6	New Buffalo City	Lake Michigan	6/13/16	350
	25	Berrien	7	Union Pier - Townline Road	Lake Michigan	8/8/16	350
	26	Berrien	8	Weko Beach	Lake Michigan	7/25/16	340
	27	Berrien	9	New Buffalo City	Lake Michigan	7/25/16	338.686
<b>5</b>	28	<b><u>Chippewa</u></b>	1	Sherman Park	Lake Superior	8/31/16	1732.9
	29	Chippewa	2	Sherman Park	Lake Superior	8/31/16	1553.1
	30	Chippewa	3	Brimley State Park	Lake Superior	8/30/16	1413.6



Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

		County		Location	Water Body	Sampling Date	E. coli Test Results
	31	Chippewa	4	Sherman Park	Lake Superior	8/31/16	1046.2
	32	Chippewa	5	Brimley State Park	Lake Superior	8/25/16	920.8
	33	Chippewa	6	Brimley State Park	Lake Superior	8/30/16	547.5
	34	Chippewa	7	Brimley State Park	Lake Superior	8/25/16	344.1
	35	Chippewa	8	Brimley State Park	Lake Superior	8/25/16	325.5
	36	Chippewa	9	Four Mile Beach	St. Mary's River	8/2/16	1732.9
	37	Chippewa	10	Four Mile Beach	St. Mary's River	8/30/16	1299.7
	38	Chippewa	11	Four Mile Beach	St. Mary's River	8/30/16	980.4
	39	Chippewa	12	Four Mile Beach	St. Mary's River	8/30/16	770.1
	40	Chippewa	13	Four Mile Beach	St. Mary's River	8/2/16	547.5
	41	Chippewa	14	Four Mile Beach	St. Mary's River	8/2/16	488.4
<b>6</b>	42	<b><u>Delta</u></b>	1	Gladstone Bathing Beach/Van Cleve Park	Lake Michigan	7/12/16	497.5244
<b>7</b>	43	<b><u>Emmet</u></b>	1	Mackinaw City Beach #2	Lake Michigan	8/24/16	410.6
	44	Emmet	2	Mackinaw City Beach #2	Lake Michigan	7/12/16	387.3
<b>8</b>	45	<b><u>Grand Traverse</u></b>	1	Bayside Acme Township Park	Grand Traverse Bay-East	7/27/16	328
<b>9</b>	46	<b><u>Huron</u></b>	1	Caseville County Park	Lake Huron	8/18/16	2419.6
	47	Huron	2	Bird Creek County Park	Lake Huron	6/20/16	1553.1
	48	Huron	3	Caseville County Park	Lake Huron	8/17/16	1299.7
	49	Huron	4	Port Crescent State Park - Camping Area	Lake Huron	8/17/16	613.1
	50	Huron	5	Bird Creek County Park	Lake Huron	6/21/16	461.1
	51	Huron	6	Bird Creek County Park	Lake Huron	8/22/16	461.1
	52	Huron	7	Bird Creek County Park	Lake Huron	8/29/16	396.8
	53	Huron	8	Caseville County Park	Lake Huron	8/23/16	365.4
<b>10</b>	54	<b><u>Iosco</u></b>	1	Veterans Park	Lake Huron	6/20/16	816.4
	55	Iosco	2	Tawas Point State Park-Day Use area	Lake Huron	7/12/16	689.3
	56	Iosco	3	Gateway Park Beach	Lake Huron (Tawas Bay)	7/12/16	526.1932
	57	Iosco	4	Gateway Park Beach	Lake Huron (Tawas Bay)	8/16/16	332.8684

Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

		County		Location	Water Body	Sampling Date	E. coli Test Results
<b>11</b>	58	<b>Leelanau</b>	1	Suttons Bay - South Shore Park	Grand Traverse Bay (West Bay)	8/31/16	575
	59	Leelanau	2	Suttons Bay - South Shore Park	Grand Traverse Bay (West Bay)	7/6/16	344
	60	Leelanau	3	Elmwood/Greilikville Park & Beach	Grand Traverse Bay-West	8/31/16	914
	61	Leelanau	4	Northport Bay Marina	Grand Traverse Bay-West	8/24/16	602
	62	Leelanau	5	Omena Beach & Park	Grand Traverse Bay-West	7/27/16	317.7399
	63	Leelanau	6	Elmwood/Greilikville Park & Beach	Grand Traverse Bay-West	8/17/16	313
<b>12</b>	64	<b>Mackinac</b>	1	Kiwanis Beach	Lake Huron	8/2/16	2419.6
	65	Mackinac	2	Kiwanis Beach	Lake Huron	8/16/16	2419.6
	66	Mackinac	3	Kiwanis Beach	Lake Huron	7/12/16	1046.2
	67	Mackinac	4	Kiwanis Beach	Lake Huron	8/2/16	770.1
	68	Mackinac	5	Kiwanis Beach	Lake Huron	7/12/16	582.746
	69	Mackinac	6	Kiwanis Beach	Lake Huron	7/12/16	488.4
	70	Mackinac	7	Kiwanis Beach	Lake Huron	7/12/16	387.3
	71	Mackinac	8	Kiwanis Beach	Lake Huron	7/19/16	343.6
	72	Mackinac	9	Kiwanis Beach	Lake Huron	7/19/16	316.9
	73	Mackinac	10	Kiwanis Beach	Lake Huron	8/3/16	307.6
	74	Mackinac	11	US 2 Sand Dunes Beach (East of Brevort)	Lake Michigan	6/2/16	344.8
<b>13</b>	75	<b>Macomb</b>	1	St. Clair Shores Memorial Park Beach	Lake St. Clair	8/17/16	1790.46
	76	Macomb	2	H.C.M.A. - Lake St. Clair Metropark Beach	Lake St. Clair	8/24/16	1093.88
	77	Macomb	3	H.C.M.A. - Lake St. Clair Metropark Beach	Lake St. Clair	8/17/16	897.23
	78	Macomb	4	H.C.M.A. - Lake St. Clair Metropark Beach	Lake St. Clair	7/6/16	866.4
	79	Macomb	5	St. Clair Shores Memorial Park Beach	Lake St. Clair	8/24/16	819.14
	80	Macomb	6	St. Clair Shores Memorial Park Beach	Lake St. Clair	8/31/16	675.93
	81	Macomb	7	H.C.M.A. - Lake St. Clair Metropark Beach	Lake St. Clair	7/6/16	566.49
	82	Macomb	8	St. Clair Shores Memorial Park Beach	Lake St. Clair	7/6/16	459.24
	83	Macomb	9	H.C.M.A. - Lake St. Clair Metropark Beach	Lake St. Clair	8/10/16	421.45
	84	Macomb	10	St. Clair Shores Memorial Park Beach	Lake St. Clair	7/20/16	392.83
	85	Macomb	11	St. Clair Shores Memorial Park Beach	Lake St. Clair	7/13/16	361.42
	86	Macomb	12	St. Clair Shores Memorial Park Beach	Lake St. Clair	8/15/16	320.66
	87	Macomb	13	H.C.M.A. - Lake St. Clair Metropark Beach	Lake St. Clair	8/30/16	307.74
	88	Macomb	14	St. Clair Shores Memorial Park Beach	Lake St. Clair	9/28/16	560.58

Appendix F.2. Daily Water Samples from Great Lakes Beaches that Exceeded Michigan's WQS 2016.

		County		Location	Water Body	Sampling Date	E. coli Test Results
<b>14</b>	89	<b>Monroe</b>	1	Luna Pier City Beach	Lake Erie	6/21/16	2420
	90	Monroe	2	Sterling State Park	Lake Erie	6/21/16	2420
	91	Monroe	3	Luna Pier City Beach	Lake Erie	6/14/16	1937.035
	92	Monroe	4	Luna Pier City Beach	Lake Erie	6/23/16	885.3144
	93	Monroe	5	Luna Pier City Beach	Lake Erie	7/19/16	747.4523
	94	Monroe	6	Sterling State Park	Lake Erie	8/29/16	590.8891
<b>15</b>	95	<b>Muskegon</b>	1	P.J. Hoffmaster State Park - Public Beach Area	Lake Michigan	8/9/16	649
<b>16</b>	96	<b>Ottawa</b>		Grand Haven State Park	Lake Michigan	6/1/16	320.4
	97	Ottawa		Grand Haven State Park	Lake Michigan	7/27/16	852.8
	98	Ottawa		Holland State Park	Lake Michigan	8/3/16	1132.2
<b>17</b>	99	<b>Sanilac</b>	1	Forester County Park	Lake Huron	8/16/16	1967.243
	100	Sanilac	2	Port Sanilac Park	Lake Huron	8/16/16	1647.81
	101	Sanilac	3	Forestville Beach	Lake Huron	8/16/16	1529.313
	102	Sanilac	4	Forester County Park	Lake Huron	8/17/16	872.598
	103	Sanilac	5	Port Sanilac Park	Lake Huron	6/28/16	402.3926
	104	Sanilac	6	Forester County Park	Lake Huron	8/18/16	319.1773
<b>18</b>	105	<b>Schoolcraft</b>	1	Rogers Park-MDOT	Lake Michigan	7/12/16	1137.939
	106	Schoolcraft	2	Public Shoreline Beach-Thompson	Lake Michigan	7/12/16	693.0588
<b>19</b>	107	<b>St. Clair</b>	1	Chrysler Park Beach	St. Clair River	8/16/16	2419.6
	108	St. Clair	2	Chrysler Park Beach	St. Clair River	8/17/16	1119.9
	109	St. Clair	3	Chrysler Park Beach	St. Clair River	6/28/16	517.2
	110	St. Clair	4	Chrysler Park Beach	St. Clair River	7/27/16	387.3
	111	St. Clair	5	Chrysler Park Beach	St. Clair River	8/3/16	307.6
	112	St. Clair	6	Holland Road Beach	Lake Huron	8/31/16	2419.6
	113	St. Clair	7	Keewadhin Road Beach	Lake Huron	6/21/16	410.6
	114	St. Clair	8	Keewadhin Road Beach	Lake Huron	7/19/16	307.6