



## MINNESOTA

### 11th in Beachwater Quality

5% of samples exceeded national standards in 2010

Polluted urban and suburban runoff is a major threat to water quality at the nation's coastal beaches. Runoff from storms and irrigation carries pollution from parking lots, yards, and streets directly to waterways. In some parts of the country, stormwater routinely causes overflows from sewage systems. Innovative solutions known as green infrastructure enable communities to naturally absorb or use runoff before it causes problems. The U.S. Environmental Protection Agency is modernizing its national rules for sources of runoff pollution and should develop strong, green infrastructure-based requirements.

Minnesota has 79 public beaches along about 58 miles of Lake Superior coastline. During the 2010 swim season, the Minnesota Pollution Control Agency (MPCA) began transferring responsibility for the program to the Minnesota Department of Health (MDH), and as of April 2011, the Minnesota Lake Superior Beach Monitoring Program is fully administered by the MDH. As an interim step in moving the program from MPCA to MDH, MPCA contracted with the University of Minnesota Duluth's Natural Resources Research Institute (MDH's NRRI) to conduct monitoring and notification activities for the 2010 swim season.

The City of Duluth is in the process of adopting a new unified land development code. This code will be informed by the city's comprehensive plan, and will encourage green infrastructure and the preservation of open space. In addition to taking steps to reduce stormwater runoff, Duluth received financial assistance for wastewater treatment upgrades through the American Reinvestment and Recovery Act, and has embarked on the construction of a \$2 million wastewater storage facility that allows stormwater to be held during storms for later treatment so that the treatment plant is not overwhelmed during heavy rains. The project also includes pipe replacements between 7th Street and 21st Avenue East to reduce sewage leaks, and nearly \$2 million for a wastewater lift station and improvements in piping. These installations and upgrades will help to reduce discharges of raw or partially treated sewage to Lake Superior beachwater.<sup>1</sup>

#### KEY FINDINGS IN MINNESOTA

##### Beachwater Contamination

(% of samples exceeding state standards in 2010)<sup>†</sup>

- Park Point 20th Street/Hearing Island Canal Beach in St. Louis County (50%)
- Park Point Sky Harbor Parking Lot Beach in St. Louis County (30%)
- Park Point New Duluth Boat Club/14th Street Beach in St. Louis County (20%)
- Leif Erikson Park Beach in St. Louis County (20%)

##### Reported Sources of Beachwater Contamination Statewide (number of closing/advisory days)

- 45 (74%) unknown sources of contamination
- 16 (26%) stormwater runoff

#### Monitoring Results

In 2010, Minnesota reported 90 coastal beaches and beach segments (including 11 beaches on the Grand Portage Reservation), 7 (8%) of which were monitored more than once a week, 43 (48%) once a week, and 40 (44%) were not monitored. For this section of the report, NRDC looked at the percent of monitoring samples that exceeded the state's daily maximum bacterial standards (all reported samples were used to calculate the 2010 percent exceedance rates, including duplicate samples and samples taken outside the official beach season, if any). In 2010, 5%\* of all reported beach monitoring samples exceeded the state's daily maximum bacterial standards. The beaches with the highest percent exceedance rates in 2010 were Park Point 20th Street/Hearing Island Canal Beach (50%), Park Point Sky Harbor Parking Lot Beach (30%), Leif Erikson Park Beach (20%), and Park Point New Duluth Boat Club/14th Street Beach

<sup>†</sup> To avoid capturing sampling locations that are not truly located at swimming beaches, NRDC does not normally include monitoring sites that were sampled less than 12 times per year in its Dirtiest Beachwater rankings. However, as discussed in this summary, Minnesota had a truncated sampling season in 2010, so NRDC is including all beaches with at least 10 samples in its Dirtiest Beachwater rankings for this state.

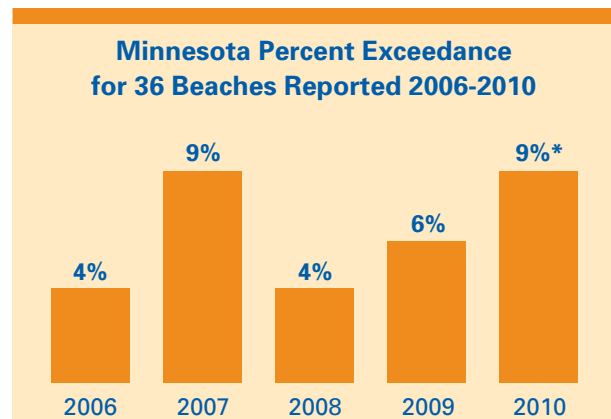
(20%), all in St. Louis County. St. Louis County had the highest exceedance rate (12%) in 2010, followed by Cook County (1%); there were no exceedances at beaches in Lake County. Less than 5% of Grand Portage samples exceeded standards.

**Sampling Practices:** Generally, beaches are monitored from the week before Memorial Day to the week after Labor Day, with some beaches monitored in May and October as well because of use by kayakers, surfers, and sailboarders. In 2010, the monitoring season was shortened because finalization of contracts between MPCA and UMD's NRRI was delayed, and beaches were sampled from August 18 to September 15.<sup>4</sup>

The state determines sampling practices, locations, standards, and notification protocols and practices at the beaches monitored under the program. Grand Portage Reservation, located on the north shore of Lake Superior near the Canadian border, has swimming beaches on Lake Superior, and the water at these beaches is monitored in a program separate from the state's Lake Superior Beach Monitoring Program. These beaches were sampled throughout the entire monitoring season. This summary describes only the Beach Monitoring Program's practices, but includes monitoring and notification data beaches in the Grand Portage Reservation. Grand Portage applies the same water quality standards as the state.<sup>1</sup>

Samples are collected at a depth of 6 to 12 inches in water that is knee deep. In Minnesota, beaches are assigned high, medium, and low priority based on the potential for impacts from stormwater runoff, bather loads, waterfowl populations, and proximity to concentrated animal feeding operations and wastewater treatment discharges.<sup>2</sup>

When a beach is placed under advisory, monitoring occurs daily (Monday through Thursday) until the site meets the water quality standards. States that monitor more frequently after an exceedance is found will tend to have higher percent exceedance rates and lower total closing/ advisory days than they would if their sampling schedule did not alter after an exceedance was found.



### Closings and Advisories

Total closing and advisory days for 15 events lasting six consecutive weeks or less decreased 38% to 61 days in 2010 from 99 days in 2009. In prior years, there were 257 closing and advisory days in 2008, 195 days in 2007, 73 days in 2006, and 143 days in 2005. In addition, there were no extended or permanent events in 2010. Extended events are those in effect more than six weeks but not more than 13 consecutive weeks; permanent events are in effect for more than 13 consecutive weeks. For 15 events lasting six consecutive weeks or less, 97% (59) of closing/advisory days in 2010 were due to monitoring that revealed elevated bacteria levels, and 3% (2) were preemptive (i.e., without waiting for monitoring results) due to unspecified reasons.

**Standards and Procedures:** The Lake Superior Beach Monitoring Program does not issue beach closings; its policy is to issue advisories only<sup>1</sup> (the Grand Portage Tribe, however, does issue closings). Minnesota applies a single-sample maximum *E. coli* standard of 235 cfu/100ml and a geometric mean *E. coli* standard of 126 cfu/100ml for a minimum of five samples collected during a 30-day period. When a sample exceeds either the single-sample or geometric mean bacteria standard, an advisory is issued. There is no protocol for delaying or foregoing an advisory when a sample exceeds standards.

Minnesota has no preemptive rainfall standards, but does post advisories after known sewage overflows or other events that are considered likely to result in high bacteria levels. In addition, the public is advised to wait 24 hours before going swimming after rainfall in urban areas.<sup>3</sup>

\* Why don't the 2010 percent exceedance values in this summary match? Only samples from a common set of beaches monitored each year from 2006–2010 are included in the bar chart. The percent exceedance for this subset of beaches (9%) did not have the same value as the percent exceedance for all of the beaches monitored in 2010 (5%).

### Minnesota 2010 Monitoring Results and Closing or Advisory Days

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>Cook County</b>					
Grand Portage Bay Monitoring Location 1	1	1/wk	18	0%	0
Grand Portage Bay Monitoring Location 2	1	1/wk	18	0%	0
Grand Portage Bay Monitoring Location 3	1	1/wk	18	0%	0
Grand Portage Bay Monitoring Location 4	1	1/wk	18	0%	0
Grand Portage Bay Monitoring Location 5	1	1/wk	18	6%	2 (2)*
Grand Portage Bay Monitoring Location 6	1	1/wk	18	0%	0
Grand Portage Bay Monitoring Location 7	1	1/wk	18	0%	0
Grand Portage Bay Monitoring Location 8	1	1/wk	18	0%	0
Hollow Rock Resort Beach	1	1/wk	18	0%	0
Red Rock Beach	1	1/wk	18	0%	0
Reservation River Beach	1	1/wk	16	13%	12 (3)*
<b>Beaches in Cook County that were not monitored and that had no closing or advisory days in 2010:</b>					
Cutface Creek Wayside Rest Beach	Paradise Beach	Cascade State Park Campground Beach	Judge C.R. Magney State Park East Beach		
Durfee Creek Area Beach	Schroeder Town Park Beach	Cascade State Park West Beach	Judge C.R. Magney State Park West Beach		
Grand Marais Campground Beach	Sugarloaf Cove Beach	Coville Creek Beach	Ray Berglund Wayside Rest Beach		
Grand Marais Downtown Beach	Temperance River State Park Beach	Croftville Beach	Red Cliff Beach		
Kadunce Creek Beach	Chicago Bay Boat Launch Beach	Horseshoe Bay Boat Launch Beach	Temperance River State Park East Beach		
Old Shore Road Beach Area	Butterwort Cliffs Beach				
<b>Lake County</b>					
Agate Bay Beach	2	1/wk	1	0%	0
Burlington Bay Beach	2	1/wk	1	0%	0
Flood Bay Beach	2	1/wk	1	0%	0
Gooseberry Falls State Park Beach	2	1/wk	1	0%	0
Silver Bay Marina Beach	2	1/wk	1	0%	0
Split Rock Lighthouse State Park Beach	2	1/wk	1	0%	0
Split Rock River Beach	2	1/wk	1	0%	0
Tettegouche State Park Beach	2	1/wk	1	0%	0
Twin Points Public Access Beach	2	1/wk	2	0%	0
<b>Beaches in Lake County that were not monitored and that had no closing or advisory days in 2010:</b>					
Blueberry Hill Beach	Silver Creek Beach	Split Rock Lighthouse State Park/Gold Rock Point Beach	Tettegouche State Park/Baptism River Beach		
Knife River Marina Beach	Split Rock Lighthouse State Park/Corundum Point Beach	Split Rock Lighthouse State Park/Split Rock Point Beach	Tettegouche State Park/Crystal Bay Beach		
Manitou River Beach	Split Rock Lighthouse State Park/Crazy Bay Beach	Stewart River Beach	Two Harbors City Park Beach		
Palisade Beach					
Silver Cliff Beach					
<b>St. Louis County</b>					
42nd Avenue East Beach	2	1/wk	5	0%	0
Bluebird Landing Beach	2	1/wk	4	0%	0

Beach	Tier	Assigned Monitoring Frequency	Total Samples	% of Samples Exceeding State Standards	Closing or Advisory Days
<b>St. Louis County</b>					
Boy Scout Landing Beach	2	1/wk	5	0%	0
Brighton Beach	1	2/wk	10	0%	0
Clyde Avenue Boat Landing Beach	2	1/wk	7	14%	4 (2)*
French River Beach	2	1/wk	5	0%	0
Lakewalk Beach	1	2/wk	9	11%	1 (1)*
Lakewalk East/16th Avenue East Beach	2	1/wk	7	14%	2 (1)*
Leif Erikson Park Beach	2	1/wk	10	20%	4 (1)*
Lester River Beach	2	1/wk	6	0%	0
Park Point 20th Street/Hearing Island Canal Beach	1	2/wk	14	50%	19 (2)*
Park Point Beach House	1	2/wk	11	0%	0
Park Point Franklin Park/13th Street South Beach	1	2/wk	12	0%	0
Park Point Lafayette Community Club Beach	1	2/wk	9	0%	0
Park Point New Duluth Boat Club/14th Street Beach	1	2/wk	10	20%	4 (1)*
Park Point Sky Harbor Parking Lot Beach	2	1/wk	10	30%	13 (2)*
Stony Point Beach	2	1/wk	5	0%	0
<b>Beaches in St. Louis County that were not monitored and that had no closing or advisory days in 2010:</b>					
Bayfront Park Beach	Lakewood Pump Station Beach	North Shore Drive Wayside Rest/72nd Avenue East Beach	Stony Point Wayside Rest Beach		
Blatnik Fishing Pier Beach	McQuade Road Safe Harbor Beach	North Shore Drive Wayside Rest/Cant Road Beach	Waterfront Trail/Interlake Beach		
Glensheen Cemetery Beach	Minnesota Point Harbor Beach	Park Point Southworth Marsh Beach	Waterfront Trail/Radio Towers Beach		
Indian Point Campground Beach	Morgan Park Beach	Smithville Park Beach	Waterfront Trail/Riverside Beach		

\*Reported closing or advisory days are for events lasting six consecutive weeks or less. Number of days in parentheses are for events lasting more than six consecutive weeks.

## NOTES

- 1 Margaret Watkins. Grand Portage Environmental Department. May, 2011.
- 2 Brian Fredrickson, Minnesota Pollution Control Agency, personal communication, April 2011.
- 3 Minnesota Lake Superior Beach Monitoring Program. Minimizing Risk. Accessed at <http://mnbeaches.org>, February 2011.
- 4 Brian Fredrickson, Minnesota Pollution Control Agency, personal communication, June 2011.

**Testing the Waters 2011 reflects data as of June 27, 2011.**