

## OHIO

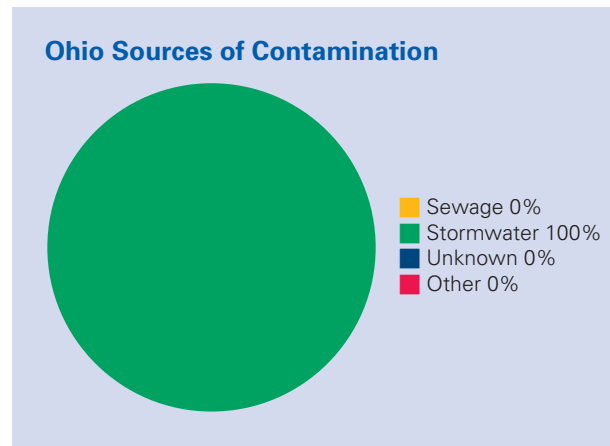
### 2nd in the nation in percent exceedances in 2007

Ohio has 53 public beaches lining 7.3 miles of Lake Erie shoreline.<sup>1</sup> Nearly half of these beaches and nearly all of the beach miles are monitored under a program administered by the Ohio Department of Health (ODH). This department, in addition to monitoring 15 Lake Erie beaches in 2007, coordinated activities at coastal beaches monitored by the Lake County General Health District, the Cuyahoga County Board of Health, and the Northeast Ohio Regional Sewer District (NEORS). Ashtabula, Lake, Cuyahoga, Lorain, Erie, Lucas, and Ottawa counties had at least one monitored beach in 2007. Some inland beaches are also monitored for water quality in Ohio, but this report includes information about only Lake Erie monitoring activities.

Advisories due to monitoring results are issued at Lake Erie beaches in Ohio by local authorities based on recommendations by the state. Local jurisdictions have the authority to close beaches if they choose. The monitoring season varies depending on the monitoring agency, but generally runs from Memorial Day through Labor Day.<sup>2</sup>

In 2007, the Cleveland Department of Public Health continued to develop educational materials for the beach-going public and participated in various outreach activities held along the Lake Erie border. The department participated in “National Clean Beaches Week” activities held at Villa Angela, Euclid Beach, and Edgewater Beach. Staff distributed beach-related flyers and information to libraries and recreation centers in the greater Cleveland area.

Ohio received a \$224,300 federal BEACH Act grant in 2007 and was eligible for a \$220,780 grant in 2008. The BEACH Act grants fully fund Ohio’s Lake Erie beach monitoring program.



## Standards

**Indicator Organism:** *E. coli*.

**Standards:** Ohio uses the *E. coli* single-sample maximum standard of 235 cfu/100 ml for beach closing and advisory decisions. There are no preemptive rainfall standards, but preemptive rainfall advisories can be issued by beach managers if they feel water quality has been compromised by rain.<sup>1</sup> Beach managers may also restrict beach access because of sewage or other pollution spills, or for any other threat to public health.

A predictive model called Nowcast uses environmental factors including rainfall, turbidity, and wave height to predict *E. coli* levels. In 2007, Huntington Beach was placed on advisory status if Nowcast predicted that the probability of *E. coli* concentrations exceeding 235 cfu/100 ml was 30 percent or greater. Bacterial monitoring was conducted simultaneously, and showed that notifications were issued in a more protective pattern than if they had been issued based on bacterial monitoring.<sup>2</sup> Nowcast predictions are being used at Edgewater Beach as well as Huntington Beach for the 2008 swim season.<sup>1</sup> In another modeling effort, the Ashtabula Township Park Commission collaborated with the US Geological Survey (USGS) in continued testing and refining of a model for predicting *E. coli* concentrations at Lakeshore Park. The model was used to examine and compare the association between *E. coli* concentrations and algal density.<sup>2</sup>

In 2007, NEORS continued to collaborate with staff of the USGS and the Cleveland Department of Public Health to evaluate rapid analytical techniques in water quality analysis.<sup>2</sup>

Monitoring for harmful algal blooms is not being conducted in Ohio as yet, but a plan to combine harmful algal bloom and beachwater quality information online using the current beachwater quality system is under consideration.<sup>1</sup>

## Monitoring

**Frequency:** Ohio reported monitoring 23 Great Lakes beaches in 2007.

**Practice:** Samples are taken in water that is three feet deep, one foot below the surface, in an area of the beach generally used for swimming. Sampling results are generally available 18 to 24 hours after samples are delivered to the lab. Sampling occurs every day of the week at Lake County beaches, Monday through Friday or daily at Cuyahoga County beaches, and Monday through Thursday at all other beaches with the exception of two island beaches, which are sampled on Monday.

**Results:** For the third consecutive year, NRDC looked at the percent of monitoring samples that exceeded the state's daily maximum bacterial standards. The percent of samples exceeding the standard decreased to 17 percent in 2007 from 22 percent in 2006, but increased from 14 percent in 2005. *Note:* to make this three-year comparison, NRDC includes only those beaches reported in each of these three years.

The beaches with the highest percent exceedances in 2007 were Villa Angela State Park (64%) and Euclid St. Pk. in Cuyahoga County (59%), Camp Perry in Ottawa (48%), Edgewater St. Pk. in Cuyahoga (29%), Maumee Bay State Park E in Lucas (24%), Fairport Harbor in Lake (17%), Huntington Beach in Cuyahoga (15%), Lakeshore Park in Ashtabula (14%), Lakeview Beach in Lorain (12%), Crane Creek in Lucas (11%), Crane Creek State Park in Cuyahoga (11%), and Port Clinton Deep in Ottawa (11%).

Cuyahoga County had the highest percent exceedance in 2007 (28%) followed by Ottawa (16%), Lucas (14%), Lake (12%), Lorain (8%), Ashtabula (6%), and Erie (0%).

2007 Monitoring Frequency and Results by Beach					
County	Beach	Tier	Monitoring Frequency	Total Samples	Percent Exceedance
Ashtabula	Lakeshore Park	No data	4/wk	43	14%
Ashtabula	Walnut Beach	No data	4/wk	45	7%
Ashtabula	Conneaut Twp Park	No data	4/wk	46	2%
Ashtabula	Geneva St. Pk.	No data	4/wk	46	2%
Cuyahoga	Villa Angela State Park	No data	4/wk	55	64%
Cuyahoga	Euclid St. Pk.	No data	4/wk	74	59%
Cuyahoga	Edgewater St. Pk.	No data	Daily	76	29%
Cuyahoga	Huntington Beach	No data	4/wk	101	15%
Cuyahoga	Crane Creek State Park	No data	4/wk	90	11%
Erie	Kelleys Island State Park	No data	1/wk	9	0%
Lake	Fairport Harbor	No data	4/wk	101	17%
Lake	Mentor Headlands E.	No data	4/wk	101	10%
Lake	Headlands State Park (W)	No data	4/wk	101	8%
Lorain	Lakeview Beach	No data	4/wk	43	12%
Lorain	Century Beach	No data	4/wk	44	5%
Lucas	Maumee Bay State Park E	No data	4/wk	46	24%
Lucas	Crane Creek	No data	4/wk	90	11%
Ottawa	Camp Perry	No data	4/wk	46	48%
Ottawa	Port Clinton Deep	No data	4/wk	46	11%
Ottawa	Lakeside	No data	4/wk	45	9%
Ottawa	East Harbor State Park	No data	4/wk	45	9%

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County	Beach	Tier	Monitoring Frequency	Total Samples	Percent Exceedance
Ottawa	South Bass Island State Park	No data	1/wk	12	8%
Ottawa	Catawba Island	No data	4/wk	45	7%

### Closings and Advisories

Total advisory days increased 4 percent to 657 in 2007 from 629 days in 2006, which was nearly triple the 182 days reported in 2005.

**Advisory Issuance:** Ohio is a “home rule” state and the state can only recommend that a municipality post a warning sign when the state standard is exceeded. However, local agencies are complying with this recommendation, and advisories are issued when the standard is exceeded. The public is notified of advisories and closings via a telephone hotline, website, signs, and newspaper articles.<sup>2</sup> Suggested language for signs posting a beach includes: “Water Quality Advisory-Bacterial levels here currently exceed state standards. Children, the elderly and those in ill health are advised not to swim.”<sup>3</sup> Advisories are generally issued for whole beaches, not sections of a beach.

**Reopening Procedures:** The monitoring frequency does not generally increase if a beach is placed under advisory. This is because nearly all beaches are already sampled daily or as frequently as laboratory availability will allow.<sup>1</sup>

**Causes of Advisories:** All advisory days in 2007 were due to monitoring that revealed elevated bacteria levels from storm-water sources of contamination.

2007 Ohio Great Lakes Beach Closings/Advisories					
County	Beach Name	Start Date	End Date	Reason	Source
Ashtabula	Conneaut Twp Park	7/19/07	7/23/07	Bacteria	Stormwater
Ashtabula	Geneva St. Pk.	7/19/07	7/23/07	Bacteria	Stormwater
Ashtabula	Lakeshore Park	6/14/07	6/19/07	Bacteria	Stormwater
Ashtabula	Lakeshore Park	7/19/07	7/23/07	Bacteria	Stormwater
Ashtabula	Lakeshore Park	8/6/07	8/7/07	Bacteria	Stormwater
Ashtabula	Lakeshore Park	8/9/07	8/13/07	Bacteria	Stormwater
Ashtabula	Lakeshore Park	8/22/07	8/27/07	Bacteria	Stormwater
Ashtabula	Walnut Beach	7/19/07	7/23/07	Bacteria	Stormwater
Ashtabula	Walnut Beach	8/6/07	8/7/07	Bacteria	Stormwater
Ashtabula	Walnut Beach	8/20/07	8/21/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	6/4/07	6/7/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	6/8/07	6/11/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	6/13/07	6/16/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	6/18/07	6/25/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	6/27/07	6/30/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	7/1/07	7/5/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	7/6/07	7/24/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	7/26/07	7/30/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	8/2/07	8/10/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	8/13/07	8/14/07	Bacteria	Stormwater

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County	Beach Name	Start Date	End Date	Reason	Source
Cuyahoga	Villa Angela St. Pk.	8/17/07	8/20/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	8/21/07	8/22/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	8/23/07	8/27/07	Bacteria	Stormwater
Cuyahoga	Villa Angela St. Pk.	8/29/07	8/30/07	Bacteria	Stormwater
Erie	Bay View East	7/2/07	7/5/07	Bacteria	Stormwater
Erie	Bay View West	6/13/07	6/20/07	Bacteria	Stormwater
Erie	Bay View West	6/25/07	7/2/07	Bacteria	Stormwater
Erie	Bay View West	7/5/07	7/9/07	Bacteria	Stormwater
Erie	Bay View West	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Bay View West	7/18/07	7/30/07	Bacteria	Stormwater
Erie	Bay View West	8/6/07	8/13/07	Bacteria	Stormwater
Erie	Bay View West	8/15/07	8/27/07	Bacteria	Stormwater
Erie	Bay View West	8/29/07	8/29/07	Bacteria	Stormwater
Erie	Cedar Point Chausee	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Cedar Point Chausee	8/8/07	8/15/07	Bacteria	Stormwater
Erie	Cranberry Creek	5/31/07	6/11/07	Bacteria	Stormwater
Erie	Cranberry Creek	6/13/07	7/2/07	Bacteria	Stormwater
Erie	Cranberry Creek	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Cranberry Creek	7/23/07	7/25/07	Bacteria	Stormwater
Erie	Cranberry Creek	8/6/07	8/8/07	Bacteria	Stormwater
Erie	Cranberry Creek	8/21/07	8/29/07	Bacteria	Stormwater
Erie	Darby Creek	6/4/07	6/11/07	Bacteria	Stormwater
Erie	Darby Creek	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Darby Creek	7/11/07	7/16/07	Bacteria	Stormwater
Erie	Darby Creek	7/30/07	8/1/07	Bacteria	Stormwater
Erie	Darby Creek	8/13/07	8/15/07	Bacteria	Stormwater
Erie	Darby Creek	8/21/07	8/27/07	Bacteria	Stormwater
Erie	Edson Creek	5/31/07	6/11/07	Bacteria	Stormwater
Erie	Edson Creek	6/13/07	6/18/07	Bacteria	Stormwater
Erie	Edson Creek	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Edson Creek	7/11/07	7/16/07	Bacteria	Stormwater
Erie	Edson Creek	7/30/07	8/1/07	Bacteria	Stormwater
Erie	Edson Creek	8/8/07	8/27/07	Bacteria	Stormwater
Erie	Fichtel Creek	6/6/07	6/11/07	Bacteria	Stormwater
Erie	Fichtel Creek	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Fichtel Creek	7/11/07	7/16/07	Bacteria	Stormwater
Erie	Fichtel Creek	8/21/07	8/27/07	Bacteria	Stormwater
Erie	Hoffman Ditch	8/21/07	8/22/07	Bacteria	Stormwater
Erie	Huron River East	7/25/07	7/26/07	Bacteria	Stormwater
Erie	Huron River East	8/1/07	8/8/07	Bacteria	Stormwater
Erie	Huron River East	8/15/07	8/22/07	Bacteria	Stormwater

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<b>County</b>	<b>Beach Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Reason</b>	<b>Source</b>
Erie	Huron River West	6/6/07	6/11/07	Bacteria	Stormwater
Erie	Huron River West	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Huron River West	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Huron River West	8/13/07	8/22/07	Bacteria	Stormwater
Erie	Old Womans Creek East	6/6/07	6/11/07	Bacteria	Stormwater
Erie	Old Womans Creek East	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Old Womans Creek West	6/6/07	6/11/07	Bacteria	Stormwater
Erie	Old Womans Creek West	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Pickerel Beach	6/4/07	6/6/07	Bacteria	Stormwater
Erie	Pickerel Beach	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Pickerel Beach	8/21/07	8/27/07	Bacteria	Stormwater
Erie	Sawmill Creek	6/4/07	6/11/07	Bacteria	Stormwater
Erie	Sawmill Creek	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Sawmill Creek	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Sherod Creek	6/4/07	6/11/07	Bacteria	Stormwater
Erie	Sherod Creek	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Sherod Creek	7/11/07	7/16/07	Bacteria	Stormwater
Erie	Sherod Creek	7/30/07	8/1/07	Bacteria	Stormwater
Erie	Sherod Creek	8/8/07	8/27/07	Bacteria	Stormwater
Erie	Showse Park	6/4/07	6/6/07	Bacteria	Stormwater
Erie	Showse Park	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Showse Park	8/8/07	8/13/07	Bacteria	Stormwater
Erie	Showse Park	8/21/07	8/22/07	Bacteria	Stormwater
Erie	Sugar Creek	6/4/07	6/4/07	Bacteria	Stormwater
Erie	Sugar Creek	7/11/07	7/16/07	Bacteria	Stormwater
Erie	Sugar Creek	8/8/07	8/15/07	Bacteria	Stormwater
Erie	Sugar Creek	8/21/07	8/22/07	Bacteria	Stormwater
Erie	Vermilion East	6/4/07	6/11/07	Bacteria	Stormwater
Erie	Vermilion East	6/13/07	6/18/07	Bacteria	Stormwater
Erie	Vermilion East	7/2/07	7/5/07	Bacteria	Stormwater
Erie	Vermilion East	7/11/07	7/12/07	Bacteria	Stormwater
Erie	Vermilion East	7/18/07	7/23/07	Bacteria	Stormwater
Erie	Vermilion East	8/1/07	8/6/07	Bacteria	Stormwater
Erie	Vermilion East	8/8/07	8/15/07	Bacteria	Stormwater
Erie	Vermilion East	8/21/07	8/27/07	Bacteria	Stormwater
Erie	Vermilion West	6/20/07	6/25/07	Bacteria	Stormwater
Erie	Vermilion West	7/11/07	7/16/07	Bacteria	Stormwater
Erie	Vermilion West	7/23/07	7/25/07	Bacteria	Stormwater
Erie	Vermilion West	8/6/07	8/13/07	Bacteria	Stormwater
Erie	Vermilion West	8/21/07	8/29/07	Bacteria	Stormwater
Lake	Fairport Harbor	6/3/07	6/4/07	Bacteria	Stormwater

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<b>County</b>	<b>Beach Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Reason</b>	<b>Source</b>
Lake	Fairport Harbor	6/14/07	6/15/07	Bacteria	Stormwater
Lake	Fairport Harbor	6/22/07	6/23/07	Bacteria	Stormwater
Lake	Fairport Harbor	7/6/07	7/7/07	Bacteria	Stormwater
Lake	Fairport Harbor	7/8/07	7/9/07	Bacteria	Stormwater
Lake	Fairport Harbor	7/11/07	7/12/07	Bacteria	Stormwater
Lake	Fairport Harbor	7/15/07	7/16/07	Bacteria	Stormwater
Lake	Fairport Harbor	7/19/07	7/20/07	Bacteria	Stormwater
Lake	Fairport Harbor	7/26/07	7/28/07	Bacteria	Stormwater
Lake	Fairport Harbor	7/29/07	7/30/07	Bacteria	Stormwater
Lake	Fairport Harbor	8/8/07	8/10/07	Bacteria	Stormwater
Lake	Fairport Harbor	8/13/07	8/14/07	Bacteria	Stormwater
Lake	Fairport Harbor	8/17/07	8/18/07	Bacteria	Stormwater
Lake	Fairport Harbor	8/24/07	8/25/07	Bacteria	Stormwater
Lake	Mentor Headlands E.	6/20/07	6/21/07	Bacteria	Stormwater
Lake	Mentor Headlands E.	6/27/07	6/28/07	Bacteria	Stormwater
Lake	Mentor Headlands E.	7/11/07	7/12/07	Bacteria	Stormwater
Lake	Mentor Headlands E.	7/18/07	7/20/07	Bacteria	Stormwater
Lake	Mentor Headlands E.	7/25/07	7/28/07	Bacteria	Stormwater
Lake	Mentor Headlands E.	8/16/07	8/17/07	Bacteria	Stormwater
Lake	Mentor Headlands E.	8/20/07	8/21/07	Bacteria	Stormwater
Lorain	Century Beach	7/24/07	7/25/07	Bacteria	Stormwater
Lorain	Century Beach	8/21/07	8/22/07	Bacteria	Stormwater
Lorain	Lakeview Beach	7/10/07	7/11/07	Bacteria	Stormwater
Lorain	Lakeview Beach	7/17/07	7/18/07	Bacteria	Stormwater
Lorain	Lakeview Beach	8/2/07	8/6/07	Bacteria	Stormwater
Lorain	Lakeview Beach	8/20/07	8/21/07	Bacteria	Stormwater
Lucas	Crane Creek	6/28/07	7/2/07	Bacteria	Stormwater
Lucas	Crane Creek	8/1/07	8/2/07	Bacteria	Stormwater
Lucas	Crane Creek	8/7/07	8/8/07	Bacteria	Stormwater
Lucas	Crane Creek	8/13/07	8/14/07	Bacteria	Stormwater
Lucas	Crane Creek	8/21/07	8/22/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	6/13/07	6/18/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	6/28/07	7/2/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	7/23/07	7/25/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	8/7/07	8/8/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	8/9/07	8/13/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	8/15/07	8/16/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	8/21/07	8/27/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Erie	8/29/07	8/29/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Inland	7/26/07	7/30/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Inland	8/2/07	8/7/07	Bacteria	Stormwater

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County	Beach Name	Start Date	End Date	Reason	Source
Lucas	Maumee Bay SP Inland	8/8/07	8/13/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Inland	8/20/07	8/21/07	Bacteria	Stormwater
Lucas	Maumee Bay SP Inland	8/22/07	8/27/07	Bacteria	Stormwater
Ottawa	Camp Perry	6/28/07	7/2/07	Bacteria	Stormwater
Ottawa	Camp Perry	7/11/07	7/17/07	Bacteria	Stormwater
Ottawa	Camp Perry	7/19/07	7/23/07	Bacteria	Stormwater
Ottawa	Camp Perry	7/30/07	8/14/07	Bacteria	Stormwater
Ottawa	Camp Perry	8/15/07	8/21/07	Bacteria	Stormwater
Ottawa	Camp Perry	8/23/07	8/28/07	Bacteria	Stormwater
Ottawa	Camp Perry	8/29/07	8/30/07	Bacteria	Stormwater
Ottawa	Catawba Island	6/20/07	6/21/07	Bacteria	Stormwater
Ottawa	Catawba Island	7/5/07	7/9/07	Bacteria	Stormwater
Ottawa	Catawba Island	7/11/07	7/12/07	Bacteria	Stormwater
Ottawa	Catawba Island	7/19/07	7/23/07	Bacteria	Stormwater
Ottawa	Catawba Island	8/7/07	8/8/07	Bacteria	Stormwater
Ottawa	East Harbor St. Pk.	8/7/07	8/8/07	Bacteria	Stormwater
Ottawa	East Harbor St. Pk.	8/9/07	8/14/07	Bacteria	Stormwater
Ottawa	East Harbor St. Pk.	8/20/07	8/21/07	Bacteria	Stormwater
Ottawa	Lakeside	6/20/07	6/25/07	Bacteria	Stormwater
Ottawa	Port Clinton (Lakeview)	8/7/07	8/13/07	Bacteria	Stormwater
Ottawa	Port Clinton (Lakeview)	8/14/07	8/15/07	Bacteria	Stormwater
Ottawa	Port Clinton (Lakeview)	8/21/07	8/22/07	Bacteria	Stormwater
Ottawa	South Bass Island State Park	8/20/07	8/21/07	Bacteria	Stormwater

**Abbreviations used:** *Bacteria*, Monitoring that revealed high bacteria levels; *Stormwater*, Stormwater runoff.

### Notes

- 1 Barry Rice, Ohio Department of Health, personal communication, June 2008.
- 2 Ohio Department of Health. Year 2007 Bathing Beach Monitoring Program Results. Accessed at <http://www.odh.ohio.gov/odhPrograms/eh/bbeach/beachmon.aspx>. Not dated.
- 3 Ohio Department of Health. Advisory Sign-Beach Posting (website). Accessed at <http://www.odh.ohio.gov/odhPrograms/eh/bbeach/beachmon.aspx>. June 2008.