



YEAR 2008 BATHING BEACH MONITORING PROGRAM RESULTS

Ohio operates a monitoring and notification program of selected public beaches located along the Ohio/Lake Erie border. The goal of the program is to monitor the bacteria content of the state's bathing beach waters and to notify the public whenever bacteria levels present a potential health risk to bathers. The program involves the efforts and cooperation of multiple state and local health agencies and organizations. The Ohio Department of Health (ODH) coordinates the state effort and is responsible for monitoring several beach locations along the border.

The normal beach season in Ohio runs approximately 13 weeks, from Memorial Day to Labor Day. For the 2008 swimming season, ODH staff collected water samples from most beaches at a frequency of 4 days per week. The waters at two island beaches on Lake Erie were sampled once per week during the period because results have shown that their bacteria levels have never presented a potential health hazard. During 2008, water quality analysis in Ohio was based upon the single sample maximum established by the US EPA of 235 E. coli colony forming units (cfu) per 100mL. of water sampled. All water samples collected by ODH staff were analyzed at private microbiological laboratories for E. coli bacteria content. When sample results exceeded the standard, advisory signs were posted to alert the bathing public of the condition of the water. Under normal circumstances, beaches are not closed solely due to high bacteria levels. But the signage helps to educate the public and give them valuable data for making informed decisions about their aquatic recreational activity.

Additionally, the results of tests for each monitored beach were made available to the public at the Ohio Department of Health's website (www.odh.ohio.gov), on the Earth 911 website (www.earth911.com) and on the department's toll-free telephone information line: 1-866-OHIO-BCH (644-6224). In cooperation with the Cuyahoga County Health District, sample results were also published weekly in the "Cleveland Plain Dealer". Reports of beach conditions in Lake County were also published by the "News Herald" throughout the summer.

Due to a decrease in funding the Ashtabula Park Commission declined to partner with Ohio Department of Health in 2008. The money that was intended to be distributed to the Ashtabula Park Commission was redistributed to the other grantees.

The following table depicts the results of this year's program for Lake Erie beaches, which operated from late May 2008 through the first week of September 2008.

Monitoring Data generated by the Ohio Department of Health

Sample frequency: 4 days per week (island beaches - weekly)

<u>Beach Name</u>	<u>County</u>	<u># of Sample Days</u>	<u># of Times Sample Exceeded the Standard</u>	<u># of Days Advisory Signs Were Posted</u>	<u>Average E.coli level for the Period</u>
Maumee Bay	Lucas	53	8	13	122.9
Camp Perry	Ottawa	53	19	27	214.4
Port Clinton	Ottawa	53	6	8	45.9

Catawba Island	Ottawa	53	1	1	10.0
S. Bass Island	Ottawa	13	0	0	2.4
East Harbor	Ottawa	53	0	0	13.0
Lakeside Ottawa		53	2	5	20.6
Kelleys Island	Erie	13	0	0	3.8
Lakeview	Lorain	55	20	44	249.1
Century Beach	Lorain	55	25	52	330.2
Geneva	Ashtabula	47	9	21	124.6
Walnut Beach	Ashtabula	47	5	11	61.7
Lakeshore	Ashtabula	47	31	51	394.2
Conneaut	Ashtabula	47	8	14	108.0
Totals for lake beaches monitored by ODH		642	134	247	

*Crane Creek was not sampled during the 2008 season due to the Ohio Department of Natural Resources decision to close the beach.

Inland Beach Monitoring

Ohio Revised Code sections 1541.032 and 3701.18 require the Chief of the Division of Parks and Recreation to sample and test all public bathing beaches under the division's control and to post advisory signs whenever notified by the Director of Health that the bacteria levels in the waters tested present a possible health risk to swimmers. Sixty-seven (67) inland state park beaches were tested this year for *E. coli* bacteria between May 19 and September 4, 2008. A recommendation to post advisory signs was issued **thirty-six (36)** times throughout the testing period.

Additional Monitoring/Notification Programs for 2008

Under a Personal Service Contract with ODH, the Lake County General Health District, a local health district in northeastern Ohio, conducted a monitoring and notification program of the 3 beaches on Lake Erie within its jurisdiction. It also utilized the single sample maximum to evaluate sample results. Results were reported to ODH for evaluation against the standard, determination of whether an advisory was warranted, notification to the public if necessary and eventual transmission to the US EPA for its e-beaches database.

Contracts were also awarded to the Erie County General Health District who monitored 25 public beaches within its jurisdiction, four more beaches than in 2007, the Cuyahoga County Board of Health who monitored 13 beaches within its jurisdiction, one more than in 2007 and the Northeast Ohio Regional Sewer District who monitored 3 beaches in its area.

Monitoring Data generated by the Lake County General Health District

Sample frequency: daily

<u>Beach Name</u>	<u>County</u>	<u># of Sample Days</u>	<u># of Times Sample Exceeded the Standard</u>	<u># of Days Advisory Signs Were Posted</u>	<u>Average E.coli level for the Period</u>
Headlands West	Lake	104	13	12	94.2
Headlands East	Lake	104	10	10	93.6
Fairport Harbor	Lake	104	23	23	163.3
Totals for Lake beaches monitored by LCGHD		312	46	45	

Monitoring Data generated by the Erie County General Health District

Sample frequency: Three times per week

<u>Beach Name</u>	<u>County</u>	<u># of Sample Days</u>	<u># of Times Sample Exceeded the Standard</u>	<u># of Days Advisory signs Were Posted</u>	<u>Average E.coli level for the Period</u>
*Battery Park	Erie	41	1	4	8.2
Bay View East	Erie	41	5	13	50.9
Bay View West	Erie	41	19	40	235.2
Cedar Point	Erie	41	6	13	54.9
Chappel Creek	Erie	41	7	13	68.0
Cranberry Creek	Erie	41	2	5	29.0
*Crystal Rock	Erie	40	7	12	74.3
Darby Creek	Erie	41	7	12	53.5
Edison Creek	Erie	40	13	28	147.6
Fichtel Creek	Erie	41	4	10	40.2
Hoffman Ditch	Erie	39	1	4	14.6
Huron River East	Erie	41	7	17	79.3
Huron River West	Erie	41	11	27	101.3
*Kiwanis Park	Erie	41	4	8	57.1

Lion's Park	Erie	41	1	1	13.8
Old Woman Creek East	Erie	40	1	1	20.8
Old Woman Creek West	Erie	41	5	11	35.5
Pickeral Creek	Erie	41	6	11	51.2
Sawmill Creek	Erie	40	0	0	14.0
Sherod Creek	Erie	39	9	19	83.6
Showse Park	Erie	40	9	19	102.0
Sugar Creek	Erie	40	6	12	57.9
Vermillion East	Erie	40	10	25	116.4
Vermillion West	Erie	40	6	13	87.6
*White's Landing	Erie	41	5	5	50.6
		-----	-----	-----	
Totals for Lake beaches monitored by ECGHD		1013	152	323	

*Denotes additional beaches monitored in 2008 by the Erie County General Health District

Monitoring Data generated by the Northeast Ohio Regional Sewer District

Sample frequency: 5 days per week (avg.)

<u>Beach Name</u>	<u>County</u>	<u># of Sample Days</u>	<u># of Times Sample Exceeded the Standard</u>	<u># of Days Advisory Signs Were Posted</u>	<u>Average E.coli level for the Period</u>
Euclid	Cuyahoga	109	51	50	721.8
Villa Angela	Cuyahoga	109	49	49	443.1
		-----	-----	-----	
Totals for Lake beaches monitored by NEORS		231	115	160	

NOWCASTING

During the summer of 2008, the Cuyahoga County Board of Health continued a pilot project at Huntington Beach, located on Lake Erie in Bay Village, Ohio. The project, known as a Nowcasting System for Predicting Beach Advisories, evaluates multiple environmental factors such as rainfall, turbidity, wave height, etc. to

determine a predicted E. coli concentration and a probability that the E. coli water quality standard will be exceeded. The Nowcast system provides the public with same-day, near real-time water quality data seven days per week.

For 2008 the beach sampling season was divided into two separate seasons, Season 1 and Season 2. Season 1 was implemented from May 19, 2008 through July 23, 2008. The probability for Season 1 was set at 28% or greater likelihood that the water quality standard would be exceeded an advisory was issued. For Season 2 the probability was set at 27% or greater. For both seasons the Nowcast model accurately predicted the water quality 85% of the time.

As in previous years, it was agreed that water samples would be collected and analyzed for E. coli in the normal fashion in addition to the sample protocol for the Nowcast system. It was also agreed that the Nowcasting predictions would solely be used as the determinant for posting water quality advisories at Huntington Beach. A detailed explanation of the project as well as results of sampling and predictions was available to the public throughout the summer at www.ohionowcast.info.

This pilot project was expanded in 2008 to include Edgewater State Park beach in the City of Cleveland. The Northeast Ohio Regional Sewer District along with the USGS monitored the pilot project at Edgewater beach. Water samples were also collected at Edgewater Beach to compare with the Nowcast predictive model. The percent probability of exceeding the water quality standard changed during the season. From May 18, 2008 through June 14, 2008, Season 1, the probability was established at 27%. Season 2 ran from June 15th through August 9th the probability was at 30%. The probability for Season 3 was set at 32%. Overall the Nowcast model for the Edgewater beach was 65.8% accurate for 2008. The NEORSD and the USGS will reevaluate the model parameters in an effort in to improve the predictability of the system.

Additional accomplishments in 2008

In addition to monitoring water quality at 3 beaches along Lake Erie (Edgewater, Villa Angela and Euclid beaches), the Northeast Ohio Regional Sewer District (NEORSD) continued to collaborate with staff of the US Geological Survey (USGS) and the Cleveland Department of Public Health to evaluate rapid analytical techniques in water quality analysis.

The Cleveland Department of Public Health continued with the development of educational materials for the beach-going public and participated in various outreach activities held along the Lake Erie border. Again this year, the department was a major participant in “National Clean Beaches Week” activities held at beaches within their area, notably, Villa Angela, Euclid Beach and Edgewater Beach. Staff distributed beach-related flyers and information to libraries and recreation centers in the greater Cleveland area. Staff also conducted a survey to determine whether there were any newly developed private or semi-private beaches in the area.