



**2014 BATHING BEACH
MONITORING & NOTIFICATION PROGRAM RESULTS**

Introduction

For many years the Ohio Department of Health has conducted a bathing beach monitoring and public notification program for the identified public and semi-public beaches located along the Ohio/Lake Erie border. The goal of the program has remained constant, *“To monitor the water quality of the state’s bathing beach waters and to notify the public whenever bacteria levels present a potential health risk to bathers.”* The program has been funded through a grant provided by the US EPA in accordance with the BEACH Act. Ohio’s program has been successful through the collaboration and effort of many different organizations at multiple governmental levels and with organizations of varying interests. The Ohio Department of Health (ODH) has coordinated this effort and remains committed to the successful management of the program.

All identified beaches are monitored at least once a week with the vast majority of beaches monitored three or more times per week. For the 2014 bathing beach season, a new local health district, Lorain County, joined ODH in monitoring and notification activities. Lorain County added two new beaches (currently in process of being added to the federal system): Community Park and Lakewood.

The BeachGuard web-based reporting system is used to provide the information for the public regarding water quality at these beaches. The system successfully went ‘live’ in 2011 and can be found on the internet at: www.odh.ohio.gov/healthybeaches.

Monitoring

The normal beach season in Ohio runs from Memorial Day to Labor Day. In 2014, the ODH contracted with five local health districts, Lorain County, Ottawa County, Erie County, Cuyahoga County and Lake County as well as the University of Toledo and Northeast Ohio Regional Sewer District, to conduct the monitoring and notification program. Lorain County was a new partner for this funding period. This was the fourth year that all monitoring and notification activities occurred at the local level. This was the first year that beaches were monitored a week before Memorial Day and the start of bathing beach season. Sampling frequency along the Lake Erie shoreline largely remained the same as last year with a few exceptions. The predictive model, Virtual Beach, was implemented at eight beaches in Ohio.

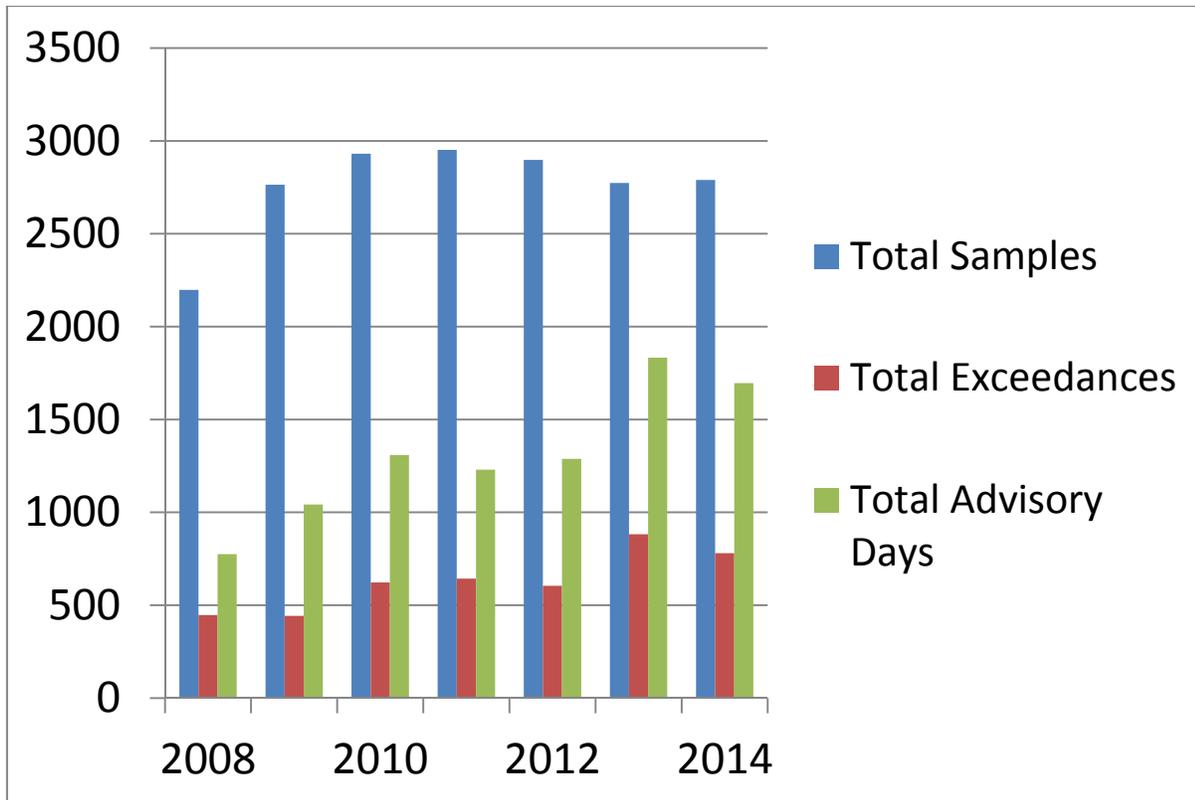
Table 1 indicates the sampling frequencies:

Table 1

7 samples per week	3 beaches
3-4 samples per week	35 beaches
1-2 samples per week	25 beaches

Figure 1 represents the sampling results for Ohio’s bathing beaches from 2008 - 2014.

Figure 1



In 2014, 2,790 samples were collected, just slightly more than in 2013. This increase was due to the new beaches being monitored in 2014. A small decrease from 2013 was seen in both the number of exceedances and in the number of advisory days recorded in 2014, 780 and 1696, respectively. As a result of fewer exceedances and advisory days, the percentage of time Ohio beaches were under advisory declined from 33% in 2013 to 25% in 2014.

During 2014, water quality analysis in Ohio was based upon the single sample maximum of 235 E. coli colony forming units (cfu) per 100mL. of water sampled. Lorain, Erie, Ottawa and Lake Counties used the Collilert-18 method for sample analysis which has a maximum detection limit, without dilution, of 2419.6 cfu. Cuyahoga County and the Northeast Ohio Regional Sewer District used the Modified M-tech method to analyze their samples.

Public Notification

When sample results exceeded the standard of 235 cfu, advisory signs were posted to alert the bathing public of the water quality. Under normal circumstances, beaches are not closed solely due to high bacteria levels. However, the signage helps to educate the public and provides valuable data for making informed decisions about their aquatic recreational activity.

The following pictures are examples of the signage posted at a beach location to alert the public whether the sample results from the previous day were acceptable or if the results exceeded the bacterial standard.



Acceptable Results



Exceeded Standard

The ODH again posted a request for proposals (RFP) to conduct the water sampling and public notification for the beach monitoring and notification program at the local level. In addition to posting the RFP on the internet, the local health jurisdictions that have beaches but have not participated in this program were contacted and encouraged to apply for the contract. A total of seven proposals were received. The proposals were reviewed and contracts were awarded. The total amount of money awarded to the local projects was \$135,375.00, which represents 64% of the money awarded to ODH by the US EPA.

Contracts were awarded to the Lake County General Health District, Erie County General Health District, Cuyahoga County Board of Health, Ottawa County Health Department, Lorain County General Health District, the University of Toledo and the Northeast Ohio Regional Sewer District. The Lake County General Health District monitored three public beaches in Lake County, one beach in Conneaut City, one beach in Ashtabula City and two beaches in Ashtabula County. The Erie County General Health District monitored 25 public beaches within its jurisdiction. The Northeast Ohio Regional Sewer District monitored three beaches in its area. The Cuyahoga County Board of Health monitored 16 beaches within its jurisdiction, most of which are semi-public and private beaches. The Ottawa County Health District monitored seven beaches within its area. The Lorain County General Health District monitored four beaches within its area.

Name of Contracted Entity	Amount of Award	Number of beaches monitored
Lake County General Health District	\$32,588.00	7
Erie County General Health District	\$26,645.00	25
Cuyahoga County Health District	\$21,317.00	17
Lorain County General Health District	\$18,616.00	4
Ottawa County Health Department	\$17,559.00	7
University of Toledo	\$10,163.00	2
Northeast Ohio Regional Sewer District	\$ 8,487.00	3

Monitoring Data generated by the Ohio Department of Health and our local partners for the 2014 recreation season.

The single sample maximum level was used to evaluate sample results. Results were reported for evaluation against the standard, determination of whether an advisory was warranted, and notification to the public when necessary.

Table 2 is a summary of the sampling results and advisories for the monitored beaches in the State

of Ohio.

Beach ID	Beach Name	# of samples taken	Sample Exceedances	% of Sample Exceedances	Average E. coli per sample taken	# of Advisory Days	# of Advisories	% of the season on advisory
OH810688	Arcadia Beach	21	11	52.38%	432.29	38	4	36.19%
OH625113	Battery Park	57	0	0.00%	9.54	0	0	0.00%
OH983073	Bay Park Beach	14	1	7.00%	269.73	2	1	2.0%
OH510880	Bay View East	56	29	51.79%	75.91	42	12	34.31%
OH568760	Bay View West	56	29	51.79%	539.06	54	10	51.43%
OH351307	Camp Perry	9	2	22.22%	230.00	13	1	12.38%
OH396459	Catawba Island St. Pk.	16	3	18.75%	210.64	9	2	1.9%
OH011172	Cedar Point	56	6	10.71%	159.47	36	6	34.29%
OH597908	Century Beach	57	18	31.58%	248.88	33	8	31.43%
OH934406	Chappel Creek	57	25	43.86%	482.61	54	9	51.43%
OH135472	Clarkwood Beach	17	5	29.41%	463.47	16	3	15.24%
OH484007	Clifton Beach	28	7	25.00%	474.21	27	7	25.71%
OH862936	Columbia Park Beach	17	4	23.53%	593.00	10	3	9.50%
	Community Park Beach	57	18	31.58%	385.15	35	12	33.33%
OH400405	Conneaut Twp. Park	33	4	12.12%	84.77	8	4	7.62%
OH014323	Cranberry Creek	57	9	15.79%	138.87	23	6	21.90%
OH158931	Crystal Rock	57	7	12.28%	120.87	15	3	14.29%
OH881916	Darby Creek	57	30	52.63%	717.60	67	10	63.81%
OH685679	East Harbor State Park	41	0	0.00%	27.79	0	0	0.00%
OH964162	Edgecliff Beach	19	10	52.63%	598.26	36	4	34.29%
OH270037	Edgewater Beach	107	17	15.89%	226.15	19	11	17.76%
OH517567	Edson Creek	55	40	72.73%	1115.10	83	7	79.05%
OH244759	Euclid State Park	106	33	31.13%	529.73	32	21	30.19%
OH491555	Fairport Harbor	35	7	20.00%	158.95	18	13	17.14%
OH242977	Fichtel Creek	56	8	14.29%	148.14	22	9	20.95%
OH682568	Geneva State Park	34	4	11.76%	180.56	10	4	9.52%
OH777353	Headlands State Pk. (E)	31	4	12.90%	180.60	20	10	19.05%
OH719776	Headlands State Pk. (W)	31	19	20.21%	237.91	25	12	24.51%
OH497945	Hoffman Ditch	57	13	22.81%	214.81	27	10	25.71%
OH183537	Huntington Beach	57	12	21.05%	134.51	17	11	16.19%
OH531706	Huron River East	57	9	15.79%	135.67	22	8	20.95%
OH102681	Huron River West	57	20	35.09%	236.50	51	13	48.57%
OH133557	Kelleys Island St. Pk.	17	3	17.65%	200.16	6	3	5.71%
OH661129	Kiwanis Park	56	10	17.86%	175.20	26	7	24.76%
OH882395	Lakeshore Park	32	17	53.13%	635.80	52	7	49.52%
OH216093	Lakeside	40	1	2.50%	42.60	5	2	4.76%
OH273826	Lakeview Beach	59	40	67.80%	777.30	77	9	73.33%
	Lakewood Beach	58	17	29.31%	295.46	31	8	29.52%
OH921073	Lion's Park	57	13	22.81%	350.13	19	9	18.10%
OH182884	Maumee Bay St. Pk. (Erie)	52	16	30.77%	369.06	20	10	19.05%
OH318877	Maumee Bay St. Pk. (Inland)	52	9	17.31%	201.59	15	6	14.29%
OH507120	Moss Point Beach	19	9	47.37%	934.63	29	4	27.62%
OH159626	Noble Beach	11	20	55.00%	1114.45	36	4	34.29%
OH647956	Old Woman Creek East	57	6	10.53%	142.90	16	5	15.24%

OH787470	Old Woman Creek West	55	15	27.27%	385.89	32	8	30.48%
OH645425	Parklawn Beach	15	3	20.00%	592.07	7	1	6.67%
OH957157	Pickeral Creek	58	8	13.79%	114.86	11	8	10.48%
OH463595	Port Clinton (Lakeview)	41	5	12.20%	133.24	17	4	16.19%
OH934275	Royal Acres Beach	17	4	23.53%	411.94	9	3	8.6%
OH453378	Sawmill Creek	57	7	12.28%	112.47	13	6	12.38%
OH840983	Sherod Creek	54	28	51.85%	570.51	66	10	62.86%
OH179611	Shoreby Club Beach	16	3	18.75%	226.56	9	2	8.57%
OH287343	Showse Park	57	15	26.32%	208.22	42	10	40.00%
OH435857	Sims Beach	20	10	50.00%	1497.35	31	5	29.52%
OH907394	South Bass Island St. Pk.	14	0	0.00%	15.63	0	0	0.0%
OH513071	Sugar Creek	56	24	42.86%	346.38	55	12	52.38%
OH775880	Utopia Beach	16	4	25.00%	228.44	13	2	12.38%
OH084281	Vermilion East	57	18	31.58%	391.80	44	10	41.90%
OH944567	Vermilion West	57	26	45.61%	457.47	59	10	56.19%
OH736320	Villa Angela State Park	108	42	38.89%	754.08	36	21	33.33%
OH136995	Wagar Beach	15	1	6.67%	378.60	2	2	1.90%
OH610732	Walnut Beach	32	6	18.75%	227.13	15	6	14.29%
OH422598	Whites Landing	57	23	40.35%	450.89	44	9	41.90%

The following charts represent the percentage of the season each beach was under advisory and the number of advisories issued per beach. The beaches are grouped by monitoring agency.

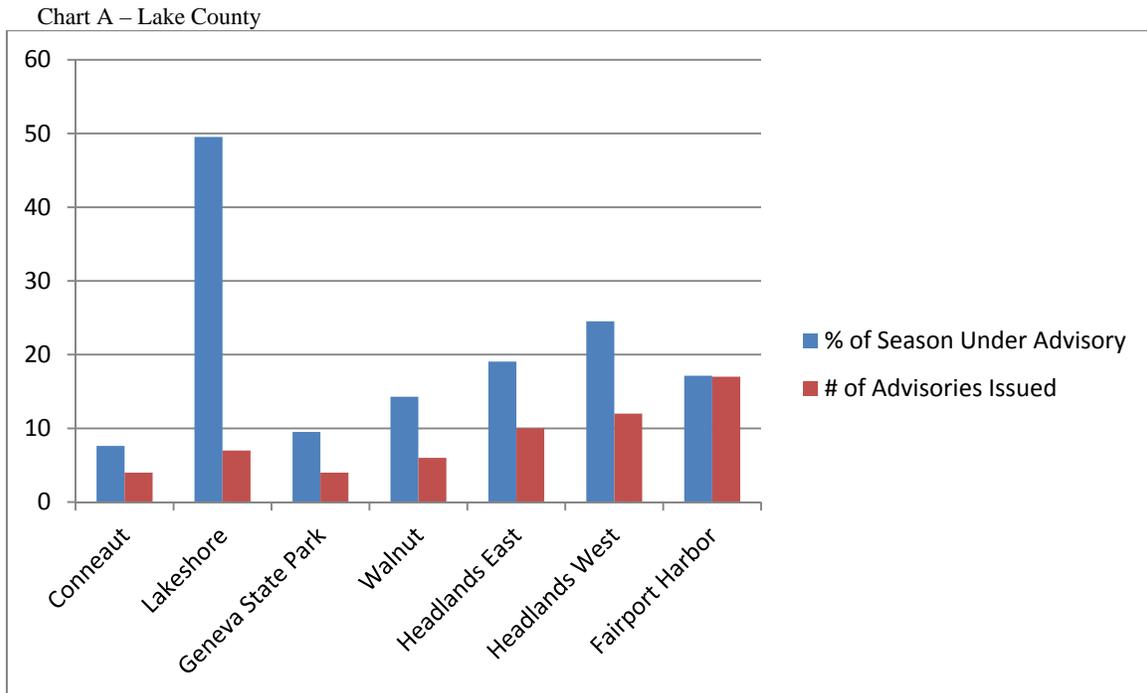


Chart A lists the beaches that were monitored by Lake County during the 2014 bathing beach season. The first four beaches are located in Ashtabula County. Headlands East and Headlands West are two sampling points for the same beach, Mentor Headlands. This beach is over a mile long and there have been two sampling points to try and more accurately capture the water quality conditions for the entire beach. These samples are then composited for analysis. In August, the

building housing the Lake County General Health District suffered extensive damage due to a fire. Sampling was not conducted for a week due to the damage and relocating of staff and resources. The loss due to fire is severe and the health district is still recovering; however, the staff was able to restart sampling in a very quick and efficient manner.

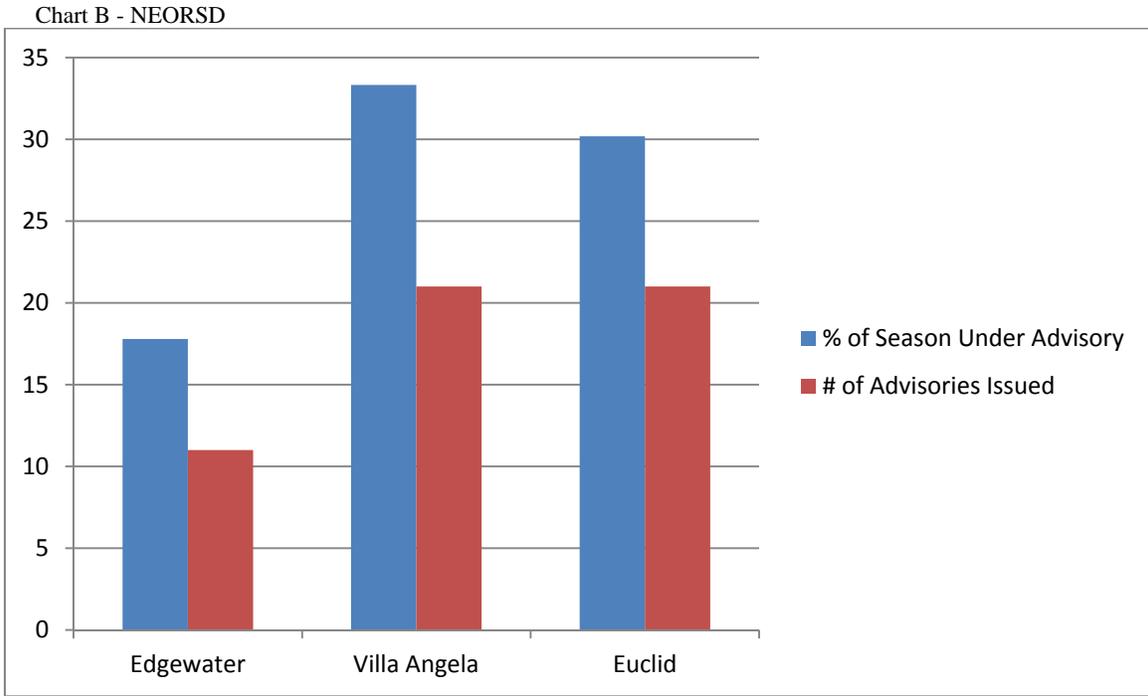


Chart B lists the beaches that were monitored by the North East Ohio Regional Sewer District (NEORSD). The NEORSD uses predictive modeling (Virtual Beach) as well as E.coli sampling.

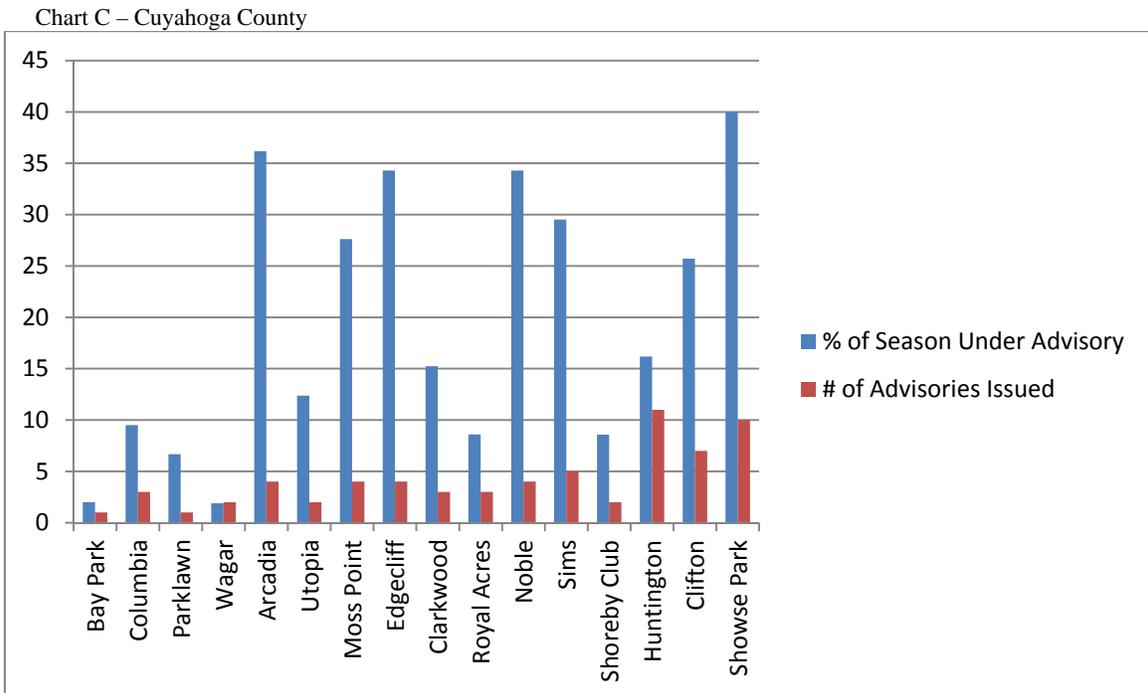


Chart C lists the beaches monitored by the Cuyahoga County Board of Health.

Chart D – Erie County

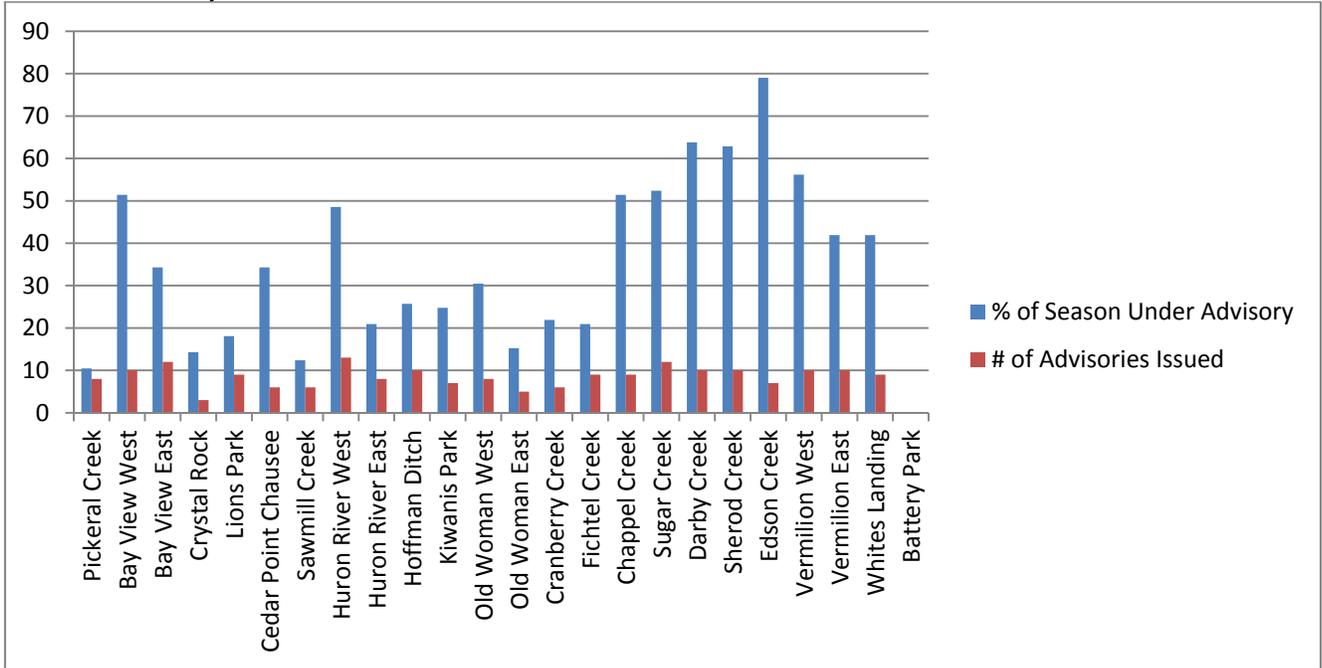
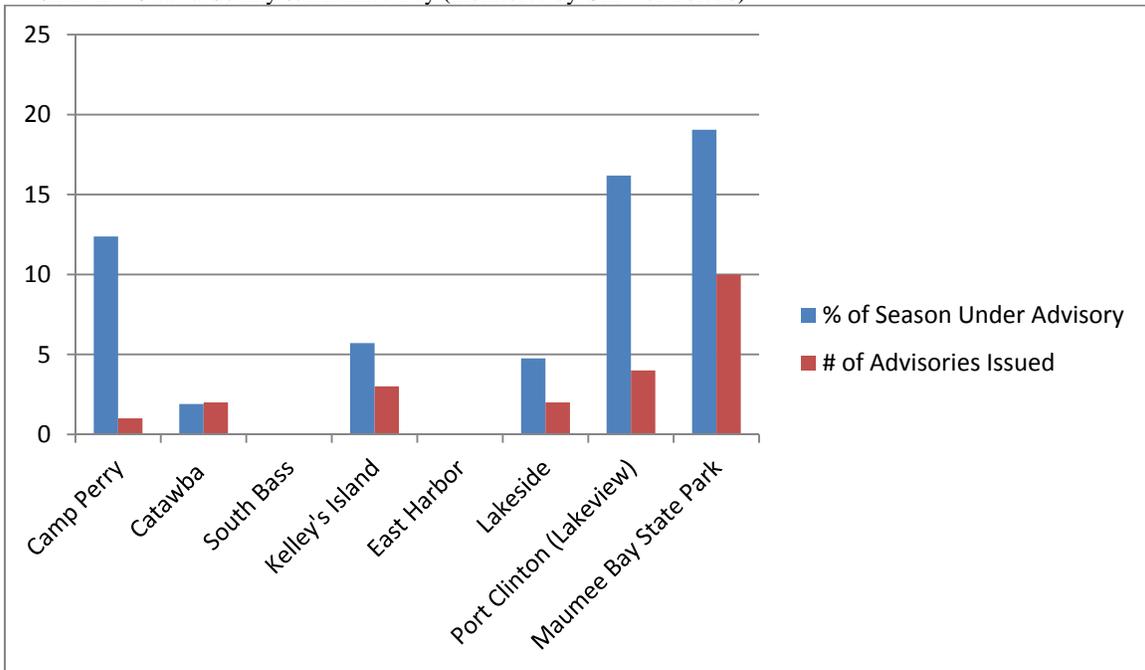


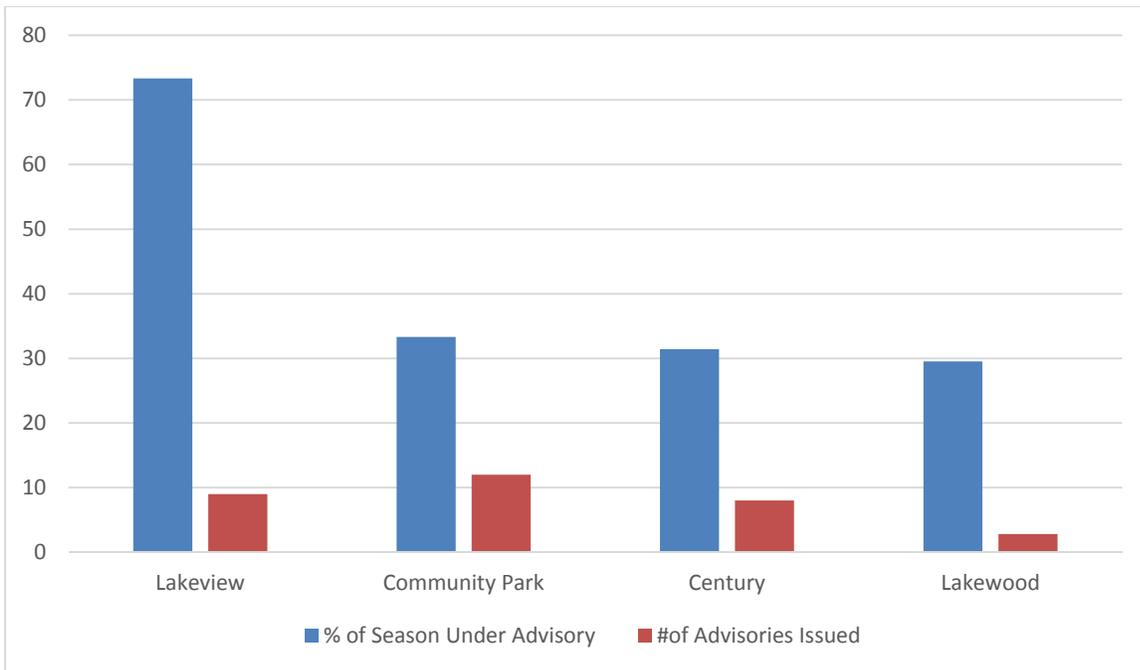
Chart D lists the beaches that were monitored by the Erie County General Health District.

Chart E – Ottawa County & Maumee Bay (monitored by Univ. of Toledo)



Ottawa County conducted the monitoring program for the beaches listed in Chart E with the exception of Maumee Bay State Park, which was monitored by the University of Toledo.

Chart E lists the beaches monitored by Lorain County General Health District



Predictive Models

Predictive models were used at seven Lake Erie beaches. Those beaches where the predictive model was 'live' in 2014 are: Huntington, Edgewater, Villa Angela, Fairport Harbor, Maumee, Vermilion and Headlands. Predictive modeling is now being used or developed for at least one beach in every local monitoring jurisdiction. With the reduction in funding it is very important to support the efforts of the predictive modeling so as to protect the public health from poor water quality. More information on the predictive models capability of predicting water quality results can be found in the attached reports.

Additional activities in 2014

As with past seasons, the Ohio Department of Health (ODH) continues to work closely with the Ohio Environmental Protection Agency (OEPA) to submit the Ohio monitoring and notification data through the OEPA State node. The agencies are continuing to work on efficient submission of the data to the US EPA. The Erie County General Health District is working closely with the community of Bay View Village to install a public sanitary sewer system.