**AYC Ecology North**

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**Local state park braces for summer water woes**

By Tom Henry, Blade Staff writer, toledoblade.com

Steady downpours from this spring could translate into another rough summer for western Lake Erie sunbathers and boaters.

Although the particular strain of E. coli bacteria that makes people sick is fairly transient — coming and going within hours of thunderstorms — toxic forms of blue-green algae have been arriving earlier and staying longer in recent years because of the steady rise in phosphorus polluting waterways since 1995.

Summers in the region typically begin with bacteria getting the most attention, then yielding way as pea-green algae mats set in.

This year, there’s a new and important Internet link for Maumee Bay State Park’s beach-goers: [**ohionowcast.info**](http://www.ohionowcast.info/index.asp).

Ohio Nowcast is a forecasting system operated by the U.S. Geological Survey with several partners, including the University of Toledo, area park districts, state health and environmental agencies, the U.S. Environmental Protection Agency, the Ohio Lake Erie Office, and others.

It’s Ohio’s closest thing to providing real-time information about beach health for sunbathers and swimmers.

The system predicts whether bacteria in the water are likely to exceed the E. coli safe-swimming threshold of 235 colonies per 100 milliliters, replacing the antiquated method of relying exclusively on sampling trends or a snapshot from the previous day or two.

If you had gone to ohionowcast.info after 9:35 a.m. Friday, you would have seen that the bacteria risk was high at Maumee Bay State Park, a 65.9 percent probability it would stay unsafe that day because of what had been measured and what had been anticipated weather-wise.

While a bacteria advisory was in effect that day at Maumee Bay State Park, the risk was deemed low at two other beaches where Ohio Nowcast has been used: Cleveland’s Edgewater Beach and the Huntington Reservation in Bay Village, Ohio.

Think weather forecast, but for bacteria.

The forecasts were accurate 80.2 percent and 85.9 percent of the time last year at Edgewater and Huntington Reservation, respectively, according to records presented at a May briefing at University of Toledo’s Erie Center in Oregon.

**A major nuisance**

As great of a nuisance as bacteria is the massive algae produced by phosphorus, a nutrient in both synthetic products and animal manure that is applied to farms, as well as the fertilizers applied to lawns, golf courses, and other types of land.

Water in ditches, rivers, and streams becomes good food for algae as it is enriched by phosphorus and other nutrients from runoff and from spills of human fecal matter as sewage networks and septic tanks are overwhelmed by rain.

And that’s been happening a lot.

U.S. Geological Survey figures show more water has gotten into western Lake Erie’s two biggest tributaries, the Maumee and Sandusky Rivers, since Oct. 1 than during the previous 12-month period.

Most of that has come during the critical April-to-June time frame, said David Baker, director emeritus and founder of Heidelberg University’s National Center for Water Quality Research, the region’s foremost research facility for agricultural runoff.

Although a lot could change — a spell of cool, windy weather, for example, could help keep bacteria and algae in check — the conditions are ripe for big outbreaks.

“It will likely be a record year for spring loading again,” Mr. Baker said, saying that the USGS runoff estimates are only part of the lab’s data-crunching. It also measures phosphorus concentration in the Maumee River near Waterville and in the Sandusky River near Fremont, measurements that take weeks to analyze for any three-month period.

The spring phosphorus concentration is key, though. Past evidence shows a strong correlation between what is found in the water then and the amount of microcystis algae six weeks later, said Tom Bridgeman, an algae researcher at the University of Toledo’s Lake Erie Center.

Microcystis is the most common form of toxic algae in the lake, the one that garners the lion’s share of attention from public health officials. Its toxin, microcystin, causes pain, swelling, nausea, cramps, and light-headedness. It is lethal in high doses, as evidence in the mid 1990s when it slipped past a water-treatment system at a Brazilian hospital and killed several dozen people who were undergoing kidney dialysis.

Many forms of algae are natural and do not harm people. But with sustained heat and calm wind, microcystis grows fast in nutrient-rich water. It chokes oxygen supplies that fish need and forms mats on the water surface that look like green paint.

Last year was one of western Lake Erie’s worst for algae after a record spring for phosphorus in the Maumee and the second highest spring on record for the Sandusky since records started being kept by the Heidelberg lab in 1975.

“I wouldn’t be surprised, especially given the high temperatures we’ve had, if we start getting it soon,” Mr. Bridgeman said. “It’s priming us for a good-size bloom this summer.”

Sewage spills

Although the city of Toledo is spending $521 million to make sewage spills a thing of the past by 2020, millions of gallons of untreated waste continue to get in area streams after heavy rains.

Records show untreated toilet waste spilled into local waterways for 24 or more consecutive hours on eight dates between March 5 and April 26. On March 6, that happened from four locations.

Toledo’s most notorious outfall, No. 33 — in South Toledo near Orchard Street, Maumee Avenue, and Lotus Avenue, just east of Danny Thomas Park — had a sewage spill of at least 72 consecutive hours from March 5 through March 7 and one of at least 48 consecutive hours between April 23 and April 24, plus another 24-hour spill on April 26.

During that latter event, the area had sewage spills of more than 13 and 17 hours on April 22 and April 25, respectively.

In other words, there was so much rain the No. 33 outfall nearly spilled raw sewage into the Maumee around the clock for five consecutive days, except for a break of a few hours on two of those days.

Records also show Toledo has had sewage spills lasting at least 10 consecutive hours on 23 different days since Jan. 1. That happened at 10 locations on April 25, at eight locations on March 6 and April 23, and at seven locations on March 7, according to the data, which is available online at toledowaterwaysinitiative.com/initiative-facts/sewer-overflows/.

Tracking problems

Last year was Ohio’s first major effort to track harmful algae blooms on a statewide basis, an investigation under former Gov. Ted Strickland’s administration that was coordinated by the Ohio Environmental Protection Agency, the Ohio Department of Health, and the Ohio Department of Natural Resources, with help from local health departments.

Although the Kasich administration has not finalized its plans for this year, a presentation on the issue has been scheduled for 10 a.m. Wednesday when the Ohio Lake Erie Commission meets at the Ottawa National Wildlife Refuge off State Rt. 2 in Ottawa County.

“There are no details yet on sampling protocol,” Dina Pierce, Ohio EPA spokesman, said.

The meeting, open to the public, will feature “an overview of nutrient loading and harmful algal blooms and how the state of Ohio is responding to these very significant Lake Erie issues for the summer of 2011,” according to the commission.

The commission is a panel composed of state agency department heads or their designees. It oversees Ohio’s Lake Erie Protection Fund, a major source of research grant money funded largely by the sale of Lake Erie license plates.

One thing new is an enhanced outreach effort and more involvement from local partners. UT’s Lake Erie Center, for example, will be sampling Maumee Bay State Park for the state health department, and the Ottawa County Health Department will be more involved with Ottawa County beaches — all of which will free up the Ohio Department of Health to spread its resources around more, according to Mary Clifton, the state health department’s administrator for recreation programs such as beach bathing.

The state health department has used federal grant money to develop a Facebook page for beach information and expects soon to have a presence on Twitter. Plans are under way for a smart phone beach application.

The agency recently held a beach poster contest for K-6 students in all Lake Erie counties. This Friday, it plans to debut an interactive Ohio map at odh.ohio.gov, where people will be able to click on a county and get beach-specific information, Ms. Clifton said.

She had two basic pieces of advice for the public: Wash your skin before and after taking a dip. And when in doubt, stay out.

“There’s a lot of opportunity for education,” Ms. Clifton said. “When it comes to the general public, I don’t think they fully grasp what is going on.”

Algae advisories already have been posted for two major inland bodies of water, Grand Lake St. Marys and Buckeye Lake, with officials still trying to determine how much they can afford to investigate other areas.

Given its manpower shortage, the state is encouraging people to report suspected problem areas.

At [epa.ohio.gov/portals/35/hab/HAB\_Report\_Form.pdf](http://epa.ohio.gov/portals/35/hab/HAB_Report_Form.pdf), residents can download a form that officials can use to begin an investigation. Information in the form can be saved to a computer, then e-mailed as an attachment to the Ohio EPA at HABmailbox@epa.state.oh.us.

The form isn’t necessary to launch an investigation, but as much information as possible is helpful, Ms. Pierce said.

The Ohio Department of Natural Resources has information at [ohiodnr.com/tabid/22957/default.aspx](http://ohiodnr.com/tabid/22957/default.aspx) for blue-green algae advisories at state parks.

The Ohio EPA has general information at [epa.ohio.gov/dsw/HAB.aspx](http://epa.ohio.gov/dsw/HAB.aspx) about harmful algae blooms.