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## Great Lakes Beach Closings Are No Protection From Harmful Pollutants

A green flag flying on a Great Lakes beach does not necessarily mean it's safe to swim.

Checking beach monitoring websites like BeachGuard is not a surefire solution either.

Those two findings are central to a public health research project, the Great Lakes Microbial Water Quality Assessment, that set out to measure microbial and chemical threats in Great Lakes waters, and how to reduce the number of illnesses they cause each year.

A report from the project, sponsored by the International Joint Commission said decades-old testing methods are inadequate and "advances in newer methods are critically needed." The commission is bi-national agency that advises the U.S. and Canada on managing water along the border.

The need for such research is considered urgent.

Bacteria draining into recreational waters from overflowing wastewater treatment plants, livestock and poultry farms, and city streets and parking lots results in hundreds of beach closings annually across the Great Lakes. Phosphorus running off farm fields and from big dairy, hog, and poultry operations causes harmful algal blooms in Lake Erie and other lakes.

Local governments regularly sample water from shorelines to protect public health. But the science and methods for measuring water for harmful microbes and chemicals is too slow, say the report's authors.

One common testing practice involves collecting a water sample and taking it to a lab where bacteria grow on a petri plate for about 24

hours. After waiting, lab workers analyze the culture's E. coli levels, allowing local health departments to determine whether water is safe for swimming.

But that 24-hour lag means the results won't actually tell the public about today's water, said Tom Edge, a microbiologist who is the Canadian co-chair of the project. "'So we're always 24 hours behind.'

There are other shortcomings of E. coli tests, like their inability to identify certain pathogens and viruses. Edge said the tests also can't distinguish where the E. coli is coming from.

Modern technology would help eliminate these problems, he said.

The hazards of older testing practices were on display this July at Belle Isle Beach on the Detroit River.

The beach's water samples are collected on Wednesdays and sent to a private lab.

Tom Bissett, the urban district supervisor at the Department of Natural Resources, said this practice lets the health department receive results before the weekend, when water recreation is most popular.

But the two-day lag means water collected on a Wednesday likely won't be in the same spot of the river that Friday. Additional contaminants may enter the water during that time.

"By the time we get those results, that water that we tested on Wednesday is no longer here — it's much further downriver," Bissett said. "So that's what makes testing water on a beach so complicated, especially on a river — it's only really a snapshot in that moment of time."

Bissett said there is a push to improve practices. Not only would quicker tests give a more accurate assessment of when beaches should close, but they would also allow beaches to reopen sooner, he said.

"We certainly want to look into the technology, and we want to look into the ability to do something to get more rapid responses," Bissett said.

Belle Isle recently received Cooperative Science and Monitoring Initiative grant funding from the Department of Environment, Great Lakes, and Energy to increase testing frequency.

Oakland County is also exploring improved testing.

There, modern tests are used four times per week on 12 inland lakes. For two years, the county has collected samples using old and new testing methods to see if they align.

Oakland's Environmental Health Unit Public Health chief, Mark Hansell, said the unit now feels confident in the results. New tests deliver the same results as the old tests, he said. Only they do it much faster.

"It's an expensive technology, unfortunately, and hopefully that cost will continue to come down," Hansell said. "But we just had the opportunity to increase the efficiency and effectiveness of our program, and just being able to provide same day results is kind of really the gold standard for us in terms of keeping our swimmers safe."

Oakland County's project is part of a voluntary collaborative effort between local health departments and Environment, Great Lakes and Energy.

Shannon Briggs, a department water toxicologist, said the agency is working to provide local departments with resources they need to test recreational water. It primarily finances that through state funding and federal funding from the Environmental Protection Agency.

But there is only so much money available, which Briggs said means the department must prioritize Michigan's most popular and high-risk beaches.

"The more funding we can provide, then the more monitoring and more places can be tested," Briggs said.

There's another obstacle to implementing new testing: the bi-national commission is an advisory group and has no regulatory authority.

Allison Voglesong Zejnati, s commission public affairs specialist, said it does not take positions on policy. Instead, the team shares what the standards should be and whether those standards are being met.

That's why the commission is expanding its operations and organizing a steering committee and a technical working group to begin planning for more studies, including a basin-wide study.

"The ultimate goal of the study is to help, on a more wide scale and more systematically, to implement these more modern tools, make it easier, more accessible, and make sure everybody's kind of on the same page," Voglesong Zejnati said.

– By Amalia Medina; Capital News Service

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