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## Research ties gulls to beach pollution

### Birds are major source of E. coli at South Shore, preliminary findings say

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Sea gulls and geese deserve a big share of the blame for pollution problems at South Shore Beach, according to preliminary results of a study that analyzes beach sources of E. coli bacteria.

DNA analysis of 100 E. coli samples collected last year at the beach found strains of the bacteria linked to gulls, a federally protected migratory bird, and other waterfowl, said Sandra McLellan, a University of Wisconsin-Milwaukee researcher conducting the study.

The study did not find E. coli types linked to humans or other animals, McLellan said.

That, coupled with her observations of bird behavior and circumstances surrounding days with high E. coli readings, led McLellan to the conclusion that sea gulls are the likeliest suspects.

"Everything we've found is most closely related to our gull data," she said.

McLellan, a scientist with the UWM Great Lakes Water Institute, described her early study results in an interview. A draft report on her findings also was submitted last week to the state Department of Natural Resources and the Milwaukee Metropolitan Sewerage District, co-sponsors of the \$96,000 research project.

High E. coli readings have led to the closing of South Shore Beach for 33 days this summer, or more than half the 60-day swimming season.

McLellan, who has collected samples by canoe with student research assistants almost daily this summer, said there are 300 to 500 gulls on the beach every morning.

"They all hang out on the break wall," she said. "It's just whitewashed with sea gull poop."

Paul Biedrzycki, a city health official, said McLellan's early findings were interesting, but he won't draw conclusions about the bacteria sources until the study is completed. McLellan's sample size analyzed so far is too small to draw any major conclusions about sources, Biedrzycki said.

"This is a more complex problem than meets the eye," he said.

Sewer overflows and storm runoff - from city streets and farms far upstream of Milwaukee - shouldn't be excluded as possible contributors, said Biedrzycki, manager of disease control and prevention for the Milwaukee Health Department.

"From a public health perspective, sources of human contamination may be more significant" causes of beach pollution, he said.

### South Shore Beach



*Photo/Elizabeth Flores*

UW-Milwaukee research assistant Alissa Salmore takes water samples from Lake Michigan at South Shore Beach on Monday. Researchers have gathered samples there for bacteria testing nearly every day this summer.



*Photo/Elizabeth Flores*

Gulls flock to South Shore Beach. Sandra McLellan, who is studying beach pollution for the DNR and the MMSD, sees 300 to 500 gulls each morning.

### Quotable

## Full results in December

McLellan cautioned that the results are preliminary and that full results, based on DNA analysis of 500 more water samples collected this year, won't be ready until December.

The finding does not rule out other sources as contributors to beach pollution, she said. Other likely sources prominently mentioned include storm runoff and sewer overflows.

But McLellan said high E. coli readings were observed in both dry and wet weather. Sewer overflows have generally occurred only after big rainstorms.

The district has dumped more than 13 billion gallons of raw sewage since late 1994, when the deep tunnel project was completed, including 103 million gallons spewed into local streams and Lake Michigan during and after the heavy rainstorm Saturday.

Another major finding of McLellan's research pointing the finger at sea gulls: The high bacteria readings were found almost exclusively in a narrow band of water within about 45 feet of the shore.

"It looks like it's a very localized problem, intensified at the shoreline," McLellan said. "It doesn't reflect water quality anywhere else."

The protective geography of South Shore Beach and the low lake levels also contribute to the problem, she said.

McLellan said there is very little water circulation. By contrast, Bradford and McKinley beaches have much better water circulation and far fewer beach closing days, she noted.

MMSD has acknowledged in the past that its sewage dumping probably plays a role in beach pollution, but district officials have emphasized the potential contribution of other sources.

The district was cautious in its reaction to McLellan's early findings. In a statement Monday, spokesman Mark Kass said the gull finding was consistent with studies of beach pollution in Chicago and elsewhere.

"We look forward to her continued research as it helps provide perspective to this complicated issue," Kass said.

Richard Whitman, a biologist with the U.S. Geological Survey, conducted a similar study last year at the 63rd St. Beach in Chicago. He concluded that 40% to 50% of E. coli bacteria tested there came from sea gulls.

Whitman also cautioned against jumping to a hasty conclusion about the importance of a single beach pollution source.

Runoff, sewer plant effluent and overflows, and even beach sand are common beach bacteria sources, he said.

In addition, he warned that DNA analysis for E. coli is a science in its infancy, and that study results must take this into account.

## Control problems

Controlling sea gulls in the area could be a difficult task, Whitman said. They can't be killed without a special federal authorization, and strategies for shooing them from a beach rarely are effective, he said.

Airports with gull problems often used loud noises to scare them off, but gulls learn that poses no real danger and quickly return, he said.

"They're so damn smart," Whitman said.


**“ They all hang out on the break wall. It's just whitewashed with sea gull poop. ”**


**- Sandra McLellan, researcher conducting the study**

**“ Let's face it, a gull will eat just about anything it finds down there. ”**

**- John Idzikowski, bird expert**

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Eliminating gull nesting areas might be one of the better means to help control the bird population, he said.

Whitman, who is familiar with South Shore Beach pollution problems but is not involved in the McLellan study, said runoff from the parking lot and boat launch ramp also might figure into the pollution problem. The lot drains directly into the lake.

Local bird expert John Idzikowski, a past president of the Wisconsin Ornithological Society, said gull populations here are at historic high levels, thanks to the bird's adaptability and plenty of local food sources.

"Let's face it, a gull will eat just about anything it finds down there" near the beach, he said.

Colonies of the birds live at the nearby Jones Island sewage treatment plant, where they feed on sewage as it moves through open-air tanks and channels as part of the settling and treatment process, Idzikowski said.

Gulls are heavy eaters with high metabolisms, meaning they also excrete frequently, he said.

A major kill of the birds is about the only way to reduce gull populations greatly, an option likely to be met with significant public opposition, Idzikowski said.

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