

# Be Careful of What's in the River

By Hiroko Sato

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I had never seen young children talk so seriously about dog waste until 2004, when I met some students from Garrison Elementary School in Dover, N.H., who were in a "Scoop the Poop" campaign poster contest.

Researchers had discovered several sites in the Great Bay Estuary watershed had high levels of bacteria. Traces of dog feces, including that from the neighborhood, were a major contributor.

The state Department of Environmental Services teamed up with city officials, residents and students to launch the campaign. Colorful pictures of dogs and scoopers that the children drew encouraged people to pick up after their pets, reminding them that rainwater that washed over animal waste on yards and streets directly pours into brooks and rivers. That's because storm-water collection systems are usually not connected to treatment plants.

If that sounds gross, consider this: In Lowell and some communities along the Merrimack River, wastewater that contains human feces can go right into the river that supplies our drinking water. In fact, the river was so polluted with bacteria that it was not fit for swimming on one out of every four days between May and October, according to Christine Tabak, executive director of the Merrimack River Watershed Council (MRWC). The river was also unsafe for boating on one out of every 10 summer days.

This is based on the Charles River Watershed Association's standard for E.coli counts, which the MRWC adopted. Under the state Department of Environmental Protection's standard, the geometric mean of all of five or more E.coli samples taken in the most recent six months cannot exceed 126 colonies per 100 ml, and no single sample can exceed 235 colonies per 100 ml. Under the stricter, CRWA standard, no single sample can exceed 126 colonies per 100 ml.

Old mill cities, including Lowell, Lawrence, Haverhill and Manchester and Nashua, N.H., have a so-called combined sewer system, meaning both wastewater and storm water go into the same pipes connected to treatment plants. The bad news is that, when the volume of sewage exceeds the treatment plants' capacities during heavy rainfall, the overflow goes into rivers untreated. The overflow from Lowell alone amounted to 500 million gallons in 2008, presumably affecting the quality of water downstream.

Cities and towns do a good job treating drinking water, Tabak says, but it's not their responsibility to ensure swimmers' and boaters' safety. And the federal Environmental Protection Agency does not have the manpower to regularly check on the river's water quality, she said.

Besides, she said, the testing device the MRWC uses needs five days to produce results while bacteria levels can change daily. In the hope of creating a real-time alerting system for swimmers and boaters, the nonprofit is trying to raise \$32,000 to buy an INDEXX Colilert, a coliforms and E.coli testing kit that provides a 24-hour turnaround, and another device that detects nitrogen levels in water within minutes. These devices would also help the Lowell-based organization determine whether pollution comes from sewer overflow or anything else, Tabak says.

The MRWC has monitored water quality in a 50-mile stretch of the Merrimack River since 2007. At one point this summer, the pH level was 3, meaning the water was as acidic as vinegar. Tabak is concerned about the health of the river because various pharmaceuticals have been found in

streams across the country and the EPA does not require testing of drinking water for such chemicals as pesticide called atrazine.

Old mill communities are working toward separating wastewater and storm-water collection systems, as required by the EPA, and making existing treatment systems more efficient. But even with separate systems, you could still have the problem that Dover, N.H., saw.

The full reports of the MRWC monitoring project are available at <http://www.merrimack.org/publications/watershedreports.html>. To donate or volunteer, call (978) 275-0120 or e-mail to [info@merrimack.org](mailto:info@merrimack.org).

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