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### **DES sleuth tracks pollution of water**

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During a community cleanup of Portsmouth's North Mill Pond, Sherry Godlewski noticed something odd around Bartlett Street Bridge.

"I was picking up garbage and noticed foamy water streaming from underneath the bridge. It did not look right."

Godlewski called Natalie Landry, coastal watershed supervisor at the N.H. Department of Environmental Services' (NHDES) coastal office.

"We follow up on all calls about unusual discharges," said Landry, who has been investigating water-pollution problems in the Seacoast for seven years.

"Many instances of pollution into surface waters are accidental. Many times the problem stems from a broken pipe, an overflowing septic system, or unintentional discharge into the storm drainage system."

Stormwater drainage systems and pipes are meant to remove rainfall and snowmelt runoff that, unlike wastewater, is not treated before it's discharged to waterways.

To figure out what is causing the pollution, Landry uses DNA fingerprinting.

"We call it microbial source tracking. When we collect water samples and discover E. coli bacteria, we know that untreated animal waste is entering the waterway. Using DNA fingerprinting, we can determine what kind of animal, even humans, the bacteria came from and then adjust our management strategies to correct the problem."

Many times water sampling suggests a problem exists in a neighborhood. But finding which house or houses have plumbing problems is tricky and requires creative examination. NHDES investigators often use a technique called "smoke testing."

"When we investigate a neighborhood, we will block off the storm drains and blow nontoxic smoke into the system to see what's connected to it. We then watch the roof vents, which are connected to toilets and sinks. If there is smoke, there's a problem."

If smoke is seen, it is reported to the local health officer, and NHDES offers further assistance to the municipality to correct the problem.

In the case of the sudsy Brackett Street Bridge, Landry contacted the city of Portsmouth and together they inspected the bridge. After seeing toilet paper and other indications of untreated sewage, they realized they had a broken sewer line. To pinpoint the leak, the city hired a contractor to send a small

remote-controlled video camera into the sewer line to visually seek out the break in the line. Instead of digging up the road to repair the line, the city used a repair sleeve that corrected the problem, improved water quality and kept traffic flowing along Bartlett Street.

Godlewski was impressed with the response by the state and city.

"It was really great to see action when I reported the problem."

If you see a potential pollution problem in a waterway near you, please report your observation to Natalie Landry at 559-1507.

Eye on Our Estuaries is an educational column initiated by the N.H. Estuaries Project about coastal watershed issues. Go to [www.nhep.unh.edu](http://www.nhep.unh.edu) for more information.