

# BLUFFERS PARK, TORONTO

## Controlling overland storm water flow greatly improves beach water quality

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It's a success! Toronto's Bluffer's Park beach is now open for swimming most of the season- a huge turnaround from previous years, when elevated levels of the bacteria *E. coli* closed this picturesque beach almost 80% of the time.

Bluffer's Park is a 473 acre public park with a supervised beach located at the terminus of Brimley Road on the shores of Lake Ontario. The popular beach is composed of fine sand and gravel with a gently sloping bottom. The beach is characterized by the backdrop of the Scarborough Bluffs and is a favourite of family groups and young swimmers. A large marsh and forested area is located behind the beach and extends part way up the Bluffs.

Since the early 1980s, the Public Health Department frequently posted Bluffer's Park Beach as unsafe for swimming due to elevated bacteria levels.

In 2005 Toronto Water, Water Infrastructure Management undertook a detailed site assessment in an attempt to identify and quantify the relative contributions of *E. coli* from local direct and diffuse sources. As part of the site assessment, a microbial source tracking (MST) study was initiated by Toronto Water, in collaboration with Environment Canada's National Water Research Institute (NWRI) to help identify the principle sources of bacterial contamination at Bluffer's Park Beach. The study used DNA fingerprinting and antibiotic resistance arrays (ARA) to identify the distribution of *E. coli* sources.

During the detailed site assessment it was noted that a small intermittent stream drained the marsh land north of the beach and discharged in the middle of the supervised swimming area. Contributing to this stream flow was run off from a nearby parking lot which was covered in bird droppings from the local waterfowl population. Testing of the stream and parking lot run off indicated high concentrations of *E. coli* in the sediment laden water. Microbial Source Tracking confirmed that high *E. coli* levels found in the stream water, parking lot run off and beach water were often not associated with a human or municipal wastewater source but were similar to known water fowl profiles. (T. Edge, personal communication, 2006).



The solution? Toronto Water along with Toronto and Region Conservation Authority (TRCA) developed a plan that managed the storm flow in two phases. Firstly the marsh would be further bermed, allowing partial discharge to controlled infiltration ponds at the marsh edge. Secondly, any additional marsh flow would be redirected from its current western location to the eastern edge of the marsh, again allowing infiltration.



Construction took place in the early spring of 2008 to avoid disturbing park users. The design plan enhanced the natural setting of the park, improved beach water quality, provided a more diverse habitat for plant and animal species and add aesthetic value to the beach area. The results speak for themselves. Pre construction Toronto Public Health would post the beach with an advisory against swimming, often over 80% of the time.

Post construction, the beach has been open 85% of the time. The turnaround was so great, that in 2011, this beach becomes the eighth in Toronto to fly the internationally recognized Blue Flag, emblematic of the highest in water quality standards (see [www.blueflag.ca](http://www.blueflag.ca))

<b>Bluffer's Park Beach Postings 2002 - 2010</b>								
2002	2003	2004	2005	2006	2007	2008	2009	2010
43%	84%	88%	95%	41%	26%	15%	14%	15%

Thanks to the many partnerships and hard work from the City of Toronto, Toronto and Region Conservation Authority, Environment Canada and others, Bluffer's Park is an example of how effective storm water controls can be to restoring a beach.

For more information contact Gary Stinson, City of Toronto at [stinson@toronto.ca](mailto:stinson@toronto.ca) or see [www.toronto.ca/beach](http://www.toronto.ca/beach) (broken link)

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