

Monitoring *E. coli* levels throughout the Englesby Brook: Summer 2011

University of Vermont Student Research Conference Proposal

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Abstract

Englesby Brook is a tributary to Lake Champlain that drains water from a 0.94 mi² watershed in Burlington and South Burlington. This watershed has been developed for various purposes, and includes sites of commercial, industrial, and residential land use. 96% of the land in the watershed is developed for human use, while the remaining 4% is forested. The brook does not meet Vermont Water Quality Standards according to the 2008 Vermont 303d list, and *Escherichia coli* (*E. coli*) is cited as a primary pollutant of concern. Since the Englesby Brook outfalls into Burlington's Oakledge Park, a recreational area that includes Blanchard Beach along Lake Champlain, *E. coli* transported to the lake creates a potential health hazard for swimmers. Blanchard Beach was closed from 1992 to 2007 due to high *E. coli* levels. In 2005, several Best Management Practices were implemented within the watershed in an attempt to remediate the water quality.

In the summer of 2011, water samples were taken at 7 locations within the Englesby Watershed immediately following 7 rain events. The samples were taken to the UVM Constructed Wetlands Research Lab, where they were analyzed for *E. coli*. The data from these samples indicated persistently high levels of *E. coli* throughout the brook after rain events. *E. coli* levels were positively correlated with amount of precipitation. *E. coli* levels were greatly variable between sampling locations, with the highest counts found at the mouth of the Englesby Brook. *E. coli* levels at Blanchard Beach were found to exceed Vermont Water Quality Standards after several rain events.