

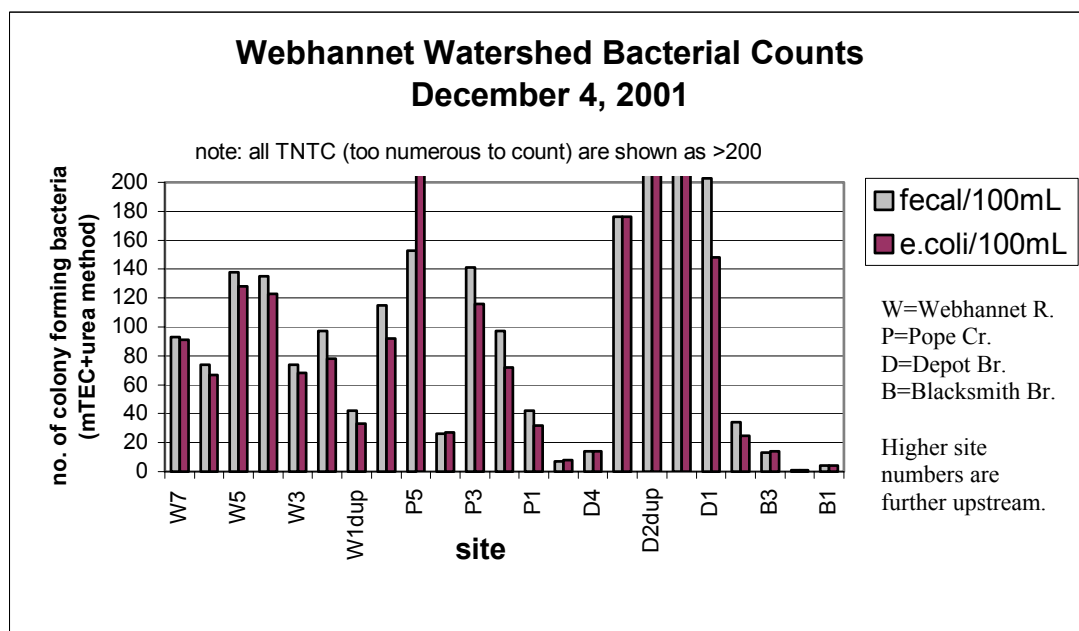
December 17, 2001

Dear Steering Committee Member,

We have just completed our first water sampling date in the Webhannet watershed in Wells, Maine, and thought it would be a good time to update you on the project status. We hope you will take a moment to look through this update and send us a reply, however brief, just to let us know you are still on-board. As you may recall from the abstract, the water sampling period that begins now will continue through May, 2002. Then, from May to September we will collect samples in the estuary. Our next sample date is set for January 8.

The primary research objective of our project is to genetically fingerprint the fecal bacteria in the watershed, and thus determine its source animal species. Secondly, we are also enumerating bacterial concentrations in the watershed for comparison against DEP water quality criteria.<sup>1</sup> After the volunteers collect the water samples, we at the Wells Reserve do membrane filtrations to count the levels of fecal and E. coli bacteria. Where contamination is high,<sup>2</sup> samples of these E. coli are sent to UNH Jackson Lab for genetic analysis.

The results of our water sampling are shown the following chart:



E. coli isolates have been created for these sites: W7, W6, W5, W4, W3, W2, W1, P5, P3, P2, D3, D2 and D1. We will transport these samples to UNH next week for genetic analysis.

<sup>1</sup> Our Dec. 4 samples were tested for E. coli and fecal coliforms using the “mTEC agar + urea” method. Both UNH’s Jackson Environmental Lab and the Maine DEP use these methods for assessing freshwater quality. We are presently evaluating the suitability of this test, and may decide to use a different growth medium which tests only for fecal coliform bacteria. The methods for these mediums are considerably easier to run than the mTEC method and would reduce our overall amount of lab work. We still need to decide whether our bacterial results should be consistent with the DEP’s freshwater quality standards for E. coli. Any input from committee members regarding this question would be greatly appreciated. All methods under consideration, however, allow isolating E. coli bacteria for genetic analysis.

<sup>2</sup> We chose to define “high E. coli count” as 64 colonies/100mL. This is the limit for the geometric mean, May 15<sup>th</sup> to September 30<sup>th</sup>, of class B waters, suitable for fishing, recreation, drinking water after treatment, etc. (Maine Statutes, Title 38 § 465). It was the most appropriate general-purpose limit for E. coli we could find.

Data from the 1999-2000 study led us to expect low counts in Blacksmith Brook and high counts in Pope's Creek. We were surprised to see such high counts across the other two rivers, however. Recent precipitation and record high temperatures may have contributed to these results.

We have collected sample scat from the watershed with the help of a knowledgeable volunteer, Dana Johnson, who is a professional trapper from Wells. We've collected coyote, deer, grey fox, red fox, raccoon and squirrel. We plan to collect samples from dog, cat, horse, cow, and other domestic animals in the watershed. We found a large beaver dam on a tributary of the Webhannet and a duck pond on a tributary of Depot Brook. Although beaver scat is difficult to find, we would like to add that to our "library," along with duck.

Volunteer interest in the project is strong, as evidenced by the 43.5 hours of volunteer service already given to the project. Twenty-one people have volunteered on the project so far, with several others recently expressing an interest.

We greatly appreciate your participation, even if for now that simply means keeping yourself up-to-date on the project. Please let us know if you have any comments or questions about the project. We look forward to hearing from you.

Best wishes for the holidays,

Cayce Dalton and Fred Dillon

CICEET funded Microbial Source Tracking Project

Project partners: UM Sea Grant, Wells NERR, UNH/Jackson Lab, University of Southern Maine and AmeriCorps/Maine Conservation Corps

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