

Greetings Steering Committee Members,

We'd like to bring you all up to date on the current status of the Microbial Source Tracking Project in the Webhannet River watershed. We completed our 4th sampling event on January 31st. E. coli and fecal coliform concentrations for most sampling sites have been generally quite low thus far as might be expected given the colder temperatures and lack of precipitation. (We have decided to continue using the m-TEC analytical method which allows us to enumerate both E. coli and fecal coliform colonies). Only a few of our sites have exceeded the DEP's seasonal (May 15 - Sept 30) instantaneous limit of 427 colonies / 100 mL of sample, and individual high counts generally do not result in the shellfish harvesting area closures.¹ Bacterial isolates from only our first sample day have been sent to UNH's Jackson Estuarine Lab. The remaining isolates will be sent soon, and there are still more animal scat samples to be collected. No results of genetic analysis are yet available. See the following two pages for charts and tables of bacterial levels in the watershed.

We have pre-scheduled 10 more sampling events through September and will be conducting an additional 5 or 6 events following significant rainfall or snow melt during this same period. Sampling in the upper (mostly freshwater) portions of the watershed will end in May followed by estuarine sampling from May to September. We are currently working to establish the estuarine sample site locations and have initially identified sites immediately above and below the head of tide for all 4 stream inputs (Blacksmith, Depot, Pope and Webhannet). We will also be focusing on the areas currently closed to shellfish harvesting (from Pope's Creek south) and will evaluate previous bacterial monitoring data to further identify potential sites. All estuarine samples will be collected at mid-high tide and preferably on an incoming tide.

The success of the water sampling thus far has largely been due to the involvement of highly dedicated volunteers (and by extension Cayce's excellent oversight). Volunteers have donated 116 hours of water sampling and lab assistance. Clearly, without their help the Microbial Source Tracking project would not be running nearly as well as it has been.

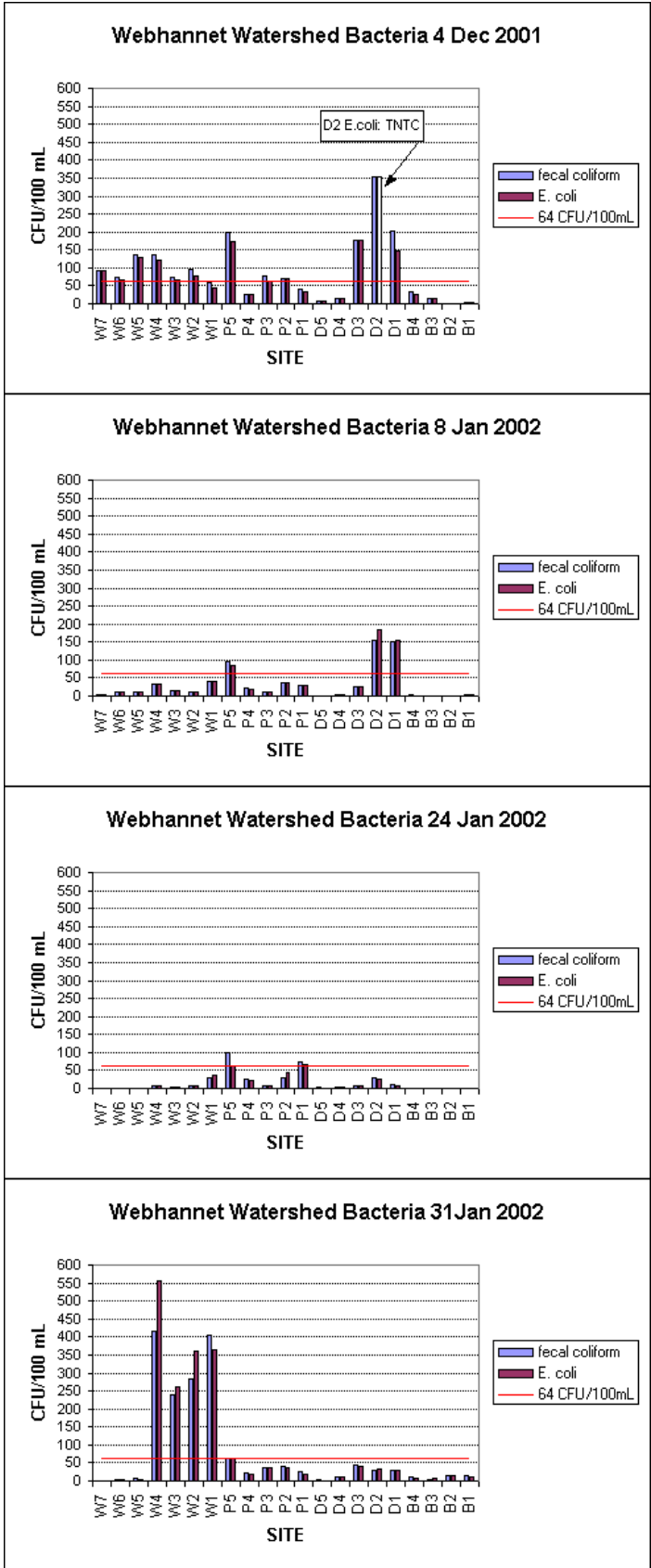
Finally, we are also beginning to plan for the watershed survey portion of the project, which we will conduct later this summer. It won't be a full scale survey since so much of this work has already been done by others. Instead, we'll be focusing on known (or suspected) "hot spots" while continuing to collect water and animal scat samples to help us confirm areas of concern.

Please contact us if you have any questions or suggestions regarding any of the above.

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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¹ Department of Marine Resources relies on the previous 30 sample results before declaring a closure.



Charts give fecal coliform and E. coli bacterial concentrations from membrane filtration test using mTEC agar medium (+ urea for E. coli).

W=Webhannet R.
 P=Pope's Cr.
 D=Depot Br.
 B=Blacksmith Br.

W7 is most upstream site on Webhannet.
 W1 is at mouth of river.

CFU = colony forming units
 TNTC = too numerous to count

For all samples showing bacterial concentrations of ≥ 64 CFU/100mL, isolates of 10 separate E. coli colonies are created for genetic analysis at UNH-Jackson Lab.

Microbial Source Tracking in Two Southern Maine Watersheds

Table of membrane filtration results as of Jan 31, 2002 (mTEC medium)

W7 is the most upstream Webhannet River site, W1 is at mouth of river.

W = Webhannet, P = Pope's Creek, D = Depot Brook, B = Blacksmith Brook

Highlighted cells indicate level of contamination. Light grey is 64-200 CFU/100mL; dark grey is >200 CFU/100mL

site	average fecal	reportable fecal	reportable fecal	reportable fecal	reportable fecal
W7	24.9	93.0	3.3	1.7	1.7
W6	22.7	74.0	12.5	0.8	3.3
W5	39.3	138.0	11.7	1.7	5.8
W4	147.9	135.0	34.0	7.5	415.0
W3	83.5	74.0	15.8	4.2	240.0
W2	100.3	97.0	11.7	7.5	285.0
W1	133.6	57.5	41.0	31.0	405.0
P5	113.7	200.0	94.0	98.8	62.0
P4	23.8	26.0	22.0	24.0	23.0
P3	32.9	78.0	10.0	7.7	36.0
P2	44.6	70.0	37.0	30.5	41.0
P1	42.0	42.0	28.0	72.0	26.0
D5	3.8	7.0	1.7	2.5	4.2
D4	8.0	14.0	2.5	3.3	12.3
D3	63.4	176.0	24.0	7.5	46.0
D2	142.0	354.5	155.0	30.5	28.0
D1	98.5	203.0	150.0	10.0	31.0
B4	11.5	34.0	2.0	0.0	10.0
B3	4.3	13.0	0.0	0.0	4.0
B2	4.0	1.0	0.0	0.0	15.0
B1	6.0	4.0	5.0	1.0	14.0
date-->	AVERAGE	4-Dec-01	8-Jan-02	24jan02ppt	31-Jan-02

site	average E. coli	reportable E. coli	reportable E. coli	reportable E. coli	reportable E. coli
W7	24.0	91.0	3.3	0.0	1.7
W6	20.7	67.0	12.5	0.0	3.3
W5	36.4	128.0	11.7	1.7	4.2
W4	179.9	123.0	34.0	7.5	555.0
W3	87.0	68.0	15.8	4.2	260.0
W2	114.1	78.0	11.7	6.7	360.0
W1	121.5	46.0	39.0	36.0	365.0
P5	96.3	173.3	86.0	62.0	64.0
P4	22.1	27.0	19.0	23.3	19.2
P3	29.2	64.0	10.0	6.8	36.0
P2	46.8	70.0	37.0	44.1	36.0
P1	36.0	32.0	28.0	65.0	19.0
D5	2.8	8.0	1.7	0.8	0.8
D4	7.1	14.0	2.5	2.5	9.5
D3	61.9	176.0	24.0	7.5	40.0
D2	149.9	354.5	185.0	27.0	33.0
D1	84.7	148.0	155.0	6.7	29.0
B4	8.8	25.0	1.0	0.0	9.0
B3	5.0	14.0	0.0	0.0	6.0
B2	4.0	1.0	0.0	0.0	15.0
B1	5.3	4.0	5.0	0.0	12.0
date-->	AVERAGE	4-Dec-01	8-Jan-02	24jan02ppt	31-Jan-02