MAY 2002 STEERING COMMITTEE UPDATE

Greetings Steering Committee Members,

Quite a bit has happened since our last update in February. Perhaps one of the most significant accomplishments has been the development of a website for the MST project. Cayce has done an excellent job in putting this valuable informational resource together. We'd encourage all of you to review the site. Simply type in "microbial source tracking" on Google and we appear at the top of the list! (Cayce orchestrated that as well). Alternately, you can access our URL directly at www.umseagrant-mst.org. To save you the trouble of reading this entire update, most of what we've summarized here can be found on the website.

Water Sampling Results

E. coli sampling results since February have been variable with some notable increases in bacterial concentrations following precipitation or snow melt events. (The results section of the MST website distinguishes these events with a "ppt" in the chart titles). There were also some considerable spikes on Pope's Creek for the March 11th sampling event. Three of these sites, P2, P3 and P4, all exceeded the DEP's instantaneous limit for Class B surface waters of 427 colonies / 100 mL of sample. We're not sure what may have contributed to this sudden increase, particularly since these same 3 sites had never before exceeded the DEP limit (including April 15th, where nearly a half inch of rain fell prior to and during this sampling event). We'll be statistically analyzing all E. coli results within the next couple of months to reveal any patterns or correlations that may exist in the data.

The Jackson Estuarine Lab (JEL) has completed the biochemical analysis for all of our isolated E. coli samples through March 11th. They use this procedure to confirm the identity of the isolates as E. coli before ribotyping. Nearly 85% of our isolates have been positively identified as E. coli and are now ready for ribotyping. JEL expects to begin this process some time in June.

Volunteer Involvement

The MST project has benefited from generous and reliable volunteer participation. We have added several new volunteer since February, and all together the volunteers have contributed 207 hours of their time up to now. Special thanks are due to RJ Mere, who offered his knowledge and experience in animal tracking and collected grouse, coyote and moose scat.

Scat Library

So far, we have deer, coyote, squirrel, raccoon, red fox, grey fox, human and dog scat samples that have yielded biochemically confirmed E. coli. (Unfortunately, the moose scat did not pass the isolating process successfully.)

Education / Outreach / Publicity

On April 21st, Kristen, Cayce and Fred staffed the MST display at the Reserve's Earth Day festivities. We set up a computer with a running slide show and a hands-on E. coli testing station complete with vacuum pump, filtration apparatus and sterilization equipment. It proved to be a big hit with kids and their parents, about 40 of whom stopped by the table for a look at the slide show or to try their hands at performing an E. coli test (in this case with tap water). Cayce and Fred also provided E. coli test procedure training and an overview of the MST project for Reserve docents on April 24th and 25th.

On May 23rd, Cayce and Fred will be presenting for the MST Project at the New England Interstate Water Pollution Control Commission's (NEIWPCC) annual Nonpoint Source conference in Boothbay Harbor. They'll provide an overview of microbial source tracking and its significance to water quality monitoring here in Wells and in similar applications elsewhere. They'll also be setting up a display (similar to the one for Earth Day) at the Casco Bay Estuary Project's State of the Bay Conference in Freeport on June 19th. This will provide another great opportunity to

educate folks about the MST Project. Finally, we're scheduled to give a presentation on September 20th at the Maine Wastewater Control Association's Fall Conference in Phippsburg.

In addition to our outreach and educational activities, we've also been trying to generate publicity for the MST project through media coverage. We were scheduled to have Maine Public Radio do a news story on May 16th, but unfortunately they had to reschedule for some time in July. Cayce just completed a wonderful article for the Casco Bay Weekly, which will probably be published later this month.

Watershed Surveys
On April 19th, Don Kale, DEP Watershed Program Coordinator, provided Cayce and Fred with an overview of watershed survey methods. We visited several sampling sites in the Webhannet River watershed and came away with a greater understanding of how to identify potential pollution sources. We also met with Laura Livingston, DMR Shellfish Harvesting Specialist, on May 1st to conduct a coastal watershed survey along the Webhannet River estuary. This helped us to focus on pollution sources specific to bacterial contamination, which should limit the intensity and extent of our watershed survey efforts. We expect to enlist the help of volunteers to complete a survey of all relevant portions of the Webhannet River watershed by late May / early June.

Estuarine sampling
Beginning in June, we'll shift most of our water quality sampling to the estuarine portion of the Webhannet River watershed. The reasons for breaking the freshwater and estuarine portions of the watershed into separate sampling periods was to focus on snow melt and freshet runoff before, during and after the clamming season (Jan-April) – with most freshwater sampling from Dec-May – and to focus on estuarine problem sites from June-Sept.

Summer sampling will pick up some freshwater discharges as we'll be collecting samples from a point above the head of tide for all 4 estuarine inputs (Blacksmith, Depot, Popes and Webhannet). In theory, we should be able to detect any fecal contamination entering the estuary from these sources. Also, we need to keep the number of sites we sample within a reasonable range. If there's time, we may chase any contamination we find further upstream to try and pinpoint the source.

NOAA Land Cover Analysis Software
In mid-April, we obtained a copy of NOAA's Coastal Change and Analysis Program (C-CAP) software, which uses satellite imagery to determine the relative effects of land use patterns on water quality. C-CAP classifies land cover types into 22 standardized classes that include forested areas, urban areas, and wetlands. This program is used in conjunction with ArcView software, which we've been using for basic watershed mapping. We hope that C-CAP may corroborate some of the actual bacterial monitoring results we've generated in the freshwater portions of the watershed.