

Lagrangian Sampling of *E. Coli* in an Urban Stream

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Abstract. Rocky Creek, an urban stream in Augusta, Georgia, has been identified on Georgia's 1998 303(d) list of impaired water bodies due to concerns about fecal coliform bacteria. There are no widespread agricultural or animal farming operations in its watershed and a large portion of its area is impervious to water infiltration, so pollutant runoff is a major concern. Monitoring efforts thus far have shown the upper-middle stretch typically has the highest concentrations of fecal indicator bacteria, but source identification has been inconclusive. To further investigate possible causes or sources of impairment, a lagrangian sampling scheme was applied, and both surface and sediment water at six sites on the creek were sampled according to travel time. At each site, a rhodamine dye tracer was used to determine travel time, and discharge, pH, dissolved oxygen, specific conductance, and temperature was measured. We found that total load of *E. Coli* increased linearly as a function of stream length from the first site. This study builds on the results of a previous lagrangian study in the same creek. Results from these studies support previous literature indicating stream sediments may be acting as a reservoir of *E. Coli*. If bacterial loading during low flow conditions is a result of mobilization from sediment into the water column, source identification from bacterial monitoring, as well as control efforts, become increasingly difficult.