Identifying and Remediating the Sources of Pollution in Impaired Bangor Streams

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In the city of Bangor, six streams are defined as impaired by the Department of Environmental Protection. The intent of this study was to identify the types and sources of pollution causing impairment and to explore possibilities for remediation based on those pollutants. Samples for all streams were analyzed for total phosphorus concentration, coliform and E. coli counts, pH, conductivity, temperature, and dissolved oxygen. The data was then examined paying specific attention to the impervious cover percentages for each watershed, the topography of the land, how stormwater would flow, and potential point source pollution sources. Results to date indicated impaired streams, including: phosphorus concentrations above the impairment limit, high E. coli counts, and high conductivity in almost all streams, and dissolved oxygen levels below the impairment limit in one of the streams. Investigations into surrounding land topography revealed construction zones, impervious surfaces such as parking lots, and expansive grass areas, which are believed to have contributed to phosphorus, E. coli, and conductivity through the combination of stormwater and impervious cover; the increased flow initiated by such surfaces can increase erosion, and release phosphorus from the sediment. The project is ongoing with the ultimate goal of evaluating best management practices for efficiency and applicability with respect to the most impaired locations and most critical pollutants, developing a topographical map based stormwater flow model to evaluate where the stormwater is picking up the majority of the pollutants, and providing remediation plans for the impaired streams.

Awards Won:
Fourth Award of $500