
**Suspended sediment concentrations in the
Shubenacadie Canal, Dartmouth, Nova Scotia**

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In the fall of 2005 a study in Dartmouth, Nova Scotia, was performed on the concentration and grain size distribution of suspended sediment entering into Lakes Charles and Micmac, and the Shubenacadie Canal during heavy rainfalls. Weekly sampling was carried out to determine 'background' values, and event sampling was performed during heavy rainfalls. One example of a large rainfall event was documented during the October 7th–10th weekend when Dartmouth received over 100 mm of rain. The Shubenacadie Canal region has a history of increased suspended sediment concentrations due to increased urban development in the local area since the early 1970s. During the summer of 2005, construction resulted in the removal of vegetation from the lands west of the Shubenacadie Canal. Heavy rainfall during this time resulted in sediment washing off the construction site and entering into the lakes, resulting in an increase in visible sediment in the water entering the lakes. Although the water was highly discoloured, the resulting concentrations of suspended sediment were low, ranging between 0.2 – 50 mg/l. Sediment concentrations were higher in portions of the Shubenacadie Canal called the Deep Cut and Grassy Brook during and after rainfall events. Measurements of the grain size of sediments entering the lakes showed that the sediments were clay/silt sized (ranging from 1 to less than 63 μm). During the study both construction companies improved their methods of water retention in the settling ponds to allow suspended sediment time to settle out. The result of this was that after the initial Thanksgiving suspended sediment overflow, the concentrations of sediments entering the lake system during large subsequent rainfall events were reduced.
