
**The effect of short-duration rainfall on the
surface water quality of Thomas Brook,
Kings County, Nova Scotia**

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The surface water quality of freshwater systems is an indicator of the overall health of an ecosystem. Nitrogen and phosphorus are limiting nutrients in freshwater systems, so slight increases in either nutrient can negatively affect surface water quality. Agricultural practices dominate approximately 50% of the Thomas Brook Watershed, located within the Annapolis Valley of Nova Scotia. Climatic data indicate that there have been increases in the frequency and duration of rainfall events in the Annapolis Valley. In addition, research indicates that over 90% of nutrients move from agricultural land into watercourses during times of precipitation. This research project focuses on the movement of artificial nutrients from agricultural land into the watercourse during periods of precipitation and its effect on the health of the watershed. An analysis of the surface water quality of Thomas Brook during three rainfall events exceeding 20 mm of precipitation in the spring of 2011 will determine the increase in nutrient concentrations as a result of excess water and soil input from overland flow and throughflow. Results from this study will be used to determine the susceptibility of the watershed to eutrophication during these events and will aid local agricultural producers in managing nutrient application on crops within the watershed.