



## Urban water quality modelling: quantifying the fecal coliform load in the Beauport River

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### ABSTRACT

Concentrations of fecal coliforms in the Beauport River (Quebec, Canada) often exceed water quality standards for bathing activities or secondary contact activities, which is problematic for a river situated in an urban area. This study explores the respective contributions of the separate stormwater drainage and combined sewer systems to fecal coliform loads, using the SWMM model with the event mean concentration method. The results show that the contribution of the combined system is the most important, even though it drains an area much smaller than the area covered by the separate stormwater system. The results also show that even if all combined sewer overflows were eliminated, the fecal coliforms coming from the separate stormwater drainage system would still lead to fecal coliform concentrations in the river that are higher than the water quality standards for primary and secondary contact activities.

### KEYWORDS

Fecal coliforms, stormwater management, SWMM, urban drainage, water quality modelling