Monitoring exstream events: The trials and tributariations

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"Urban stream syndrome" describes the increased concentrations of nutrients and contaminants, modified channel morphology and stability, flashy hydrographs, and decreases in biodiversity in urban, lotic streams because of increases in impermeable surfaces, intensive development, and poor storm water management. To further understand how flood events influence sediment transport and aquatic stream health in urban areas, three streams of varying land uses in the Greater Toronto Area – Wilket Creek, Ganatsekiagon Creek and Morningisde Creek, have been monitored from 2015 – 2017. Wilket Creek is surrounded by residential land and has no storm water management, Ganatsekiagon Creek is surrounded by rural lands with plans to be developed, and Morningside Creek has both residential and industrial adjacent land uses. This research focuses on benthic macroinvertebrate communities and water quality analysis performed on the three streams and highlights differences between the streams over time. Ganatsekiagon Creek, the least impacted stream, has higher taxa diversity and pollution sensitive taxa. Wilket Creek and Morningside Creek have higher concentrations of phosphates and sulfates, likely because of adjacent land uses. Furthermore, this presentation will highlight challenges faced when monitoring streams in urban areas and how to overcome them. Lastly, recommendations will be made on how to foster collaboration between different parties so that streams can be monitored in an interdisciplinary way that allows for better understanding of complex stream processes and how to manage them.

Biography

Patricia Huynh is a PhD Candidate in the School of Environment, Resources & Sustainability in the Faculty of Environment at the University of Waterloo. Patricia's research focuses on monitoring streams experiencing hydrological stress from the urban stream syndrome with an emphasis on water quality and benthic macroinvertebrates.