

Topic:

EFN science and applications

Title:

Incorporating Environmental Flow Considerations into Watershed Planning for Streams of the Toronto Region

While the majority of research concerning Environmental Flow Needs (EFN) in North America has focused on large Western river systems, there is increasing interest in applying EFN science and techniques to the management of streams in smaller, more urbanized watersheds. EFN provides a useful lens for examining the ways in which land use change and hydro-modification have contributed to aquatic habitat degradation and shifting species assemblages within these urbanized watersheds. The Toronto and Region Conservation Authority (TRCA) is a watershed-based agency whose mandate includes the management of riverine flooding and erosion hazards as well as aquatic and terrestrial ecosystems within the watersheds of the Toronto region flowing into Lake Ontario. TRCA is able to influence the design of new stormwater infrastructure through both a regulatory and a municipal advisory role. As such, TRCA has an interest in ensuring that the rural areas with the highest value aquatic habitat, which in many cases coincide with areas identified for future urbanization, develop in such a way as to avoid further degrading habitat and compromising ecological connectivity.

This poster will present a conceptual framework for the application of EFN assessment science to the context of the urbanizing landscape of southern Ontario. Issues of management concern will be highlighted, as will possible management approaches to mitigate ecologically undesirable hydro-modification of watercourses. A literature review will identify applicable case studies from similar landscape contexts in addition to key knowledge gaps where further research will be needed to identify thresholds of impact, and to implement mitigation measures.

Author:

Neil Taylor

Toronto and Region Conservation Authority