

Lake Wilcox Phytoremediation Project – Zeeb Lab

Lake Wilcox is a small kettle lake located in Richmond Hill. The watershed surrounding the lake has changed over the past 40 years from a cottage community with agriculture to more intense urban and residential uses. These land use changes have shifted water quality concerns in the lake from phosphorus (largely from septic discharge) to chloride (largely from road salt) distributed along Bayview Avenue and smaller roads. Chloride concentrations in Lake Wilcox have been increasing since 1996 and are now upwards of 160 mg/L. The objective of the current study is to determine how halophytes can best be integrated into road and street tree projects to improve water quality conditions and street tree survival.

This research has three main objectives related to implementing phytoremediation using halophytes to remove road salt from soil:

1. Plant native seed mix with halophytes roadside to remediate and/or intercept road salt,
2. Plant halophytes roadside as plugs to remediate soil, and
3. Plant halophytes near street trees to increase street tree survival.

Meeting these objectives will ultimately mitigate the impacts of road salt on the environment, educate the public on the issue of salt in the environment (via educational signage), and improve water quality in Lake Wilcox. We will also develop guidelines to improve street tree survival and informal regional level salt operations.