

Brook Trout Creek Restoration Under Challenging Conditions

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MacInnes Creek is a small, trout-bearing creek which discharges into the north shore of Lake Superior near Nipigon, Ontario. A January 2015 train derailment resulted in damage to the culvert conveying MacInnes Creek beneath the railline and a release of grain and seed into the creek. Winter conditions and the emergency response nature of this project posed a number of challenges to restoration, most notably:

- Ice and snow covered channel
- Limited knowledge of the pre-derailment channel features
- Clearing of all riparian vegetation in the vicinity of the culvert to facilitate emergency response remedial efforts
- Fish Window Limitations on in-water works after March 1st

Mitigation measures and restoration works were implemented from the outset and in a phased approach to mitigate the impact of the derailment on the creek and associated natural features. Phase 1 focused on stabilization of the culvert and banks to facilitate fish passage suitable for the spring brook trout spawning event, Phase 2 monitoring of site conditions through spring freshet and the fish protection window, and Phase 3 comprised the permanent restoration efforts. Success was achieved through the preparation of a detailed aquatic habitat evaluation and restoration plan, as affirmed by the presence of young-of-the-year brook trout in 2015 in both upstream and downstream reaches of the restored channel.

This paper will outline how the various challenges were addressed in cooperation with the remediation team and agencies, and techniques applied (including innovative use of wildlife cameras).