

Forest and Stream Rehabilitation Plan for Two Mile Creek Conservation Area

Frequently Asked Questions

Why is this work being done?

If you are a trail user at the Two Mile Creek Conservation Area, you will have noticed a large amount of dead or dying ash trees on the property. This damage was caused by an invasive exotic insect called the Emerald Ash Borer (EAB) (*Agrilus planipennis*), that has been decimating tree cover across the watershed. The adult beetles feed on the foliage of the ash trees, and the larvae kill the trees by feeding between the bark and the sapwood which breaks the tree's transportation system for moving nutrients and water from the roots to the canopy.

The loss of ash trees due to the EAB has been significant in Southern Ontario and other parts of North America. The dead trees no longer provide shade to nearby streams or erosion control for soils, and open canopy often allows the invasion of exotic plants that would otherwise not survive in the shade of the forest. This has been the case at Two Mile Creek, where there is now a substantial number of different invasive exotics such as garlic mustard, European buckthorn, and Manitoba maple that no longer represent a healthy, native forest. Additionally, when dead ash trees eventually fall, they can break or damage healthy trees found within the forest including Shagbark hickory, Yellow birch and native maples and oaks. This has occurred at Two Mile Creek as well.

What are the concerns?

Due to increasing concerns from the Town of Niagara-on-the-Lake (Town), the Environmental Advisory Committee (EAC), NPCA Watershed Forester, and nearby residents about the Two Mile Creek Conservation Area, the NPCA and the Town have collaborated to address these matters. The NPCA's Watershed Forester reviewed the site and developed a forest and stream rehabilitation plan to address the concerns of invasive species, trail user safety, ecosystem diversity and creek debris, while preserving the healthy upland forest in other parts of the conservation area.

What are the details of the forest and stream rehabilitation plan?

The NPCA conducted a tree clearing operation in the summer of 2021 in Treatment Area "A" and Treatment Area "B" (attached map), with the objective of a "stand conversion". As part of the forest and stream rehabilitation work, the dominant ash tree forest was removed (**phase 1**) and will be replaced with a young forest of appropriate native tree species – a mixture of deciduous and coniferous trees in **phase 2**, starting in May 2022.

Aecon Group Inc. was retained to remove the majority of the dead ash trees and invasive Manitoba maples using a machine to mulch the dead trees, leaving the organic material on-site. Fallen trees and logs in the watercourse were removed to improve flow and address concerns about large creek debris and flooding. Later this year (summer/ fall 2022), work will be conducted to help reduce erosion along the banks of the Two Mile Creek, which may include riparian planting, bioengineering, and potentially some instream work to help improve habitat and water quality.

How long will the tree planting take?

NPCA staff will be on-site during the first week of May to plant approximately 4,500 native trees in the areas that were cleared in the summer of 2021. An additional two hundred trees will be planted by volunteers on May 5, 2022, 10 a.m. to 12 p.m.

What can I expect for noise?

Minimal noise is expected from this phase of the project. All trees will be hand-planted by NPCA Restoration staff and volunteers.

Can I still access the trail?

Yes, the trail will remain open for the duration of the planting phase.

Are the gravestones or any other heritage features at any risk of damage during this work?

No. The planting will not damage the gravestones or heritage features.

What kind of trees are being planted?

Native deciduous and coniferous trees that are appropriate to the site conditions and native to seed zone 37 will be replanted to encourage the re-establishment of a healthy, resilient and diverse ecosystem that will support a variety of wildlife and improve the overall water quality in Two Mile Creek.

Common Name	Scientific Name
Red Oak	<i>Quercus rubra</i>
Sycamore	<i>Platanus occidentalis</i>
Silver Maple	<i>Acer saccharinum</i>
Shagbark Hickory	<i>Carya ovata</i>
Red Maple	<i>Acer rubrum</i>
Bur Oak	<i>Quercus macrocarpa</i>
Trembling Aspen	<i>Populus tremloides</i>
Swamp White Oak	<i>Quercus bicolor</i>
Speckled Alder	<i>Alnus rugosa</i>

Can I get involved?

Yes, residents and volunteers who are interested in helping with the Community Tree Planting on May 5, from 10 a.m. to 12 p.m. should contact Kerry Royer, Coordinator, Community Outreach 905-788-3135 x234, kroyer@npca.ca to register.

Why are there still dead standing trees, logs, and forest debris from phase one at the site? Will these be ‘cleaned up’?

The dead trees were intentionally left behind as they will provide cavity trees for birds, bats, and other wildlife. These dead-standing trees provide food, safe nesting sites, roosting and denning sites, hunting perches, and foraging sites for various species. The piles of logs and other dead trees were left to create

habitat, shelter, and create microtopography on the site. Downed logs will slowly decay as they are colonized by fungi, insects, and other decomposers. They are an essential part of forest ecology – homes for millipedes, mites, earwigs, beetles, spiders, ants, and earthworms. These insects will attract birds and other insectivores and provide important food sources. Salamanders, toads, and frogs need the "messy" debris (leaf litter, bark, sticks, branches, and logs) on the forest floor for refuge in the frigid winter months. Unfortunately, there is no way to speed up this process, and the logs will remain in place while they begin their decomposition process and nature does the work.

The wet and deep fertile soils found in the floodplain at Two Mile Creek Conservation Area made the use of heavy equipment difficult without causing considerable damage and erosion. Removing the logs from the site and clearing the mulch and other debris would have caused harm to the native soils (e.g., compaction, rutting, and erosion susceptibility) and natural understorey vegetation, making it more difficult to establish the new tree plantings and natural regeneration.

The good news is that these fertile and moist soils should be ideal conditions to help the new trees grow and have a good survival rate compared with drier sites. We anticipate that the trees planted this spring will do well. As they grow, the site's aesthetics will improve over time, though admittedly, it will take years for the trees to grow to the size of the ones that were cut.

While the largest debris was removed from the creek as part of this project, however some smaller debris was left to provide those same habitat features in the creek – homes for small aquatic insects that are food for fish and other organisms.

Who should I contact if I have further questions regarding the work/project?

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