

# introduction

Glen Stewart Ravine is a special place with natural beauty and ecological and recreational value within The Beach community of Toronto. Its landscape is the centrepiece of the community, providing opportunities for recreation, interpretation and an experience of nature within an urban setting.

The ravine floor is comprised of wonderful, undulating terrain encompassing a stream that is bordered by steep wooded slopes. Meadow, wetland and forest comprise a rich and attractive landscape within a diverse and sensitive ecosystem. The community is drawn to this place because of these values, and that is why the central trail within the ravine is so heavily used.

However, people have also ventured onto the steep slopes of the ravine and this has degraded the forest vegetation and impacted the health of the ecosystem. Potential hazards pose risks to users and raise liability concerns for the City. As a valuable environmental resource in the heart of the city, it is important that Glen Stewart Ravine be managed to achieve a synergistic balance between human use and ecological sustainability.

That is why in early 2007, the City of Toronto retained a team of consultants to investigate current conditions within the ravine and assess impacts of use on the health of trees and the stability of slopes that the trees depend upon for survival. The investigation also looked at how trails are being used and where problem areas need attention.

The City relies on your awareness and consideration to help protect the ecology of this ravine so it remains an asset to the community and is requesting your involvement in upcoming consultation process, providing you the opportunity to share experiences and concerns and contribute ideas to assist in the refinement of the management plan for Glen Stewart Ravine. There are also a number of things that you can do individually to help improve the special character and quality of this ecology. See the "what can you do to help" section of the brochure for some tips.

# soil erosion

Glen Stewart Ravine has many steep, sandy slopes and is surrounded by a largely paved urban environment. After rainfall, water moves quickly over paved surfaces and enters the ravine as 'runoff.' Moving water has the power to dislodge soil particles, especially from sandy slopes, causing erosion. Sandy soils are dominant in this ravine. This runoff from rainfall can wash soil particles, oils and other potentially toxic chemicals from the surrounding ground surface into nearby creeks. If uncontrolled, runoff can pollute creeks and rivers limiting the ability for fish and vegetation to survive.

Soil erosion becomes a problem when people walk over the forest floor which is normally covered with plants that grow low to the ground. This vegetation, consisting of shrubs and wildflowers is very important to the survival of a forest. Plants that grow in the soil, sustained by recycled nutrients from decaying twigs and leaves, help retain moisture, keep the ground surface cool and help stabilize soils with their intertwined root systems. Trampling caused by intensive use from people, bikes and dogs compacts soils and kills plant root systems. Bare slopes where tree roots are exposed occur where the understory has been trampled and soil has been washed away. This erosion and soil compaction can destabilize trees, posing a safety hazard to people using trails. The consultant team, will be looking at ways to address soil erosion in the ravine. You can also help by respecting the sensitivity of small plants trying to regenerate in the forest understory and walk on designated trails only.



Erosion can destabilize trees and slopes.

# natural regeneration

Dry sandy soil and lots of available sunlight has enabled native Red Oaks to thrive for hundreds of years within Glen Stewart Ravine. Norway and Manitoba Maples, which have been introduced to the ravine, are among several non-native species that can grow in ravine habitats, and are spreading rapidly. These maples out-compete many native trees, preventing the development of newly established Red Oak seedlings by limiting sunlight reaching seedlings through their dense canopy. Lack of sunlight caused by dense layers of invasive trees and shrubs leads to suppression of many native species. Native plants are important for retaining soil moisture, cooling temperatures, providing food for animals, and preventing erosion with their fibrous roots.

An increase of invasive species will ultimately cause biodiversity in the ravine system to decline. Removing aggressive non-native trees and shrubs can enable plants, which naturally thrive in this environment, to return and flourish. This will enable plant species that are of conservation concern to make a comeback, ensuring their survival into the future. By removing trees that do not naturally grow in this environment, future risk of those trees becoming a hazard will be reduced.



Japanese knotweed is considered a noxious weed and is present in the ravine.

# seepage areas

Seepage originates beneath slopes where water flowing under the ground oozes to the surface, pooling in low lying areas or finding its way to the stream. Seepage areas support moisture-loving plants and wildlife and enhance water quality. Seepage can cause muddy conditions which can intensify after rainfall. When seepage areas cross trails problems can arise. People walking off of the trail to avoid these muddy areas can impact plants. Seepage can cause trail surfaces to become weakened and unstable, potentially washing material into the nearby creek. Rivulets of water crossing trails, can cause tripping hazards. In winter, when the water freezes, ice can pose a hazard.

The consultant team, will be exploring solutions to reduce muddy/ icy trail conditions caused by seepage as well as options to protect important and sensitive groundwater discharge features.



Seepage can cause muddy and icy conditions.

# ecological impacts

Many native plants require specific conditions to thrive. Some require lots of light and moisture, others grow well in shady, cool environments. Glen Stewart Ravine supports a large number of plant species that are specifically adapted to habitats, which in turn provide food and nest sites for different types of insects, birds and other animals. These species contribute to the ravine's biodiversity and are an indication of ecological health and sustainability with their presence. Unfortunately, there are signs that the biodiversity within the ravine is rapidly declining. There are many factors that are contributing to this and many are human induced. If left unattended, these impacts may result in the loss of habitat and the wildlife that depends on it.



Multiple side trails.



Trampling causing erosion and exposure of tree roots.

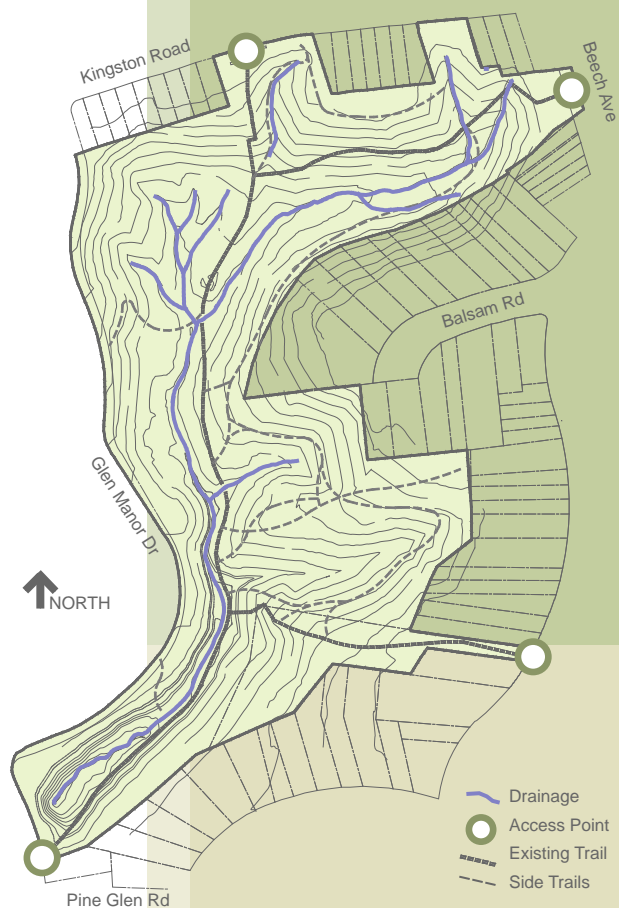
A number of impacts are threatening the health of the forest habitat and are creating safety concerns to those who use the ravine for recreation. These include:

# how you can help

*Please help us regenerate native plants. Please stay out of fenced areas and off of slopes to enable the regrowth of plant communities. Please keep dogs on leashes to help reduce soil erosion.*

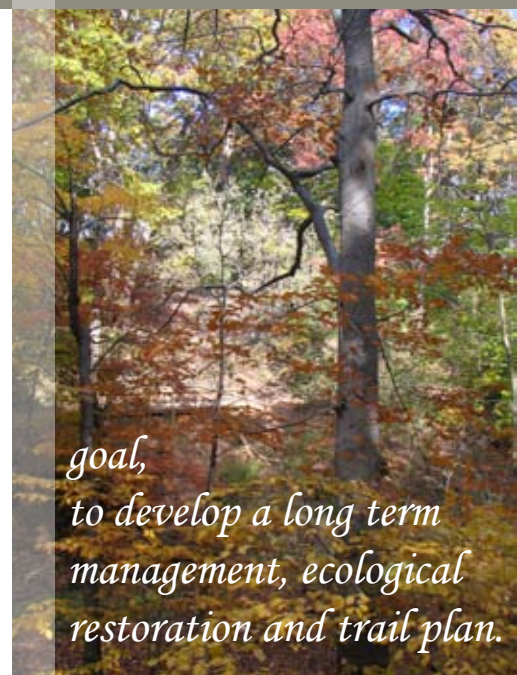
*Please respect the safety of other park users by refraining from uses which will impact people's enjoyment of the park.*

*glen stewart ravine*  
*help us manage your ravine*



- Biking presents a safety concern to recreational park users. It is also causing soil erosion.
- Side trail creation compacts soil around tree roots affecting the health of trees. This can also cause soil erosion which can expose tree roots and destabilize trees and slopes making it unsafe to walk in the ravine.
- Trampling of low lying vegetation on slopes by humans and unleashed dogs leads to exposed soil and increased potential for soil erosion.
- Uncontrolled runoff entering the ravine from surrounding residential areas contributes to washing soil from sandy slopes which may end up in the stream and lower water quality.
- Enabling native plants to naturally regenerate contributes to the sustainability of the forest ecology. Impaired forest regeneration due to trampling prevents the regrowth of native plants .
- Invasive trees and shrubs planted in residential properties near the ravine edges are spreading into the ravine and prevent native plants from surviving.
- Vandalism and defaced signage lowers the quality of park amenities and prevents learning opportunities.
- Garbage is unsightly, can attract urban predators and affect the health and behaviour of wildlife. Dog excrement left behind can wash into the stream and diminish water quality.

- Do not use slopes or trails for biking.
- Please use boardwalks and bridges to cross water features and do not create your own crossings.
- Fences are put up in places where soil erosion is threatening to destabilize slopes. For your own safety please remain outside of these areas.
- Avoid walking on slopes in the ravine.
- Please use stairways which are provided rather than shortcuts.
- Take pride and help improve the aesthetic appearance of the ravine by refraining from dumping or littering.
- Tree roots and low-lying plants help stabilize sandy soils. Please refrain from using or creating trails on ravine slopes as this contributes to soil erosion and tree loss.
- Please keep your dog(s) leashed as you walk through the ravine. Trampling of vegetation contributes to soil erosion.
- If your yard backs onto the ravine refrain from planting invasive species. Consider detaching your down spout to limit the concentration of rainwater entering the ravine and causing soil erosion.
- Promote the natural qualities of the ravine within the community and encourage others to respect the sensitive ecology.



*goal,*  
*to develop a long term management, ecological restoration and trail plan.*