

## Ganaraska Forest Management 101

If you have walked the trails of the Ganaraska Forest, you have probably noticed the many stands of Pine plantations, with some that are marked with orange paint for harvest. These Pine plantations, which cover over 5,000 acres of the 11,000 acre Ganaraska Forest, are being managed to allow them to become a healthier and more diverse forest. Cutting down trees may seem like a questionable way to make a forest healthier, but in reality these harvests are part of the Ganaraska Region Conservation Authority's (GRCA) larger commitment to sustainable forest management and improving watershed health. To bring you up to speed on how this is done, the GRCA has created the following 'Ganaraska Forest Management 101.'

### Why is there logging in the Ganaraska Forest?

In the early 20th century, Ganaraska Forest lands were almost entirely covered by barren, rapidly-eroding blowsands; the result of early, destructive farming practices. In response, an extensive reforestation effort was undertaken to stabilize these soils and improve water quality in the Ganaraska watershed. Rows of conifer trees, particularly Red Pine, were planted for their tolerance to the harsh conditions of the land. As the trees grew, the blow sands stabilized, water quality improved and the forest became healthy enough to manage for timber production.

With the land rehabilitated, the goal has turned to transitioning these planted forests into more diverse, resilient and natural forests. This is done through a series of stand thinnings where a small portion of the conifer overstorey is removed every 10-20 years. These thinnings gradually allow more light into the understorey of the stand and encourage more shade-loving species like Sugar Maples and Red Oaks to establish, survive, and thrive.

Occasionally, GRCA Forest Managers will also schedule harvests in some of the Forest's natural hardwood stands. Unlike plantations, these natural stands require much less intervention to maintain. Instead harvests are geared to selectively remove unhealthy and poor quality trees to increase understory light and to ensure that the most ecologically valuable trees are left to flourish.

By proactively managing these forests to maintain their health and productivity on top of the Oak Ridges Moraine, the GRCA is fulfilling its mandate of "Clean Water, Healthy Land for Healthy Communities." Furthermore by managing the Ganaraska Forest, the GRCA continues to provide high-quality recreational opportunities alongside sustainable, renewable, locally-sourced wood. The sum result is an effective sustainable forest management structure that balances environmental, social and economic concerns.

### Where can I find more information regarding the Ganaraska Forest and how it is managed?

To learn more about how and why the GRCA is sustainably managing the Forest for your continued benefit and enjoyment, please contact the Conservation Authority. The GRCA is always happy to discuss the history and the future management of southern Ontario's largest, contiguous forest.

## GANARASKA REGION CONSERVATION AUTHORITY (GRCA)

2216 County Road 28  
Port Hope, Ontario  
L1A 3V8

P: 905.885.8173

F: 905.885.9824

[www.grca.on.ca](http://www.grca.on.ca)

## GANARASKA FOREST CENTRE (GFC)

10585 Cold Springs Camp Road  
Campbellcroft, Ontario  
L0A 1B0

P: 905.797.2721

F: 905.797.2545

[www.ganaraskaforestcentre.ca](http://www.ganaraskaforestcentre.ca)



@GanaraskaCA  
@GanaraskaFC  
@GanaraskaForest



## Forest Management 101



## What parts of the Forest are harvested? How much of the Forest is logged annually?

The Ganaraska Forest is actively managed across all three sections: East, Central and West. Harvests are primarily focused on transitioning the Forest's 2300+ hectares (ha) of plantations into more natural stands; however, hardwood stands are also managed when required to maintain and improve their condition. The Ganaraska Forest is managed according to a harvest schedule that identifies which parcels will be harvested each year. This schedule is primarily centered on the 10-year cutting cycle of the Forest's conifer stands, with hardwood stands being added as needed.

Over the past 13 years, 174 ha has been harvested on average each year; roughly 0.4% of the Forest. To ensure sustainability, the 2018-28 Forest Management Plan (FMP) set out annual allowable harvest (AAH) guidelines to ensure that the Forest is harvested sustainably. These guidelines use the most conservative growth rate estimates for each type of forest stand to calculate how much the Forest will grow each year. Using this, GRCA Forest Managers can determine how much of the Forest may be harvested sustainably. For the first 10-year period of the FMP, the AAH for plantations has been set at 235 ha/year, while hardwood stands have been set at 50 ha/year.

It is important to note that although useful, the AAH is used only as a guiding tool and not as a target for management. Estimating forest growth is a complex task and as such, the AAH will be reviewed every 5-10 years to ensure that operations are being conducted sustainably. The long-term health and sustainability of the Forest is the main objective of management, not harvesting targets. Annual harvests often fall well short of the AAH guidelines.

## When do logging operations take place throughout the year? Will it affect my visit to the Forest?

Harvest operations are only active on weekdays from August 1<sup>st</sup> to March 31<sup>st</sup> each year. No operations may take place on weekends and statutory holidays, as well as between April 1<sup>st</sup> and July 31<sup>st</sup> to accommodate migrating and nesting periods for bird populations. While efforts are made to conduct harvesting operations in ways that reduce impacts on recreational forest uses and on the environment, visitors to the Ganaraska Forest should be aware that logging activity takes place annually from mid-summer through the winter months.

## How is it decided which trees to cut?

The Ganaraska Forest is managed in accordance to Good Forestry Practices. The Forestry Act (1990) defines these practices as: "the proper implementation of harvest, renewal and maintenance activities known to be

appropriate for the forest and environmental conditions under which they are being applied and that minimize detriments to forest values including significant ecosystems, important fish and wildlife habitat, soil and water quality and quantity, forest productivity and health and the aesthetics and recreational opportunities of the landscape."

To ensure that Good Forestry Practices are followed, individual forest stands are prescribed a site-specific silvicultural prescription by a Registered Professional Forester (RPF). The prescription lays out a silvicultural system that will be used as the basis to maximize forest health and quality through harvest. These prescriptions are then interpreted by the Tree Marker who takes the RPF's stand-level recommendations and implements them on a tree-by-tree basis. This allows the Marker to carefully select the trees of poor quality or health for removal, leaving the healthy (and often most economically valuable) trees to grow and flourish. By taking the worst and leaving the best, Forests Managers ensure that forests are harvested for ecological value rather than for economic gain.

## What is a silvicultural system? What kinds are used in the Ganaraska Forest?

Broadly speaking, silviculture is the *art and science of growing trees*, while silvicultural systems are the basis to how this is done responsibly and in accordance to Good Forestry Practices. The Great Lakes – St. Lawrence Forest Management Guide (OMNRF, 2015) defines a silvicultural system as a "planned program of silviculture treatments that extends throughout the life of a stand for the purposes of controlling stand establishment, composition, and growth." These systems are designed around major groupings of similar species and stand conditions known as 'working groups.' These working groups allow Forest Managers to make management decisions that benefit and improve forest health, rather than those that leave the forest to stagnate.

There are three commonly accepted silvicultural systems that are used in Ontario (and in the Ganaraska Forest), with each system designed to emulate the gaps and conditions left by periodic natural disturbances.

The first system is the **selection system**. Selection silviculture refers to the periodic partial harvesting of shade tolerant and mid-tolerant tree species, which in turn allows the stand to maintain forest cover while stratifying ages and sizes amongst the trees. This system emulates the disturbance created by isolated tree mortality. The selection system is the most common silviculture system used in southern Ontario and serves as the basis for managing most of the Ganaraska Forest's natural hardwood stands.

Please note that selection management should not be

confused with selective cutting. Selective cutting involves the selection and harvesting of individual trees with few, if any, control measures in place; also known as taking the "biggest and the best". The process is also known as high-grading and is not considered a Good Forest Management practice in Ontario or Canada (OMNR, 2000).

The second system is the **shelterwood system**. The shelterwood system refers to the removal of the overstory trees through a series of harvesting operations. This system, which creates a similar disturbance to a pest infestation, usually requires three stages of harvest. These include the preparatory cut, the seed-tree (regeneration) cut, and the harvest cut.

The preparatory cut removes undesirable tree species, poor quality trees, and trees that are overcrowded. This tree removal opens the canopy to permit the growth of the crowns which increases seed production. During this stage of the shelterwood operation crop trees are selected. These stems may be the best quality or largest stems within the stand and will be retained until the harvest cut is initiated.

The seed-tree (regeneration) cut involves the removal of all material growing between the crop trees that are of merchantable size. This harvest increases light conditions in the understory so that the crop trees are more likely to regenerate successfully.

The harvest (removal) cut (or cuts) involve the removal of the crop trees to release the regeneration or understory. The end result is a young, thriving even-aged forest.

The final system is the **clearcut system**; a system designed to mimic large-scale natural disturbances such as forest fires. The traditional clearcut system has rarely been prescribed in the Ganaraska Forest and has only been used to address areas where insect outbreak, disease or severe weather decimates a stand to such an extent that restarting the management cycle is the only prudent option.

One exception to this has been its use in areas where rare savannah or prairie habitat was incorrectly planted with nursery stock. In this situation, a small clearcut of the planted Pine was implemented along with a prescribed burn to reset the management cycle. The most recent clearcut of this nature was completed in 2015 as part of the Ochonski Prairie restoration in the central Ganaraska Forest.

Clearcutting is considered a drastic treatment and is only implemented on a case-by-case basis. This system is only utilized when the area is small (< 2 ha) and it is in the best interests for the restoration of an at-risk species or group of species (e.g. tallgrass prairie).