

2019 ANNUAL REPORT
NIAGARA REGION
TREE AND FOREST CONSERVATION BYLAW (2008-30)



Niagara Region Tree and Forest Conservation Bylaw
2019 Annual Summary Report
Niagara Peninsula Conservation Authority

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Introduction

The Niagara Region Tree and Forest Conservation By-law 30-2008 exists to encourage the conservation and improvement of woodlands in Niagara through Good Forestry Practices. The By-law prohibits the clearing of woodlands except under specific circumstances and requires landowners to follow Good Forestry Practices when harvesting trees. This is done by requiring landowners to submit a forest management plan or a silvicultural prescription prepared by a Registered Professional Forester (or a member of the Ontario Professional Foresters Association) to obtain a permit.

In August of 2008 the Region of Niagara delegated administration of the By-law to the Niagara Peninsula Conservation Authority (NPCA). The NPCA is responsible for reviewing applications and issuing permits for timber harvesting within the Region. We also follow up on public inquiries and investigate violations, which sometimes lead to charges. For this reason, NPCA forestry staff is designated as Provincial Offences Officers under the Provincial Offences Act. The NPCA employs one full-time staff, a Registered Professional Forester to administer the By-law.

The 2019 year marked the eleventh year in which the NPCA administered the By-law on behalf of the Region. This report will summarize the activities undertaken throughout the year by the NPCA to promote Good Forestry Practices, educate the public and enforce the provisions of the By-law.

Permits

Good Forestry Practices (GFP) Permits are issued after an application is received and satisfies the necessary criteria. In 2019, 11 new GFP Permits were issued by the NPCA, 3 permits were carried over from the 2018 year. 54% of these permits were completed by the end of 2019. Poor weather conditions was a contributing factor for permits not being completed by year's end.

Commenced in 2012 and continued in 2019, strategies for managing woodlots for emerald ash borer (EAB) are required in prescriptions and tree marking for woodlots that have a significant component of ash. This strategy will continue into 2019 as the impact of EAB continues to be an issue.

Landowners are provided a copy of a recent publication from the Ontario Woodlot Association, 'A Landowner's Guide to Careful Logging', when a permit is approved. The guide provides landowners with information on proper logging practices that will ensure good forestry is attained. The harvest inspections conducted by the NPCA are based on the contents in the guide.

All permits are subject to conditions which are specified and tailored to the characteristics of the individual site. For example, harvesting in woodlands with sensitive ground conditions will be conditional to the work being done while the ground is frozen in the winter, or during a dry period during the summer, to minimize soil disturbance. Failure to follow the conditions of a permit is considered a violation of the By-law. There were no incidents in 2019 where permit conditions were not complied with. Forest Bylaw staff maintained regular communication with logging contractors to ensure operations were suspended when ground conditions were not favourable.

Selection Silvicultural System

The forest management plan or silvicultural prescription required for a permit is prepared and reviewed by forest professionals with expert knowledge in silvicultural practices. Silviculture practices are treatments applied at the stand (woodlot) scale to achieve specific forest management objectives. Treatments are broadly categorized as either harvest, renewal, or tending. Ideally these practices are applied in a coordinated fashion with a long-term view of what is possible, practical, and desirable at both a stand and landscape scale. The coordination and long-term view are achieved through application of a silvicultural system.

A silvicultural system is a planned program of silviculture treatments that extends throughout the life of a stand for the purposes of controlling stand establishment, composition, and growth. While this view implies a certain intensity of effort and manipulation, on suitable sites the simplest application may include only a single harvest with natural regeneration (assuming a seed source, seedlings are present in sufficient quantity to restore the forest to a desired composition and structure).

There are three silvicultural systems used in Ontario; Clear-cut, Shelterwood and Selection. **Selection is the system most commonly used in the Niagara Region.** The following table describes the three silvicultural systems.

Silvicultural System	Description	General characteristics
Clear-cut	Most of the overstory trees are removed over a short period of time to create a fully exposed microenvironment for the establishment of a new even-aged stand.	<ul style="list-style-type: none"> • even-aged future stand • regeneration established in >70% full sunlight.
Shelterwood	Most of the overstory trees are removed in a series of two or more harvests for the purpose of establishing and sheltering regeneration under a residual canopy.	<ul style="list-style-type: none"> • even-aged future stand • regeneration established in 30-70% full sunlight • regeneration period <20% of the intended rotation • final removal creates >70% full sunlight.
Selection	Periodic partial harvests timed based on basal area recruitment using vigour, risk, and species preference, to select trees for harvest and retention.	<ul style="list-style-type: none"> • all-aged future forest • regeneration established in ≥70% residual cover (approx. ≤30% full sunlight) • dense mature forest cover maintained in perpetuity.

The selection system provides an environment ranging from partial to full-shade and a forest floor protected from temperature extremes and desiccation. Regeneration under single tree selection favours shade tolerant species while some mid-tolerant species are well suited to group selection openings. Both single tree and group harvest methods are used in Niagara

Single Tree: Individual trees are removed at regular intervals with no clear patches or edges created.

Group: The removal of a small group of trees, in an area normally less than 2 tree heights in diameter, in a single entry or progressive fashion, within a matrix of mature forest canopy.

The following illustrations show the implementation of the Single Tree Selection Silvicultural System.

(a) Pre-harvest



(b) Post-harvest

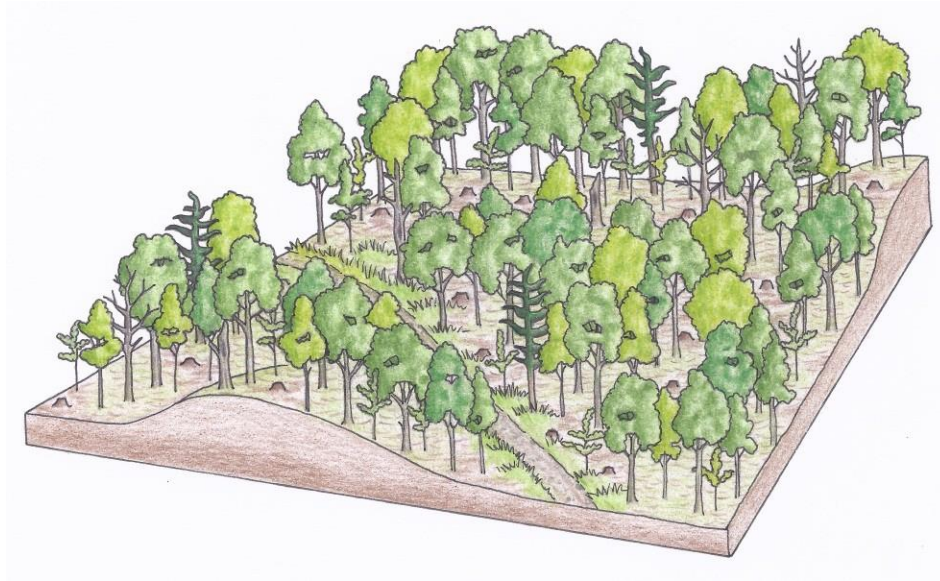


(c) Ten years later

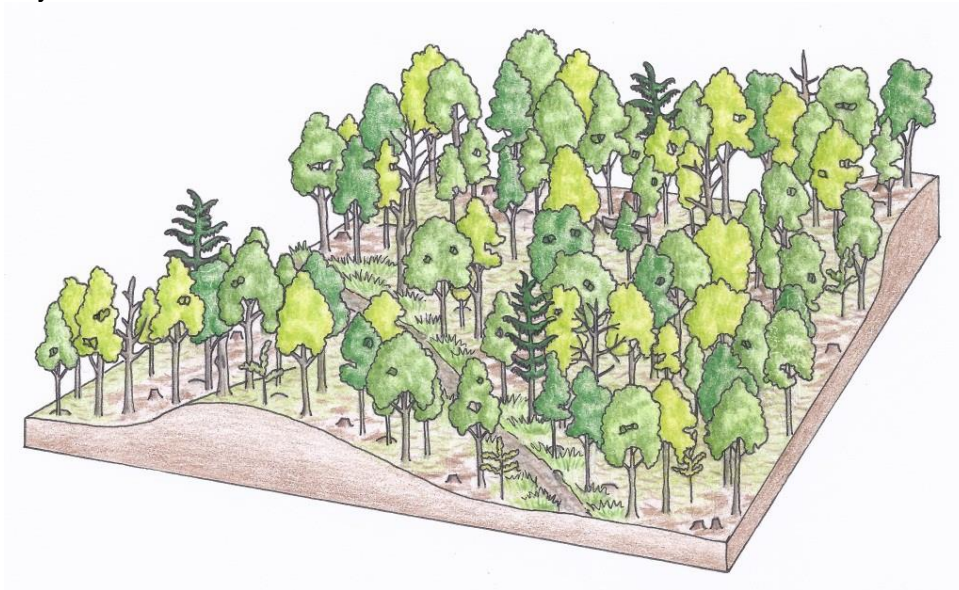


A profile of an individual selection silviculture system depicting a pre-harvest tolerant hardwood stand (a), stand conditions after a partial selection cut (b), and 10 years later with the natural regeneration of shade tolerant species under the canopy (c) (illustrations by Jodi Hall).

(a) Post-harvest



(b) Ten years later



An aerial view of an individual tree selection harvest in a tolerant hardwood stand resulting in >70% residual cover and perpetual all-aged stand. Image (a) depicts the initial harvest entry, while image (b) depicts regrowth after approximately 10 years and the harvest associated with the next cutting cycle (illustrations by Jodi Hall).

Tree Marking

The selection system requires the practice of tree marking. Tree marking involves the selection of individual trees to be harvested, while leaving trees to grow for future harvests and to provide wildlife habitat. The actual process of tree marking is recognized as being both an art and a science. Historically, many of our forests were subjected to various types of uncontrolled harvest. This included “high-grading,” a term that refers to woodlots that have had only the largest and best quality timber harvested. These unregulated disturbances, in combination with other factors, such as disease and insects, can lead to a forest with irregular stand structure and unpredictable growth. In the absence of sound forest management these forests often display a lack of regeneration of favorable species and poor spacing of smaller diameter stems.

When properly applied, tree marking can reverse many of the historical, negative impacts that unregulated cutting has created in our forests. This often requires two or more cutting cycles and adhering to the guidelines of selection and shelterwood system management.

Trees to be cut through tree marking are physically identified through the application of paint on the tree. Depending on the management system being used, trees are marked in a colour that indicates the tree is to be cut or in some cases a colour that indicates the tree should not be cut. The objective of marking is to optimize growth for all trees being retained rather than attempting to maximize growth on a few individual trees. Marking also allows the forest manager to make changes, if necessary, to selected trees before the harvest takes place.

Tree marking alone will not prevent 'high-grading'. Virtually anyone with a can of spray paint can sell their services as a tree marker. It is only when tree marking is applied in conjunction with good forestry practices that the opportunity for high-grading can be minimized. Regular monitoring (site visits) by the NPCA Forester during harvest operations ensures tree marking is being followed.

To ensure the practice of tree marking is being done professionally, the Bylaw requires those marking woodlots be ‘Certified Tree Markers’. Since 1995, the MNR has provided tree marking certification training. The training involves a one-week course covering silvicultural systems, silviculture, silvics, wildlife habitat, tree defects and tree vigour characteristics. Participants are field tested, and successful trainees are issued a certificate endorsing their skills as a certified tree marker (of conifer forests, hardwood forests or both). To maintain MNR's certification, a tree marker must attend and successfully complete a two-day refresher course every three years.

Certified tree markers must be knowledgeable in silviculture, tree and wildlife biology, and forest economics to choose the right trees to mark for cutting. Knowledge required for proficiency as a tree marker:

- ability to identify species
- understanding of silvical characteristics of species
- familiarity with site and land features
- recognition of tree defect characteristics and indicators
- appreciation of tree quality and vigour, including use of an acceptable tree classification system
- comprehension of stocking levels and structural types
- appreciation of commercial values of species, products, and grades, and
- appreciation of wildlife habitat, biodiversity, and other ecosystem values

Forest Harvest Summary

The following table breaks down the distribution and harvest area of the 2019 GFP permits by municipality.

Municipality	Number of permits	Harvest Area		Harvest Volume	
		Hectares	Acres	FBM	Cubic Meters
Fort Erie					
Grimsby					
Lincoln					
Niagara Falls					
Niagara on the Lake					
Pelham	1	3.5	8.6	22,178	52.3
Port Colborne					
St Catharines					
Thorold					
Wainfleet	10	98.1	242.4	465,721	1099.0
Welland					
West Lincoln					
Totals	11	101.6	251	487,899	1151.3

The table excludes permit renewals. Permit renewal statistics will always be included in the year in which the original permit was issued.

Inspections

Generally, each permit site is inspected at least twice, many sites were visited multiple times. The first inspection occurs upon receiving the application. NPCA Bylaw staff visit the site and inspect the tree marking to ensure it follows good forestry practices. Any concerns with the tree marking and prescription will be noted and followed up with the landowner and/or certified tree marker. The permit may not be approved until any concerns are addressed. At this time NPCA staff also assesses the site conditions (soil) and any environmental values present which may be impacted by the harvest operation such as stick nests and streams. This will affect conditions that may be stipulated on the permit.

The operation may be inspected again while the work is underway, and the crew is onsite. This gives NPCA Bylaw staff the opportunity to observe the precautions being taken and ensure that the permit conditions are being met.

Lastly the site is inspected again when the work has been completed. At this time NPCA Bylaw staff can verify that only trees that were marked have been removed and that all permit conditions are satisfied.

The result is that NPCA staff made approximately 65 site inspections on permits during 2019.

Education

In 2019 the NPCA continued to educate the public as well as groups and public agencies regarding the Bylaw.

Much of the educational activity takes place when members of the public phone or drop into the NPCA office and ask questions. Staff also conducted site visits when requested by the land owner to provide forestry knowledge and make them aware of Bylaw requirements. Staff is always available to answer questions and often spend considerable time going over the details of the bylaw and management strategies to deal with Emerald Ash Borer.

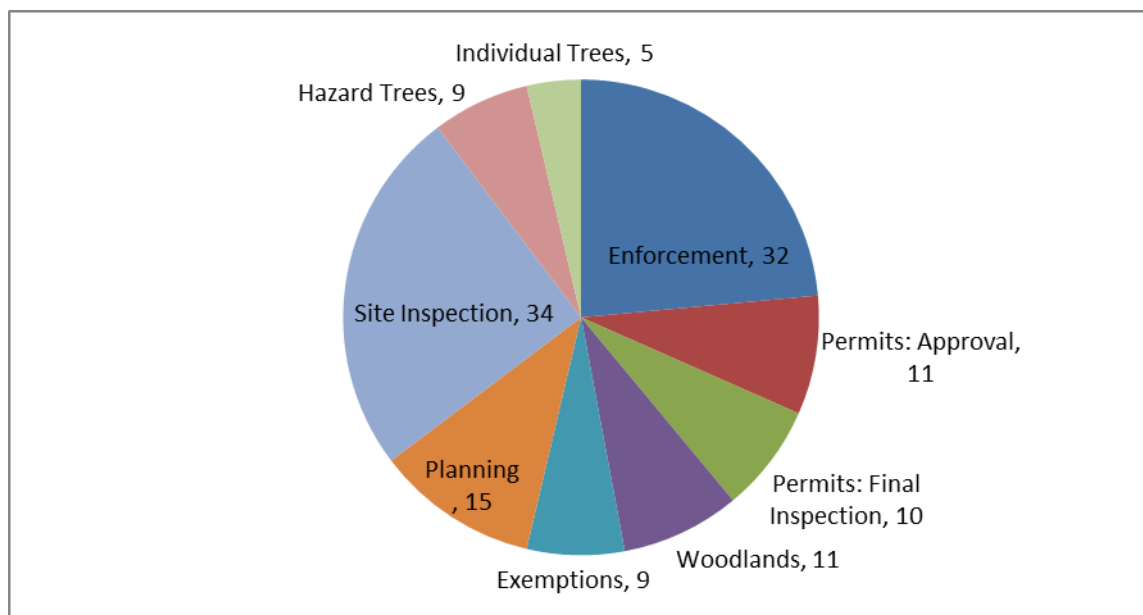
The NPCA website has a section dedicated to the Forest Bylaw with an emphasis placed on Good Forestry Practices and the latest strategies for managing woodlots for Emerald Ash Borer.

Bylaw Inquiries

Bylaw inquiries occur when Bylaw staff responds to an issue either presented by a member of the public or outside agency, or an issue initiated based on observations of Bylaw staff. Most are made by telephone. NPCA staff track inquiries for reporting purposes.

In 2019, Bylaw staff responded to 154 bylaw inquiries. Chart 1 indicates the number of inquiries by program area. Most of the inquiries were about enforcement followed by permits and woodlands. Most of the inquiries about individual trees were related to dead and dying ash trees from local citizens. Many inquired if a permit was required for their removal. A brief explanation of program area's follows.

Chart 1: Number of Inquiries by Program Area



Program Area Descriptions

Enforcement: Any enforcement related matters which required action by Bylaw staff.

Exemptions: Inquiries regarding exemptions which required evaluation by Bylaw staff.

Individual Trees: Inquiries regarding individual trees on private property, most of which are outside the jurisdiction of the Bylaw.

Permits Approval: The review and issuing of a Good Forestry Practices permit.

Permits Final Inspection: A formal documented inspection of a completed harvest operation.

Public Outreach: Inquires about by-law & other educational materials. Mail out of educational materials.

Woodlands: Issues and inquiries centered on the application of the Bylaw to woodlands.

Site Inspections: An informal site inspection of a permit during a harvest operation.

Planning: Land use planning inquiries

Chart 2: Number of Inquiries by Interest Group

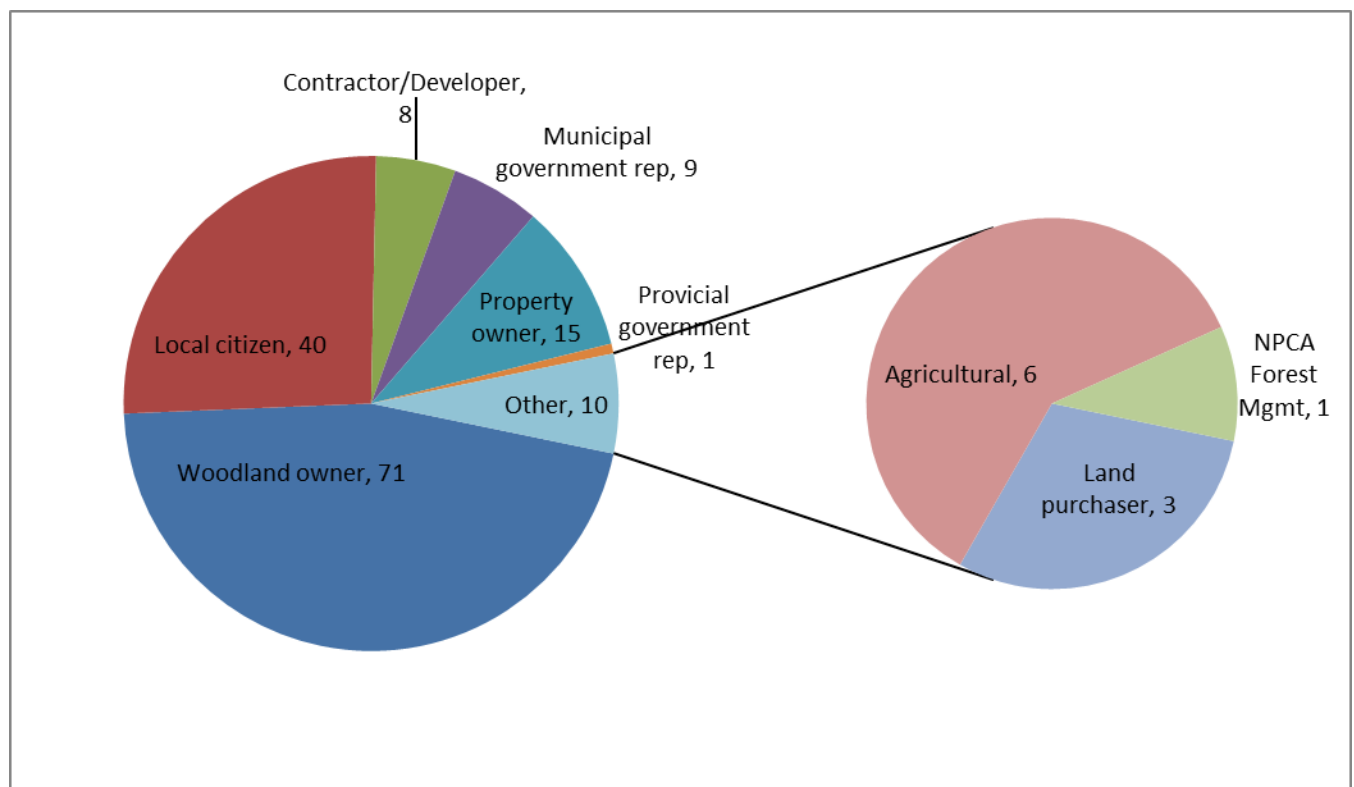


Chart 2 is a break down of the types of people that make the inquiries to the NPCA office. Most of the inquiries are from woodlot owners, followed by local citizens and contractors/developers.

Enforcement and Charges

Should it become necessary to initiate charges resulting from Bylaw violations, it is done under Part III of the Provincial Offences Act. This is referred to as commencement by information.

There were two Bylaw infractions in which Part III Informations were filed in 2018 for properties located in Thorold and St. Catharines. The Thorold property had 4.1 hectares of forest cleared without a valid exemption. That matter is still being processed in court as of the date this report was prepared. The infraction in St. Catharines involved clearing a 40-meter-wide section of forested slope along the Martindale Pond. The matter was settled before going to trial in December 2019. The landowner was fined \$5,000 and required to reforest the disturbed area as instructed in a reforestation plan prescribed by the NPCA Forester. Reforestation activity is planned for spring 2020.

There was one new Bylaw infraction where a charge was laid in 2019. The infraction occurred in Thorold. The matter is before the courts and is scheduled for trial in January 2020. It is the intention that the outcomes will be presented in future annual reports once the matters are finalized.

Training and Development

The Bylaw staff conducted independent learning to remain current with respect to the practice of forestry in the region and the application of the Bylaw. Staff will attend applicable training opportunities when available.

Advisory Committee

The Tree and Forest Conservation By-law Advisory Committee did not meet during 2019, as there were no issues brought up by NPCA that required additional meetings. The role of the committee is to review and provide advice or recommendations on matters of forest conservation as requested by the NPCA.

Conclusion

2019 was the eleventh full year in which the Bylaw was being administered by the NPCA. There were no issues with the NPCA's ability to carry out the role of administering the Bylaw for the Region. All aspects of the Bylaw, from managing Good Forestry Practice permits, enforcement and public education were conducted in a professional manner.

Woodlot management strategies to deal with Emerald Ash Borer will continue to be a main concern in 2019. Current strategies will be used in woodlots that have a significant component of ash.

A revision process was initiated in 2019 to make changes to the Bylaw. An amended Bylaw is expected in 2020.

Literature Cited:

OMNR. 2015. Forest Management Guide to Silviculture in the Great Lakes-St. Lawrence and Boreal Forests of Ontario. Toronto: Queens Printer for Ontario. 394 pp.