



Quinte  
CONSERVATION

# CONSERVATION AUTHORITY PROPERTY

## Commercial Forest Properties

Discussion Paper  
Presented to the Lands Sub-committee

JULY 2019

*Note: This document represents a compilation of existing information for the Conservation Authority's property holdings. The document was compiled and reviewed by staff for providing direction to the public on the commercial forest harvest on the Authority's land holdings.*

*As such, this document will be updated as any new information becomes available.*

## **PURPOSE**

The intent of this document is to document the efforts of previous foresters who managed the Authority's land holding based on their perspective, and to scope the proposed forest operations (harvest activities) to a short list of Authority properties.

## INTRODUCTION

The commercial value of southern Ontario's forests have long been exploited, which led to a tremendous learning curve of how not to manage a forest sustainably. Beginning with the clearing of land for farming from the early 19th century; followed by extensive harvest of timber first to supply British market (masts for the navy and square timber shipped to Europe); then to match the demand of growing economy of the United States in the latter half of the 19th century; and finally augmented by frequent fires and grazing, the forests of the Quinte Conservation watershed have been tremendously over used.

In recognizing this problem, the Province and Conservation Authority began purchases of properties to protect the headwaters of the watershed, prevent further deterioration of forest from grazing, stabilize eroding topsoil, protect wildlife habitat, demonstrate better forestry practices, and to provide the public with nature based recreational and educational opportunities. One of the intents of land acquisitions was to restore forest cover by tree planting and prevention of grazing through legal restrictions and fencing. Typically the acquired land consisted of abandoned "wasteland" (as it was often referred to), frequently inaccessible, with more or less depleted rocky and shallow soil, scattered patches of woody vegetation and severely understocked, high-graded woodlots.

Between 1961 and 1999, a forest management agreement on Authority lands was administered by the former Provincial Department of Lands and Forests (now the Ministry of Natural Resources & Forestry). Over the years several surveys of the properties were conducted to evaluate timber, wildlife habitat and recreational potential; with major updates (forest resource inventories) in 1972 and 1987. As a result of a fire at the Tweed District Office (in 1971) and numerous changes in record keeping & administrative practices, the management records kept by the Department of Lands and Forests are incomplete. Starting in 1995, the responsibility of forest management was returned to the Conservation Authority; which led to the preparation of the 1998 Forest Management Plan for each of the separate authorities' forest holdings (Moir, Napanee, and Prince Edward each had separate plans developed). These reports (which were prepared under the auspice of the Managed Forest Tax Incentive Program) confirm the low productivity of the forest and minimal timber values, while identifying a few areas where scattered larger timber may be found.

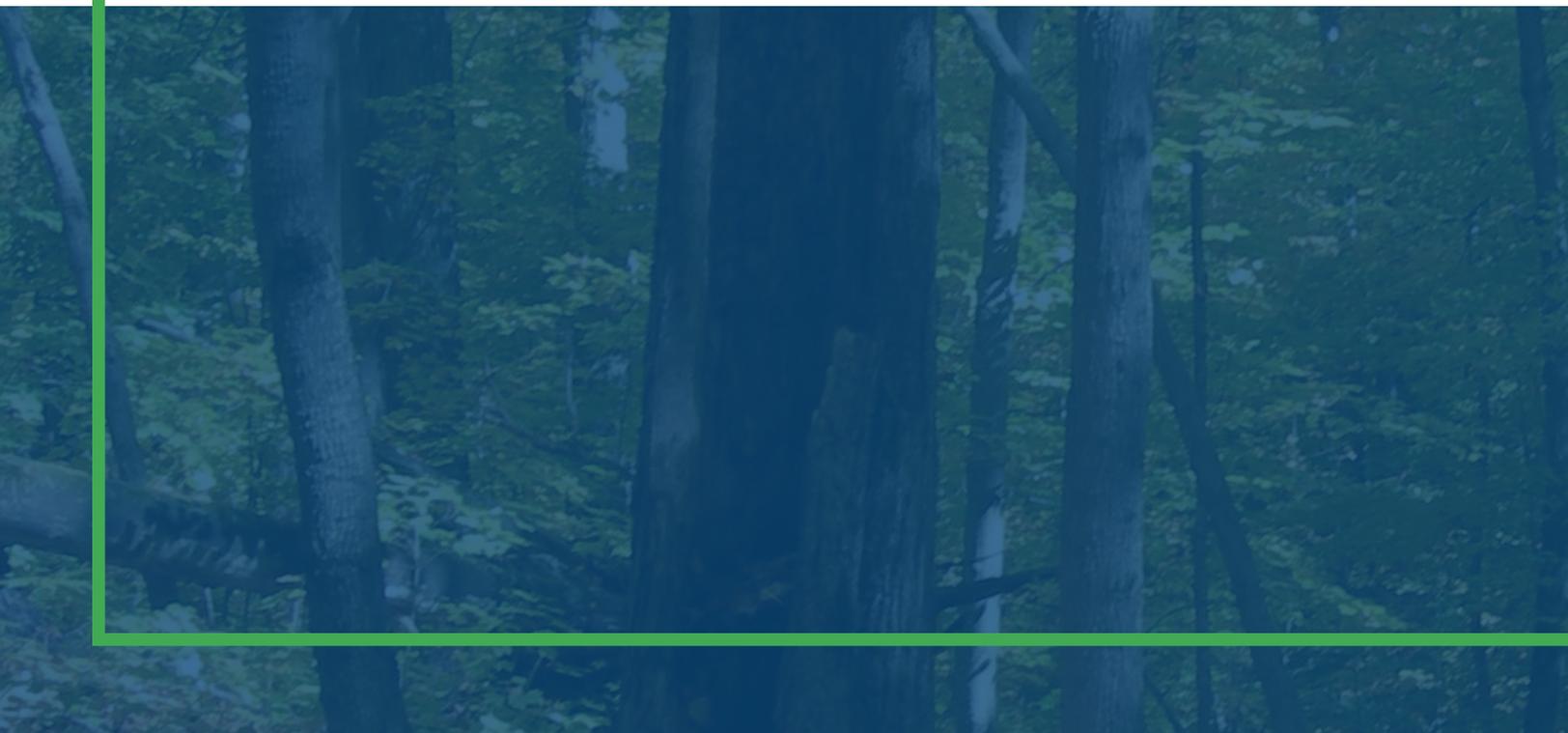
## EVALUATION OF QC COMMERCIAL FOREST PROPERTIES

Typically, a forest management plan receives a major update every 20 years, with operational plans being updated every 10 years. Given the initial plan for the QC forest was developed in 1998, two operational plan updates occurred during the tenure of the (now retired) staff forester, David Smallwood. The first operational update (in 2007) primarily involved sampling of the Red Pine plantations and a minor number of upland hardwood stands in order to clarify the anticipated harvest regime & expected volumes. A second, and far more comprehensive, inventory was conducted by two staff (contract) technicians over the summer and fall of 2017. During this inventory, virtually every forest property was timber cruised (with the exception of two which have very difficult access – MF-112 and MF 202). Subsequently, a 10 year update to the operations plan was developed for every forested property. Unfortunately, the text of the forest management plan was not updated, and is now missing any mention of First Nations land use, species at risk concerns, and biodiversity concerns. Modernization of the forest management plan would be a useful goal to achieve. That said, staff have researched and are continuing with the process of having our forest 'certified' through group collaboration with the Eastern Ontario Model Forest – Forest

Sustainability Council. Many other Conservation Authorities have achieved this certification through policy updates and clarifications, without the need for a comprehensive update to their respective (overarching) forest management plans.

Since the retirement of the previous staff forester (in 2018), a review of the forest operations plan was undertaken. Given the widely spaced and fragmented nature of the geography & species composition covering the forest blocks, present staff recommend that our primary efforts be placed into continuing the harvest regime in plantation forests. This reasoning stems from the efforts already placed into establishing the plantations (being the costs of planting & tending without income), and the concentration of economically viable amounts of material to be harvested. Further, staff recommend that given the generally poor stem quality and negative views of the general public (with regard to forest harvest); that the natural forest stands be considered for harvest operation only once the plantation forests have reached their rotation age (in the next 20 years or circa 2038 – or thereafter).

Of the over 30, 000 acres of property owned by the Authority, only four property holdings (MF-123

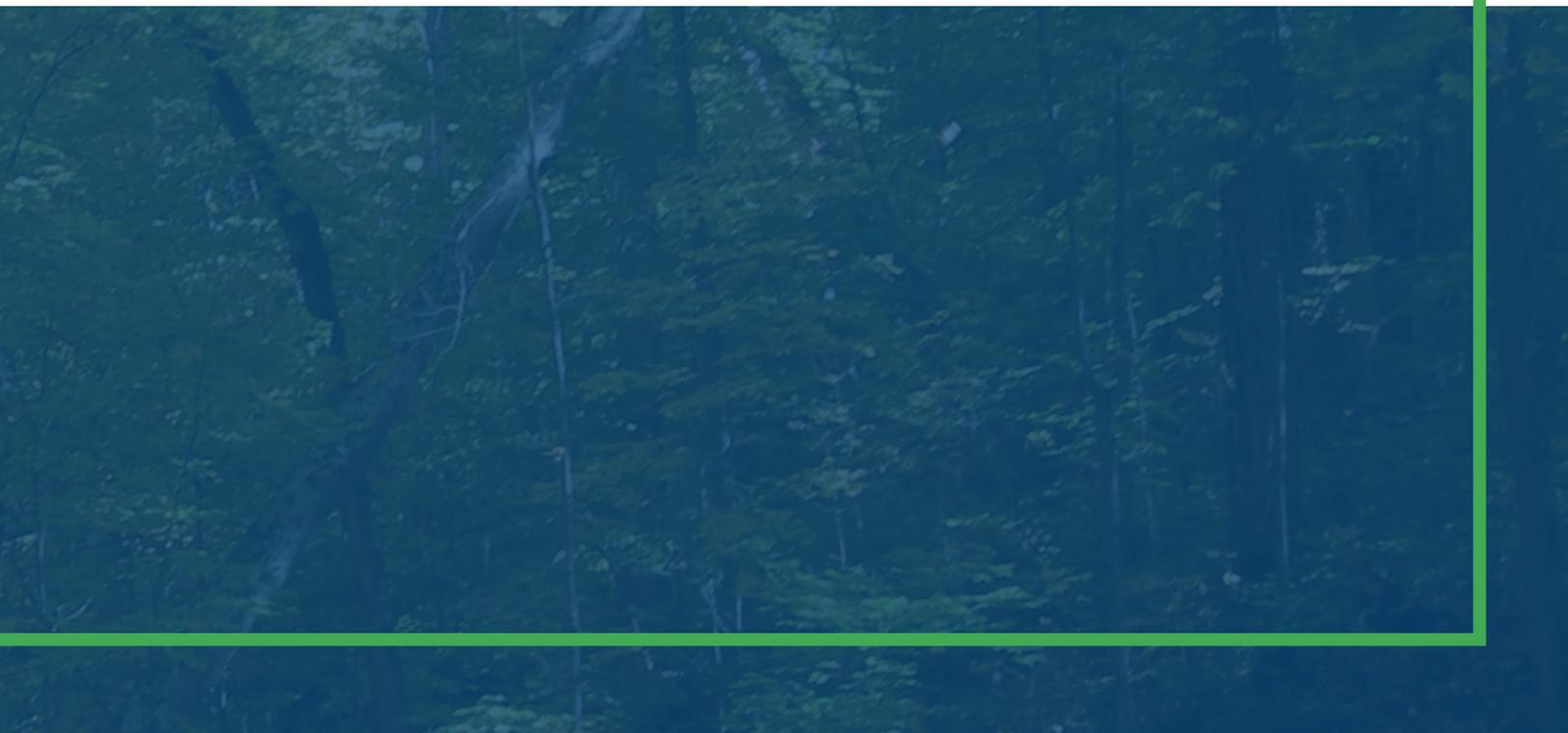


& MF-124.Downey Rapids Block, MF-126.Hawkins Bay Block, MF-127.Labarge Rd Block, MF-128 & MF-130.Potter Settlement Block) have been identified as priorities for commercial forest harvest activity (tier one). These property holdings have economic concentrations of plantation forest and natural stands of commercially viable species composition. Furthermore, these forest blocks are geographically centred between the Madoc to Tweed corridor - making transportation by Provincial Highways 7 and 37 easily available (for transporting material to mills). Additionally, these properties are also close to services available in these towns; like fuel, equipment repair, casual labour, and food/accommodations. Given the large expense incurred by floating harvest equipment to the site (averaging \$5000), it is important to note that these properties also have maintained municipal road frontage, have existing landings (where logs are stockpiled), and existing forest access trails. By targeting commercial activities, staff time (in conducting inventories, liability/risk analysis, developing harvest agreements, confirming insurance, resolving property boundary discrepancies, and harvest monitoring) can be focused on the areas with the greatest income returns.

Their two properties have been identified as secondary priorities due to plantation areas

which are over 20 acres in areas (an economic threshold), and have secondary goals associated with their continued harvest. These include MF-139.Thomasburg Block and MF-140.Vanderwater Conservation Area which have several multi-species plantations, and provide an excellent educational opportunity to illustrate good forest management integrated with the recreational. Further, the MF-145 & MF-146.Goose Lakes Fens blocks are located on the periphery of the 'Marlbank Deer Yard', thus the active harvest of the stands will promote tree & shrub regeneration providing a winter food source. Lastly, MF-113. Elzevir Rd Block and MF-114 & MF-115.Old Flinton Rd block are in close proximity to plantation forests owned and harvested by Lennox & Addington County; and the MF-121.Queensboro Rd Block is in close proximity to the tier one commercial forests (thus providing an economy of scale for forest harvesting activities).

The majority of other (smaller) plantations have received two thinnings and have an understory of native trees & shrubs developing. These smaller plantations could be harvested on a 'salvage' basis, when equipment is in the area for an adjacent operation on private lands; however in general staff recommend that these smaller plantation areas should be left to follow natural succession.



## RED PINE PLANTATIONS

A significant amount of activity was conducted by the Department of Lands and Forests/Ministry of Natural Resources in preparation for, and in support of, planting forest plantations. The investment of time & effort for site preparation (both chemical and mechanical), cleaning, tending and forest fire protection, has left the Authority with a commercially viable legacy forest (in the tier one & two commercial forest blocks). Many of the ideally scheduled thinnings (in the other plantation stands) were delayed due to the lack of a market for small diameter boltwood. The delay in thinning (plus poor site quality), has greatly affected the residual quality of many of the smaller stands.

Overall, almost all of the Authority's Red Pine plantations (even the small areas) have received at least two thinning operations, with most (but not all) being treated by removing rows of trees (every third or fourth row), and/or with some degree of selective thinning (choosing individual trees to harvest). This has allowed for the establishment of native tree species in the understory which will continue to grow into a natural stand without further intervention.

Commercial thinning of Red Pine plantations is a relatively new phenomenon, attributed to the development of strong market for smaller diameter Red pine material within the last

10 years which in turn has been triggered by region-wide influx of conifer thinning material onto the market from large number of plantations across Eastern Ontario. Prior to this, selling the early thinning material was practically impossible, thus the first thinning was normally an expense (borne by the Ministry of Natural Resources); with cut trees being thinned to waste (i.e. left to rot on site). In a change of events, Red Pine is now the commercial driver of the wood market on private lands.

The plantations found within the tier one commercial forest properties have proven very effective in stabilizing the former blow sands and providing revenue for the Authority. The average age of the Red Pine stands is 65 years, with a typical rotation (being the last harvest) at the age of 85 years. This leads to the assumption that the majority of forest revenue from Red Pine will be exhausted in the next 20 years, and at that at future forest operations may need to review the harvest upland hardwood stands for revenue stabilization.

On the four tier one properties, the average age of the Red Pine plantations is 65 years, totaling 600 acres. If an average revenue of \$350 per acre was achieved, the Authority could expect total revenue of \$210, 000 over the next ten years (or \$21, 000 per year).

## WHITE PINE AND WHITE SPRUCE PLANTATIONS

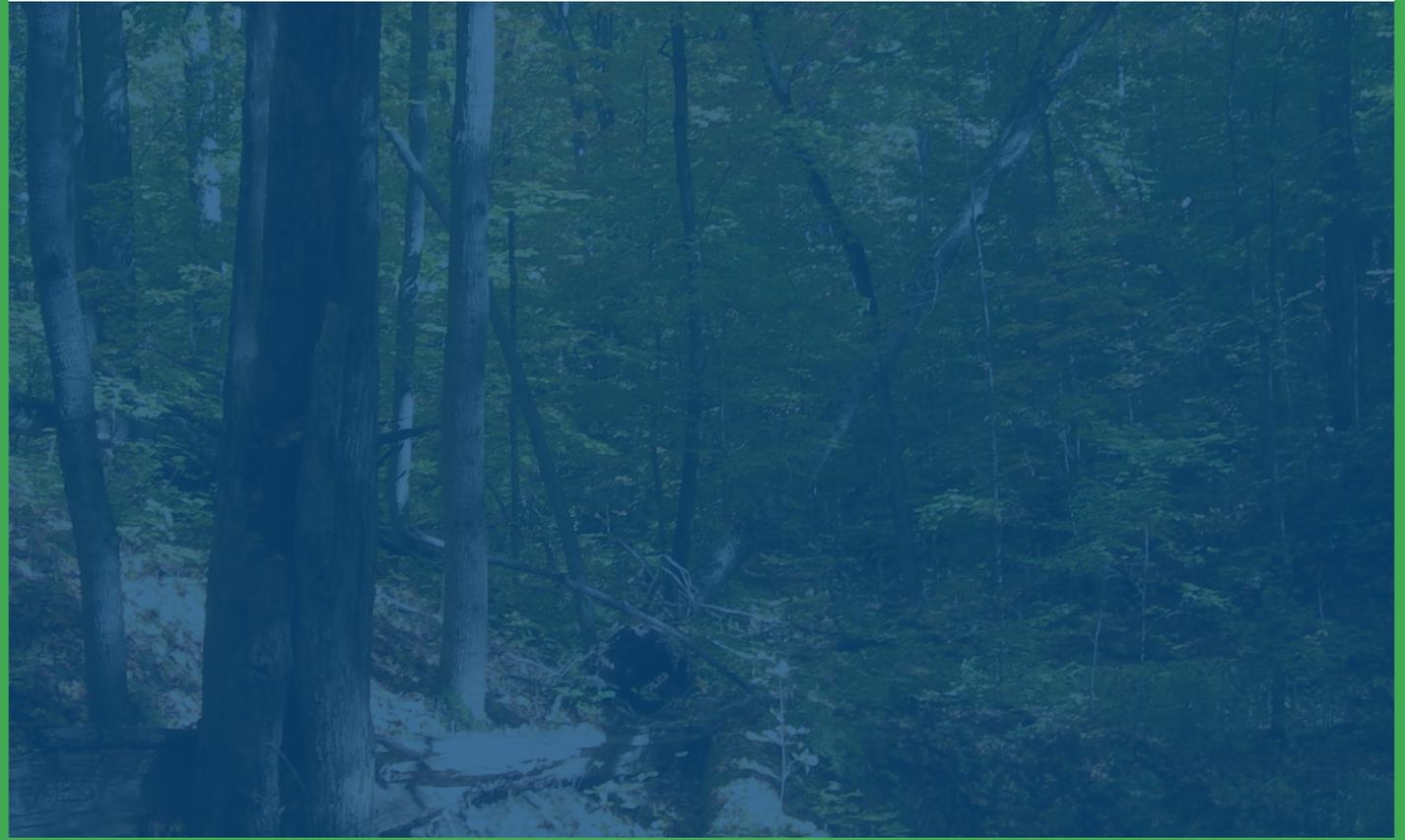
White Pine plantations are notorious for being heavily damaged by White Pine weevil (making the main stem crooked); however, many of the Authority's stands were treated by row removals (thin to waste) and pruning of the lower branches (again at the expense of the Ministry of Natural Resources). Once mature, White Pine plantations have a market but are typically small in area within the Authority's holdings. Additionally, as the poor quality stems should be the first to be removed, any stand which did not receive early treatment has poor marketability. White Spruce plantations are difficult to thin with modern harvest equipment as even small branches are prone to jamming the harvester's cutting head.

## NATURAL WHITE PINE AND UPLAND HARDWOOD STANDS

In the northern portion of the watershed, the management of Crown lands offer an economy of scale for this type of material. These Crown forests are very well managed by private companies (which are allocated a forest area in return for bearing the expense of management) offering harvest contractors and mill operators a stable allocation of hardwood resources. Most of the Authority properties are mingled in with private land holdings and are thus subject to a far greater scrutiny (due to the higher population density and less resource dependent economy) than the Crown lands found on the Canadian Shield. As such, staff recommend that the harvest of natural forest stands be deferred until the need is made apparent and is justified in the view of the public.

Although the records have largely lost, several smaller hardwood stands did have stand improvement cuts during the tenure of the department of Lands and Forests.

These improvement cuts would have involved Ministry of Natural Resources staff marking (painting) trees for removal under a 'personal fuelwood' permit system. The stands that were treated are now maturing with quality stems; however most are not at a stage to justify an economic harvest. Delaying the harvest of these hardwood stands may allow for a rebound in market prices (beyond those of fuelwood – like at present), and will allow for the evaluation of other forest values that may be more valuable than the timber (like aesthetics, wildlife harvest, water quality & baseflow maintenance, and/or absorption of carbon). That said, the natural White Pine and hardwood stands located within the commercial forest properties are encouraged to undergo improvement cuts while the harvest machinery is already on site. This will assist in stand improvements and future revenue stabilization within the blocks of forest targeted for forest harvest activities.



**PROPOSED FOREST OPERATIONS SCHEDULE (PRESENT UNTIL 2028):**

Property Name	Stand Number	Area in Acres	Working Group	Ideal Year	Operational Notes
140. Vanderwater	1, 3, 9, 11, 14, 20, 21, 22, 23, 24	96 acres	Red Pine, White Pine, White Spruce	2019	High priority, selection thinning
113. Elzevir	2, 5, 7, 8, 9	58 acres	Red Pine, White Pine	2020	Selection thinning
145. Goose Lake Fens	4, 7, 9	101 acres	White Pine	2020	Selection thinning
123. Downey Rapids	7, 13, 19, 25A	66.5 acres	Red Pine, White Pine	2021	Improvement cut
128. Potter Settlement	16, 17	21.5 acres	White Pine, White Spruce	2021	Improvement cut
128. Potter Settlement	14, 15, 16, 17, 21, 22	107 acres	Red Pine	2022	Selection thinning
114. Old Flinton Rd	4, 7, 10, 11	41 acres	Red Pine, White Pine	2023	Selection thinning
115. Old Flinton Rd	2, 4, 5	43 acres	Red Pine	2023	Selection thinning
123. Downey Rapids	6, 18, 20, 22, 25B, 25C, 23	64.5 acres	Red Pine, White Pine	2025	Selection thinning
130. Potter Settlement	2	30.5 acres	Red Pine	2026	Selection thinning
121. Queensboro Rd	9, 11, 12, 13	85 acres	Red Pine	2026	Selection thinning
139. Thomasburg	3, 6	27 acres	White Pine	2027	Selection thinning
126. Hawkins Bay	12, 13, 16	16.8 acres	Red Pine, White Pine	2028	Selection thinning
127. Labarge	9, 10, 12, 13, 14, 15	283 acres	White Pine (natural)	2020	Improvement Cut
123. Downey Rapids	17B, 27ABC, 30AB	107 acres	Hard Maple (40%), White Birch (20%), Basswood (10%), White Oak (10%), Pw (10%), Red Maple (10%)	2025	Selection harvest for stand improvement

*Reference: Quinte Conservation Managed Forest Plan, updated by David Smallwood, R.P.F.A., Jan. 2018*