

**THE HURDMAN CREEK OLD-GROWTH FOREST:
AN UNPROTECTED ENDANGERED OLD-GROWTH FOREST
IN ALGONQUIN PROVINCIAL PARK, ONTARIO**

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M. HENRY AND P. A. QUINBY



Ancient Forest Exploration & Research, Powassan, Ontario P0H 1Z0
contact: Mike Henry, info@ancientforest.org; www.ancientforest.org

SUMMARY

Following implementation of the 2013 Algonquin Park amendment, 24,000 ha of old-growth forest >150 years old remains unprotected in the Park, most of which has never been ground-truthed. This report details a field study of one of these unprotected old-growth forest areas: 377 ha (943 acres) of contiguous old-growth forest adjacent to Hurdman Creek and Brain Creek. Old-growth forests composed of hemlock, yellow birch and sugar maple are extremely rare in Ontario and are likely endangered ecosystems throughout their North American range. This area was selected for a rapid survey because it is a significant contiguous area with relatively high stand ages and no evidence of nearby logging roads. The Brain Creek area has significant stands of old-growth forest where trees 270-295 years old are common. Ages obtained by tree core ranged from 145 to 295 years, with an average age of 232 years. Old-growth forest characteristics including logs and snags (dead standing trees) were found throughout the forest, however a small amount of historical logging was also found in some areas. With one exception, these were stumps of white pine likely harvested more than 70-80 years ago and floated out on Hurdman Creek. More recent (but still historical) logging of yellow birch occurred close to the Brain Lake Access Road. Steep topography likely limited road access for much of the old-growth forest, which is generally in good condition. We repeat our call for a complete and detailed assessment of old-growth forest throughout the entirety of Algonquin Park and for full protection for identified old-growth forests. This inventory should be completed prior to the next review of the Algonquin Park Management Plan.

INTRODUCTION

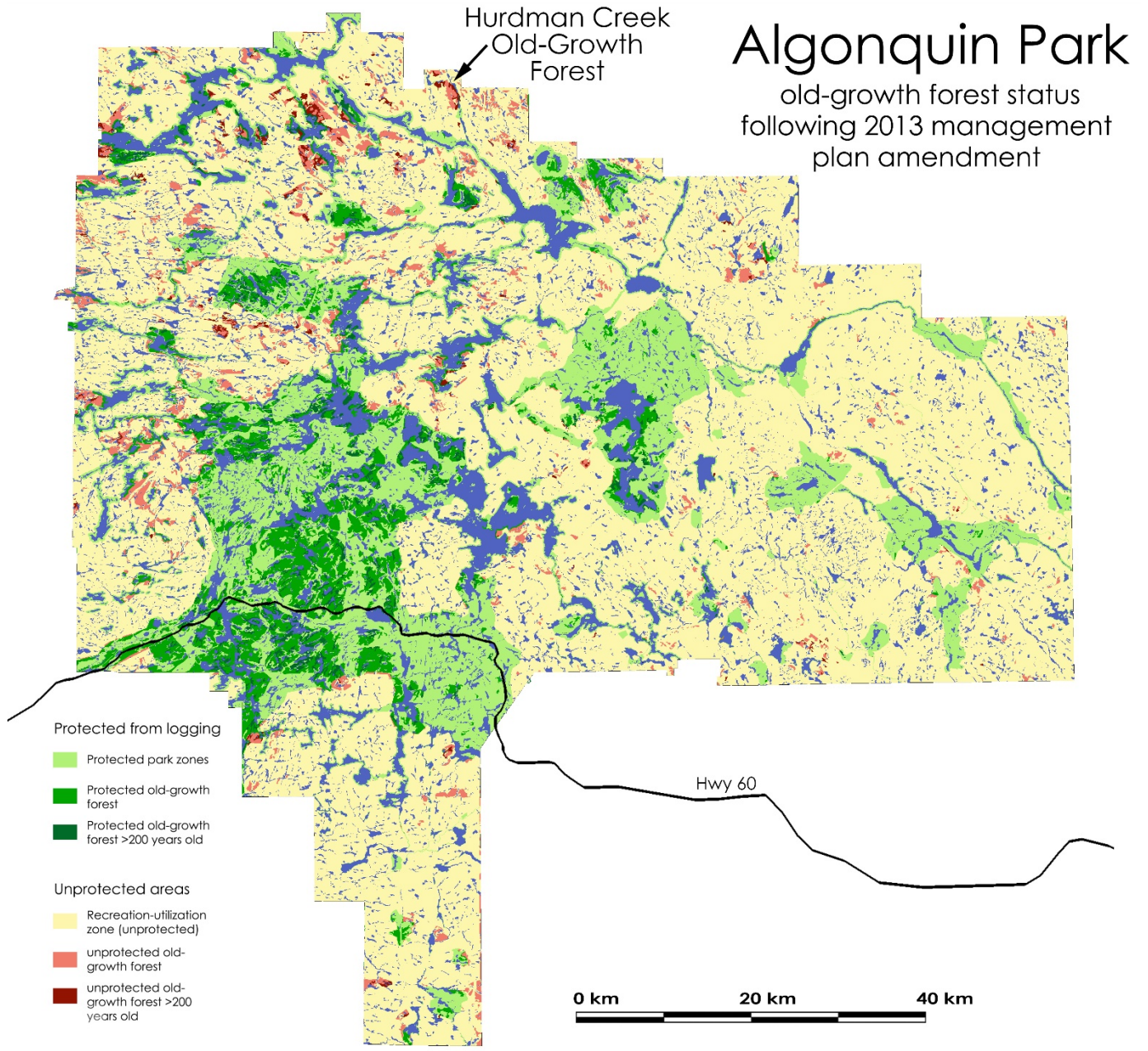
In 2006, we conducted a preliminary survey of old-growth forests on the west side of Algonquin Provincial Park (Henry & Quinby 2006). This report identified numerous old-growth forests both in protected zones of Algonquin Park and in the unprotected recreation-utilization zone of the Park, and made the following recommendation:

“To address the lack of adequate information and protection for old-growth forests in Algonquin Park, a detailed assessment of old-growth forests throughout the entirety of the Park should be carried out using digital forest resource inventory data and field inventories.”

Although no such inventory was carried out, in 2007 the Ontario Parks Board released the report *Lightening the Ecological Footprint of Logging in Algonquin Provincial Park*, which recommended expansion of the protection zones to include 54% of the Park. Following the release of this report, the Minister of Natural Resources asked the Ontario Parks Board and the Algonquin Forestry Authority (AFA) Board to work together to develop a new set of joint recommendations. The resulting report, the *Joint Proposal for Lightening the Ecological Footprint of Logging in Algonquin*, proposed much less ambitious changes that would expand protection to only 35% of the Park. This proposal was accepted in 2009 and in 2013 it was incorporated into an amendment to the Algonquin Park Management Plan (Ontario Parks 2013).

Due to this policy change, the protected area of the Park increased from 22% to 35%. However, after the 2013 Park amendment roughly 24,000 ha of old-growth forest over 150 years old remains unprotected in the recreation-utilization zone (Fig. 1). Most of these old-growth forest stands have never been ground-truthed. For this study, we carried out a rapid field survey of one of these unprotected old-growth forest areas (377 ha) adjacent to Hurdman Creek and Brain Creek.

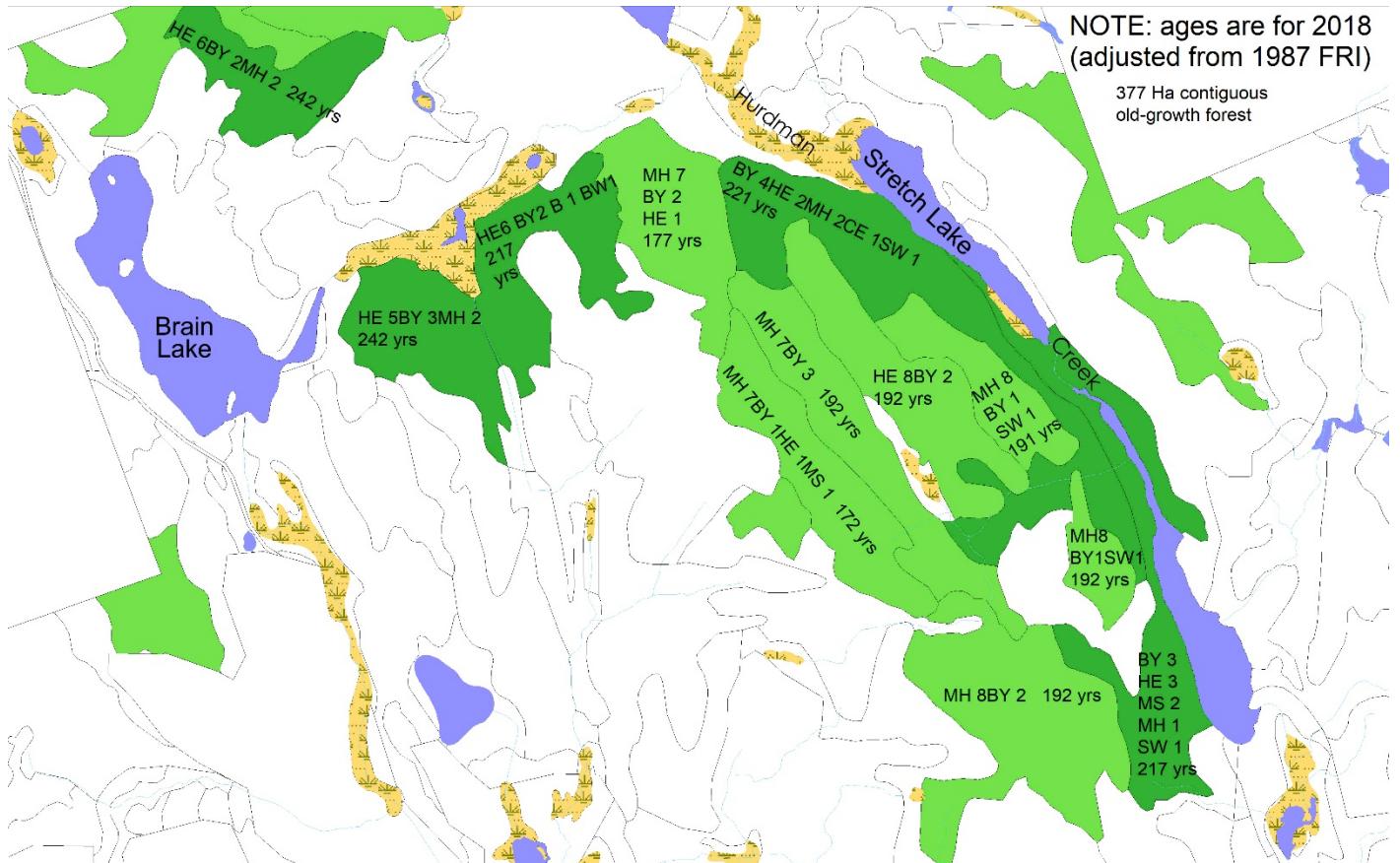
Figure 1. Old growth status following the 2013 management plan amendment and study site location



FOREST RESOURCE INVENTORY MAPPING

Forest Resource Inventory (FRI) maps indicate that 377 ha (943 acres) of contiguous old-growth forest occur principally between Brain Creek and Hurdman Creek in the Recreation and Utilization Zone of Algonquin Park (Fig. 2). The stands are dominated by hemlock (HE), yellow birch (BY) and sugar maple (MH) with ages ranging from 172 to 242 years (adjusted to 2018). Significant additional non-contiguous old-growth forests also occur north of Brain Lake and east of Hurdman Creek and Stretch Lake. Just south of the Hurdman Creek Old-Growth Forest is the Hurdman Creek Significant Black Ash Forest, which is a 63 ha protected nature reserve.

Figure 2. Forest resource inventory mapping of the Hurdman Creek Old-Growth Forest



The Hurdman Creek Old-growth Forest was selected for a rapid survey because it is a significant contiguous area with relatively high stand ages and no evidence of nearby logging roads. Steep topography likely acts as a barrier to road access for most of the area within this old-growth forest (Fig. 3). Steep topography may also have prevented the logging of some nearby old-growth stands to the east, but this was not confirmed in our field survey.

FIELD METHODS AND RESULTS

Old-growth characteristics were surveyed along five transects totalling approximately 2 km in length within the Hurdman Creek Old-Growth Forest from May 20 to 22, 2018. Along each transect, the forest was surveyed for historical stumps and any other evidence of significant human disturbance, and for old-growth forest characteristics

including old trees, logs, snags, and pit and mound topography. A total of eight tree cores were taken within the old-growth forest and one additional core was taken along the Brain Creek portage.

Ages obtained by tree core ranged from 145 to 295 years, with an average age of 232 years. Old-growth forest characteristics were found throughout the forest and a small number of cut stumps were found in some areas. Nearly all stumps were white pine that had been taken from near shorelines or ridgetops, and almost certainly floated out on Hurdman Creek. Based on our experience, the state of decay of these stumps suggested they were harvested upwards of 70-80 years ago. There was no portion of the old-growth where these stumps were common enough to suggest that white pine had been a significant component of the stand. In one area, close to the access road, numerous yellow birch stumps were found, likely harvested at least 40-50 years ago (marked "C" in Fig. 2). However, in this same area, an intact 270-year-old hemlock stand occurs with little or no disturbance. All stumps that could be identified in this stand were of yellow birch.

Figure 3. Locations of transects, tree cores and significant features in the Hurdman Creek Old-Growth Forest

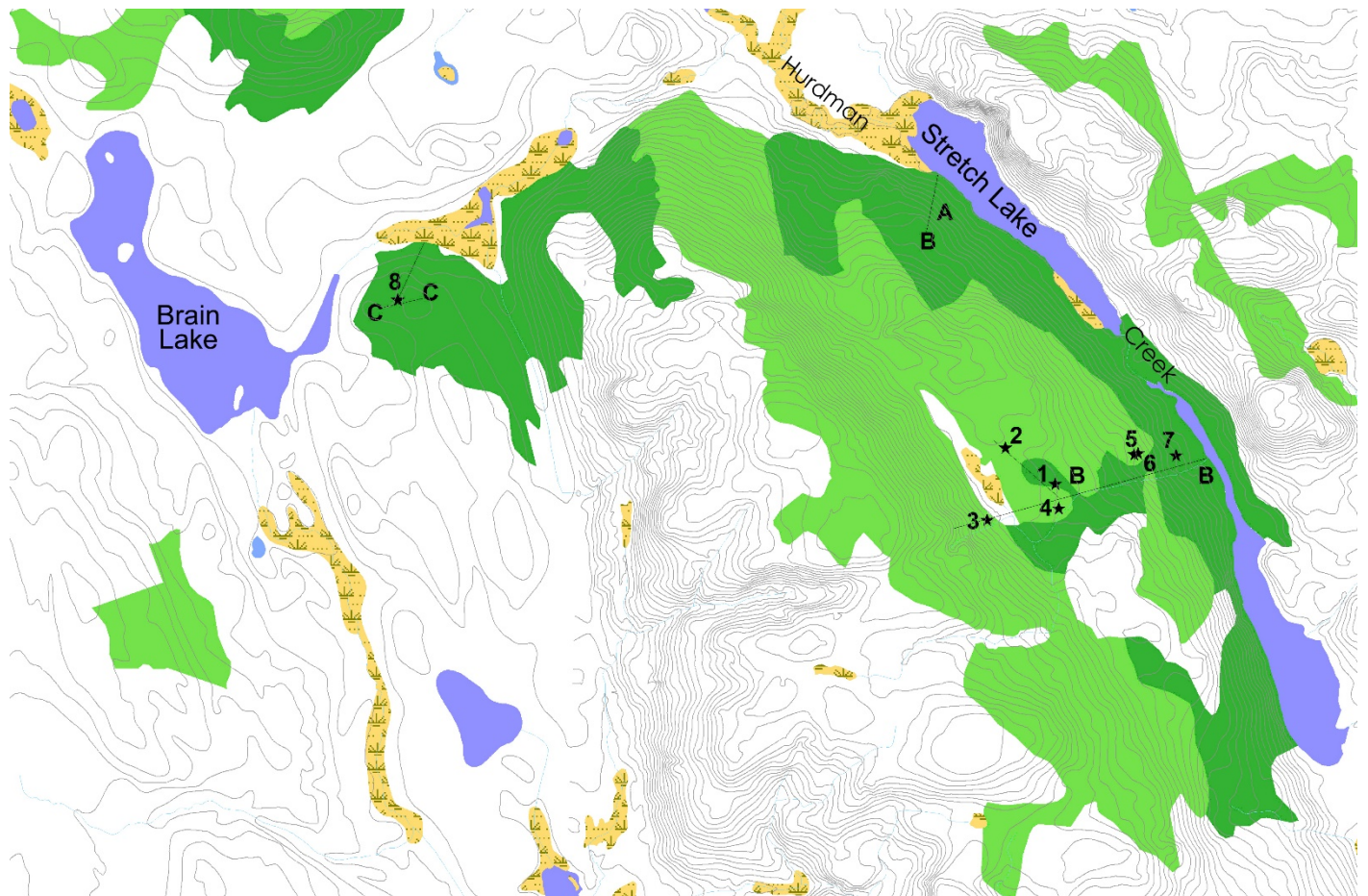


Table 1. Tree core and transect results

#	SPECIES	RING COUNT	AGE	NOTES
1	HEMLOCK	242	266	Mixed stand of hemlock, yellow birch and sugar maple, Some beech. Historical pine stumps >50 m away.
2	HEMLOCK	271	295	Dense old-growth hemlock stand with a few yellow birch. No sign of human disturbance. Logs and snags are common.
3	SUGAR MAPLE	130	145	A mid-aged old-growth stand dominated by sugar maple. No stumps seen.
4	BLACK ASH	153	168	Growing in a black ash / yellow birch swamp. Swamp and surrounding forest are old growth.
5	YELLOW BIRCH	134	>200	Partial core. 134 rings in 14 cm (tree DBH 58.5). Tree and surrounding forest appear old.
6	BLACK ASH	203	218*	Adjacent to stream in an old-growth forest, no stumps or other signs of disturbance. Missed center slightly, so 218 is a minimum age. Oldest known in Ontario?
7	YELLOW BIRCH	255	270	Tree has old-age characteristics including plated bark and large upper branches. Similar trees are not unusual in this forest. Some stumps from historic pine logging downhill along shoreline. See Figs. 8 & 9.
8	HEMLOCK	244	268	Access from Brain Creek. This tree is part of an impressive small old-growth hemlock stand on the hill. Surrounding forest is largely old-growth, however numerous yellow birch stumps occur in places.
A	An old-growth yellow birch-sugar maple forest on the slope. The trees are average size but show old-growth characteristics including plated bark, large strangely shaped upper branches (see Fig. 4). Stumps from historic pine logging occur on ridge.			
B	Well-decayed stumps, appear to be white pine. Historic logging estimated >70-80 years old. See Fig. 5.			
C	Yellow birch stumps, partially decayed. Historic logging estimated >40-50 years old. Bark present at ground level.			

*This appears to be Ontario's oldest documented black ash tree.

Figure 4 Old-growth west of Stretch Lake (area A)



Figure 5. Historic white pine stump



Figure 6. Hemlock, 295 years old (tree 8)



Figure 7. Black ash, 218 years old (tree 6)



Figure 8. Yellow birch >270 years old



Figure 9. Base of old yellow birch (tree 7)



Figure 10. Old-growth hemlock near Brain Creek



Figure 11. Old growth near Brain Creek.



CONCLUSIONS

The Hurdman Creek area has significant stands of old-growth forest dominated by hemlock, yellow birch and sugar maple, where trees 270-295 years old are common. Based on our rapid survey, human disturbance in most of the Hurdman Creek Old-Growth Forest appears to be limited and localized, with significant tracts that are relatively undisturbed. The recreational value of the area is limited due mainly to difficulty of access posed by wetlands along many shorelines and steep topography where the old growth occurs. Trees in parts of the old-growth forest (e.g. west of Stretch Lake) are of average size despite showing signs of old age, likely due to poor growing conditions on the steep rocky slopes.

However, the ecological value of this large contiguous tract of old-growth forest is significant. If the Hurdman Creek Old-growth Forest was located outside of Algonquin Park, it would most probably be a candidate for protection. It should be protected simply due to its location within Algonquin – the “*Gem of Ontario’s Parks*,” however the inverse seems to be the case. Old-growth forests within the recreation-utilization zone of Algonquin Park are not being identified and considered for protection.

Protecting the Hurdman Creek Old-Growth Forest would significantly enhance the ecological integrity of the adjacent Hurdman Creek Black Ash Nature Reserve. Old-growth forests to the east and north should be surveyed and included within a larger protected area if they are found to be significant. There are many additional old-growth forests that need to be surveyed in the recreation-utilization zone of Algonquin Park. We have identified stands around Dividing / Whatnot Lakes, Cayuga / Lost Dog Lakes, and others for near-term surveys. Mapping of these forests show that they are very old and that they are near adjacent nature reserves that contain confirmed old-growth forest.

We repeat our call for a complete and detailed assessment of old-growth forests throughout the entirety of Algonquin Park using GIS, digital FRI data, and field inventory work (Henry and Quinby 2006). All remaining old-growth forests in the recreation/utilization zone should be identified and protected from logging.

“It is also disappointing that the ministry’s amendment to the [Algonquin Park] Management Plan appears to give little weight to the direction in the Provincial Parks and Conservation Reserve Act, 2006 to prioritize ecological integrity in planning and managing the park.”

Environmental Commissioner of Ontario (ECO) 2014

Logging of old-growth forest in Algonquin Park clearly undermines the ecological integrity of the Park, and may be addressed in one of two ways: the province could phase out commercial logging in the park as urged by the Environmental Commissioner of Ontario (ECO 2014), or old-growth forest areas could be properly identified and given additional protection. A review of the Algonquin Park Management Plan is due to occur in 2018 (ECO 2014), and a strategy for properly identifying and protecting remaining old-growth forest in the Park should be a part of this review.

REFERENCES

- Environmental Commissioner of Ontario (ECO). 2014. **MANAGING NEW CHALLENGES: ANNUAL REPORT 2013/2014**, Available at: <http://docs.assets.eco.on.ca/reports/environmental-protection/2013-2014/2013-14-AR.pdf> [Accessed May 28, 2018].
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