

This is Annex 3 prepared by Algonquin Eco Watch as part of a request for Individual Environmental Assessment for the Algonquin Forest Management Plan 2010

Annex #3 - Provision of Insufficient Old Growth in the Park and in the R/U Zone

Algonquin Eco Watch is concerned with the plans in the FMP for the development and retention of old growth pine. We believe that the planned amount of old growth pine in the Park is considerably lower than it should be and, there is an unduly heavy reliance on the protected zones in the Park to provide old growth pine.

Technical Review---The Planned Amount of Old Growth Pine

The natural forest benchmark run for the 2010 FMP does not accurately forecasts the amount of old pine that would be present in Algonquin in the event that management ceased.

The MNR's own analysis of natural forest dynamics, completed for the landscape guide, shows that at least half of the pine area would be in the old age classes in a natural forest.

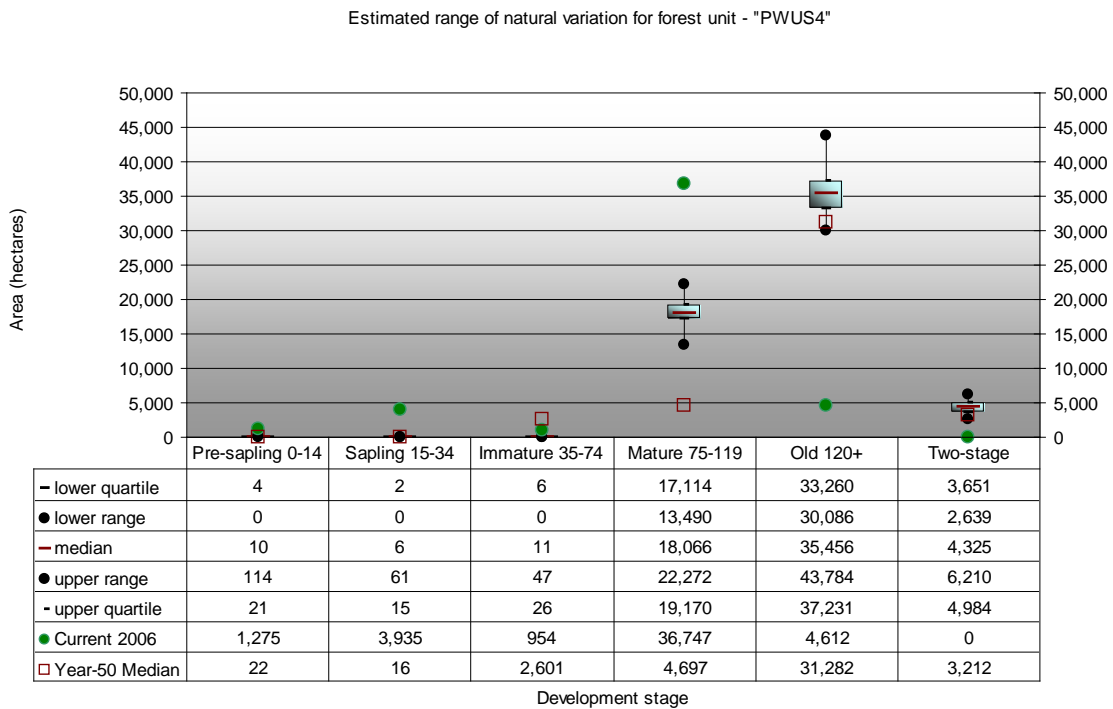


Figure 3 - This figure is copied from Algonquin Park Forest (454) 2010 – 2020 Forest Management Plan Analysis Package, Base Case Inputs and Assumptions, Checkpoint 3, Updated Dec 16 20/08. Prepared by: Gordon Cumming, R.P.F. Plan Author.

Figure 3 shows that age class structure of pine that could be expected in the natural Algonquin Park forest. The figure was produced by MNR for the Landscape Guide using models developed by MNR and tested and verified in an extensive scientific review

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process. The models in the Guide are approved and MNR staff is encouraged to use them in preparing 2010 Forest Management Plans. These are better models and provide much more scientific credibility than the habitat approach used in the SFMM model for the 2010 Algonquin Park FMP.

The “box and whisker” icons in Figure 3 illustrate the age structure of white pine stands, under natural forces of disturbances and regeneration, with median, upper and lower ranges of estimates given by these symbols. Under natural evolution processes, about 30% of the white pine would be in the mature age class and about 60% in the old growth age class. In contrast, the green dots represent the actual amount of pine in each age class present in the Park. An examination of Figure 3 makes clear that many years of forest management in the Park have reduced the amount of old growth pine to almost negligible amounts. Current management of white pine in the Algonquin Park Forest has maintained most of this species in mature and younger stands, with very little in the old growth stage. This happens because the Uniform Shelterwood management approach tends to restrict the amount of old growth on the landscape, primarily because the most economic value occurs before the old growth stage. Natural management would have produced 7 or 8 times as much old growth pine on the landscape as currently exists.

A second difference between the current forest and a natural forest lies in the amount of area in the two story stage. The natural benchmark has much less two-story forest in it than is found in the present forest. The Base Model Inventory for the current forest has a little less than 22,000 hectares of two story stages in the White Pine Forest Unit.¹ The Natural Benchmark scenario estimates that only between 4 and 5,000 hectares would be two-staged forest in the White Pine Forest Unit if no human management was occurring on the Algonquin White Pine Forest Units.

In contrast, Figure 4 (taken from the LTMD, Appendix J) projects the amount of old growth white pine compared to the total area of white pine in the Park. In the first 4 terms of the plan, the amount of old growth pine increases. Table 2 of the same appendix also shows that in the short term, the amount of old growth white pine doubles. In contrast to the short term, however, over the long term the amount of old growth white pine decreases so that by the end of the plan, the area of old growth white pine is not much different from its value at the beginning.

¹ See the Base Model and the explanation of how the two story condition is calculated.

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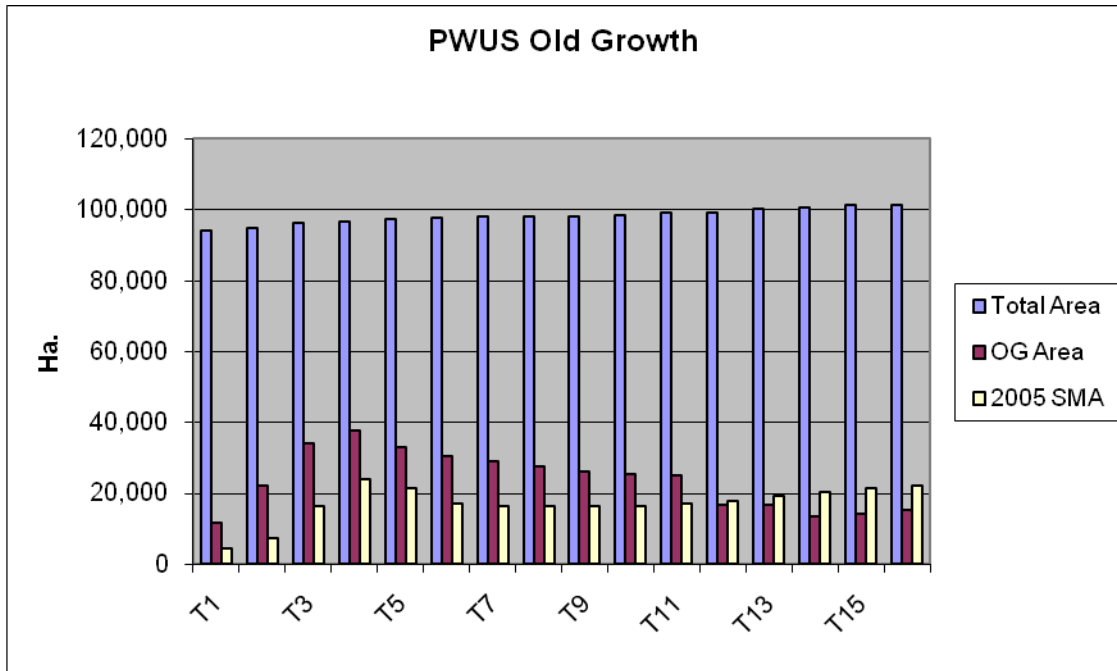


Figure 4. Planned area of Old Growth White Pine. Taken from Appendix J of the LTMD, Algonquin Park, draft Forest Management Plan.

We believe that the natural benchmarking process used in the FMP does not provide a good basis for setting long-range targets for old growth white pine. One reason for this is that because such a large area of the older pine stands in the Park has received a first removal shelterwood harvest, these stands will not develop into typical old growth, as defined in the scientific literature. However, they will not become equivalent to young stands either. In our view, the presence of these partially harvested stands undermines the ability of the natural benchmark run to create a “natural” forest condition within the modeling horizon used. It would take at least a couple of centuries for the “natural” forest, depicted in Figure 3, to emerge in the absence of management, and we are not convinced that SFMM is an appropriate model to use to set long term old growth pine targets in the case of white pine in Algonquin.

In response to our concerns on this topic, Joe Yaraskavitch commented:

“However, note that your Fig. 1 [Figure 3 in this document] from the base case is not/will not be part of the forest management plan (Landscape Guide material) but was only used to better explain how SFMM now treats the T-staged condition in the uniform shelterwood system. Also, the Landscape Guide forest Unit PW US4 is not the same as the Algonquin Park PwUS forest unit.”²

² In the base case, this figure is described as the white pine forest unit in Algonquin Park.

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This response is puzzling because although the Planning Team is willing to use the Landscape Models to provide guidance on T-state conditions, it is not willing to use them to guide planners in managing for old growth. This makes the Planning Team appear to be selectively taking results from different sources to support its perspectives.

Second, although Joe maintains the PWUS 4 in the landscape model is different from the PWUS4 in Algonquin Park, no details are provided as to the difference. We doubt if the differences are significant and they are unlikely to derive a substantially different conclusion.

The Planned Distribution of Old Growth Pine

Algonquin Eco Watch also contends that the planned distribution of old growth pine within the Park is not appropriate. The draft 2010 FMP places a heavy reliance on riparian strips, AOCs, and other small patches of land to provide old growth, but much of this will be of low ecological quality because the patches are small or linear strips, or some combination of the two. Additionally, most of the upland sites in the Park are in the R/U zone, and the plan does not provide for much if any future old growth pine in reasonably sized blocks. What old growth is created in the R/U zone outside of these small areas will be cut soon after it reaches the age of old growth, and this rapid cycling further reduces its habitat value.

Figure 4 shows the planned area of old growth pine in the Park. However, this issue is complicated by the decision to include FRI protection forest, bypassed areas and no-cut AOC reserves in the R/U zone as part of the “unavailable”³ forest. The total area in the “unavailable” forest in the Pw forest unit at plan start (2010) equals 27,546 ha⁴. Table 1 illustrates that 87% of this “unavailable” area would be in old growth by Term 5 of the 2010 plan. In white pine forest units that evolve under natural conditions, age classes in the old growth category are more likely to occur on around 60% of the area.

The estimate that 87% of the “unavailable” forest is in old growth is very likely an over-estimate, perhaps based on a long natural disturbance cycle such as was used in the 2005 plan. In the 2005 plan because the disturbance cycle was very long, the stands did not recycle in a normal way and the model output is an aberration that over-estimates the old growth white pine. This result may occur because the natural disturbance rate is set very low in the SFMM model. Given that wind throw is also a common disturbance in the Park, and that large fires do still occasionally occur, such a disturbance rate is unrealistically low. Hence the forests of the “unavailable” areas are

³ In this review and in the correspondence regarding the issues involved, the “available” forest is the area of the Park where actual forest management can take place. The “unavailable” forest is that part of the Park where forest management cannot take place. Sometimes the non-RU zone is referred to a “protected” but it is also important to remember that areas in the RU zone may also be “unavailable” in the sense that timber harvest or various silvicultural activities cannot take place there..

⁴ This figure kindly supplied by Gord Cumming by e-mail to Dave Euler.

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projected to age without being reset to younger conditions, and the proportion of old forest increases basically uninterrupted over time.

At the peak abundance of old growth in white pine Units in the 2010 Plan, at time T4, about 38% of the 100,000 ha of white pine forest units in the Park are in an old growth stage. Over the time period T 4 to T10, old growth pine declines to about 27% of the white pine forest units. Table 1 and Figure 4 show this.

PWUS	Available	Unavailable	Total	Avail %	Unavail %
T1	7,267	9,502	16,769	43.3%	56.7%
T2	10,970	19,143	30,113	36.4%	63.6%
T3	15,563	23,194	38,757	40.2%	59.8%
T4	14,972	23,924	38,896	38.5%	61.5%
T5	9,882	23,609	33,491	29.5%	70.5%
T6	8,019	22,746	30,765	26.1%	73.9%
T7	7,634	21,604	29,238	26.1%	73.9%
T8	7,742	20,319	28,061	27.6%	72.4%
T9	7,701	18,891	26,593	29.0%	71.0%
T10	9,415	17,678	27,093	34.7%	65.3%

Table 1⁵- The area of old growth white pine in the RU and “unavailable” areas over the next approximately 100 years (ha). Based on the 2010 Forest Management Plan.

A Better Approach

One of the key ideas in the Crown Forest Sustainability Act, the Old Growth Policy and in the new landscape guide is that managers should investigate the age class structure of forest units on the landscape that evolve under a natural disturbance regime. The graphs produced by the MNR in the landscape guide illustrate the “Simulated Range of Natural Disturbances, much as Figure 3 does for white pine. Under conditions of natural disturbance these graphs represent the best estimate of how the forest would evolve in the absence of human management. A better approach in the 2010 FMP for the Algonquin Forest is to use those graphs as a guide to set a target area for old growth. We believe that the result would be a long-term target area of old growth that would be in the neighborhood of 50% of the pine area, and having such a target would require that more of the pine in the R/U zone would reach and remain for some time in old growth. This outcome would be expected to largely provide the ecological benefits indicated in the discussion of the distribution of old growth.

⁵ This chart provided by Gord Cummings.

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In order to reach this revised target, while other solutions might prove practical, we suggest that no harvest of old growth white pine in the “available” area should occur after time T4 through to the end of the plan. This would be a good first step in moving the forest towards a natural distribution of age classes, and would allow time for on-going discussions leading to more permanent solutions. The total area of white pine in the available forest is just less than 70,000 hectares⁶, with about 10% in old growth. Most of the old growth in this Forest Unit is at the very beginning of the old growth stage and can be expected to continue in that stage for at least 100 years. By avoiding harvest in this age class, over time the amount of old growth in the white pine forest unit would increase and by the end of the plan would probably approach some 30% of the Unit in old growth. This would be much more important ecologically and would also be more in line with the Crown Forest Sustainability Act.

A similar approach is appropriate for the other Forest Units in the Park.

⁶ Based on information in the LTMD, assessment of objective achievement, Appendix B, objective 10.