Final Report of the Independent Audit of Forest Management on the White River Forest
2008 to 2014

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1.0 Executive Summary

A team of four auditors carried out an independent audit of forest management and activities conducted by Domtar, White River Forest Products, and the Ministry of Natural Resources and Forests (MNRF) on the White River Forest covering the period from April 1, 2008 to March 31, 2014.

Since April 1, 2002 the White River Forest was managed under Sustainable Forest License (SFL) # 550399. The White River SFL was established to provide a continuous supply of forest products to the Domtar sawmill located in White River and to ensure that the Forest was managed sustainably. Poor forest products markets led to the temporary closure of the White River sawmill in June 2007, the permanent closure of Weyerhaeuser's Oriented Strand Board (OSB) mill in October 2007, and the permanent closure of the Marathon Pulp Inc. pulp mill due to their March 2009 bankruptcy.

On June 19, 2009 White River Forest Products Ltd. (WRFP) acquired the White River sawmill from Domtar and SFL #550399 was transferred to WRFP on February 9, 2010 as part of the purchase agreement.

White River Forest Products Ltd. is owned by the Pic Mobert First Nation, the White River Economic Development Corporation, and private investors. The White River sawmill was reopened by WRFP in August of 2013. Forest operations between the last independent forest audit (2008) and the end of the current audit period were limited, with the exception of some fuelwood harvesting and road construction, to the harvesting that occurred between August, 2013 and March 31, 2014.

The Wawa District of the MNRF holds the main responsibility for this Forest for the MNRF. Staffing at the District was significantly constrained through most of the audit period.

Operations during this audit period have been conducted under the auspices of 20-year forest management plans. The initial plan was issued on April 1, 2008. The plan was updated, as per the normal requirements of the Forest Management Planning Manual, in 2013.

The audit examined compliance with the terms and conditions of the SFL and reviewed the MNRF's performance in meeting its obligations on the Forest. The audit included a review of the process, planning, and operational efforts associated with both FMPs as well as plan preparation for the 2013 FMP. Records of forest management activities were reviewed along with field verification visits to areas where a variety of forest management activities occurred during the audit period. Public input to the independent forest audit was solicited through newspaper advertising, individual interviews, and mail-in surveys.

The limited operational practices on the White River Forest have been conducted in a highly effective manner. Road construction and maintenance, harvest, renewal, and renewal assessment all fell within acceptable operating parameters.

The auditors have issued seven recommendations. An area of concern (AOC) prescription for ground nesting raptors needs to be formalized. The Company has been directed to clarify the AOC prescriptions for shoreline operations.

The Wawa District of MNRF has been significantly understaffed through most of the audit period. Some records were difficult to find, annual compliance plans were not prepared, and a lack of silvicultural effectiveness monitoring were examples of activities that were not completed due to challenges with staffing. Recommendations have been written addressing all of these issues.

The free-to-grow assessments conducted on behalf of White River Forest were found to have some technical deficiencies, and a recommendation has been issued requiring these to be corrected.

The audit team concludes that management of the White River Forest was generally in compliance with the legislation, regulations, and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the SFL held by White River Forest Products Ltd. Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The audit team recommends the Minister extend the term of SFL #550399 for a further five years.

2.0 Table of Recommendations

Recommendation on License Extension

The audit team concludes that management of the White River Forest was in compliance with the legislation, regulations, and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by White River Forest Products Ltd. Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The audit team recommends the Minister extend the term of Sustainable Forest Licence 550399 for a further five years.

Recommendations Directed to the SFL Holder/MNRF District(s)

Recommendation 1: It is recommended that MNRF and the White River Area Co-management Committee review the Terms of Reference and update operating practices to improve the effectiveness of the Committee.

Recommendation 2: The MNRF must meet with Pic Mobert First Nation and resolve outstanding issues with stumpage obligations and explore the opportunity for developing long term tenure opportunities on the White River Forest.

Recommendation 3:

i. The Company should ensure that an area of concern prescription or condition on regular operations for ground-nesting raptors is included in the forest management plan and annual work schedules.

ii. The Company and MNRF must ensure that the shoreline area of concern prescriptions (RHZ-1 to RHZ-4) incorporated in the forest management plan are clear and understandable.

iii. The Company and MNRF should identify areas where shoreline harvesting can be conducted to better emulate natural landscape patterns at the stand scale, consistent with direction in the Stand and Site Guide.

Recommendation 4: White River Forest Products should review the 2012 free-to-grow assessment areas to ensure that stand descriptions are consistent with ground conditions. Priority should be placed on large mixedwood stands which may contain a number of hardwood and softwood stands within them.

Recommendation 6: The MNRF must produce an annual district forest compliance plan that takes into account the licensee's forecast of activities for the year and explains how MNRF staff effort will be allocated among area forests.

Recommendation 7: District MNRF must implement a silvicultural effectiveness monitoring program on the White River Forest.

Recommendations Directed to Corporate MNRF

Recommendation 5: Regional MNRF must ensure Wawa District maintains a staffing level that enables fulfillment of their operational and regulatory mandate.

3.0 Introduction

3.1 Audit Process

An independent forest audit of the White River Forest was undertaken in September 2014. The objective of the audit was to assess the performance of forest management activities conducted during the six years from April 1, 2008 to March 31, 2014 as measured against the plans, guidelines, regulations, and legislation in force during that period. The audit was conducted in compliance with the *Crown Forest Sustainability Act* (CFSA) (Statutes of Ontario 1994) and fulfills the requirements of the *Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario* (Ontario Ministry of Environment and Energy 2003). The audit assessed the effectiveness of forest management activities in achieving the management objectives for the Forest. The audit examined the compliance of White River Forest Products Ltd. (WRFP), and the previous Sustainable Forest License (SFL) holder (Domtar Inc.) with the terms and conditions of SFL #550399. The audit also reviewed the performance of District, Regional, and Corporate Ontario Ministry of Natural Resources and Forestry (MNRF) in meeting its obligations on the Forest. Finally, the auditors offer an opinion, based on consideration of all evidence reviewed, on the sustainability of the forest management program.

The audit was conducted in accordance with the Independent Forest Audit Process and Protocol (MNRF 2014) by a team of four independent auditors, consisting of three registered professional foresters (RPF), one of which is also a biologist/ecologist, and a socio-economist. Their qualifications are presented in Appendix 6.

The auditors collected evidence through document review, interviews with staff and stakeholders, and physical inspection of field activities that occurred on the Forest between April 1, 2008 and March 31, 2014. The on-site portion of the audit was conducted within a standard five-day period. Field site visit locations were selected to evaluate harvest, renewal, tending/maintenance, free-to-grow (FTG) operations, areas of concern (AOC), road construction and maintenance, site preparation, water crossings, wildlife management activities, and other areas of special interest. On average, the auditors inspected over 40% of operating areas from the audit period. Additional details on the audit process and sampling are provided in Appendix 4.

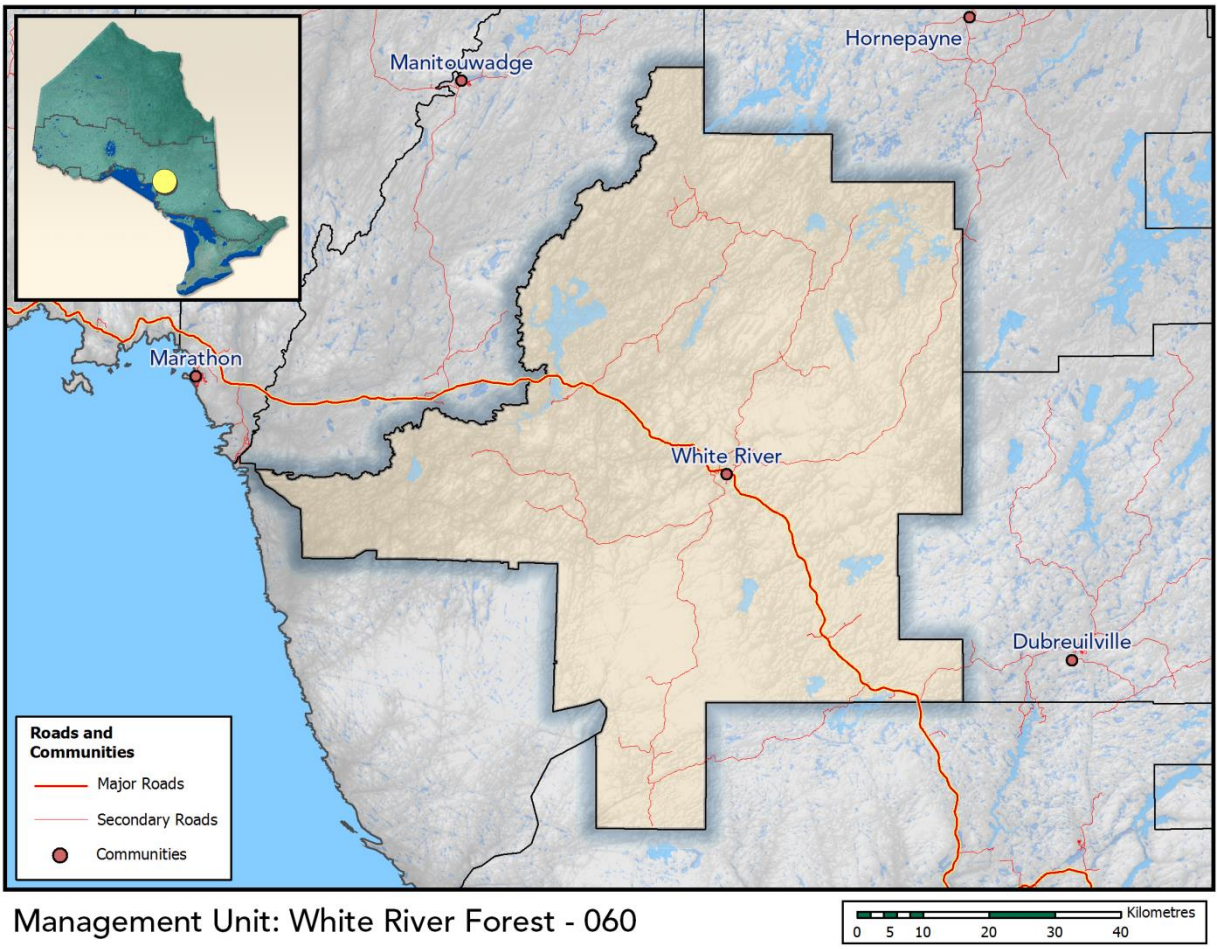
This report summarizes the findings of the audit and presents recommendations that are intended to improve management and operational performance on the White River Forest.

3.2 Management Unit Description

The White River Forest is located within the MNRF's administrative District of Wawa, which in turn is administered regionally by the Northeast Region office in South Porcupine. Figure 1 illustrates the boundaries and location of the White River Forest around the town of White River. The White River Forest is located along the Highway 17 corridor, north of the town of Wawa, east of the town of Marathon, and south of Manitouwadge and Hornpayne. The westernmost part of the Forest is near (within 1 to 2 km) Lake Superior. The town of White River is situated in the central portion of the Forest.

The WRFP offices are located in the town of White River and the contracted management company, Jack Fish River Management, is located in Hornpayne.

Figure 1. Location of the White River Forest.



Since April 1, 2002, the White River Forest has been managed under SFL #550399. The White River SFL was established to provide a continuous supply of forest products to the sawmill located in White River and to ensure that the Forest is managed sustainably. Other mills in the region also receive wood from the White River Forest.

Poor forest products markets led to the temporary closure of the White River sawmill in June 2007, the permanent closure of the Weyerhaeuser's oriented strand board (OSB) mill in Limer in October 2007, and the permanent closure of the Marathon Pulp Inc. pulp mill due to their March 2009 bankruptcy.

On June 19, 2009, WRFP acquired the White River sawmill from Domtar and the White River Forest SFL #550399 was transferred to WRFP on February 9, 2010 as part of the purchase agreement. White River Forest Products Ltd. is owned by the Pic Mobert First Nation, the White River Economic Development Corporation, and private investors. The sawmill was reopened in the summer of 2013.

Harvesting on the forest between 2007 and 2014 totaled 2,981 ha, or 5% of that planned for that period. Renewal activity (site preparation, planting, and tending) have consequently been reduced since 2008, with a total of 780,000 seedlings planted in 2013 on sites depleted in 2012/13.

Stands with similar species composition, development patterns, and that will normally be managed under common silvicultural treatments have been grouped into 11 forest units in the 2013 forest management plan (FMP) as listed in Table 1.

Table 1. Forest Units on the White River Forest.

Forest Unit	Code	Area (ha)
Other Hardwood	OH1	434
Birch	BW1	57,875
Jack Pine/Spruce/Aspen	MW1	14.393
Black Spruce/Aspen	MW2	38,407
Jack Pine	PJ1	75,339
Jack Pine/Black Spruce	PJ2	31.415
Aspen	PO1	64,546
Black Spruce/Cedar/larch	LC1	13,523
Black Spruce Lowland	SB1	36,643
Spruce /Fir/Cedar	SF1	17,255
Black Spruce /Jack Pine	SP1	57,788
		407,620

Source: FMP Table 2

Crown land managed by the SFL holder for production purposes occupies approximately 94% of the total provincial Crown land within the boundaries of the White River Forest. Table 2 shows the breakdown of managed Crown land by land type.

Table 2. Managed Crown Land on the White River Forest by Land Type.

Land Class		Area (ha)
Non-forested		
	Water	49,561
	Other land	6,102
Forested		
	Non-productive	43,656
	Protection	31,802
	Production	446,407
	Total Forested	521,866
Total		**577,530**

Source: FMP-1 2013 White River Forest Management Plan

The Forest supports a wide variety of aquatic and terrestrial flora and fauna. Most native species found on the White River Forest are tolerant of natural and man-made disturbances and maintain healthy populations through time. Normal forest management activity provides a suitable environment to sustain populations of these species. Some wildlife are identified as "featured species", but habitat for all fish and wildlife occurring in the Forest is provided using a coarse filter-fine filter approach defined by the MNRF (OMNR 2010).

The FMP provides more detailed oversight of provincially and locally featured species. Provincially featured species (e.g., moose, deer, pileated woodpecker, woodland caribou, black bear, lynx,) are found on the Forest and are the subject of enhanced management attention. Locally featured species (e.g., barred owl, beaver, Blackburnian warbler, marten, northern flying squirrel, northern goshawk, and white throated sparrow) also have preferred habitat identified and are under management consideration on the Forest.

Timber harvesting was a significant contributor to the local economy prior to 2007 but has been absent for most of the audit period. Recreation (remote tourism, angling, and hunting), mining, and hydro power generation are also significant contributors to the local economy.

3.3 Current Issues

All other issues on this Forest are subordinate to the suspension of commercial harvest on the Forest between 2008 and the fall of 2012.

The suspension of operational activities may have contributed to the reduction of the multiple land use challenges cited in the 2008 independent forest audit. These were evident in the White River Area Co-management Committee (WRACC) comments in both the 2008 and 2013 FMPs, where the committee had asked for development of a land use plan. This was not raised as an issue in preparation for this audit.

Water crossing installation had been noted as an issue in the last independent forest audit and was the subject of two recommendations in the report. The audit team inspected water crossings encountered including the one which was the specific subject of Recommendation 9 in the last audit.

The last independent forest audit and the 2013 FMP both identified the impact of interrupted operations on the Forest as a principle issue. This influences operational achievement in road construction, harvest, renewal and monitoring, as well as meeting longer term targets in habitat supply. The auditors reviewed the impacts on all of these factors. It is notable that the economic impact of reduced operations is not part of the independent forest audit protocol and, consequently, was not examined by the audit team.

3.4 Summary of Consultation and Input to Audit

The auditors distributed 789 surveys and placed advertisements inviting comments in two local papers, as well as web-based versions of the same documents. Nine members of the WRACC were interviewed, as were members from each of the First Nations communities with an expressed interest in the Forest. A more detailed summary can be found in Appendix 4.

4.0 Audit Findings

This section provides a summary of audit findings for each principle. Detailed discussions for each recommendation are found in Appendix 1.

4.1 Commitment

The Independent Forest Audit Process and Protocol (MNRF 2014) requires the MNRF and WRFP to have policy statements and operational performance that demonstrate the commitment of the organizations to sustainable forest management.

The audit identified that both have clear policies that identify a commitment to the sustainable management of the White River Forest. These documents are available for view by employees, stakeholders, and interested members of the public.

The WRFP maintains third party certification of its forest management program under the Forest Stewardship Council® (FSC) standard, which requires a specific and public statement of WRFP's commitment to the principles of sustainable forest management.

4.2 Public Consultation and Aboriginal Involvement

The WRACC is the local citizens' committee (LCC) that has been established for the White River Forest. The audit team contacted all of the members of the WRACC with respect to an interview and also reviewed the Terms of Reference and meeting minutes. A total of nine interviews were held with WRACC members.

The WRACC is comprised of a diverse set of members from WRFP, Parks Canada (Pukuskwa National Park), the local prospectors association, the town of White River, Pic River First Nation, Pic Mobert First Nation, bear management area operators, the local trappers' association, independent loggers, White Lake Cottagers' Association, baitfish operators, White River Rod and Gun Club, and road-based tourism operators. The strong level of participation of First Nations on the WRACC is notable. Collectively, the members represent most of the interests on the Forest, with the notable exception of remote tourism. Efforts have been made in the past to invite remote-based tourism outfitters to participate on the WRACC, but they have not been successful. There is active hydro power development on the Forest which, along with environmental or naturalist associations, have been identified as target members for the WRACC. The re-opening of the White River sawmill, together with recent hydroelectric development and mineral exploration in the region, have resulted in new people in the community who may have an interest in participation. Some WRACC members do not participate regularly and so there is the potential to renew the membership of the Committee.

The WRACC was actively involved in the Phase 2 planning team and continues to be involved in issues on the Forest. The WRACC actively participated in the categorization of a minor amendment that occurred during the term of the audit. This is an active LCC and all members indicated that the Committee is run in a fair and inclusive fashion where everyone can freely express their personal views.

Overall, the WRACC serves its primary function with respect to forest management. However, there were several issues that challenged the effectiveness of the committee. Quorum was not always obtained for meetings. While the majority of Committee members are from White River, some need to travel from Marathon and Wawa. Some members have suggested that practical solutions such as proper notification and the use of conference call facilities would assist in addressing these problems.

Staff from MNRF attended most of the WRACC meetings. However, there was at least one meeting in which MNRF did not participate and it appears that sufficient notification to MNRF and the WRACC did

not always occur. Minutes of WRACC meetings were only provided for portions of the audit period and those that were available were difficult to obtain. Staff turnover at MNRF and coordination with the WRACC's recording secretary have contributed to this situation.

Members of the WRACC were not very cognizant of their Terms of Reference and could not really comment on whether they are followed. The MNRF and WRACC should consider whether the Terms of Reference should be augmented or rules developed around committee operations. Particular issues to consider should include: a review of membership; attendance and quorum; the use of teleconferencing facilities; the recording and retention of minutes; MNRF participation; and procedures around notifications for meetings. The WRACC members and the MNRF may have other suggestions on how to improve the Committee and its effectiveness. It is recommended that MNRF and the WRACC review the Terms of Reference and update operating practices to improve the effectiveness of the Committee (**Recommendation 1)**.

Members of the WRACC are generally satisfied with how WRFP is managing the Forest and commented that WRFP management has been very responsive to the Committee. Concerns were raised about rules regarding AOCs around water bodies and access controls. There was support for cutting to the shoreline to emulate natural disturbance patterns but there were questions around its interpretation.

Required opportunities were provided for the public to comment during the process. Comments from the public on the Phase 2 plan were quite limited but were appropriately documented by MNRF. Planning team members were available to the public. Several members of the public did express concerns with respect to access but were informed that those comments were more appropriately directed within the Crown land-use planning process being conducted in Wawa District.

The issue resolution process was not invoked during the preparation of the Phase 2 FMP (2008-2018). However, it was invoked during the preparation of Minor Amendment #6 in 2012 by a member of the public and an outdoor recreational organization. This was a proposed amendment for the establishment of new sections of a branch road and a connection of a branch road to Highway 631. The amendment also included gating and signing the branch road to restrict unauthorized public vehicular traffic and the establishment of boat caches. This amendment occurred in order to facilitate forest management operations and allow access for advanced exploration by a mining company.

While supportive of the road building activity, these parties were concerned with the access restrictions. Consultation with other parties indicated that the proposed amendment was the best way to find a workable compromise to satisfy WRFP, the mineral exploration company, and the tourism outfitter. It was recognized that a workable solution offered direct and indirect economic benefits to other entities such as the town of White River and Pic Mobert First Nation. The Regional Director supported the amendment as proposed. There appeared to be no solution that would have addressed the concerns of all the parties as the concerns of a few of the parties were completely opposite. Therefore, the Regional Director had no opportunity to resolve the issue, only to make a decision. All the required procedures for the issue resolution process were followed.

Access remains a somewhat contentious issue on the Forest, an issue noted in previous independent forest audits. Over the last few years, Wawa District has moved land-use considerations from forest management to, more appropriately, land-use planning through its Crown Land Use Atlas Harmonization process. While that exercise has not been fully completed, it has generally removed access issues out of

forest management planning (with the notable exception of the issue resolution process discussed above).

Letters of invitation to participate in Phase 2 planning for the 2008-2018 FMP were sent to the Pic Mobert First Nation, Ojibways of the Pic River First Nation, Michipicoten First Nation, Missanabie Cree First Nation, Métis Nation of Ontario, and Red Sky Métis Independent Nation. The audit team contacted all the First Nations and Métis groups and discussions were held with Pic Mobert, Pic River, Missanabie Cree, and the Red Sky Métis Independent First Nations. Michipicoten First Nation and Métis Nation of Ontario did not indicate a meeting or interview was required.

Pic Mobert First Nation is located within the White River Forest and has an equity interest in WRFP. A sizeable component of the workforce at WRFP comes from the community and a Band-owned logging operation is one of the main harvesters on the Forest. Pic Mobert actively participated in the Phase 2 FMP and attended planning team meetings. There were no issues noted with respect to impacts on resource values. Issues with one trapper were resolved. Two formal community meetings on the FMP were held in the community.

The Ojibways of Pic River are located near Marathon and have focused their efforts on forests to the west, although they maintain traditional land within the White River Forest. Pic River has an active lands and resources department and does have Band members assigned to participate on the planning team and the WRACC. A community meeting on the Phase 2 FMP was held in the community in 2011. There was no indication of concern with respect to the FMP.

Michipicoten First Nation, located near Wawa, did not indicate any concerns with respect to the Phase 2 FMP. Michipicoten did send a representative to planning team meetings and one community open house was held in the community.

During the term of the audit, the interests of the Missinabie Cree First Nation with respect to the White River Forest have been less certain. The Missinabie Cree First Nation does not have a Reserve, but is a First Nation recognized by the Government of Canada. Information provided on the Missinabie Cree website has indicated that they have been working towards re-establishing a home community within their traditional territory near Missinabie Lake, which is in the Chapleau Crown Game Preserve. The Missinabie Cree are currently based in the Sault Ste. Marie/Garden River area of Ontario and are a member of Mushkegowuk Tribal Council (signatories to Treaty #9). Neither Phase 1 nor Phase 2 of the FMP provided an explanation as to why the Missinabie Cree First Nation had an interest in the White River Forest, nor was there any documentation of a specific issue or interest. At the time of the audit, the new Chief was not aware of correspondence about the White River Forest with his community; however, examination of MNRF records indicated letters were sent to the community. Turnover within MNRF and the Missinabie Cree have contributed to this uncertainty.

Following the field audit, the MNRF proactively addressed the uncertainty with respect to the Missinabie Cree. The MNRF has now confirmed that Missanabie Cree First Nation is considered an adjacent community to the White River Forest. Missanabie Cree First Nation has not indicated a specific interest in the White River Forest management planning process or operations; however, they wish to be included in FMP public consultation mail outs and kept on the FMP mail list for the White River Forest, which is considered notification. If Missanabie Cree First Nation feels there is any specific interest to their community, they would need to advise MNRF of any request for customized Aboriginal consultation.

Pic Mobert, Pic River, Michipicoten, and Missinabie Cree First Nations were provided with an opportunity to develop a consultation approach unique to their communities. These communities were also invited to designate a representative to the planning team and to review and update the Aboriginal Background Information Report and the Identification of Aboriginal Values. Pic Mobert, Pic River, and Michipicoten First Nations participated in the Phase 2 FMP with varying degrees of involvement. The level of involvement appeared to have been appropriate to the interests and concerns of the First Nations.

Both Pic Mobert and Pic River indicated that while consultation with MNRF was significant in the early part of the audit term, it has been largely absent in 2013 and 2014. This coincided with MNRF not having the Forest Resource Liaison position staffed within the District. Both communities indicated that they generally did not know who worked at MNRF anymore. At the time of the audit, there were no pressing issues from either community. From the perspective of the audit team this situation, while not desirable, was tolerable (MNRF filled the Forest Resource Liaison staff position just prior to the field portion of the audit). The lack of MNRF interaction had less consequence because the community and key individuals were participating as an active shareholder in WRFP.

Pic Mobert First Nation plays a substantial role within WRFP and the First Nation spoke very positively about their relationship with the Company. Pic Mobert did raise two issues of economic concern. The first was that the Crown is sending them invoices for wood that was apparently cut and delivered to James River Marathon but stumpage was never paid by the Company. Pic Mobert is requesting that the stumpage be waived. The second issue is that Pic Mobert currently harvests wood for WRFP in a business-to-business relationship but they have no form of tenure for the wood. While their current relationship is very positive with WRFP, they are interested in obtaining an overlapping license. Both of the above issues are not related to WRFP and are issues the MNRF would need to address. Pic Mobert was uncertain of who to raise these issues with in the absence of MNRF staff. Progress on addressing either, or both issues, would significantly increase the benefits for Band members on this Forest. Addressing the stumpage question would eliminate an issue that might financially hamper the existing operation. Addressing the tenure issue may help to establish a more sustainable long term future for the logging operation **(Recommendation 2)**.

4.3 Forest Management Planning

The audit focused on the production and, given the absence of operations, limited implementation of Phase 2 of the FMP. The operational planning for Phase 2 was completed under the responsibility of WFRP for SFL #550399.

As stated in Section 2, page A-73 of the Forest Management Planning Manual (FMPM), any approved access, harvest, renewal, and tending operations for the first five-year term that were not completed during the first five-year term remain approved for implementation during the second five-year term, with no further planning requirements. Given the reduced operations through Phase 1 of the FMP, the bulk of the content of the Phase 2 plan revolved around updates of the previously approved items.

The planning team was well staffed and worked well through the Phase 2 plan. All background information was available. The biggest issue affecting the plan was a lack of a market for poplar. With the exception of veneer quality wood, there was simply nowhere to sell any other hardwood products.

Three different OMNR biologists and two different foresters from the District participated on the team, which led to some inconsistencies and repeated work. The operational review did not result in any new or revised silviculture ground rules (SGR). Virtually the entire Phase 1 allocation was rolled into Phase 2. Phase 2 allocations were planned well.

The assumptions used in the Phase 2 modeling were consistent with field conditions observed. Forest operations prescriptions were found to be consistent with the SGRs and the direction provided in the FMPM. There were no salvage operations required. Road planning was well documented. Planning corridors were logical and reasonable.

Eleven amendments have been implemented since 2008, including one minor amendment. The minor amendment went through public consultation as required. The level of amendments was appropriate given the level of activity. Annual work schedules (AWS) were complete and approved. Most plan revisions were for water crossings and crossing replacements. None of these were related to new values.

The Phase 2 FMP for the White River Forest generally did an excellent job of modifying the AOC prescriptions from the Phase 1 plan and developing additional AOCs and Conditions on Regular Operations (CROs) to reflect the new direction in MNRF's Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (the Stand and Site Guide) (OMNR 2010), and older direction from other forest management guides. The MNRF had reviewed all available information during the development of the Stand and Site Guide with a view to ecological effectiveness and ecological and economic efficiency; the prescriptions for non-timber values in the Phase 2 FMP for the White River Forest reflect this state of knowledge. No exceptions to the Stand and Site Guide were identified in the Phase 2 FMP.

A wide variety of AOCs was included in the Phase 2 FMP, consistent with the Stand and Site Guide and other forest management guides (e.g., AOCs for stream crossings and working around water in harvest blocks; species-specific AOCs for species at risk; AOCs for a variety of stick nesting birds and cavity-nesters; AOCs for tourism areas; and CROs for dens, small songbird nests, rich lowland swamps, wetlands, and other values). Instead of identifying specific moose emphasis areas as permitted in the Stand and Site Guide, the planning team opted to provide additional protection to some moose aquatic feeding areas.

The audit team identified only one omission in the AOC package: the northern harrier is relatively common in the region and could be nesting on the ground in clearcuts that are subject to renewal treatments in the White River Forest, but the prescription for ground-nesting raptors in the Stand and Site Guide was not incorporated into the Phase 2 FMP. Although a prescription could be developed once a nesting site is found, the audit team believes that including a prescription in the AOC package beforehand would raise awareness among operators and increase the probability of nests being observed**.**

The Stand and Site Guide encourages specific amounts of thoughtfully planned, carefully implemented shoreline harvesting, where it will not conflict with other values or ecological functions, to better emulate the patterns of disturbance around water on natural landscapes. The Phase 2 FMP included a series of AOC prescriptions that attempted to reflect the direction in the Stand and Site Guide but the prescriptions in the FMP were complicated. It was unclear whether certain aspects had been incorporated, such as varying the percentage of shoreline available for harvesting according to the size of the water body, the sort of adjustments that were made based on slope, and exactly what activities were

allowed around water. Prescriptions that are incorporated into a document that is offered to the public and First Nations for comment during its development, and that serves as a record of what is happening in the Forest, should be clear and understandable.

The Phase 2 FMP summary stated that areas available for modified shoreline harvesting as a result of implementation of the Stand and Site Guide "were reverted to reserve areas as the modified harvesting was deemed impractical or too risky to implement". However, the nature of this risk is unclear as the harvesting that was observed was well done (Section 4.4) and the ecological "risk" associated with Stand and Site Guide prescriptions was already taken into account during development of the Stand and Site Guide. A key purpose of direction from the Guide is to assist managers to produce managed stands that emulate natural stands to the extent possible, thereby conserving biological diversity. Some amount of shoreline disturbance is necessary to create habitat for the many species that are directly or indirectly dependent on shoreline disturbances, beaver ponds, and intolerant hardwood forest or young forest adjacent to water (OMNR 2010, background and rationale document). Based on discussions with the SFL holder and MNRF, the audit team believes there are more opportunities for shoreline harvesting in the White River Forest that could be identified and implemented through the Phase 2 FMP, consistent with direction in the Stand and Site Guide.

The audit team has issued a single recommendation that targets three improvements to AOC management. The recommendation requires the Company to ensure that an AOC or CRO be developed for ground nesting raptors (such as the northern harrier), that the AOC prescription for shoreline harvest be written in a manner that is clear and understandable, and that the Company and MNRF identify areas where shoreline harvesting can be conducted to better emulate natural disturbance objectives (**Recommendation 3).**

4.4 Plan Assessment and Implementation

During their examination of the field operations, the audit team assessed the appropriateness of the FMP in describing the field conditions, whether field implementation of the FMPs reflects the direction and assumptions asserted in each respective FMP, and whether the areas where actual operations were undertaken reflect the eligibility and selection criteria listed in the plan. Overall, the auditors were satisfied that the White River Forest land base conditions encountered in the field closely reflected the descriptions embodied in the FMP texts.

Harvest operations were found to be well executed with good utilization and no evident site damage. Residual trees were well chosen and appropriate. All harvests were consistent with the forest operations prescriptions and the FMP. Wood utilization was fair but there was a great deal of aspen remaining in blocks after an aspen veneer harvest. This situation is well documented in the FMP and AWS and is consistent with the MNRF's Northeast Region Operations Guide for Marketability Issues.

The audit team assessed the implementation of a total of 20 AOCs or CROs in the field (Table 4.2, Appendix 4). Shoreline reserves were as prescribed on the operations maps and water was well protected, even in the two cases observed where cutting to the shoreline occurred. However, the prescriptions often appeared to be conservative compared to prescriptions in the Stand and Site Guide, and the Phase 2 FMP suggests the opportunities for shoreline harvesting are extremely limited (Phase 2 FMP Summary). Based on field observations during the audit, an assessment of the prescriptions in the FMP, and discussions with MNRF and Company staff, the audit team believes there are more opportunities for shoreline forest harvesting in the White River Forest that would better emulate

naturally disturbed stands (Recommendation 3). Phase 1 of the FMP recognized the value of shoreline disturbances and included an objective that encourages this practice where possible.

Figure 2. Aspen was left on the blocks as there was no market for OSB or pulp quality material.

Stream crossings were generally well done and consistent with MNRF direction (although there were a few maintenance issues). Road rights-of-way were narrowed near streams, as required. There was good retention of wildlife trees and residual patches in the cut blocks.

A stick nest was observed during the audit and it had been protected appropriately. The FMP includes a variety of prescriptions for stick nests consistent with the Stand and Site Guide. Stick nest identification can be difficult, however, and a refresher course in stick nest identification conducted by MNRF would help to increase the confidence of the staff of MNRF and the Company in the judgment calls they must make when such nests are encountered during operations. The particular nest viewed during the audit (Table 4.2, Appendix 4) might be a "value" as defined by the FMP, and there is a procedure in place for reporting new values to MNRF (Section 8.2.1.1 of the Phase 2 FMP). However, there was no record of this nest in MNRF's Natural Resource Values Information System (NRVIS) database. The Company and its contractors were doing an excellent job of implementing AOC portions of the plan in general, but the audit team believes some clarification is needed on the precise process to be followed when unoccupied nests of this sort are encountered. This observation supports the findings leading to Recommendation 3**.**

Free-to-grow assessments were undertaken using large-scale aerial photography. The audit team visited several of the sites assessed. Staff from MNRF have verified that the individual plot data are correct. The auditors found several large blocks (100 ha to 300 ha) where the entire block was declared free-growing with a mixedwood composition, when in fact there are several stands of relatively pure jack pine and aspen which should have been delineated **(Recommendation 4)**.

The renewal program was re-initiated in 2013-14 with 358 hectares planted. A total of 716,629 trees were planted including 390,566 jack pine trees (current year Jiffy® container trees), 139,232 black spruce trees, and 186,831 white spruce trees (both over-wintered Jiffy® container trees). Observations by the

audit team showed good survival of seedlings planted in the spring of 2013.

None of the planned seeding, mechanical, chemical, or slash pile burning site preparation was completed, nor was any chemical aerial tending or pre-commercial thinning completed. Reasons for the lack of renewal were primarily due to the extremely low harvest levels on the Forest. It was not feasible or economically viable to implement a very small renewal program, therefore renewal treatments were delayed until harvest operations resumed and a reasonable level of renewal activities could be completed.

4.5 System Support

Under the Independent Forest Audit Process and Protocol, an audit of system support is undertaken to determine whether the resources, staff, training programs, and activities are in place to support sustainable forest management and implementation of the approved FMP for the Forest.

In 2014, the White River Forest was certified to the FSC® boreal standard. The Independent Forest Audit Process and Protocol recognizes that FSC® certification requires companies to maintain a high level of commitment to staff and contractor training and awareness, to have detailed knowledge of legislation, and other technical knowledge respecting the performance of their duties. During the independent forest audit, it was confirmed that Company, contractor, and also MNRF staff were well qualified, competent, and knowledgeable. Both industry and MNRF staff had participated in relevant training and awareness programs to maintain or improve their level of competency over the audit period.

In 2014, MNRF reorganized the delivery of its programs through the districts and regions. During the audit, the District Manager described the new organizational chart proposed for Wawa District, including the complement of management and operations staff and their roles and responsibilities. The District intends to fill the vacancies in the chart, but numerous vacancies remained at the time of the audit. These must be filled to enable MNRF to carry out its role effectively as forest management activity increases in the White River Forest and the adjacent forests for which Wawa District is responsible **(Recommendation 5)**.

Under the Independent Forest Audit Process and Protocol, both MNRF and the WRFP must have information management systems in place to ensure that relevant documents are available and follow the required protocols. MNRF requires forest management documents to be submitted through their Forest Information Portal, and compliance reports must be submitted through their Forest Operations Inspection Program (FOIP) system. The Forest Information Portal enables MNRF to validate documents, identify errors and omissions, and report these to the Company for rectification. The FOIP system provides an organized, structured way for the Company and MNRF to file, distribute, and control compliance inspection reports. The MNRF forester was satisfied with the manner in which documents had been prepared and submitted by the Company over the audit period. For a variety of reasons, it was difficult, however, for MNRF to locate some records.

One audit team inspected sites on active haul roads and neither Company nor MNRF staff had functioning radios, which was surprising. The independent forest audit protocol does not address operational safety issues, so no recommendation can be raised. However, it was noteworthy and is, therefore, included here. It is note that the citizens of White River and surrounding communities routinely use the forest access roads without radios.

4.6 Monitoring

Compliance Monitoring

Compliance monitoring of activities in the White River Forest was conducted by certified inspectors from MNRF and the Company's contractor, who had three certified inspectors. Compliance staff from MNRF and those representing WRFP were working together well. Compliance reports were thorough and professional. Over the audit period, the Company maintained a good compliance record that appeared to accurately reflect performance in the field. Twenty AOCs or CROs were checked in the field during the audit and there were no unreported non-compliances discovered, with the exception of one washout on a road that had been left suspended in 2008.

The number of inspections conducted and reports produced was consistent with the level of activity in the White River Forest over the audit period (Table 3). Inspections performed by the Company increased as activity in the Forest increased. The compliance team from MNRF will have to increase their capacity to inspect to keep pace with increased activity in the Forest. This is expected to happen based on the organizational chart for the District and interviews with compliance inspectors. However, it had not happened by the time of the audit. This observation is addressed by Recommendation 5.

Table 3. Summary of compliance inspections conducted by the Company's contractor and MNRF over the audit period.

Year	Number of Compliance Reports			In Compliance	Not In Compliance
	Company	MNRF	Total		
2008-09	11	6	17	16	1
2009-10	0	9	9	9	0
2010-11	3	1	4	4	0
2011-12	10	2	12	12	0
2012-13	2	3	5	5	0
Total	**26**	**21**	**47**	**46**	**1**
2013-14	34	5	39	Too soon to assess	

The Forest Compliance Handbook (Procedure 07 - Forest Monitoring and Assessment FOR 07 02 04) requires MNRF to produce an annual district forest compliance plan that takes into account the licensee's forecast of activities for the year and explains how MNRF staff effort will be allocated among area forests. During the audit, MNRF located only one annual district compliance plan **(Recommendation 6)**.

Silvicultural Monitoring

The audit team noted that FTG assessments in Blocks 300 and 400 appear to have resulted in the amalgamation of separate, significantly large stands of pure poplar and pure conifer into even larger stands that were classified as mixedwoods based on overall composition of the larger blocks (Recommendation 4). Considering that the MNRF Forest Information Manual (MNRF 2007) specifies a minimum polygon size for productive forest of 8 ha, the practice of amalgamating stands would seem to

overestimate the proportion of mixedwoods and underestimate the proportion of pure conifer and pure poplar on the landscape. A completely new inventory would rectify this, but the inventory cycle for the White River Forest is such that the aerial photography for the new forest resources inventory (FRI) was taken years before the stands in question were declared FTG. This means that when finally received, the new FRI will have to be updated with the FTG information provided by the Company, including these large areas that were incorrectly typed as mixedwoods. The audit team believes this is an important issue because:

- accurate stand typing is needed to support the objective for the provision of cover types (forest units) and habitat supply in the current FMP (Phase 1) and the next FMP (Phase 2 - 2018);
- accurate stand typing is needed to facilitate realistic assessments of landscape composition when the Forest Management Guide for Boreal Forest Landscapes is applied in 2018.

The renewal and silvicultural success rates determined from the FTG assessment are in excess of 98% and 91%, respectively. The view of this excellent performance is tempered by the relatively small sample, and by the fact that MNRF has not completed independent assessment through silvicultural effectiveness monitoring. The silvicultural effectiveness monitoring program was effectively suspended through the audit period in response to reduced MNRF staff levels and minimal activity on the White River Forest. The auditors recommend that the District resurrect this program in the near term. **(Recommendation 7)**.

Annual Reports

Annual reports for the first four years of the 2008-2013 audit term were available for the auditors to examine. The 2012-2013 annual report was not due to be completed until after the audit. The reports met the guidance requirements. White River Forest Products was very attentive in meeting the annual report submission requirements for nearly all reports for which data was available during the entire audit term. The annual reports are well done. The level of analysis and commentary satisfactorily meets the applicable FMPM requirements.

4.7 Achievement of Management Objectives and Forest Sustainability

Forest sustainability is the overriding goal of the *Crown Forest Sustainability Act* (CFSA), the main piece of legislation governing forest management on Crown land in Ontario. The success of forest management activities in meeting that goal has been assessed in terms of meeting the objectives they were designed to achieve. By reviewing planning commitments as detailed in the 2008 and 2013 FMPs against achievements and analysis shown in Appendix 2, and as reported in the Trend Analysis - Year 10 Annual Report (Appendix 7), and observations during this audit, the auditors have assessed sustainability on the White River Forest.

All aspects of the Trends Analysis - Year 10 Annual Report have been completed in a satisfactory manner. The findings are consistent with observations made throughout this audit.

Observations made from harvest locations confirmed that utilization and harvesting practices were generally good to excellent, with the notable exception of poplar utilization. Logging damage to residual trees, regeneration, and skid trail coverage was minimal where observed on all sites and within the standards that have been established for the Forest. Overall implementation in terms of retention and

removal of appropriate trees (e.g., removing poor quality stems, retaining wildlife trees, and retaining sufficient basal area and diameter classes) exceeded minimum requirements.

The renewal program was effectively suspended for the audit period, with only 2.4% of the planned area planted. The auditors visited several sites where planned tending treatments had not been completed and were anticipating compromised results. This proved not to be the case. For example, Block 20 had been aerially seeded in the spring of 2007. The stand was FTG with well stocked conifer seven years later. The small sample does not suggest that silviculture was not missed but some stands, particularly those suited to jack pine, are resilient.

The auditors credit the previous SFL manager for leaving the Forest Renewal Trust fully funded. This has allowed WRFP to aggressively initiate a site preparation program beginning in the fall of 2012 and planting in the spring of 2013. The audit team notes MNRF was understaffed through the same period and failed to ensure implementation of the silvicultural program. This deficiency is part of the rationale supporting Recommendation 5.

Table 4 provides detail on the level of FTG survey effort and lists the degree of silvicultural success and regeneration success for each forest unit. This information assesses the effectiveness of renewal efforts from the previous audit period.

Table 4. Free-to-grow Survey Results on the White River Forest by Forest Unit (areas in ha).

Forest Unit	Total Area Forest Unit Assessed	Projected Forest Unit	Other Forest Unit	Total	Area Not Successfully Regenerated	Silviculture Success %[1]	Regeneration Success %[2]
BW1	255	157	62	219	36	14	85
LC1	11	0	11	11	0	0	100
MW1	17	16	1	17	0	94	100
MW2	67	45	22	67	8	67	100
PJ1	1,864	1,864	0	1,864	0	100	100
PJ2	110	106	4	110	0	96	100
P01	1,392	1,292	70	1,362	30	93	98
SB1	232	0	232	232	0	0	100
SF1	163	153	0	153	10	94	94
SP1	1,192	1,089	83	1,172	20	91	98
Total Forest	**5,310**	**4,722**	**484**	**5,206**	**104**		

[1]Silviculture success (%) shows stands that have been successfully renewed to the planned forest unit
[2]Regeneration success (%) shows stands that have renewed to an acceptable forest unit

In most cases, the silviculture and regeneration success rates are high. The view of this excellent performance is tempered by the relatively small sample, and by the fact that MNRF has not completed independent assessment through silvicultural effectiveness monitoring. As noted above, the auditors recommend that the District resurrect this program in the near term (**Recommendation 7).**

The measurable indicators of forest sustainability, created from the four objective categories in the FMP, have been monitored and reported on by WRFP. Appendix 2 shows the audit team's independent assessment of progress towards achieving those objectives.

Progress towards meeting the habitat and forest diversity objectives has been largely suspended since the 2008 FMP was issued. There was virtually no commercial harvest until the summer of 2012 and no significant natural depletions have occurred. The only measurable parameter of forest change has been growth, but this has not resulted in forest units moving into significantly different habitat types.

The explicit inclusion of Pic River First Nation and the town of White River as shareholders in WRFP and, by extension, as managers of the SFL is a notable accomplishment. The independent forest audit protocol does not measure the economic benefits of timber harvesting, but the collective interest in restarting the sawmill and management and operational programs on the Forest show the benefits are desirable. The investment required and associated risk is considerable. This investment, in the opinion of the audit team, reflects the large opportunity for economic benefit for shareholders in WRFP and the region.

Area of concern prescriptions have been effectively administered. They offer strong protection for defined ecological and cultural values in real time. Road construction and maintenance were judged to be effective. Road water crossings are a potential source of sedimentation into streams and are always the subject of particular attention from the auditors. Water crossings were found to be in good order and the aquatic values suitably protected. Operations adjacent to aquatic habitats were consistently within practice standards established for operations in riparian zones.

The auditors conclude that the ecological components of the White River Forest which are most likely to be influenced by forest operations are being managed in a sustainable manner. The creation of young forest and recent disturbances through operations had been suspended while the sawmill was closed. However, the restarting of the sawmill in White River will ensure that development of young forest and recent disturbances are back on track.

4.8 Contractual Obligations

The audit team reviewed the terms and conditions of SFL #550399.

White River Forest Products met its contractual obligations throughout the audit period.

Appendix 3 provides detailed comments on the performance of WRFP in achieving each of its stated contractual obligations.

4.9 Conclusions and Licence Extension Recommendation

Operations on the White River Forest have been severely restricted through the audit period so virtually all planned economic benefit was absent until the restart of the sawmill and commensurate harvest operations in the summer of 2012.

The auditors have concluded that the operational practices that have occurred since then are conducted in a highly effective manner.

The audit team was impressed with the commitment by the investors in WRFP, Company staff, Jack Fish River Management, and operational contractors to restart the sawmill and assume the obligations of the SFL. The positive economic impact of the restart on the town of White River is obvious.

The audit team concludes that management of the White River Forest was in compliance with the legislation, regulations, and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the SFL held by White River Forest Products Ltd. Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol. The audit team recommends the Minister extend the term of SFL #550399 for a further five years.

Appendix 1 - Recommendations

Independent Forest Audit – Record of Finding

Recommendation 1

Principle: 2 Public Consultation

Criterion 2.1.2 LCC purpose and activities

Procedure(s): Review and assess whether the LCC met the purposes and conducted its activities in accordance with the applicable FMPM

Background Information and Summary of Evidence: Quorum was not always obtained for WRACC meetings and this was a point of frustration for some members. While the majority of WRACC members are from White River, some need to travel from Marathon and Wawa. Some members have suggested that practical solutions such as proper notification and the use of conference call facilities would assist in addressing these problems.

Over the audit period, MNRF attended most of the WRACC meetings. MNRF was not always notified of the WRACC meetings. Some minutes of WRACC meetings were missing (March 2011 and earlier, October 2013 to March 2014). Staff turnover at MNRF and co-ordination with the WRACC's recording secretary have contributed to this situation.

All the WRACC members indicated that the Committee is run in a fair and inclusive fashion and everyone can freely express their personal views.

The WRACC was actively involved in the Phase 2 planning team and involves itself in issues in the Forest. The WRACC actively participated in the categorization of a minor amendment that occurred during the term of the audit. This is an active LCC.

The WRACC members were not very cognizant of the Terms of Reference and could not really comment on whether they are followed.

Discussion: The WRACC is generally operating in an effective manner but it is unusual for there to be issues with the maintenance of minutes, meeting notification, and awareness of the Committee's Terms of Reference. The Committee itself works, but the system supporting it has notable deficiencies.

Conclusion: The operating terms of the Committee should be reviewed.

Recommendation 1: It is recommended that MNRF and the White River Area Co-management Committee review the Terms of Reference and update operating practices to improve the effectiveness of the Committee.

Independent Forest Audit – Record of Finding

Recommendation 2

Principle: 2 .5 Aboriginal Involvement in Forest Management Planning

Criterion : 2.5.2 Participation of Aboriginal peoples in the benefits provided through forest management planning

Procedure(s): Review and assess whether reasonable efforts were made to engage each Aboriginal community in or adjacent to the management unit in forest management planning as provided by the applicable FMPM and assess the resulting involvement and consideration in the plan or amendment

Background Information and Summary of Evidence: Pic Mobert First Nation is located within the heart of the White River Forest and is a significant equity holder within WRFP. A sizeable component of the workforce at WRFP comes from the community and a Band-owned logging operation is one of the main harvesters on the Forest. White River Forest Products and Pic Mobert are also in discussions about providing funds for social programs in the community that are based on volumes of wood to be cut on the Forest.

Discussions held with Pic Mobert indicated a very positive working relationship with WRFP.

Pic Mobert did raise two issues of economic concern. The first was that the Crown is sending them invoices for stumpage for wood that was apparently cut and delivered to James River Marathon but never paid by the Company. Pic Mobert is requesting that the stumpage be waived.

The second issue is that Pic Mobert currently harvests wood for WRFP in a business-to-business relationship but they have no form of tenure for the wood. While their current relationship is very positive with WRFP, they are interested in obtaining an overlapping licence. Both of the above issues are not related to WRFP and are issues the MNRF would need to address. Pic Mobert was uncertain of who to raise these issues with since MNRF has not had staff in place for a couple years.

Discussion: Progress on addressing either, or both, issues would constitute measurable ways in which MNRF could implement ways of achieving more equal participation in the benefits provided through forest management planning for Aboriginal peoples. Addressing the stumpage question would eliminate an issue that might financially hamper the existing operation. Addressing the tenure issue may help to establish a more sustainable long-term future for the logging operation.

Conclusion: MNRF must meet with Pic Mobert First Nation and resolve the outstanding issues with respect to stumpage obligations and the opportunity for developing long term tenure opportunities on the White River Forest.

Recommendation 2: The MNRF must meet with Pic Mobert First Nation and resolve outstanding issues with stumpage obligations and explore the opportunity for developing long term tenure opportunities on the White River Forest.

Independent Forest Audit – Record of Finding

Recommendation 3

Principle: 3 Forest Management Planning

Criterion 3.5.2 FMP area of concern (AOC) prescriptions

Procedure: Review the AOC prescriptions and assess whether

- adequate information was available for AOC planning
- documentation of AOCs and any related issues meets the applicable FMPM requirements including whether
    - planning of AOCs followed approved forest management guides
    - planning of AOCs included environmental analysis of alternatives that would support protection of the values (where alternatives are required of the applicable FMPM)
    - public comments were summarized and considered
    - specific prescriptions for planned harvest, renewal and tending activities are appropriate to protect the values
    - any exceptions to forest management guides were approved, appropriate in the circumstances and accompanied by an appropriate effectiveness monitoring program

AOCs were identified on maps including the selected prescription where practical.

Background Information and Summary of Evidence: A total of 20 AOCs and CROs were checked in the field during the audit, including 6 AOCs established around the shorelines of water bodies, 7 AOCs at crossings, 1 AOC established around a stick nest, and 6 harvested areas where CROs for residual wildlife trees were retained. Water was well protected, including cases where harvesting had occurred to the shoreline in accordance with prescriptions in the FMP. Crossings were well done and generally well maintained. Two partly plugged culverts on active roads will eventually need maintenance to clear debris or beaver dams but were functioning during the audit, and one culvert was too long by current standards but was functioning well.

The Phase 2 FMP generally did an excellent job of modifying AOC prescriptions and developing additional CROs based on new direction from MNRF in the Stand and Site Guide, with only three issues noted.

Discussion: The issues noted during the audit are as follows:

(a) The Stand and Site Guide includes a prescription for ground-nesting raptors (such as the northern harrier and short-eared owl) and vultures, but there was no similar prescription in the Phase 2 FMP for the White River Forest. Since harriers are relatively common and could be nesting on clearcuts that are subject to renewal treatments in the Forest, it would make sense for the Phase 2 FMP to include a prescription for ground-nesting raptors. A prescription could be developed once a nesting site is found, but including it in the AOC package beforehand would raise awareness among operators and increase the probability of nests being observed.

(b) The Stand and Site Guide encourages specific amounts of thoughtfully planned, carefully implemented shoreline harvesting where it will not conflict with other values or ecological functions, to better emulate the patterns of disturbance around water on natural landscapes. The FMP included a series of AOC prescriptions that tried to reflect this direction in the Stand and Site Guide but the prescriptions in the FMP were complicated and it was unclear whether certain aspects had been incorporated, such as varying the percentage of shoreline available for harvesting according to the size of the water body, the sort of adjustments that were made based on slope, and exactly what activities were allowed around water. Prescriptions that are incorporated into a document that is offered to the public and First Nations for comment during its development, and that serves as a record of what is happening in the Forest, should be clear and understandable.

(c) The Phase 2 FMP summary stated that areas available for modified shoreline harvesting as a result of implementation of the Stand and Site Guide "were reverted to reserve areas as the modified harvesting was deemed impractical or too risky to implement". However, the nature of this risk is unclear as the harvesting that was observed was well done (see above) and the ecological "risk" associated with Stand and Site Guide prescriptions was already taken into account during development of the Stand and Site Guide. A key purpose of direction from the Guide is to assist managers to produce managed stands that emulate natural stands to the extent possible, thereby conserving biological diversity. Some amount of shoreline disturbance is necessary to create habitat for the many species that are directly or indirectly dependent on shoreline disturbances, beaver ponds, and intolerant hardwood forest or young forest adjacent to water (OMNR 2010, background and rationale document). Based on discussions with the SFL holder and MNRF, the audit team believes there are more opportunities for shoreline harvesting in the White River Forest that could be identified and implemented through the Phase 2 FMP, consistent with direction in the Stand and Site Guide.

Conclusion: Three recommendations related to AOCs or CROs are warranted.

Recommendation 3:
i. The Company should ensure that an area of concern prescription or condition on regular operations for ground-nesting raptors is included in the forest management plan and annual work schedules.

ii. The Company and MNRF must ensure that the shoreline area of concern prescriptions (RHZ-1 to RHZ-4) incorporated in the forest management plan are clear and understandable.

iii. The Company and MNRF should identify areas where shoreline harvesting can be conducted to better emulate natural landscape patterns at the stand scale, consistent with direction in the Stand and Site Guide.

Independent Forest Audit – Record of Finding

Recommendation 4

Principle 4: Plan Assessment And Implementation

Criterion 4.4 Renewal

1. Procedure: In the conduct of the field audit examine areas of the FMP that can be assessed in the field and assess whether the FMP was appropriate in the circumstances. Include consideration of:

- description of geology, soils, sites and historic forest condition
- FRI update e.g. actual depletions and accruals
- FRI e.g. stand descriptions, FEC types
- other parameters of current forest condition
- other forest resources dependent on forest cover
- values maps
- modeling assumptions
- SGRs e.g. overall relevance to management unit as seen in the field (all being implemented as per management alternative/strategy or portion, is planned reflective of field application)
- proposed harvest, renewal and tending areas for consistency with eligibility and selection criteria

Background Information and Summary of Evidence: The audit team noted that FTG assessments in Blocks 300 and 400 appear to have resulted in the amalgamation of separate, significantly large stands of pure poplar and pure conifer into even larger stands that were classified as mixedwoods based on overall composition of the larger blocks. Considering that the MNRF Forest Information Manual (OMNR 2007) specifies a minimum polygon size for productive forest of 8 ha, the practice of amalgamating stands would seem to overestimate the proportion of mixedwoods and underestimate the proportion of pure conifer and pure poplar on the landscape. A completely new inventory would rectify this, but the inventory cycle for the White River Forest is such that the aerial photography for the new FRI was taken years before the stands in question were declared FTG. This means that when finally received, the new FRI will have to be updated with the FTG information provided by the Company, including these large areas that were incorrectly typed as mixedwoods.

Discussion: Accurate stand typing is needed to support the objective for the provision of cover types (forest units) and habitat supply in the current FMP (Phase 1) and the next FMP (Phase 2 - 2018) as well as supporting realistic assessments of landscape composition when the Forest Management Guide for Boreal Forest Landscapes is applied.

Conclusion: The 2012 FTG assessment should be reviewed.

Recommendation 4: White River Forest Products should review the 2012 free-to-grow assessment areas to ensure that stand descriptions are consistent with ground conditions. Priority should be placed on large mixedwood stands which may contain a number of hardwood and softwood stands within them.

Independent Forest Audit – Record of Finding

Recommendation 5

Principle: 5 System Support

Criterion 5.1 Human Resources

1. Review and assess, including through interviews, the organization's commitment to awareness, education and training programs and whether individuals involved in the SFM system are current with legislation, industry and government regulatory requirements and standards, and the organization's policies and objectives specific to their responsibilities. Include consideration of

- extent of communication by the organization to employees (MNR or SFL holder), subcontractors, overlapping licensees
- adequacy and comprehensiveness of overall training program (i.e. planned training or ad hoc)
- nature, extent and periodicity of training courses and degree to which competence or knowledge is determined
- review training courses attended
- examine employee lists and responsibilities to determine how they relate to their education or training and associated credentials
- interview employees to determine accessibility of training, extent of continuous education program and sponsorship by the organization
- adequacy of training delivered to subcontractors and overlapping licensees
- employees, subcontractors, and overlapping licensees awareness of duties

Background Information and Summary of Evidence: In 2014, MNRF reorganized the delivery of its programs through the districts and regions. During the audit, the District Manager described the new organizational chart proposed for Wawa district, including the complement of management and operations staff and their roles and responsibilities. The District intends to fill the vacancies in the chart, but numerous vacancies remained at the time of the audit. These must be filled to enable MNRF to carry out its role effectively as forest management activity increases in the White River Forest and the adjacent forests for which Wawa District is responsible.

Discussion: The audit period represented an extraordinary period during which industrial operations on the White River Forest were largely suspended. During most of that period, the Wawa District operated with just over half of its allocated staff complement. Staffing was deferred as MNRF reorganized, and the staff on site clearly worked to meet mandatory obligations. However, annual compliance reports, silvicultural effectiveness monitoring, management of the renewal program in the absence of an active SFL manager, and compliance inspections were not completed. The auditors view these as indicators of MNRF failing to meet its minimum commitment to monitoring activity on the Forest. Corporate MNRF must ensure District staffing is not allowed to fall to these levels in the future.

Conclusion: Regional MNRF must ensure District staffing is maintained at an operationally effective level.

Recommendation 5: Regional MNRF must ensure Wawa District maintains a staffing level that enables fulfillment of their operational and regulatory mandate.

Independent Forest Audit – Record of Finding

Recommendation 6

Principle: 6 Monitoring

Criterion 6.1 To review and assess whether an MNRF compliance program has been developed and implemented to effectively monitor program compliance in accordance with MNRF manuals, policies and procedures.

Procedure(s): 6.1.1 Review the MNRF District Compliance Plans in place during the term of the audit (consider FMP - criteria 3.5.11 and 3.9.10 as well) to determine how forest management activities were to be monitored for compliance by MNRF and assess whether the actual level of the overall monitoring program was in accordance with the FMP/plans and whether it was appropriate based on evidence gathered through analysis of related criteria, including field audits. Consider Principle 4 which includes an examination of MNRFs compliance information system.

Background Information and Summary of Evidence: MNRF filed 26 compliance reports for the White River Forest from 2008 to 2014 in the FOIP system. Based on field sampling of AOCs, harvested areas, renewal areas, road building and maintenance, and water crossing installations in the White River Forest (see Table 3), as well as the review of the compliance reports and interviews with industry and MNRF staff, the auditors concluded that the Ministry has provided an effective oversight role over the audit period. However, Forest Compliance Handbook Procedure 07 - Forest Monitoring and Assessment FOR 07 02 04 states that MNRF must produce an annual district forest compliance plan that takes into account the licensee's forecast of activities for the year and explains how MNRF staff effort will be allocated among forests. Wawa District MNRF located only one annual compliance plan during the audit.

Discussion: The Company/MNRF compliance program proceeded well during the audit period without the aid of more than one MNRF annual compliance plan. However, operations in the White River Forest were relatively few and MNRF's compliance team will have to increase their inspections as forest management activity in the Forest increases. An annual compliance plan will become increasingly important.

Conclusion: A recommendation is warranted.

Recommendation 6: The MNRF must produce an annual district forest compliance plan that takes into account the licensee's forecast of activities for the year and explains how MNRF staff effort will be allocated among area forests.

Independent Forest Audit – Record of Finding

Recommendation 7

Principle: 6 Monitoring

Criterion 6.3 To review and assess whether an effective program exists to assess area that is successfully regenerated to the projected forest unit (silvicultural success) or to another forest unit (regeneration success) in accordance with the applicable FMPM, FIM, FOSM and SEMMO.Procedure: Assess whether the management unit assessment program (SFL and District) is sufficient and is being used to provide the required silviculture effectiveness monitoring information including whether it

- assesses overall effectiveness of treatments, including those that are exceptions to silvicultural guides i.e. documented program, survey methodology such as survival, stocking, free-to-grow surveys, records, use and evaluation of results e.g. appropriateness of treatment for actual site conditions, area regenerated to the projected forest unit (silvicultural success) or to another forest unit (regeneration success)
- determines the need for and the type of remedial action required if an area is not successfully regenerated (e.g. in fill plant, tending)
- assesses reasons where eligible areas are not determined to be successfully regenerated to the projected forest unit (silvicultural success)

Background Information and Summary of Evidence: The renewal and silvicultural success rates determined from the FTG assessment are in excess of 98% and 91%, respectively. The view of this excellent performance is tempered by the relatively small sample, and by the fact that MNRF has not completed independent assessment through silvicultural effectiveness monitoring. The silvicultural effectiveness monitoring program was effectively suspended through the audit period in response to reduced MNRF staff levels and minimal activity on the White River Forest. The auditors recommend that the District resurrect this program in the near term.

Discussion: There has been no MNRF oversight of FTG assessments on the White River Forest in four years. This reflects the lack of renewal activity on the Forest but the program should be resurrected.

Conclusion: District MNRF must implement a silvicultural effectiveness monitoring program on the White River Forest.

Recommendation 7: District MNRF must implement a silvicultural effectiveness monitoring program on the White River Forest.

Appendix 2 – Management Objectives Table

<table>
<tr><th>Objective</th><th>Auditor Assessment</th><th>Auditor comments</th></tr>
<tr><td>Forest Diversity</td><td></td><td></td></tr>
<tr><td>Move towards a distribution of disturbances that more closely resembles the expected natural disturbance template</td><td>Partially achieved</td><td>
<table>
<tr><th>Area distribution of NDPEG forest disturbances (ha)</th><th>Plan start level (%)</th><th>Target (%)</th><th>Assessment</th></tr>
<tr><td><100</td><td>4.1</td><td>4.7-5.4</td><td>Target not achieved</td></tr>
<tr><td>101-200</td><td>2.9</td><td>4-7</td><td>Target achieved</td></tr>
<tr><td>201-500</td><td>5.5</td><td>0-1</td><td>Target achieved</td></tr>
<tr><td>501-1,000</td><td>8.5</td><td>0-3</td><td>Target achieved</td></tr>
<tr><td>1,001-5,000</td><td>16.2</td><td>2-12</td><td>Target not achieved</td></tr>
<tr><td>5,001-10,000</td><td>6.5</td><td>5-14</td><td>Target achieved</td></tr>
<tr><td>>10,000</td><td>56.3</td><td>62-82</td><td>Target not achieved</td></tr>
</table>
The absence of harvest as a tool for creating new disturbance patterns has minimized the opportunity for achieving this objective. No significant natural disturbances have occurred through the audit period. The Forest remains where it was at the start of the 2008 FMP, with three of seven categories falling outside of the target range. Most planned operations fall within the 100-1,000 ha size categories. It is unlikely that progress in increasing the percentage area in the <100 ha, or reducing the area in the 1,001-5,000 ha and >10,000 ha, will be influenced by harvest operations. The assessment of NDPEG disturbances as a frequency function shows all but the 5,001-10,000 ha categories are within targets.
</td></tr>
<tr><td>To maintain the area of forest cover types that would occur naturally on the White River Forest, similar to the expected natural landscape dynamics</td><td>Achieved</td><td>Cover type has not changed since the beginning of the audit term. Re-starting the White River sawmill will ensure that progress toward producing recent disturbances and young forest is back on track.</td></tr>
<tr><td>To provide for a forest age class structure that maintains mature and over-mature ecosystem conditions, similar to the expected natural landscape dynamics</td><td>Achieved</td><td>
<table>
<tr><th>Total area by forest unit</th><th>Plan start</th><th>Target (75% of natural)</th></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td>Bw1</td><td>78976</td><td>59232</td></tr>
<tr><td>Lc1</td><td>16376</td><td>12282</td></tr>
<tr><td>Mw1</td><td>19598</td><td>14669</td></tr>
<tr><td>Mw2</td><td>51387</td><td>38540</td></tr>
<tr><td>Pj1</td><td>86021</td><td>64516</td></tr>
<tr><td>Pj2</td><td>38000</td><td>28500</td></tr>
<tr><td>Po1</td><td>78843</td><td>59132</td></tr>
<tr><td>Sp1</td><td>41856</td><td>31392</td></tr>
<tr><td>Sf1</td><td>21561</td><td>16171</td></tr>
<tr><td>Sb1</td><td>67670</td><td>50573</td></tr>
</table>
Virtually no harvest or natural disturbance has occurred so no changes are documented since the beginning of the 2008 planning term. This will be better assessed at the end of the next term when planned operations target near full utilization of the 10-year allocations and the new FRI will provide an updated assessment of forest units. Assessment of mature and over-mature area by forest unit is similarly
</td></tr>
</table>

		challenged. Given that existing and natural levels of mature and over-mature cover were equivalent at the start of the 2008 term, these targets can be deemed to be met.
To maintain wildlife habitat for species dependent on over-mature forest conditions on the White River Forest	Partially Achieved	Virtually no harvest or natural disturbance has occurred so changes in habitat supply are restricted to growth and natural disturbance. The reduced timber harvest for the five-year period does not have a measurable effect on the provision of mature habitat, but it does suspend progress in creating early successional habitat. Re-starting the White River sawmill will ensure that progress toward producing recent disturbances and young forest is back on track. This will be better assessed at the end of the next term when planned operations target near full utilization of the 10-year allocations and the new FRI will provide an updated assessment of forest units. Given that existing habitat levels were deemed equivalent to the natural levels for the first planning term, all targets have been achieved for the audit period.
To maintain wildlife habitat for forest dependent provincially and locally featured species on the White River Forest	Partially Achieved	Little natural disturbance has occurred so no changes are documented since the beginning of the 2008 planning term. This will be better assessed at the end of the next term when planned operations target near full utilization of the 10-year allocations and the new FRI will provide an updated assessment of forest units. Given that existing habitat levels were deemed equivalent to the natural levels for the first planning term, all targets have been achieved for the audit period.
To maintain 10% to 20% of the forest which has the capacity to produce marten habitat in suitable conditions in core areas	Achieved	Plan start level = 11% Desirable level = 10-20% Virtually no harvest or natural disturbance has occurred so no changes are documented since the beginning of the 2008 planning term. This will be better assessed at the end of the next term when planned operations target near full utilization of the 10-year allocations and the new FRI will provide an updated assessment of forest units. Given that the documented core area was within the desirable level of existing habitat at the start of the 2008 FMP, the target has been achieved for the audit period.
To provide early successional shoreline forest habitat similar to what would be created during natural disturbance events, during the plan term	Not achieved	No shoreline areas were harvested in the audit period.
To maintain wildlife habitat for forest dependent wildlife species at risk with known occurrence on the White River Forest	Achieved	Great grey owl habitat (35,403 ha) (which is no longer listed as "at risk" in Ontario) is the only feature tracked. It has been deemed unchanged since the start of the 2008 FMP, and as with other habitat objectives, is likely to be meaningfully verified when assessed against the news FRI. A second indicator for this objective addresses species at risk. All species at risk AOC prescriptions have been implemented on operational areas where warranted.

To reduce the use of pesticides while maintaining forest productivity	Achieved	No pesticides were used during the last term.
To ensure maintenance of riparian zones, water quality, and habitat for fisheries resources adjacent to water bodies where forest management activities occur	Achieved	Reduced activity offered reduced opportunity for riparian interaction. However no significant issues were noted on compliance inspections or through the field audit.
Silviculture		
To ensure the successful renewal of harvested stands	Achieved	Target was to assess 100% of the area and 98% of that has been assessed as FTG. No FTG assessment has been carried out yet on the small area harvested during the audit period, although post-harvest assessments have been conducted to support silvicultural planning.
Social and Economic – Community Well Being		
To ensure there are enough roads in place to allow for effective and efficient forest operations while also limiting Company and MNRF liability for roads that are no longer required	Achieved	Roads have been adequate for the limited harvest completed. The Company and the MNRF have confirmed respective responsibility for inactive roads. Area accessible by road has been estimated at 0.005% of the Forest.
Implement forest operations in a manner that minimizes conflicts with non-timber resource users, and protects non timber values, in order to provide the opportunity to benefit from the Forest	Achieved	No non-compliances were issued relating to non-timber or tourism AOCs.
To provide a continuous, predictable and economical supply of quality timber products required by wood processing facilities that received wood from the Forest	Partially Achieved	The supply was available but not utilized. No mill delivery indicators were met.
To minimize the impact of forest operations on cultural heritage values	Achieved	No non-compliances for cultural heritage AOCs were reported in the audit period or observed on the field audit, nor were any complaints received by the audit team during consultations.
To undertake all forest management operations using sound environmental practices such that any negative environmental impacts are avoided or minimized	Achieved	One non-compliance was issued regarding a water crossing installed outside the acceptable time period. There were no other non-compliances with adverse environmental impacts issued during the audit term.
Maintain the area of managed Crown productive forest available for timber production at the highest possible level by minimizing conversion of managed Crown forest to non-forest land	Achieved	No loss of productive land was observed during the audit period.
To provide for First Nation involvement in forest management planning activities	Achieved	Each of the four First Nation communities with a demonstrated interest in the Forest had involvement, ranging from the shareholder status of Pic Mobert in WRFP and the SFL to less intense involvement from others. MNRF contact with First Nations was notably absent for much of the audit period.

To encourage and support the participation of the LCC (WRACC) in the development of the FMP for the White River Forest	Achieved	Interviews with the WRACC showed a reasonable level of participation in forest management planning, although Recommendation 1 shows a need for improvement. The Company's participation and support for in the WRACC was evident.
To improve forest operations compliance for the White River Forest.	Achieved	The low level of operations reduces the integrity of the assessment of this objective. However, only one non-compliance was issued.

Source: FMP -6 WRF FMP 08-04-17

Appendix 3 – Compliance with Contractual Obligations

Licence Condition	Licence Holder Performance
Payment of Forestry Futures and Ontario Crown charges	Payments by WRFP are up to date as of March 31, 2014.
Wood supply commitments, memoranda-of-agreement, sharing arrangements, special conditions	Appendix E shows the SFL is directed to provide Columbia Forest Products and Weyerhaeuser Company Limited with volume. Weyerhaeuser was shut down throughout the audit period and received no volume. Columbia received a total of 389 m^3 through the audit period.
Preparation of FMP, AWS, and annual reports; abiding by the FMP, and all other requirements of the FMPM and CFSA	Preparation of the FMP, AWS, and annual reports were completed in accordance with the requirements of the FMPM.
Conduct inventories, surveys, tests and studies; provision and collection of information in accordance with the Forest Information Manual	WRFP has met the requirements of the Forest Information Manual.
Wasteful practices not to be committed	The auditors did not observe wasteful practices other than those reported in compliance reports. In general, harvest sites were clean of industrial garbage and utilization was very good.
Natural disturbance and salvage SFL conditions must be followed	The license conditions regarding natural disturbance and salvage harvesting were followed. No natural disturbance occurred during the audit period.
Protection of the licence area from pest damage, participation in pest control programs	No pest management programs were completed on this Forest.
Withdrawals from licence area	No areas were withdrawn from this Forest during this audit term.
Audit action plan and status report	The auditors note that the action plan did not address recommendations directed to Regional or Corporate MNRF. Wawa District was not able to provide minutes for all WRACC meetings as directed in Recommendation 1. Aboriginal participation on the Forest, as directed by Recommendation 4, has been particularly impressive, as Pic Mobert First Nation is a full shareholder in WRFP. Recommendation 5 directed MNRF to invite Michipicoten and Missinabie Cree First Nations to participate in the forest management planning process and this was done. The limited harvest activity observed by the auditors showed effective slash piles managed as directed in Recommendation 8. The audit recommended removal of water crossing 76-5. This was inspected by WRFP and MNRF and it was decided to leave it in place. Inspections of other water crossings are occurring. MNRF did not compete its annual compliance plans

	as directed in Recommendation 6. The Company's compliance plan met the requirements of the Forest Compliance Handbook. The Company and MNRF District did not conduct silvicultural monitoring through 2008-2012, but that program has started again. Recommendations regarding inventory and silvicultural achievements are being addressed.
Payment of forest renewal charges to Forest Renewal Trust	Payment of forest renewal charges to the Forest Renewal Trust met the required minimum balance as of March 31, for each of the five years within the scope of the audit. There was no renewal activity during the first five years of the audit period and 716,629 seedlings planted in 2013.
Forest Renewal Trust eligible silviculture work	There was limited field-based renewal activity in 2013-14 which qualified for Forest Renewal Trust eligibility.
Forest Renewal Trust forest renewal charge analysis	The renewal rates were reviewed and adjusted to ensure sufficient funds were available to meet the requirements of the silviculture program.
Forest Renewal Trust account minimum balance	The required minimum balance was maintained in each year of the audit term.
Silviculture standards and assessment program	Silvicultural standards were conducted with the restoration of the SFL in 2013. MNRF has not conducted silvicultural effectiveness monitoring work on the White River Forest since 2009.
Aboriginal Opportunities	The SFL includes the Pic Mobert First Nation as a shareholder. Pic Mobert and Pic River First Nations actively participate in forest operations and mill employment.
Preparation of compliance plan	Preparation of the compliance plan by the Company met the contractual obligations.
Internal compliance prevention/education program	The internal compliance program met contractual requirements.
Compliance inspections and reporting; compliance with compliance plan	Compliance inspections by WRFP were generally well done.
SFL forestry operations on mining claims	Notices were provided to all mining claim holders with operations within the White River Forest.

Appendix 4 – Audit Process

The CFSA directs the Minister of Natural Resources to conduct a review of the White River Forest every five years to ensure that the licensee has complied with the terms and conditions of its license. Independent forest audits, as directed through the Independent Forest Audit Process and Protocol (2014) are conducted to support this direction.

The Independent Forest Audit Process and Protocol (2014) details the scope and process requirements of an independent forest audit, and contains approximately 150 individual audit procedures. It states that the purpose of the audits is to:

- assess to what extent forest management planning activities comply with the Forest Management Planning Manual and the [*Crown Forest Sustainability*] *Act*;
- assess to what extent forest management planning activities comply with the Act and with the forest management plans, the manuals approved under the Act, and the applicable guides;
- assess the effectiveness of forest management activities in meeting the forest management objectives set out in the forest management plan, as measured in relation to the criteria established for the audit;
- compare the forest management activities carried out with those that were planned;
- assess the effectiveness of any action plans implemented to remedy shortcomings revealed by a previous audit; and
- review and assess a licensee's compliance with the terms and conditions of the forest resources license.

There are two key types of findings in an independent forest audit, recommendations and best practices. A recommendation provides direction to address a noted deficiency in the planning, implementation, or monitoring of forest operations. Recommendations can be directed towards the Company and/or at the appropriate administrative level of the MNRF. The auditee must address all recommendations in follow-up actions.

If the audit team feels that an aspect of forest management is exceptional it may be identified as a best practice. The Independent Forest Audit Process and Protocol (2014) states that “Highly effective novel approaches to various aspects of forest management may represent best practices”.

The auditors collected evidence through document review, interviews with staff and stakeholders, and physical inspection of field activities that occurred on the White River Forest between April 1, 2008 and March 31, 2014. The audit process began with a pre-audit and site selection meeting in Wawa on June 19, 2014. The purpose of the meeting was for the lead auditor, the WRFP, and MNRF to discuss audit logistics and for the lead auditor to collect background information and documents for the audit. Following the meeting, an audit plan was finalized and distributed that outlined the audit schedule and identified the main contacts for the audit.

From June 30 to September 20, 2014, the audit team reviewed documents describing forest management activities on the White River Forest. Interviews were held with a variety of interested parties. Personnel from MNRF and WRFP were interviewed throughout the audit. Most of these interviews took place in person, but contact by phone and e-mail between the audit team, auditee, and the public was common.

Field site visit locations were selected to evaluate harvest, renewal, tending/maintenance, FTG operations, AOCs, road construction and maintenance, site preparation, water crossings, wildlife management activities, and other areas of special interest. Sites that had multiple audit values (e.g., renewal and AOC) were preferentially selected. Field sites were also selected to ensure that evaluations of winter and summer operations were representative of actual operations and included representative sites for the operations of each of the overlapping licensees. On-site and field audit activities occurred between Sept 22 and 26, 2014.

The audit team verified records and information systems at the WRFP and MNRF offices. The team split into two or three field crews at different times, each of which was accompanied by WRFP or MNRF staff. Sampling was completed through seven person days of field inspections. Sampling continued until the auditors had viewed all of the selected sites and were satisfied that they had viewed enough sites to be confident in their assessment of field performance.

Table 4.1 shows the total amount of each key activity that has occurred on the White River Forest during the audit period, total area of the sites visited, and the sample size as a percentage of the total area. The audit protocol requires the audit team to sample a minimum of 10% of the area treated during the audit period, and to increase the sample where higher risk activities were identified.

Table 4.1 Sampling Intensity for the White River Forest Audit by Operational Activity.

ACTIVITY	Area of Operations	Audited	Percent Sample
Clear Cut	2,625.2	1,179.2	44%
Road Right-of-way	34.7	34.7	100%
Selection	0.0		
Shelterwood	0.0		
Stand Improvement	0.0		
Mechanical Site Prep	0.0		
Chemical Site Prep	0.0		
Tree Plant	358	89	25%
Tending	1,012.9	497.1	49%
FTG	5,047.8	806.5	16%
Total	**8,720.6**	**2,517.5**	**29%**

Areas of Concern and Roads Inspections

The audit team assessed the implementation of a total of 20 AOCs or CROs in the field, along with their documentation and compliance reports. Most of these observations are of AOCs, but there are some for values protected through Conditions on Regular Operations or other measures. The number of AOC/CRO inspections was lower, in absolute terms that the auditors had encountered on previous IFA's. Hoverer, the field sampling protocol used by the audit team directs all auditors to inspect all OAC's/CRO's as they are encountered. Given the relatively small area of harvest that has occurred, it is reasonable to conclude that the AOC/CRO sample intensity was proportional to that achieved with harvest. It is notable that a review of the AOC/CROs shown on AWS maps indicates the auditors sampled 100% of the type of AOC/CROs that occurred on operational blocks inspected.

Table 4.2 Summary of AOCs and CROs observed during the field portion of the audit on the White River Forest.

Value Type		# Checked in the Field	Conclusions
Regular AOC	Shoreline	6	Shorelines were well protected. There may be more opportunities for shoreline harvesting on the Forest to better emulate natural disturbances at the stand level (see Recommendation 3).
	Crossing	7	Crossings were well done and generally well-maintained. Two needed maintenance to clear debris or beaver dams but were functioning during the audit.
	Nest	1	Found during operations and known to the contractor (unoccupied stick nest, species unknown). This nest was protected in an appropriate reserve or residual patch but was not reported to MNRF or incorporated into NRVIS. The procedure for addressing nests of this type was unclear (see Recommendation 3).
Condition on Regular Operations	Wildlife Trees	6	Very good residual tree retention (species, size, distribution, some conifer stubbing). Wildlife were using the residual trees (red-tailed hawk, hairy woodpecker, black-backed woodpecker).
TOTAL		20	

The audit team also travelled extensively on the road system in the Forest and observed operational road conditions on primary, branch, and operational roads.

There were 358 hectares of hand scalp planting completed in 2013/14 and no planting completed in the five year period prior to that. None of the planned seeding, mechanical, chemical or slash pile burning site preparation was completed, nor was any chemical aerial tending or pre-commercial thinning completed. Reasons for the lack of renewal were primarily due to the extremely low harvest levels on the Forest. It was not feasible or economically viable to implement a very small renewal program, therefore renewal treatments were often delayed until harvest operations resumed and a Reasonable level of renewal activities could be completed.

There were no renewal activities to report for the 2011-12 annual report period and there were no renewal activities during the previous five-year period because of a lack of harvesting (Table 4.3).

Table 4.3 Audit sample of areas treated in 2011/2012 that were eligible for funding though the silvicultural trust fund.

Treatment	Total area treated 2012/13 (ha)	Area inspected on audit (ha)	% sample
Site Preparation	0	0	0
Tree Plant	0	0	0
Tending	0	0	0

Risk Assessment

The audit protocol allows the auditors to subsample procedures identified as low and medium risk in terms of contributions to the sustainability of the Forest. Given that the audit team reviewed the content, process, or outcome of each of these procedures in their assessment of those procedures deemed high risk, the auditors elected to audit all procedures pertinent to the White River Forest (Table 4.4).

Table 4.4 Independent Forest Audit Procedures Audited by Risk Category.

Procedures Audited, by Risk Category								
Principle	Low Risk			Medium Risk			High Risk	Comments
	Applicable (#)	Selected (#)	% Audited	Applicable (#)	Selected (#)	% Audited	Audited (#)	
1. Commitment	2	2	100	2	2	100	100	All procedures were audited
2. Public Consultation and Aboriginal Involvement	6	6	100	6	6	100	100	All procedures were audited
3. Forest Management Planning	27	27	100	27	27	100	100	All procedures were audited
4. Plan Assessment and Implementation	6	6	100	6	6	100	100	All procedures were audited
5. System Support	2	2	100	2	2	100	100	All procedures were audited
6. Monitoring	4	4	100	4	4	100	100	All procedures were audited
7. Achievement of Objectives and Forest Sustainability	5	5	100	5	5	100	100	All procedures were audited
8. Contractual Obligations	20	20	100	20	20	100	100	All procedures were audited
Totals	72	72	100	72	72	100	100	

Summary of Consultation and Input into the Audit

General Public: A survey was sent to 789 stakeholders on August 21, 2014 using the mailing list that the MNRF maintains for the White River Forest. The audit team received 34 responses to the survey by mail and one by phone. Eighteen of the written surveys were received after the completion of the field audit. Additionally, invitations to comment on forest management on the White River Forest over the audit term were placed in daily newspapers.

The comments were generally supportive of forest management on the White River Forest. Several comments focused on the positive impact of restarting the sawmill. One comment expressed concern with the impact of hydro dam development. Several comments referred to the unfairness of closing forest roads to limit access for local recreation.

White River Area Co-Management Committee: The audit team contacted all members of the WRACC with respect to an interview and also reviewed the Terms of Reference and Minutes. A total of nine interviews were held with WRACC members.

The WRACC includes membership from the following sectors: White River Forest Products, Parks Canada (Pukuskwa National Park), the local prospectors association, the town of White River, Pic River First Nation, Pic Mobert First Nation, bear management area operators, the local trappers association, independent loggers, White Lake Cottagers Association, baitfish operators, White River Rod and Gun Club, and road-based tourism operators. The participation of First Nations on the WRACC is notable as this does not occur in many other forests in the Province. Collectively these interest groups represent most of the interests on the Forest with the notable exception being remote tourism which has a fairly sizeable presence in the Forest.

First Nations: The audit team contacted all the First Nations and Métis groups for the purposes of the audit and discussions were held with Pic Mobert, Pic River, Missanabie Cree and the Red Sky Métis Independent First Nations. Michipicoten First Nation and the Métis Nation of Ontario did not indicate a meeting or interview was required.

MNRF: The Area Forester, Acting Area Supervisor, Area Biologist, Senior Technician, and Resource Technicians participated in the opening and these staff plus the District Manager participated in the closing meetings. The Area Forester, Area Biologist, and Compliance Technician participated in the field audit. Regional MNRF staff attended the opening meeting, two field days, and the closing meeting (via conference call). Main office MNRF staff attended the opening and closing meetings via conference call.

WRFP: All staff from WRFP with responsibility for management of the White River Forest participated in the audit. Compliance and silvicultural staff from Jack Fish Management participated in all phases of the audit.

Appendix 5 – List of Acronyms Used

AOC	Area of Concern
AWS	Annual Work Schedule
CFSA	Crown Forest Sustainability Act
CRO	Condition on Regular Operations
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FOIP	Forest Operations Inspection Program
FRI	Forest Resource Inventory
FTG	Free-to-grow
LCC	Local Citizens' Committee
MNRF	Ontario Ministry of Natural Resources and Forestry
OSB	Oriented Strand Board
RPF	Registered Professional Forester
SGR	Silviculture Ground Rule
SFL	Sustainable Forest License
WRACC	White River Area Co-management Committee
WRFP	White River Forest Products Ltd.

Appendix 6 – Audit Team Members and Qualifications

Craig Howard, R.P.F., CEA (SFM)** – **Lead Auditor

Education:	B.Sc. Forestry, University of New Brunswick, 1983.
Experience:	30 years' experience in forestry, 16 years in private practice, 3 years in the MNRF.
Previous Audits:	26 Independent Forest Audits, 16 Sustainable Forest Initiative verifications, 19 Forest Stewardship Council assessments.

Kandyd Szuba, Ph.D., R.P.F.** – **Biologist

Education:	B.Sc.F. (1977), M.Sc.F. (1984), Ph.D. (1989) Faculty of Forestry, University of Toronto.
Experience:	30 years of experience as a forester and biologist, including 11 years as the full-time biologist for a forest products company in Ontario, and 10 as an adjunct professor of environmental science, zoology, and conservation biology at Nipissing University.
Previous Audits:	Team member on 30 FMA reviews and IFAs to 2001, 2 Forest Stewardship Council assessments in 2014, and 1 Sustainable Forestry Initiative assessment in 2014. Assisted auditees on several IFA and FSC audits from 2001-2012.

Phil Shantz – Socio-economist

Education:	M.E.S, R.P.P.
Experience:	Registered professional planner with 20 years' experience in forest auditing/certification, resource and socio-economics, environmental assessment and public consultation.
Previous Audits:	18 Independent Forest Audits, 15 Forest Stewardship Council assessments.

Brian Callaghan, R.P.F. – Forest Management Planning Analyst

Education:	B.Sc.F., University of Toronto, 1982.
Experience:	31 years' experience in forestry in Ontario.
Previous Audits:	28 Independent Forest Audits, 60 Sustainable Forest Initiative verifications, 30 Forest Stewardship Council assessments.

Appendix 7 – Trend Analysis - Year 10 Annual Report

White River Forest
SFL# 550399

2014 Independent Forest Audit
2003-08 Trends Analysis Report

for the phase 1 FMP term of
April 1, 2008 to March 31, 2018

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4.0 Implementation of Forest Operations - Trends Analysis

This report has been prepared in support of the Independent Audit for the audit term of April 1, 2009 to March 31, 2014. It provides a summary of the implementation of operations for three past plan operating periods (i.e. 1993-98, 1998-03 and 2003-08) compared to phase 1 of the current plan (i.e. 2008-03).

Markets for sawlogs and pulpwood were lost with the closures of the WRFP sawmill, the Terrace Bay pulp mill, the St. Mary's pulp mill and the Marathon Pulp mill during the forest industry downturn. The hardwood market was lost with the closure of the Weyerhaeuser OSB mill.

On June 19, 2009 White River Forest Products Ltd. (WRFP) acquired the White River sawmill from Domtar and the WRF SFL #550399 was transferred to WRFP on February 9, 2010. WRFP is a partnership between Pic Mobert First Nation, the Township of White River and two private investors. WRFP is responsible for preparing forest management plans and annual work schedules, conducting forest operations in accordance with approved plans, monitoring operations for compliance, collecting and maintaining planning information for the WRF according to the current Forest Information Manual and reporting on operations and objective achievements in Annual Reports.

WRFP is now the SFL holder and they employ Jackfish River Management Limited (JRM) to carry out their forest management obligations for the license. Two main licensees, WRFP and AV Terrace Bay Inc. harvest on the WRF. There are also commercial and personal use fuelwood operators. The Wawa District serves as the administrative office for the White River Forest.

The brutal market conditions and closure of all mills dependent on the WRF has reduced the wood demand and operating levels to almost nothing during the 2008-03 plan period. Therefore the operating trends on the WRF during the audit period have been down to almost nothing. Recently positive events are expected to dramatically increase the wood demand and operating levels on the WRF creating a significant upward trend for the 2013-18 plan period.

White River Forest Products(WRFP) has refurbished existing equipment and the white river sawmill was re-opened in October 2013 which has led to a market for SPF sawlogs. Plans are to invest an estimated $15 million in the sawmill to add a 3rd line for studs and a 7.5 Megawatt co-generation plant. Plans are to harvest and utilize approximately 240,000 cubic metres of SPF sawlogs from the White River Forest in 2013-14 with an increase to 543,000 cubic metres for the remainder of the 2013-18 plan term.

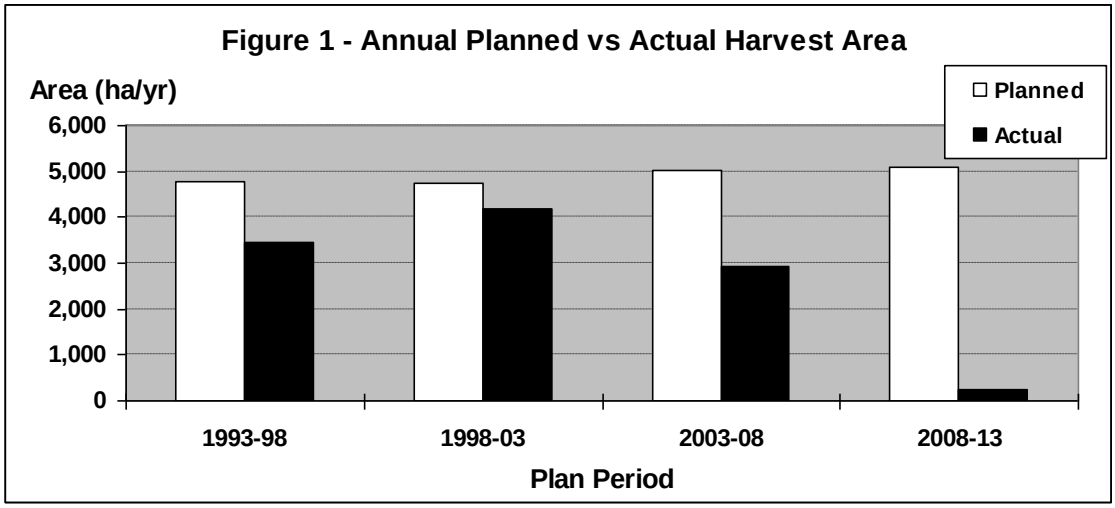
A new owner, AV Terrace Bay Inc. re-opened the Terrace Bay pulp mill in October 2012 which has created a new market for SPF pulpwood, sawmill chips and potentially biomass for WRFP. AV Terrace Bay Inc. has announced an investment of $250 million to convert the mill to dissolving pulp. This has dramatically improved the viability of the WRFP sawmill, and it has provided the ability to utilize small diameter conifer.

Other potential positive developments have been the September 2013 start-up of the new 10 megawatt Becker Co-generation plant in Hornepayne and preliminary plans to re-open the White River co-generation plant. Rentech is currently converting the former Weyerhaeuser OSB mill in Limer, to a pellet plant plus the potential increased demand at the Georgia Pacific MDF plant in Sault Ste. Marie means their will be improved markets for unutilized hardwood species, biofibre and sawmill residuals. Columbia Forest Products has an increased demand for poplar veneer which would help hardwood utilization.

4.1.1 Harvest Area Utilization (Table AR-7)

AR-7 and **Figure 1** provide a summary of harvest area utilization trends for the three past plans and the current plan. Harvesting on the White River Forest follows the clear cut silvicultural system with conventional careful logging. The logging method is either full tree to roadside or top and limb at the stump using cut-to length. WRFP continued to strive towards one pass harvesting operations in the White River Forest, in which one operator was assigned to work within an AWS block or portion of the block. That operator was responsible for the delivery of all products within the block area as per the product delivery schedule assigned by WRFP.

A total of only 1,214 hectares have been harvested during the first 5 year term of the 2008-18 FMP. This equates to a total of only 24% of the annual year planned harvest areas and only 5% of the 5 year planned harvest areas. Full utilization levels would be 100% of the five year and 50% of the ten year planned harvest areas. The majority of harvesting was in the Pj1, Pj2 and Po1 forest units which were the most marketable. A general lack of demand for all types of wood fibre has generally stopped harvesting in the last five years.



Planned harvest areas increased slightly from about 4,800 hectares per year during 1993-98 and 1998-03 periods to about 5,100 hectares per year during the 2003-08 and 2008-13 periods. A total of 73% of the planned harvest area was utilized in 1993-98, 88% was utilized in 1998-03, declining to 58% utilization in 2003-08 and only 5% utilization in 2008-13 owing to the forest industry decline (**Figure 1**). The implications are that any plan objectives related to harvesting, plan operating levels or socio-economics would not be met. Non-timber objectives would likely benefit from a lock of harvesting operations.

4.1.2 Harvest Volume Utilization (Table AR-8)

AR-8 and **Figure 2** provide a summary of harvest volume utilization trends for the three past plans and the current plan. A very limited proportion of the planned harvest volume was utilized during the 2003-08 plan period owing to the lack of markets. A total of 5.1% of the planned SPF sawlogs and pulp, 0% cedar and larch sawlogs, 0.2% poplar veneer, 0.4% poplar composite and pulp, 0% white birch veneer, and 2.7% white birch composite and pulp was utilized. The depressed economic conditions are easing somewhat as harvesting and mill utilization has improved slightly at the end of the 2003-08 plan term. Planned harvest volumes have declined slightly over time from a high of 751,000 cubic metres per year in 1993-98 to a low of 609,000 cubic metres per year in 2008-13. Planned volumes were 59% utilized in 1993-98, 77% utilized in 1998-03, declining to 44% in 2003-08 and only 4% in 2008-13 owing to the forest industry decline (**Figure 2**). Markets are slowly improving for spruce and pine sawlogs, SPF pulp and poplar veneer, low grade poplar and white birch and biofibre. The implications are that any plan objectives related to harvesting, plan operating levels or socio-economics would not be met. Non-timber objectives would likely benefit from a lock of harvesting operations.

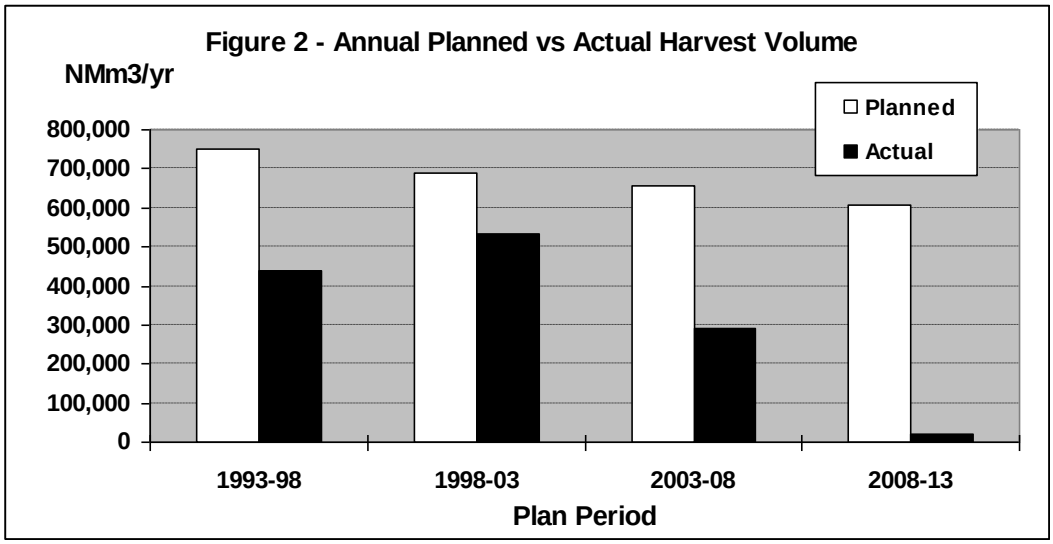
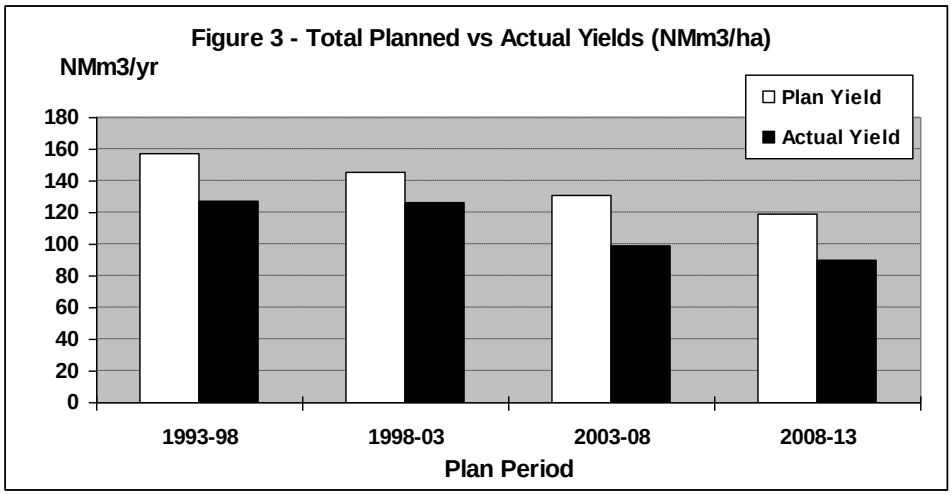
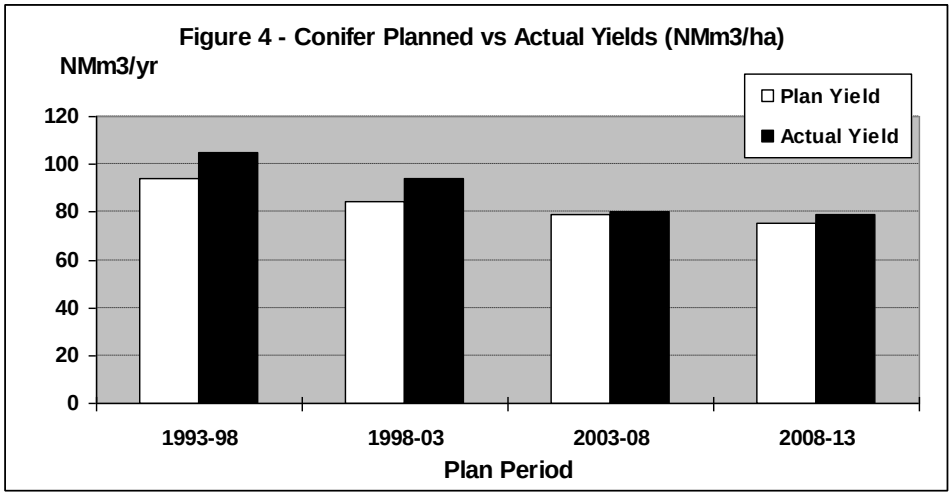


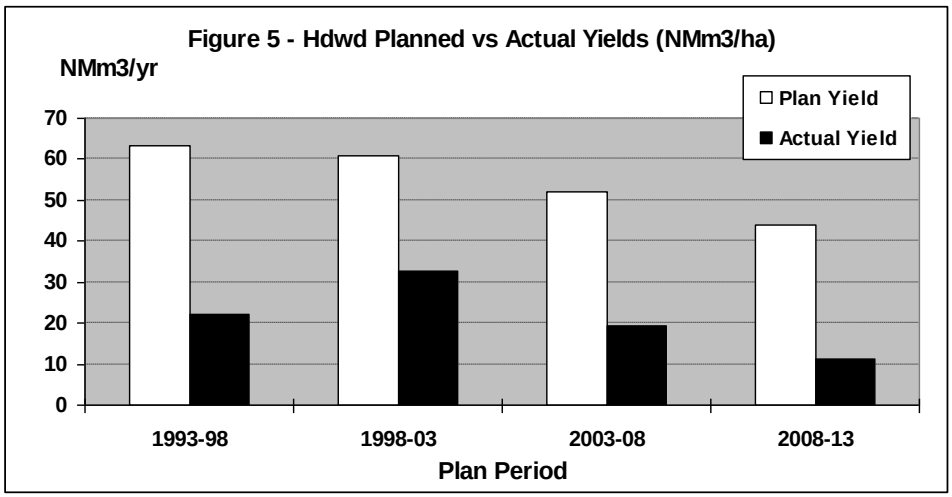
Figure 3, 4 and 5 provide a comparison of average yields per hectare during each plan term for total, conifer and hardwood. It shows a decline in total planned and actual yields from past plans to current plans. Actual yields were 127 cubic metres per hectare in the 1993-98 and 1998-03 periods and have declined to 99 cubic metres per hectare in 2003-08 and 90 cubic metres per hectare in 2008-13.

Both planned and actual conifer yields declined over time and actual yields are always slightly higher than planned. Actual yields were 105 cubic metres per hectare in 1993-98 declining to 79 cubic metres per hectare in 2008-13. Planned hardwood yields have also declined from slightly above 60 cubic metres per hectare to only 44 cubic metres per hectare in 2008-13. Actual hardwood yields have dropped off in the last two terms due to a lack of hardwood markets.

Even though slightly more harvest area is available in the last two plans it is yielding less volume due to lower yields. The primary reason was the lower utilization of purer jack pine and poplar dominated stands (i.e. Pj1 and Po1) which yield higher volumes per hectare and more utilization of mixedwood stands (i.e. Mw1 and Mw2) in the last two plans.

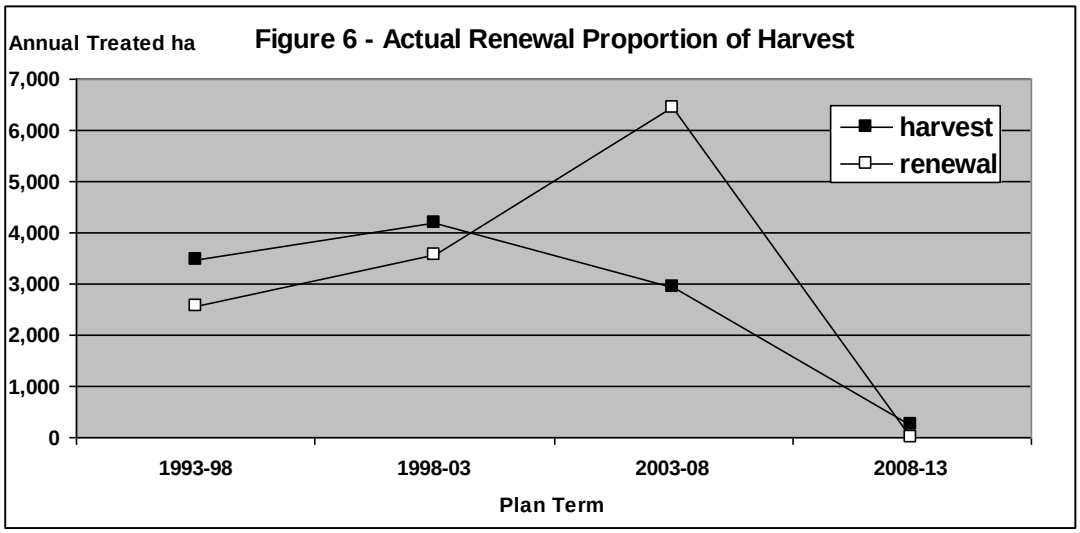






4.1.3 Renewal and Maintenance (Table AR-9)

AR-9 provides a summary of renewal and maintenance trends for the three past plans and the current plan. Renewal levels are directly related to the harvest levels as this determines areas available for silviculture treatment. **Figure 6** shows actual renewal lagged harvest by 26% in the first plan period and 15% in the second plan period. Renewal exceeded harvest by 119% in the third plan period owing to natural regeneration reporting for the Crocker Lake burn and there was little harvest or renewal activity in the last term. Some of the initial renewal lag can be attributed to an under-reporting of natural regeneration treatments. Plan objectives could be adversely affected if harvest areas are not all renewed as less area will be available for timber production.

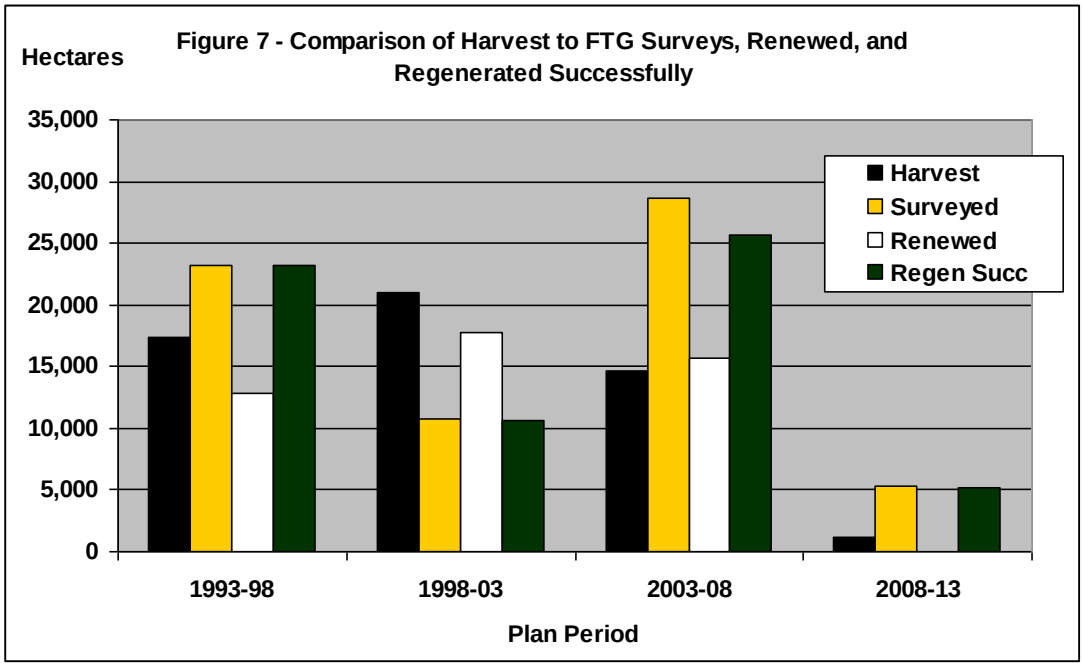


There has been no renewal during the last five year period owing to a lack of harvesting. Renewal has fallen slightly behind harvesting owing to the curtailment of operations on the White River Forest. The renewal program is being ramped up to address this issue. The renewal and tending program began implementation in 2014-15. A total of 1,214 hectares of harvesting has occurred during the 2008-13, five year term. Renewal assessments were conducted on 800 hectares of these recent harvest areas and a total of 766,140 over-wintered Jiffy container trees were planted in blocks 341 and 346. A total of 98 hectares of site preparation was completed in blocks 420 and 504 and 200 hectares more is scheduled for next spring. The planned 324 hectare tending program was not completed due to an early frost and the areas have been rescheduled for next year. A total of 4.25 million trees were sowed in 2014-15 for planting in 2015-16. Renewal levels will be increased dramatically for the remainder of the phase 2 plan term to support the resumption and increase in harvest levels.

4.1.4 Harvest and Regeneration (Table AR-10)

This table implies a comparison harvest and regeneration success for the same block areas. Annual reports report on harvest area, renewal treatment area (with and without forest unit), and FTG survey area, however these are from different block areas. This table was completed by reporting the harvest area, renewal treatment area, and FTG surveys and results in terms of successful regeneration. The two older plan periods used forest units based on working group while the two recent plan periods used forest units based on the standard forest units which made forest unit comparisons difficult. The actual renewal by forest unit was not available for the 2003-08 plan period as only the total renewal is reported in the ARs according to the FMPM requirements.

Figure 7 compares harvest area to FTG survey area, renewed area and successful regeneration area for the four plan periods. Overall for all plan terms combined the results show renewed area (i.e. 46,241 ha) to be slightly lower than harvest (i.e. 54,199 ha), however FTG survey (i.e. 67,988 ha) and regeneration success (i.e. 64,750 ha) areas were higher than the harvest level.
Almost 100% of all FTG survey area was successfully regenerated. Reported renewal was less than the harvest level in three of the four plan periods and could be in part due to under-reporting of natural regeneration treatments.



4.1.5 Forest Condition (Table AR-11)

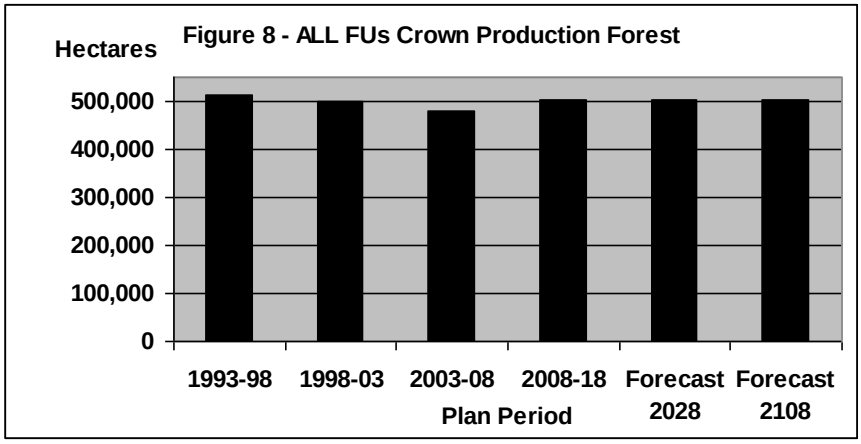
AR-11 provides a summary of the forest condition for the available managed Crown productive forest. This represents the area available for timber production. Reserved forest (i.e. protection forest, reserves and parks) also contribute to the plan objectives but is excluded from the available forest so these values were added to the total available forest to allow comparison.

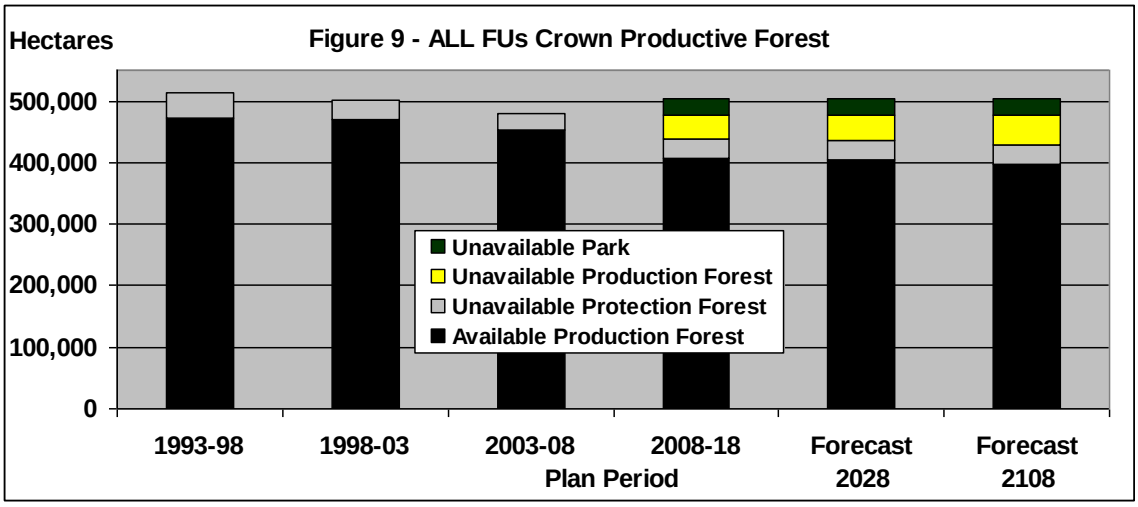
The two older plan periods (i.e. 1993-98 and 1998-03) used forest units based on working group and the old 1980 and 1972 FRIs while the two recent plan periods (i.e. 2003-08 and 2008-13) used forest units based on the standard forest units and the current 1993 FRI which makes forest unit comparisons difficult. The age class structure and forest unit areas were similar for these two sets of plan periods. **Figure 8 to 20** provide a comparison by forest unit composition by plan period.

Total Production Forest Trends

The total production forest (**Figure 8 and 9**) was stable just over 500,000 hectares in all plan terms except for 2003-08 which was missing park areas and accounts for the approximate 25,000 hectare difference. The available production forest has declined from about 472,000 hectares in the 1993-98 plan period to 408,000 hectares in the 2008-13 as more existing reserves have been created over time.

Since **Table AR-11** reports available forest only the results described below also reflect reductions in area due to new reserves.





Forest Unit Composition Trends

The BW1 forest unit **(Figure 10)** has declined substantially over time owing to plan objectives to convert some of these areas as well as significant area now being classed as MW1 and MW2. The LC1 forest unit **(Figure 11)** has increased over time which appears to be a function of more area being classed LC1 due to the less restrictive sort criteria for LC1 versus CE and LA working groups. Also more LC1 can be created from the establishment and increase in larch on some sites. The new MW1 and MW2 forest unit areas in 2003-08 and 2008-13 were primarily from the reclassifying PO and BW working groups and with smaller proportions coming from the other working groups **(Figure 12 and 13).** MW1 was expected to increase in future primarily owing to jack pine planting and seeding treatments while MW2 was expected to be maintained as slightly reduced levels. A small amount of OH1 has been created likely due better identification of black ash in the current FRI **(Figure 14).**

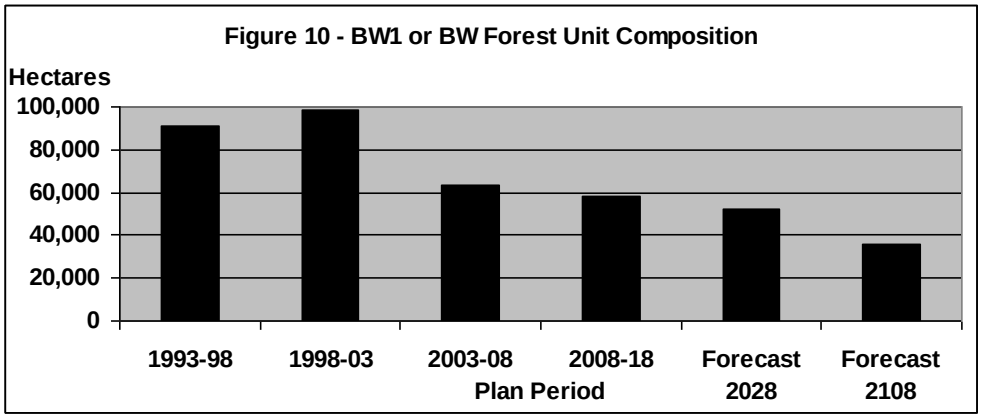
The PJ1 forest unit has declined in every term from 109,000 hectares in the 1993-98 plan period to about 75,000 hectares in 2008-13. The primary reason being the creation of the new PJ2 and MW1 forest units

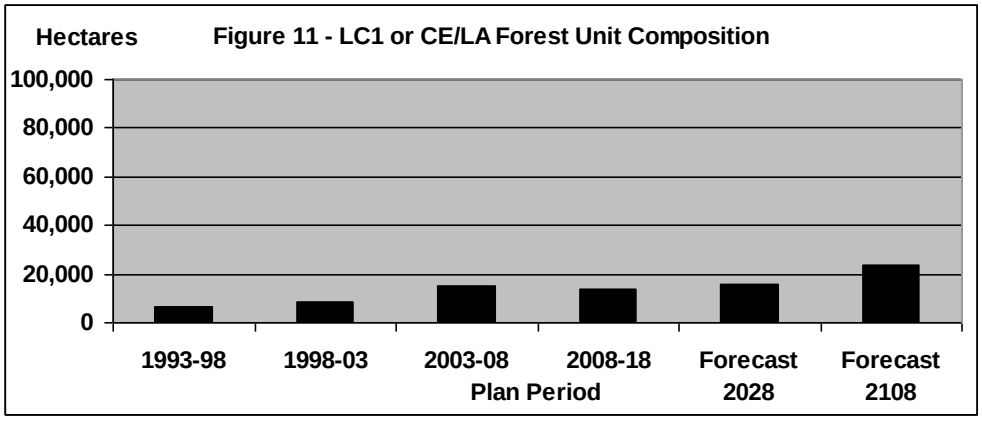
which would take area from the PJ working group **(Figure 15 and 16).** A total of 30 to 40% of the harvesting and much of the planting and seeding renewal treatments have focused on the PJ1 forest unit.

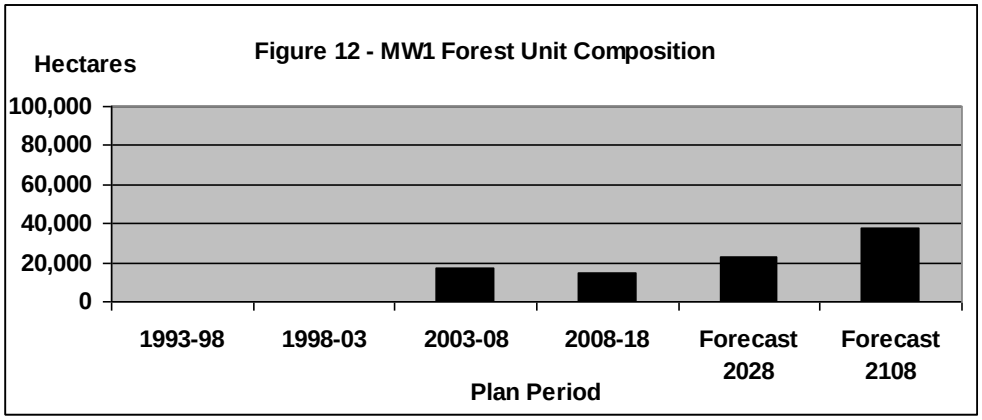
The PO1 forest unit has decreased steadily and especially during the 1998-03 and 2003-08 plan periods when hardwood utilization existed **(Figure 17).** A good portion of the decline can be attributed to the creation of the new MW1 and MW2 forest units as well as higher utilization during periods when markets existed. It is likely PO1 will be created through extensive regeneration treatments that are not yet reflected in the FRI.

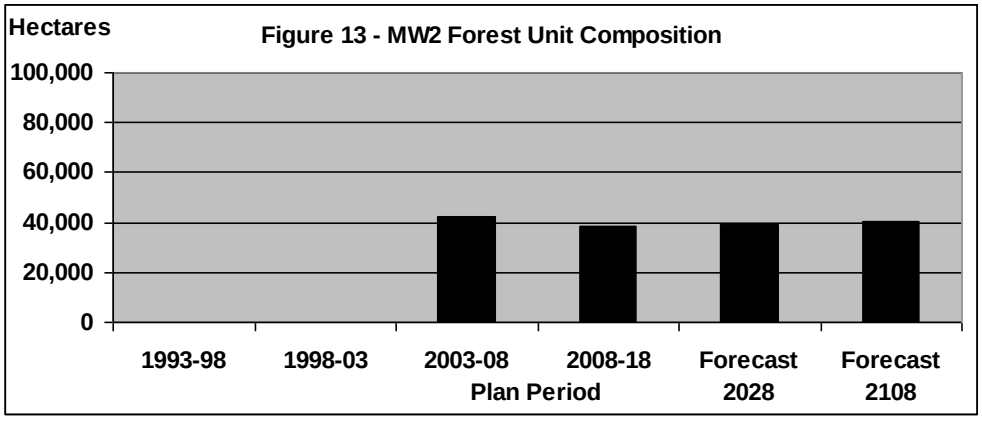
The SB1 forest unit declined substantially between thee first and last plan periods owing largely to creation of the new SB1, SF1 and SP1 forest units**(Figure 18).** The spruce working group area appeared to decline from about 150,000 hectares in 1993-98 to 112,000 hectares (based on SB1, SF1 and SP1) in 2008-13. Harvesting was also directed to spruce sites and renewal could be lagging especially with longer FTG periods. When suitable micro sites exist jack pine is often planted on spruce working group areas.

The SF1 forest unit increased substantially from 7,000 hectares to 19,000 hectares by the 2003-08 plan period **(Figure 19).** The large increase between 1993-98 and 1998-03 is not clear but the further increase in 2003-08 is likely the result of more area being captured in the SF1 sort versus the BF working group sort. The level of SF1 has declined in the last term consistent with modeling forecasts and SGRs strategies to limit balsam fir composition. The new FRI will certainly help confirm these trends. The SP1 forest unit declined slightly consistent with the modeling forecasts largely owing to small conversions to other forest units especially Pj1 **(Figure 20).**




Hectares
Figure 11 - LC1 or CE/LA Forest Unit Composition
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period


Hectares
Figure 12 - MW1 Forest Unit Composition
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period


Hectares
Figure 13 - MW2 Forest Unit Composition
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period

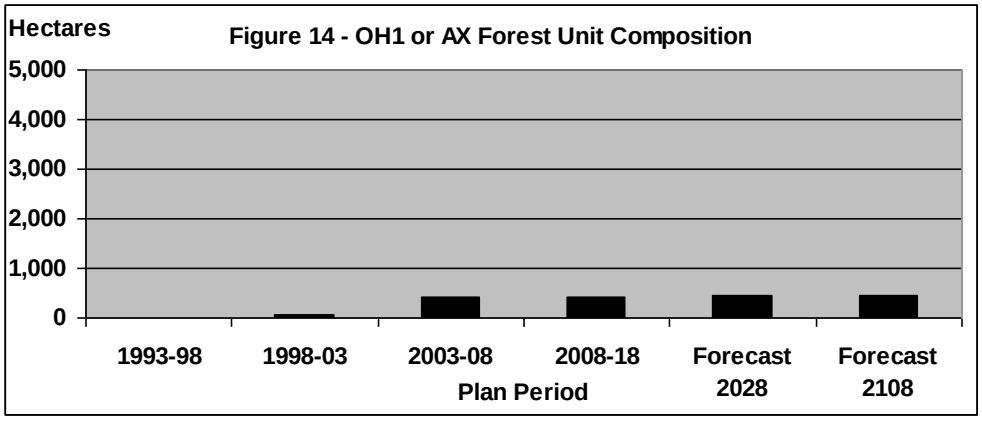


Figure 14 - OH1 or AX Forest Unit Composition
Hectares
5,000
4,000
3,000
2,000
1,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period

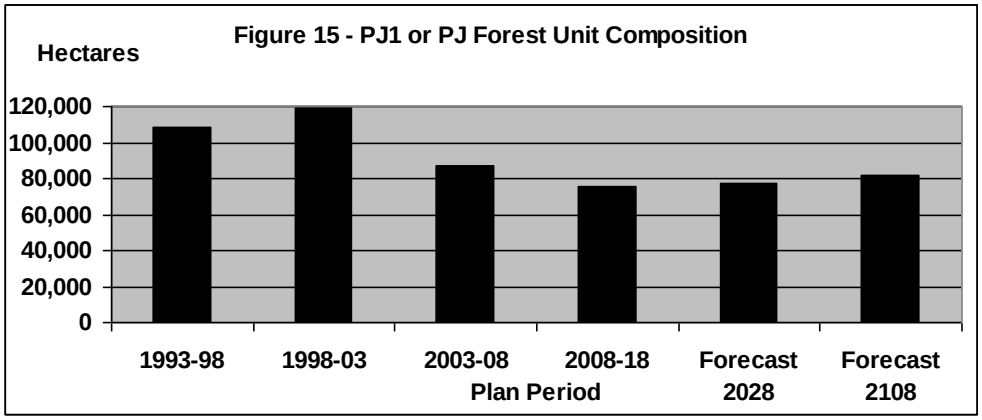


Figure 15 - PJ1 or PJ Forest Unit Composition
Hectares
120,000
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period

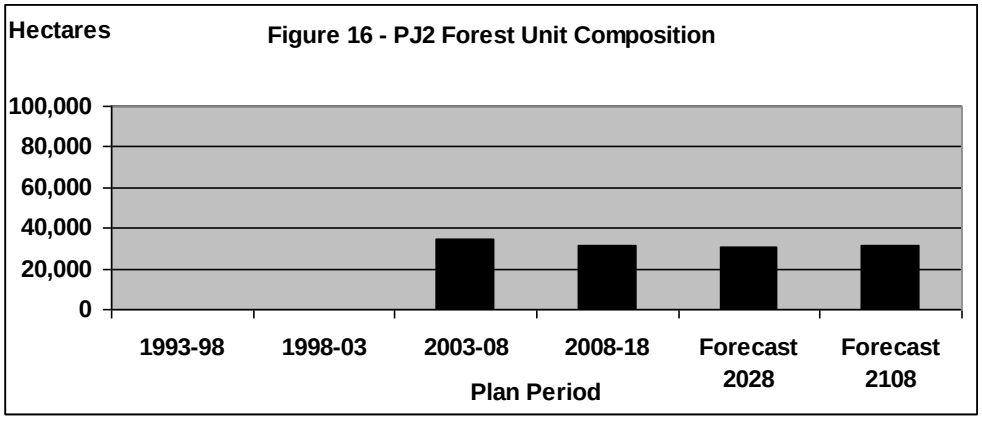
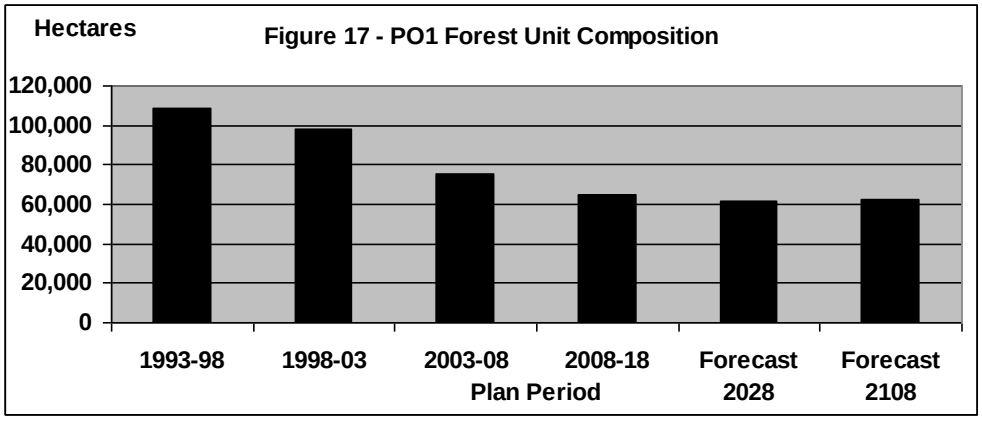
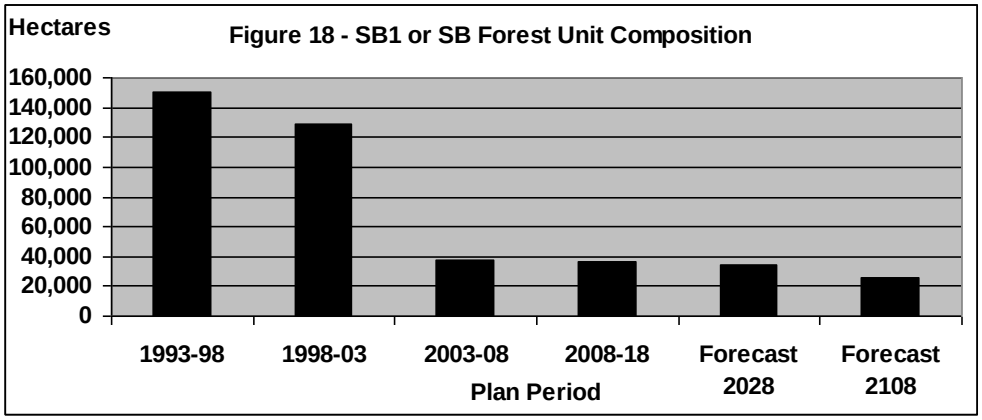
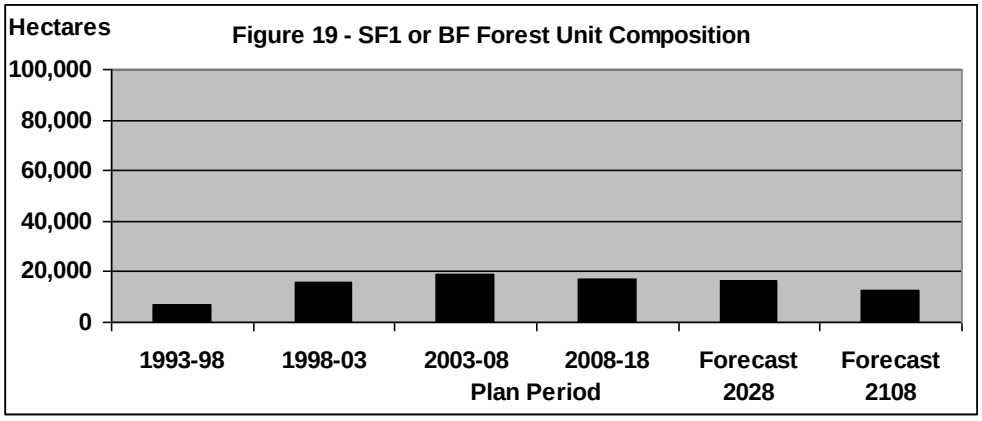


Figure 16 - PJ2 Forest Unit Composition
Hectares
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period


Hectares
Figure 17 - PO1 Forest Unit Composition
120,000
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period


Hectares
Figure 18 - SB1 or SB Forest Unit Composition
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period


Hectares
Figure 19 - SF1 or BF Forest Unit Composition
100,000
80,000
60,000
40,000
20,000
0
1993-98
1998-03
2003-08
2008-18
Forecast 2028
Forecast 2108
Plan Period

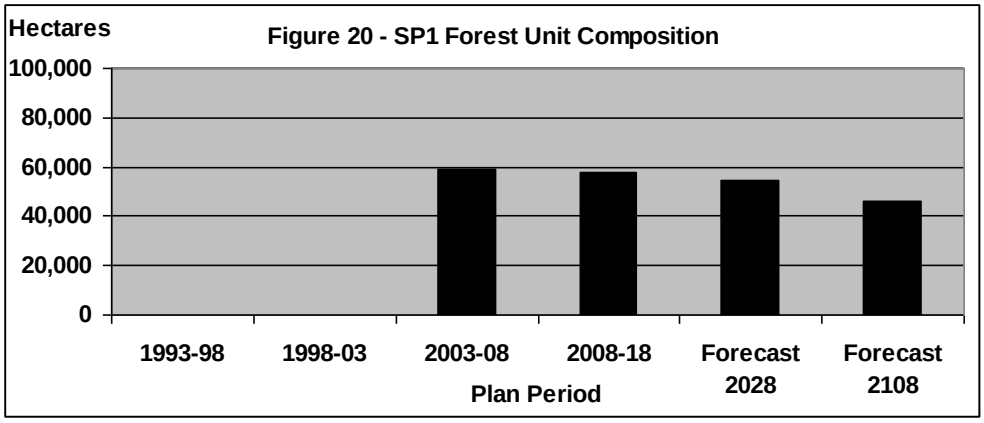


Figure 21 provides a summary of area by forest unit group. It shows an increase in upland conifer (SP1, SF1, PJ1 PJ2) initially and a slight decline in the last plan period. Lowland conifer (SB1 LC1) declined substantially with the change from SB, CE and LA working groups to SB1 and LC1. New mixedwood (MW1 and MW2) forest units were created in the last two plan periods and this resulted in a decline in hardwood areas.

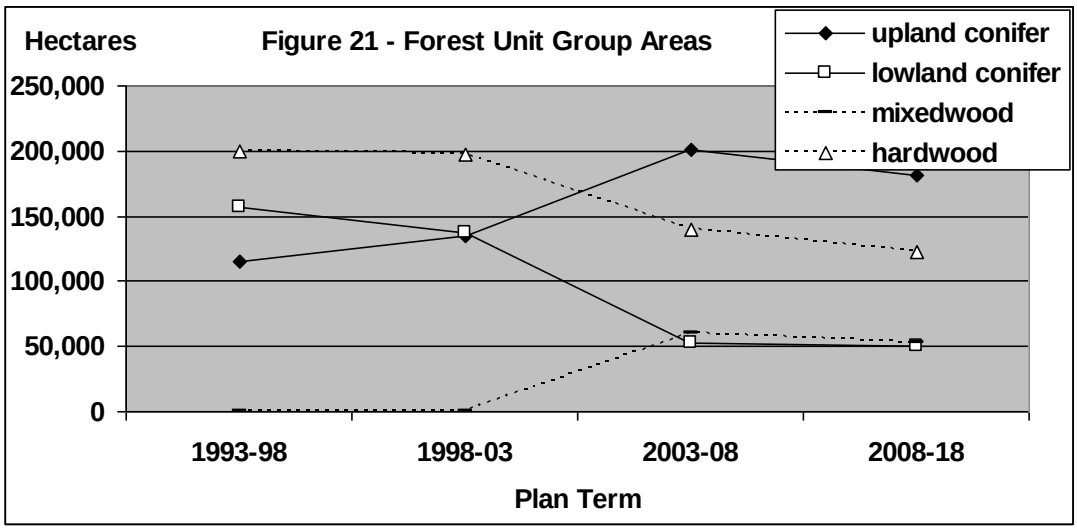
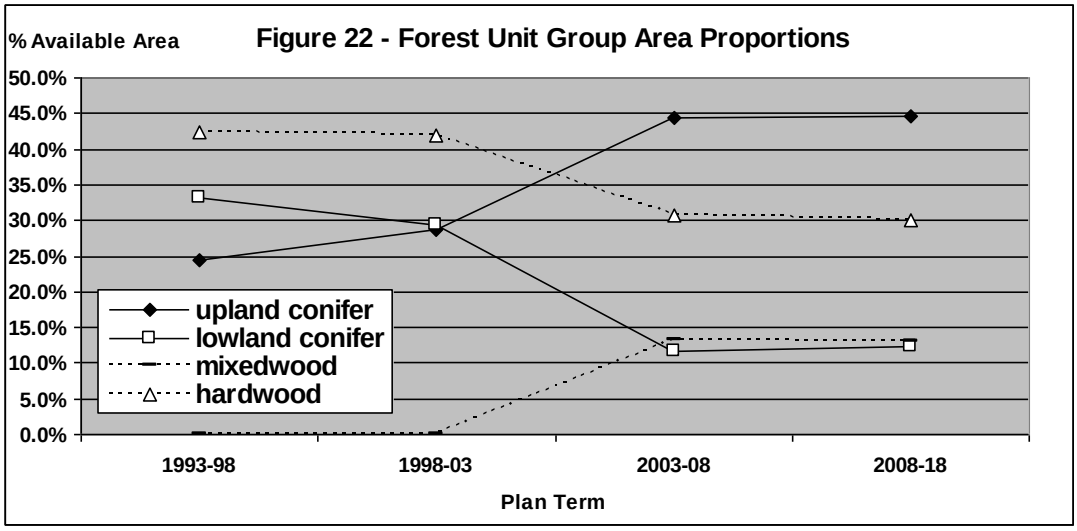


Figure 22 shows the impact of the changes to the forest unit definitions and results of operations. Upland conifer has increased from 24% of the available forest in the first (1993-98) plan period to 45% in the last (2008-13) plan period, lowland conifer decreased from 33% to 12%, mixedwood increased from 0% to 13% and hardwood decreased from 42% to 30%. Over a balance of conifer and hardwood/mixedwood forest units has been maintained between the first and last terms. Conifer forest units represented 58% in the first plan period and 57% in the last plan term. Hardwood and mixedwoods forest units represented 42% of the available forest in the first term and 43% in the last term.

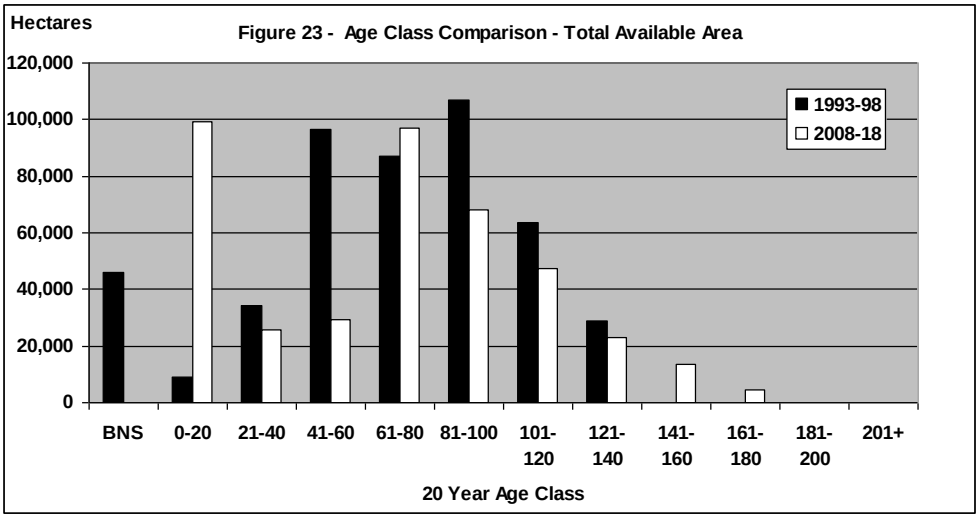


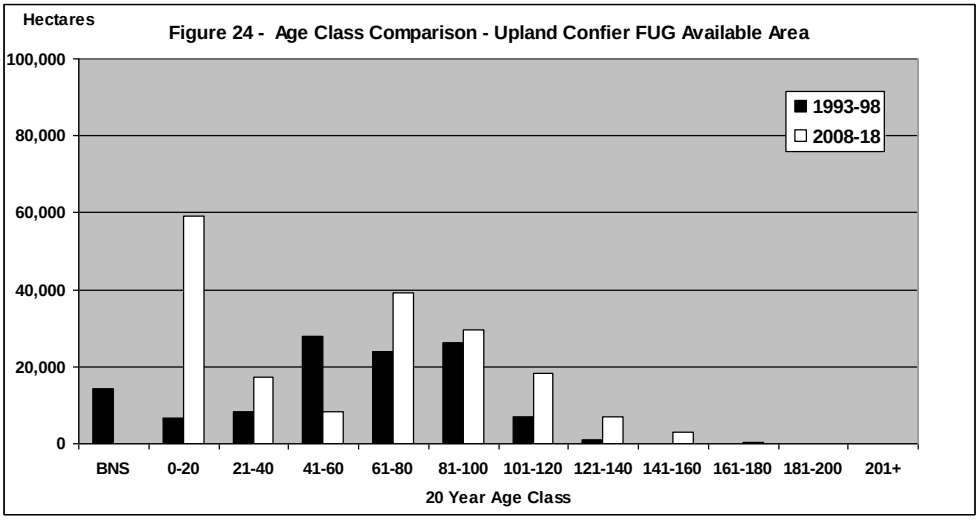
Age Class Composition Trends

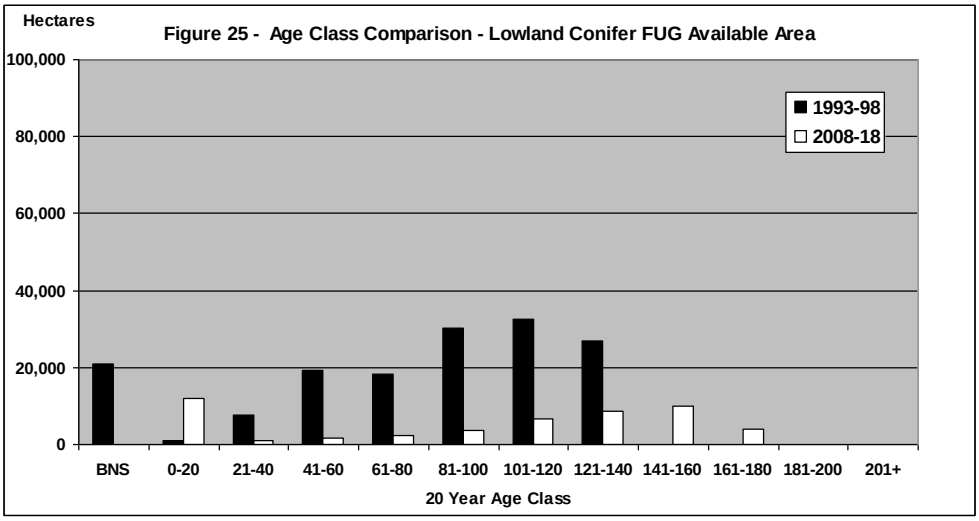
Figured 23 to 27 provide an assessment of the age class composition between the oldest (1993-98) and newest (2008-18) plan periods for upland conifer, lowland conifer, mixedwood and hardwood forest unit groups.

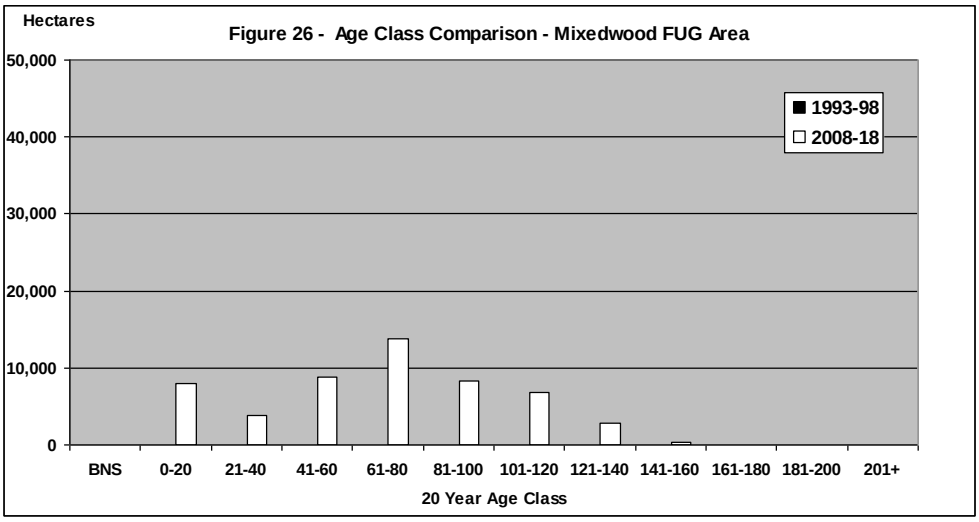
The total (i.e. all FUs) available age class structure showed a general shift to older classes and a decline in younger age classes in 2008-13 compared to 1993-98. The 61-80 year age class increased, the 81-100, 101-120 and 121-140 year age classes all decreased slightly but proportions were maintained and there was now area within the 141-160 and 161-180 year age classes. The 0-20 age class increased dramatically as BNS is now included and also due to recent harvesting and renewal as well as the Crocker Lake burn. Both the 21-40 and 41-60 year age classes declined. Upland conifer, lowland conifer and hardwood forest unit groups all showed similar trends as the total available. Lowland conifer showed dramatic declines across the board largely owing to the change in FU sort criteria and there was no initial mixedwood area to compare.

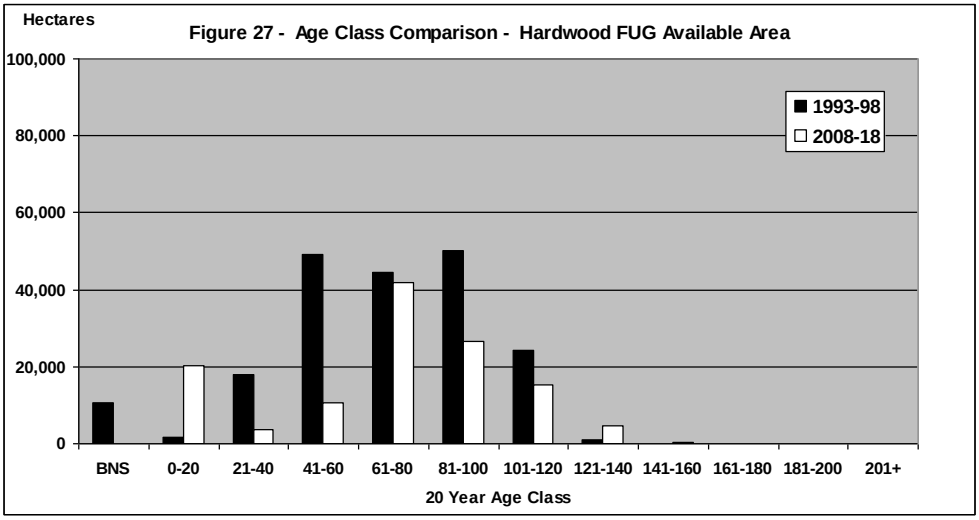
The maintenance of older age class proportions is beneficial to wood supply and old growth objectives. The creation of a 21-60 year regeneration gap will adversely affect wood supplies in the future, but is not uncharacteristic of many Ontario forests due to their harvesting and renewal history.


Hectares
Figure 23 - Age Class Comparison - Total Available Area
120,000
100,000
80,000
60,000
40,000
20,000
0
1993-98
2008-18
BNS
0-20
21-40
41-60
61-80
81-100
101-120
121-140
141-160
161-180
181-200
201+
20 Year Age Class


Hectares
Figure 24 - Age Class Comparison - Upland Confier FUG Available Area
100,000
80,000
60,000
40,000
20,000
0
1993-98
2008-18
BNS
0-20
21-40
41-60
61-80
81-100
101-120
121-140
141-160
161-180
181-200
201+
20 Year Age Class


Hectares
Figure 25 - Age Class Comparison - Lowland Confier FUG Available Area
100,000
80,000
60,000
40,000
20,000
0
1993-98
2008-18
BNS
0-20
21-40
41-60
61-80
81-100
101-120
121-140
141-160
161-180
181-200
201+
20 Year Age Class





The FRI will be updated at the end of the 2013-18 plan term in preparation for the 2018-28 FMP and this will provide the best information to compare to the current 2008-13 period.

4.1.6 Habitat for Species at Risk and Selected Wildlife Species

Table AR-12 and **Figures 28 to 30** provide a summary of the habitat for species at risk and selected wildlife species. This includes a total of 16 selected wildlife species that were modeled in the 2008 FMP with 12 having habitat forecasts in the 2003-08 FMP. Red breasted nuthatch, canada warbler, olive sided flycatcher, Tennessee warbler and mourning warbler were not selected wildlife species in the 2003-08 FMP. Woodland caribou habitat was not forecast in the 2008 FMP since the habitat suitability matrix was not deemed accurate.

On the White River Forest, the area of preferred habitat for selected wildlife species is addressed through strategic-level planning using current forest resource inventory information and projections of future forest condition. Strategic-level planning decisions are made as to the long-term desirable range of area of specific habitat, and modeling provides projections of habitat areas based on the planned and

projected harvest and silvicultural activities. These desirable wildlife habitat area ranges are generally derived on the basis of observations of the natural benchmark scenario. Overall, the planned operations are derived from the constraints in strategic modeling to not compromise the desired area of short and long-term wildlife habitat.

It is very difficult to compare habitat levels between the 2003-08 and 2008-13 periods as it appears the habitat matrix was changed between these plans a noted by the large changes in habitat between the two plans. Also there were changes to the selected wildlife species.
Due to differences in preferred habitat types evaluated between terms, and the short duration of tracking of habitat area, limited information can be gleaned from **Table AR-12** and **Figures 28 to 30** with respect to the changes in area of preferred non-spatial wildlife habitat. However, given that the strategic planning for the 2003-08 and 2008-2018 FMPs projected achievement of non-spatial wildlife habitat area objectives, coupled with the fact that not all planned area in each FMP has been harvested, it can be surmised that there is little if any impact on the non-spatial habitat areas.

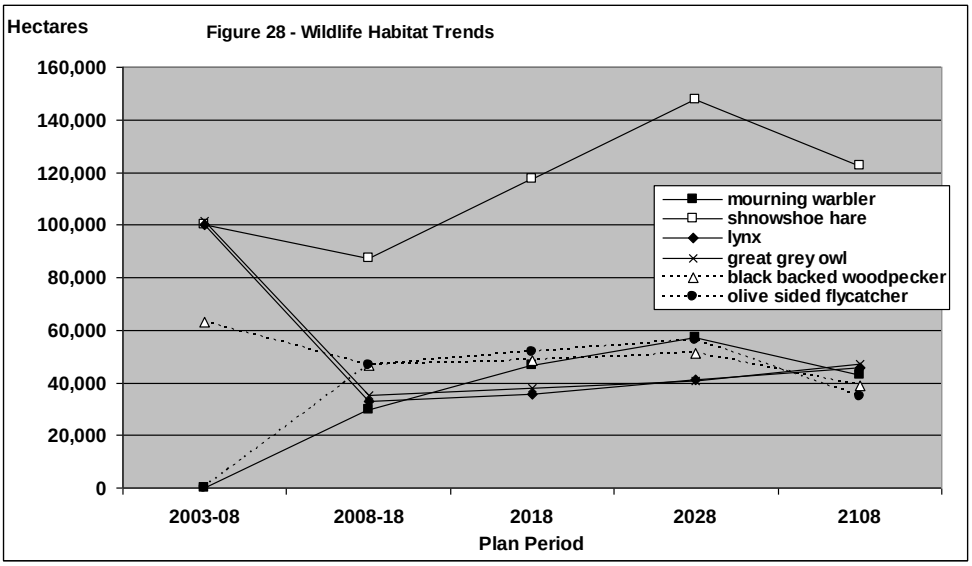
Spatial wildlife habitat needs have been considered through forest management planning over the last 20 years for moose, the last 15 years for marten and in the last 5 years for woodland caribou. Management guidelines provided direction for forest management planning teams to address the spatial habitat needs for these species. Meeting the spatial habitat needs for moose was generally conducted at the stand level using travel corridors, winter cover, summer thermal cover and by protecting specific values such as mineral licks, calving sites and moose aquatic feeding areas. Spatial needs for marten and caribou was addressed by deferring harvest from larger aggregations of conifer dominated forest using marten or caribou cores.

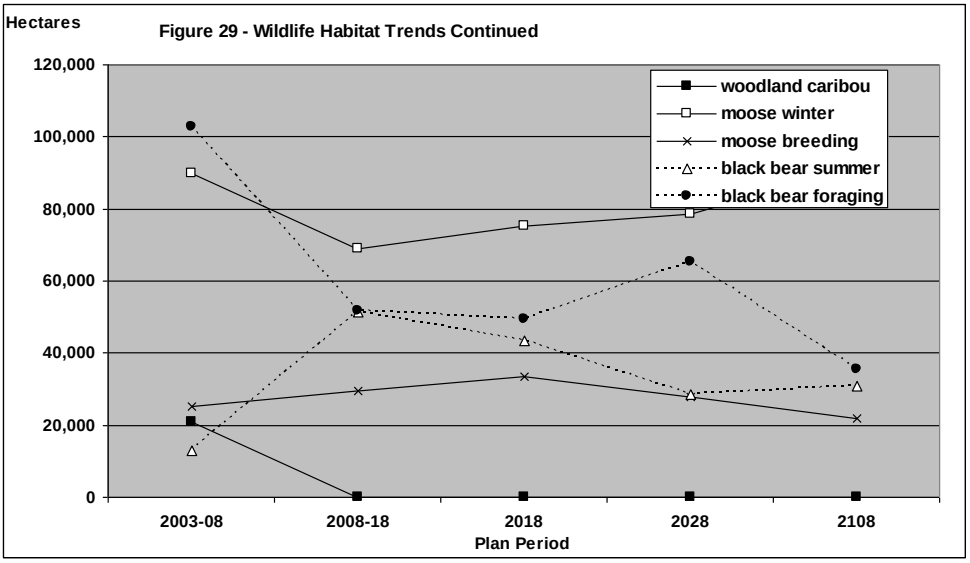
Only a small portion of the White River Forest falls within the Lake Superior Coastal population range. This area was avoided for planned operations and travel corridors were maintained between this area and the northern continuous caribou range to the Caribou Conservation Plan.

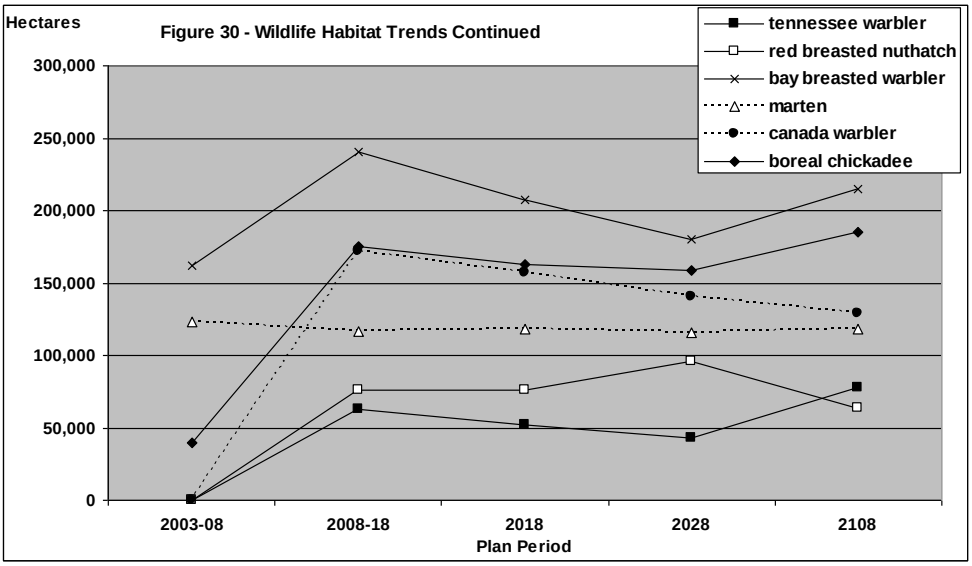
Area of Concern (AOC) prescriptions have been implemented during operations over the last 20 years to protect identified wildlife values such as stick nests, heron colonies, critical fish habitat, moose aquatic feeding areas, water quality, etc.

The 2013-18 operating plan considered the potential impact of forest management operations on species at risk. This included preparing an updated list of species at risk for the White River Forest as well as preparing and implementing new AOC prescriptions.

In summary, the achievement of objectives related to non-spatial habitat area over the last 20 years, preferred habitat levels have been considered and maintained in accordance with provincial direction either through the application of guideline direction in area of concern prescriptions or through strategic modeling (maintaining habitat area at the desired level over time). Spatial habitat objectives have, in general, been achieved on balance with other objectives for desired future forest condition and benefits. Critical habitats, wildlife values, and species at risk have been protected and addressed through the application of AOCs.


Hectares
Figure 28 - Wildlife Habitat Trends
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
2003-08
2008-18
2018
2028
2108
Plan Period
mourning warbler
shnowshoe hare
lynx
great grey owl
black backed woodpecker
olive sided flycatcher


Hectares
Figure 29 - Wildlife Habitat Trends Continued
120,000
100,000
80,000
60,000
40,000
20,000
0
2003-08
2008-18
2018
2028
2108
Plan Period
woodland caribou
moose winter
moose breeding
black bear summer
black bear foraging


Hectares
Figure 30 - Wildlife Habitat Trends Continued
300,000
250,000
200,000
150,000
100,000
50,000
0
2003-08
2008-18
2018
2028
2108
Plan Period
tennessee warbler
red breasted nuthatch
bay breasted warbler
marten
canada warbler
boreal chickadee

4.1.7 Monitoring and Assessment (Table AR-13)

Table AR-13 provides a summary of the assessment of regeneration and silvicultural success for the most recent planning term (2008-13). No regenerations surveys were completed during the first four years of the 2008-13 planning term owing to the curtailment of operations. In 2012-13 WRFP began completing an annual program of regeneration surveys to determine the success of forest renewal. A total of 5,310 hectares were assessed for their regeneration status during the 2008-13 plan period. Of the total area assessed 5,206 hectares or 98% was declared free-to-grow which means an acceptable silvicultural standard has been achieved.

WRFP initially focused on post harvest surveys on recent harvest blocks completed by Domtar prior to the SFL transfer to assess their regenerations needs. In 2011-1212 WRFP completed 800 hectares of post harvest surveys of previously depleted areas on the WRF that have not had any documented artificial renewal treatments to date. Areas not sufficiently naturally regenerated to preferred forest units have been targeted for artificial regeneration.

There is still a need to conduct renewal treatments on previously depleted areas and regeneration assessments on previously renewed areas in line with anticipated FTG age. The lack of renewal and regeneration surveys has created a small amount of backlog area requiring renewal treatments and regeneration assessments. Future renewal treatments and renewal assessments will have to capture any back log renewal or regeneration assessment area.

During the 2008-13 plan term there were a total of 47 compliance inspections with only one non-compliance due to installation of a water crossing outside of a timing window. A warning letter was issued. There was no monitoring of exceptions.

4.2 Analysis of Forest Disturbances

There were no natural disturbances during the 2008-13 plan term. There were only 1,214 hectares harvested in the last plan period in a total of 6 harvest blocks and 1 primary road right-of-way possibly creating 7 new disturbances ranging in size from 42 hectares to 336 hectares (**Table 1**). Two disturbances were greater than 260 hectares in size. Given the level of in-activity it would be best to conduct a analysis of forest disturbances after implementation of the 2013-18 plan period as harvesting and forest disturbance levels are expected to be increased and will provide a more meaningful assessment.

Table 1 – Summary of Harvest Disturbances

Harvest Block	Total
040	**67**
600	**131**
706	**219**
709	**332**
714	**86**
730	**336**
RD-708	**43**
Total	**1214**

4.3 Analysis of Renewal and Tending Activities

Renewal and tending activities area documented in **Table AR-9, Table AR-10** and **Table AR-13. Table AR-9** provides renewal and tending trends for the last 20 years, **Table AR-10** provides a comparison of harvest, renewal and FTG assessments for the last 20 years and **Table AR-13** provides a summary of FTG assessments for the last plan period only.

Table AR-9 and Figure 6 showed actual renewal lagged harvest by 26% in the first plan period and 15% in the second plan period. Renewal exceeded harvest by 119% in the third plan period owing to natural regeneration reporting for the Crocker Lake burn and there was little harvest or renewal activity in the last term. There has been no renewal during the last five year period owing to a lack of harvesting. Renewal has fallen slightly behind harvesting owing to the curtailment of operations on the White River Forest. Renewal levels will be increased dramatically for the remainder of the phase 2 plan term to support the resumption and increase in harvest levels. Some of the initial renewal lag can be attributed to an under-reporting of natural regeneration treatments and the regeneration delay for the time necessary to assess and complete renewal after harvesting.

Table AR-10 and **Figure 7** compared the harvest area, renewal treatment area, and FTG survey results for the past 20 years. Overall during the last 20 years of operations the results show renewed area (i.e. 46,241 ha) to be 15% less than the harvest area (i.e. 54,199 ha), however regeneration success (i.e. 64,750 ha) areas was 19% higher than the level of harvest. Almost 100% of all FTG survey area was successfully regenerated.

Table AR-13 provides a summary of the regeneration assessments completed in the 2008-13 period. These initial assessments were for older depletions occurring between 1982 and 2007. There were a total of 5,310 hectares assessed with 5,206 hectares regenerated successfully and 104 hectares not successfully regenerated. A total of 4,722 hectares were successfully regenerated to the projected forest unit and considered a silvicultural success while 484 hectares were successfully regenerated to non-target forest unit and considered regeneration success. Recent FTG surveys indicate regeneration treatments are successful in achieving desired objectives.

Plan objectives could be adversely affected if harvest areas are not all renewed as less area will be available for timber production. It is recommended that renewal treatment areas should be increased in future to provide a balance of harvest, renewal.

4.4 Review of Modeling Assumptions

A meaningful comparison of modeling assumptions cannot be made at this time due to the very limited proportion (i.e. only 5% of planned harvest) of the planned operations implementation. This assessment will be more meaningful in the Year 7 and Year 10 Annual Reports when more planned operations have been completed.

4.5 Assessment of Objective Achievement

Table AR-14 provides a summary of objective achievements for the current, 2008-13 plan period based on the 2008 FMP objectives found in **Table FMP-14. The following provides a summary discussion of plan objective achievements**

1) Forest Diversity Objectives

a) Natural landscape pattern and distribution

The area distribution targets for disturbances were expected to be achieved for all size classes except 1001-5000 hectares where there was more area than desired and >10000 hectares where there was less area than desired. The frequency distribution targets for disturbances were all achieved except for the >10000 hectares size class. There was so little harvesting in the current 2008-13 plan period that these targets were likely not impacted at all. Achieving the largest disturbance size class targets may take several plan periods to achieve.

b) Forest structure, composition and abundance

Existing forest unit area, mature forest unit area, and over-mature forest unit area desired and target levels were all achieved in the current plan period as they were consistent with the natural forest.

c) Values dependent on the Crown forest

No pesticide applications occurred during the 2008-13 plan term due to in-active operations so the desired objective to minimize pesticide use was achieved.

Overall there was no substantive change in forest structure and composition resulting from the current plan period implementation due to the low operating levels. Some transitions were noted between the first two plan periods and the last two plan periods primarily due to a change in FRIs and forest units. Harvesting and renewal has appeared to move older area to younger forest areas. The forest continues to get older and a regeneration gap from past history and operations still persists. The forest condition trends in Table AR-11 show progress towards the desired forest conditions. Landscape pattern targets are general being achieved with the exception of the largest (>1000 hectare) size class which may take several plan periods to achieve. There were no factors noted as interfering with forest diversity objective achievements other than a lack of forest operations which can affect some objectives positively and some negatively.

2) Social and Economic Objectives

a) Community well-being

There were adequate roads to implement limited operations so the desired level was achieved. There were no non-compliances related to wasteful practices, cultural heritage and aboriginal AOCs during the current term so desired levels were achieved. There was only one non-compliance regarding a water crossing that was installed outside of the timing window. There were no other riparian, water quality or fishery non-compliances during the plan term do desired and target levels were achieved.

No losses in managed Crown productive forest available for timber production were predicted as a result of the limited level of harvest so this objective was achieved. Aboriginal objectives were also achieved. Aboriginal communities now have a stronger role on the White River Forest with their ownership stake in the SFL and White River Forest Products Sawmill and as harvesting contractors. All four aboriginal communities were contacted to promote their involvement in the planning and implementation of operations on the White River Forest. Aboriginal communities were involved in the planning team and attended approximately 50% of the meetings. The local citizens committee reports generally indicate satisfaction with operations and planning on the White River Forest.

b) Healthy forest ecosystems

There were no non-compliances related to non-timber AOCs, tourism AOCs or for adverse environmental impacts so desired and target levels were achieved.

c) Harvest levels

The lack of harvesting due to a lack of mill demand and markets meant operations on the White River Forest have been very limited with only 1,214 hectares harvested during the current 2008-13 plan period. Mill openings and improving forest product markets have created new demand for SPF sawlogs, SPF pulp, biofibre and hardwood fibre which should greatly increase operating levels for the future 2013-18 plan period.

Socio-economic objectives related to harvest area and volume utilization were obviously not achieved due to the lack of harvesting however the wood still remains available for use during the future 2013-18 plan period and future wood supplies can also be enhanced. No changes to management are warranted at this time.

Table AR-7 and **Table AR-8** both indicated the harvest area and volume utilization have decline significantly in the last 10 years owing to mill closures and lack of demand in response to brutal markets. Hardwood utilization has tailed off significantly with the loss of the OSB mill. Utilization is increasing significantly with the development of new markets for mills that have re-opened. The area available for management remains stable declining slightly over time due to new existing reserves being created. The FMP did not contribute to mill and community stability due to the lack of recent operations, however both the local mills and communities have benefited through the development of the phase 2 operating plan and the fact the White River Forest has been actively managed as they were able to take advantage of an immediate and available supply of wood. Desired socio-economic benefits suffered from the lack of operations but this was un-avoidable.

3) Forest Cover Objectives

a) Habitat for animal life

Both over-mature and preferred wildlife habitat desired and target levels were achieved in the current plan period as they were consistent with the natural forest. Operations were in compliance with all wildlife AOCs during the current plan period. A total of 11% of the forest is maintained in suitable cores for the 2008-2018 period so this desired and target level was achieved. No shoreline areas were planned for harvesting or were harvested so the objective to provide early succession shoreline forest habitat was not achieved. The 2013-18 operating plan included a few areas where shoreline harvesting is planned. Great Grey owl was the only species at risk with preferred habitat targets. Both desired and

target levels were achieved as they were consistent with the natural forest. There were no non-compliances related to species at risk so desired and target levels were achieved.

Habitat targets for species at risk and selected wildlife species are being achieved and the trends in Table AR-12 do not indicate a specific concern with the area of habitat from any particular wildlife species.

4) Silviculture Objectives

Over the last 20 years a total of 54,199 hectares were harvested, 67,988 hectares were surveyed for FTG status and 64,750 hectares of 95% was successful. A total of 98% of the FTG surveys completed during the current plan period were successful. When renewal has occurred it was successful and appeared to achieve the anticipated results and appears to indicate that the forest is growing and developing as projected.

Actual renewal lagged harvest by 26% in the first plan period and 15% in the second plan period. Renewal exceeded harvest by 119% in the third plan period owing to natural regeneration reporting for the Crocker Lake burn and there was little harvest and no renewal activity in the last term. Some of the initial renewal lag can be attributed to an under-reporting of natural regeneration treatments and the regeneration delay for the time necessary to assess and complete renewal after harvesting.

Renewal has not yet been reported for the 1,214 hectares harvested in the current term 2008-13 plan term. The lack of harvesting means renewal levels have fallen slightly behind harvesting due to the difficulty in planning small renewal programs each year. Dramatically larger renewal programs are scheduled for next 2013-18 plan period to address the renewal shortfall.

4.6 Determination of Sustainability

On the whole, despite the lack of operations the majority of plan objectives were achieved or were moving towards the desired levels for the current plan period. A lack of harvesting and mill utilization has been addressed with improved markets and mill re-openings. A slight shortfall in renewal during the current term has been addressed with a dramatic increase in the renewal program in 2015-16. There were no other differences between objective target and actual levels achieved that would have implications on sustainability. Yields and other predictions appear to remain realistic and there no changes to modeling assumptions required to better represent the forest at this time. There were no adjustments to objectives or the long term management direction suggested by the levels of objective achievement describe above.

The current forest structure does not appear to be imposing limitations on objective achievements. The age class structure indicates a 20 to 60 year age class regeneration gap that has been created and will affect future wood supplies and non-timber objectives. However there were significant older age classes and a large area of 0-10 year age class that can be used to bridge the gap in area in the future. Balancing the achievement of multiple objectives did not affect objective achievement levels. The actual operations were limited in the current plan period but were still consistent with assumptions and projections in the model and forest management plan as the lack of operations simply represents a delay in operations implantation of 5 years.

The 2008 IFA resulted in 16 recommendations. The audit team concluded that management of the White River Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and

conditions of the Sustainable Forest Licence. Forest sustainability is being achieved, as assessed through the Independent Forest Audit Process and Protocol.

An Action Plan was approved on December 15, 2009 and a January 2012 status report was prepared to provide an update on how audit recommendations were addressed. In April 2012, during the development of the 2013-18 phase 2 planned operations the planning team reviewed all recommendations and updated the status report to determine if there was any further action necessary in the phase 2 plan. These recommendations were: Recommendation #3 maintain a constructive relationship with the LCC, Recommendation #5 to initiate consultation with Michipicoten First Nation and Hornpayne Aboriginal Community to improve their participation and benefits from the forest, Recommendation #10 improve compliance inspections of water crossings, Recommendations #11 and #12 to complete and improve MNR and company annual compliance plans, Recommendation #13 and #14 to improve the MNR and company silviculture effectiveness monitoring and to improve regeneration success, Recommendation #16 to renew and monitor a backlog of harvest areas requiring renewal treatments. All recommendations have been adequately addressed including those that pertained to objective achievement and sustainability.

Overall the WRF has received little management over the last five years due to a lack of demand. Operations are expected to increase in response to improved demand. There are no issues or concerns identified in this trends analysis that would indicate a change in management approach is required at this time. The management of the WRF is still considered sustainable as wood remains available to be harvested and there have been no real impacts on non-timber objectives through harvesting and renewal efforts.

Appendix 1 – Tables AR-7 to AR-14

MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-7: Summary of Planned and Actual Harvest Areas (ha/yr)

	Past Plans						Current Plan				
	Planned			Actual			Planned	Actual	Projections		
Forest Unit	1993-98	1998-03	2003-08	1993-98	1998-03	2003-08	2008-13	2008-13	Short AHA 2008	Medium 2028	Long 2108
Pj	1,617	1,919		1,199	1,827						
Sp	1,228	975		1,027	806						
Bf	1	9		16	18						
Oc	3	10		3	7						
Po	1,533	1,676		960	1,372						
Bw	386	166		261	169						
Bw1			447			144	787	25	760	739	162
Lc1			50			25	69		76	130	148
Mw1			152			76	234	5	268	223	657
Mw2			156			95	634	1	644	316	555
Pj1			821			576	978	82	990	571	743
Pj2			354			222	535	43	567	293	169
Po1			1,433			847	1,073	73	1,149	715	418
Sb1			538			314	330	2	321	279	262
Sf1			111			63	183	3	188	138	354
Sp1			954			570	279	8	412	480	667
Total	**4,768**	**4,755**	**5,016**	**3,466**	**4,199**	**2,932**	**5,102**	**243**	**5,376**	**3,882**	**4,135**

Source:
2008 FMP, Approved ARs and RPFOs

MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-8: Summary of Planned and Actual Harvest Volumes (m3/yr)

	Past Plans						Current Plan				
	Planned			Actual			Planned	Actual	Projections		
Forest Unit	1993-98	1998-03	2003-08	1993-98	1998-03	2003-08	2008-13	2008-13	Short AHA 2008	Medium 2028	Long 2108
White Pine				1,500		8			0	0	0
Jack Pine	246,917	251,612	177,988	190,700	236,800	116,866	245,694	0	244,489	188,647	245,084
Spruce	202,246	148,460	209,610	158,700	146,300	108,276	122,919	0	120,919	101,896	114,110
Balsam Fir			7,023	12,800	11,000	9,460	7,279	0	14,592	10,456	17,807
SPF								19,171			
Cedar			2,034			25	4,244	6	5,635	5,969	5,684
Larch			584			0	4,761	0	2,227	2,711	3,820
Poplar	220,404	239,993	195,868	76,100	135,500	54,189	172,948	698	175,000	119,000	120,000
Birch	81,200	49,457	64,510	200	2,600	2,602	51,119	1,425	74,568	54,412	36,856
fuelwood/biofibre								569			
Total	**750,767**	**689,522**	**657,617**	**440,000**	**532,200**	**291,425**	**608,963**	**21,869**	**637,430**	**483,091**	**543,361**

Source:
2008 FMP, Approved ARs and RPFOs

MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-9: Summary of Planned and Actual Renewal, Tending and Protection Operations

Operation	Area (ha) - Annualized							
	Past Plans						Current Plan	
	PLANNED			ACTUAL			PLANNED	ACTUAL
	1993-98	1998-03	2003-08	1993-98	1998-03	2003-08	2008-13	2008-13
Renewal								
Natural Regeneration								
Natural Depletion (Crocker Lake)			1,995			3,332		
Clearcut Silvicultural System (even-aged)	2,610	2,220	2,957	673	1,284	1,949	3,034	0
Artificial Regeneration								
Planting	1,314	1,897	1,474	1,623	2,060	836	1,342	0
Seeding	100	400	585	261	207	309	674	0
Total Renewal	**4,024**	**4,517**	**7,011**	**2,557**	**3,551**	**6,426**	**5,051**	**0**
Site Preparation								
Mechanical	1,173	2,147	2,227	1,652	1,508	957	2,017	0
Chemical	141	200	157	132	472	6	0	0
Prescribed Burn	715	150		103	85			0
Slash Pile Burn			0			36	1,682	0
Total Site Preparation	**2,029**	**2,497**	**2,384**	**1,887**	**2,065**	**999**	**3,699**	**0**
Tending								
Clemical Aerial	1,007	1,420	1,411	1,222	1,731	749	2,017	0
Chemical Ground	0		157	0	6	0	0	0
Manual	53	200		0				0
Pre-Commercial Thinning	50	570	200	11	181	57	314	0
Total Tending	**1,110**	**2,190**	**1,768**	**1,233**	**1,918**	**806**	**2,330**	**0**
Protection (Insect Pest Control)								

Source:
2008 FMP, Approved ARs and RPFOs

MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-10: Summary of Harvest and Regeneration Trends

		Term			
Forest Unit		**1993-98**	**1998-03**	**2003-08**	**2008-13**
BW1 or BW	Harvest/Salvage (ha)	**1,305**	**845**	**720**	**127**
	Surveyed (ha)	**1,346**	**843**	**1,213**	**255**
	Renewed (ha)	**296**	**728**	**na**	**0**
	Regenerated Successfully (ha)	**1,346**	**776**	**1,129**	**219**
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated	**100%**	**92%**	**93%**	**86%**
LC1 or OC	Harvest/Salvage (ha)	**15**	**35**	**125**	**0**
	Surveyed (ha)	**462**	**0**	**378**	**11**
	Renewed (ha)	**0**	**19**	**ns**	**0**
	Regenerated Successfully (ha)	**462**	**0**	**343**	**11**
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated	**100%**		**91%**	**100%**
MW1	Harvest/Salvage (ha)	**0**	**0**	**380**	**27**
	Surveyed (ha)	**0**	**0**	**772**	**17**
	Renewed (ha)	**0**	**0**	**ns**	**0**
	Regenerated Successfully (ha)	**0**	**0**	**649**	**17**
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated			**84%**	**100%**
MW2	Harvest/Salvage (ha)	**0**	**0**	**475**	**6**
	Surveyed (ha)	**0**	**0**	**1,347**	**75**
	Renewed (ha)	**0**	**0**	**na**	**0**
	Regenerated Successfully (ha)	**0**	**0**	**1,196**	**67**
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated			**89%**	**89%**
PJ1 or PJ	Harvest/Salvage (ha)	**5,995**	**9,135**	**2,880**	**410**
	Surveyed (ha)	**10,395**	**6,652**	**10,026**	**1,864**
	Renewed (ha)	**7,885**	**7,545**	**na**	**0**
	Regenerated Successfully (ha)	**10,395**	**6,652**	**9,139**	**1,864**
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated	**100%**	**100%**	**91%**	**100%**
PJ2	Harvest/Salvage (ha)	**0**	**0**	**1,110**	**215**
	Surveyed (ha)	**0**	**0**	**2,531**	**110**
	Renewed (ha)	**0**	**0**	**na**	**0**
	Regenerated Successfully (ha)	**0**	**0**	**2,324**	**110**
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated			**92%**	**100%**

Forest Unit		Term			
		1993-98	1998-03	2003-08	2008-13
PO1 or PO	Harvest/Salvage (ha)	4,800	6,860	4,235	365
	Surveyed (ha)	3,474	613	6,766	1,392
	Renewed (ha)	2,538	2,589	na	0
	Regenerated Successfully (ha)	3,474	551	5,899	1,362
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated	100%	90%	87%	98%
SB1 or SP	Harvest/Salvage (ha)	5,135	4,030	1,570	8
	Surveyed (ha)	7,561	2,582	1,872	232
	Renewed (ha)	2,069	6,825	na	0
	Regenerated Successfully (ha)	7,561	2,582	1,401	232
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated	100%	100%	75%	100%
SF1 or BF	Harvest/Salvage (ha)	80	90	315	14
	Surveyed (ha)	0	48	860	162
	Renewed (ha)	0	17	na	0
	Regenerated Successfully (ha)	0	22	846	152
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated		46%	98%	94%
	Harvest/Salvage (ha)	0	0	2,850	42
	Surveyed (ha)	0	0	2,939	1,192
	Renewed (ha)	0	0	na	0
	Regenerated Successfully (ha)	0	0	2,798	1,172
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent FU Successfully Regenerated			95%	98%
Total	**Harvest/Salvage (ha)**	17,330	20,995	14,660	1,214
	Surveyed (ha)	23,238	10,738	28,702	5,310
	Renewed (ha)	12,788	17,724	15,729	0
	Regenerated Successfully (ha)	23,238	10,583	25,723	5,206
	Unavailable for Regeneration (ha)				
	Un-surveyed (ha)				
	Percent ALL FU Successfully Regenerated	100%	99%	90%	98%

Sources:
Approved ARs, RPFOs and Trends Analysis

MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-11: Summary of Forest Condition for the Available Managed Crown Productive Forest

		Area (ha)						
		Past Plans			Current Plan 2008-18			
							Projections	
Forest Unit	Age Class	1993-98	1998-03	2003-08	Plan Start 2008	Plan End 2013	Medium-Term 2028	Long-Term 2108
bw1 or bw	BNS	2,860	1,959					
	0-20	763	8,583	4,346	5,704		11,175	6,891
	21-40	13,249	3,112	864	1,011		5,716	7,903
	41-60	28,533	36,938	11,679	8,253		1,002	7,438
	61-80	14,728	25,182	27,637	23,793		8,271	7,434
	81-100	17,614	14,785	9,471	10,739		22,554	6,046
	101-120	12,238	7,248	6,923	6,058		1,328	86
	121-140	708	928	2,600	2,221		1,243	0
	141-160	0	71	86	96		811	0
	161-180	0	0		0		43	0
	181-200	0	0		0		0	0
	201+				0		0	0
	bw1 or bw	**90,693**	**98,806**	**63,606**	**57,875**		**52,142**	**35,797**
lc1 or ce/la	BNS	87	207					
	0-20	95	0	976	1,151		4,264	4,424
	21-40	1,307	21	649	535		1,140	3,474
	41-60	1,080	124	1,622	1,007		536	3,659
	61-80	951	630	418	752		998	4,410
	81-100	2,848	1,927	1,402	1,271		745	4,061
	101-120	0	2,786	2,923	2,598		1,270	206
	121-140	0	1,924	3,563	2,897		2,577	0
	141-160	0	646	2,610	2,494		2,193	951
	161-180	0	70	876	776		1,435	561
	181-200	0	0	48	43		787	131
	201+			8	0		42	1,796
	lc1 or ce/la	**6,368**	**8,335**	**15,095**	**13,524**		**15,987**	**23,672**
mw1	BNS							
	0-20			3,526	2,674		12,935	8,466
	21-40			2,305	2,458		2,665	8,173
	41-60			1,303	1,081		2,433	7,670
	61-80			3,409	2,394		957	7,915
	81-100			3,037	3,030		1,354	4,497
	101-120			2,607	2,145		1,916	33
	121-140			961	609		469	318
	141-160			7	3		603	95
	161-180			2	0		14	190
	181-200				0		0	0
	201+				0		0	0
	mw1	**0**	**0**	**17,157**	**14,394**		**23,345**	**37,356**
mw2	BNS							
	0-20			5,032	5,343		11,877	12,731
	21-40			1,370	1,388		5,291	10,314
	41-60			9,947	7,757		1,391	7,193
	61-80			12,451	11,441		8,422	8,341
	81-100			5,049	5,215		5,420	64
	101-120			5,536	4,713		2,857	213
	121-140			2,569	2,146		2,478	842
	141-160			434	392		1,014	213
	161-180				0		109	257
	181-200				13		0	0
	201+			28	0		0	0
	mw2	**0**	**0**	**42,416**	**38,408**		**38,860**	**40,168**

Forest Unit	Age Class	Area (ha)						
		Past Plans			Current Plan 2008-18			
							Projections	
		1993-98	1998-03	2003-08	Plan Start 2008	Plan End 2013	Medium-Term 2028	Long-Term 2108
oh1 or ax	BNS							
	0-20				0		5	5
	21-40				0		0	5
	41-60				0		0	5
	61-80		44	418	423		0	5
	81-100				0		418	5
	101-120	9	15	15	11		0	0
	121-140				0		14	0
	141-160				0		0	0
	161-180				0		0	398
	181-200				0		0	0
	201+				0		0	14
	oh1 or ax	**9**	**59**	**433**	**434**		**437**	**437**
pj1 or pj	BNS	13,874	9,888					
	0-20	6,480	19,051	35,005	28,789		18,828	18,676
	21-40	4,645	3,741	4,544	8,854		28,921	21,525
	41-60	25,972	13,267	5,135	2,550		8,779	20,261
	61-80	23,555	29,902	20,289	16,695		2,525	7,509
	81-100	26,181	26,206	11,760	11,208		10,438	5,319
	101-120	6,835	13,611	8,443	5,786		4,745	6,974
	121-140	1,057	2,827	1,869	1,270		2,553	1,246
	141-160	0	444	278	178		155	0
	161-180	0	38	12	9		0	0
	181-200	0	3		0		0	0
	201+				0		0	0
	pj1 or pj	**108,599**	**118,978**	**87,335**	**75,339**		**76,944**	**81,510**
pj2	BNS							
	0-20			7,139	6,780		9,768	10,540
	21-40			3,422	4,841		6,554	8,005
	41-60			1,136	614		4,780	4,886
	61-80			8,889	6,369		614	4,211
	81-100			6,043	6,495		3,630	1,198
	101-120			5,369	4,391		4,641	1,971
	121-140			2,295	1,491		552	484
	141-160			390	360		355	340
	161-180			92	77		0	0
	181-200				0		0	0
	201+				0		0	0
	pj2	**0**	**0**	**34,775**	**31,418**		**30,892**	**31,635**
po1	BNS	7,919	4,666					
	0-20	841	10,635	13,380	14,677		21,046	13,620
	21-40	4,720	2,881	2,250	2,663		14,526	13,196
	41-60	20,793	10,688	3,186	2,223		2,646	10,073
	61-80	29,765	25,790	23,570	17,483		2,224	13,120
	81-100	32,508	26,548	17,316	15,705		17,384	12,618
	101-120	12,154	14,056	11,495	9,129		2,539	0
	121-140	255	2,612	3,811	2,503		1,122	0
	141-160	0	121	246	100		308	0
	161-180	0	0		0		15	0
	181-200	0	0		0		0	0
	201+			73	64		0	0
	po1	**108,955**	**97,997**	**75,327**	**64,547**		**61,810**	**62,627**

Forest Unit	Age Class	Area (ha)						
		Past Plans			Current Plan 2008-18			
							Projections	
		1993-98	1998-03	2003-08	Plan Start 2008	Plan End 2013	Medium-Term 2028	Long-Term 2108
sb1 or sb	BNS	21,008	8,030					
	0-20	770	6,104	8,362	10,753		3,549	4,246
	21-40	6,337	2,848	700	566		10,637	3,253
	41-60	18,120	12,703	529	704		560	2,457
	61-80	17,469	26,167	2,049	1,701		695	3,002
	81-100	27,344	23,965	2,370	2,420		1,676	3,380
	101-120	32,419	21,179	4,891	4,187		2,406	4,212
	121-140	26,972	13,511	6,445	5,632		4,157	0
	141-160	0	14,234	8,630	7,368		4,330	662
	161-180	0	129	3,311	3,228		3,362	1,569
	181-200	0	141	26	54		2,726	1,437
	201+			5	29		25	1,682
	sb1 or sb	**150,439**	**129,011**	**37,318**	**36,642**		**34,124**	**25,901**
sf1 or bf	BNS	248	45					
	0-20	57	5,790	1,225	2,013		2,091	1,178
	21-40	3,806	904	339	323		2,006	1,406
	41-60	2,086	7,394	4,663	3,283		707	2,153
	61-80	429	1,384	6,954	6,410		3,507	2,431
	81-100	228	237	2,276	2,263		5,074	2,735
	101-120	0	33	1,942	1,573		1,745	1,184
	121-140	0	0	1,069	899		465	358
	141-160	0	0	746	436		405	877
	161-180	0	0	38	44		152	0
	181-200	0	0		11		39	194
	201+				0		6	53
	sf1 or bf	**6,854**	**15,787**	**19,252**	**17,255**		**16,197**	**12,568**
sp1	BNS							
	0-20			12,076	21,394		6,428	7,385
	21-40			3,099	3,108		21,147	7,626
	41-60			2,790	1,981		3,079	7,596
	61-80			13,272	9,668		2,204	6,449
	81-100			10,620	9,611		9,618	5,358
	101-120			8,738	6,682		7,789	8,886
	121-140			5,198	3,187		2,063	2,242
	141-160			3,114	1,920		1,358	880
	161-180			399	233		902	0
	181-200			36	4		98	0
	201+			20	0		0	0
	sp1	**0**	**0**	**59,362**	**57,788**		**54,685**	**46,422**
All Fus	BNS	45,996	24,795	0	0		0	0
	0-20	9,006	50,163	91,067	99,278		101,966	88,161
	21-40	34,064	13,507	19,542	25,747		98,603	84,880
	41-60	96,584	81,114	41,990	29,453		25,912	73,391
	61-80	86,897	109,099	119,356	97,129		30,418	64,827
	81-100	106,723	93,668	69,344	67,957		78,310	45,282
	101-120	63,655	58,928	58,882	47,273		31,237	23,764
	121-140	28,992	21,802	30,380	22,855		17,692	5,489
	141-160	0	15,516	16,541	13,347		11,531	4,018
	161-180	0	237	4,730	4,367		6,033	2,975
	181-200	0	144	110	125		3,650	1,762
	201+	0	0	134	93		73	3,545
All FUS Total Available Production Forest		**471,917**	**468,973**	**452,076**	**407,623**		**405,425**	**398,094**
All FUS Total Unavailable Protection Forest		**41,706**	**32,121**	**28,682**	**31,802**		**31,802**	**31,802**
All FUS Total Unavailable Production Forest		**0**	**0**	**0**	**38,702**		**40,900**	**48,231**
All Fus Total Unavailable Park			**na**	**na**	**26,461**		**26,461**	**26,461**
All FUS Total Crown Productive Forest		**513,623**	**501,094**	**480,758**	**504,588**	**0**	**504,588**	**504,588**

Source:
2008 FMP SFMM and FMP-4, and FMP-9

MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-12: Summary of Habitat for Species at Risk and Selected Wildlife Species

Wildlife Species	Area of Habitat (ha)							
	Past Plans			Current Plan				
	1993-98	1998-03	2003-08	Plan Start 2008	Projections			Plan End
					Short-Term 2,018	Medium Term 2,028	Long-Term 2,108	
moose breeding			25,200	29,409	33,599	27,998	22,020	
moose winter			90,000	69,040	75,331	78,661	91,856	
marten			122,800	116,847	118,217	115,396	118,001	
great grey owl			101,600	35,404	37,875	40,526	46,953	
black bear summer			13,000	51,362	43,297	28,647	30,667	
black bear foraging			102,700	51,738	49,388	65,205	35,412	
lynx			100,000	32,738	35,457	41,013	45,516	
red breasted nuthatch			na	76,269	75,639	95,617	63,285	
woodland caribou			20,800	na	na	na	na	
black backed woodpecker			63,100	46,557	48,645	51,012	38,729	
canada warbler			na	171,727	156,885	140,291	129,256	
bay breasted warbler			162,300	240,285	207,159	179,963	215,163	
olive sided flycatcher			na	46,843	51,785	56,397	34,885	
boreal chickadee			39,400	174,983	162,709	158,728	184,747	
tennessee warbler			na	62,520	52,329	43,276	77,504	
mourning warbler			na	29,575	46,713	57,205	42,792	
shnowshoe hare			100,000	87,503	117,564	147,497	122,309	

Source:
2008 FMP, Approved ARs and RPFOs

MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-13: Summary of Assessment of Regeneration and Silvicultural Success

		2008-13 Area Assessed (ha)				
		Area Successfully Regenerated			Area Not Successfully Regenerated	Total Area Assessed
Forest Unit	Silvicultural Ground Rule	Projected Forest Unit	Other Forest Unit	Total		
Harvest	**Harvest**			0		0
BW1	BW1-01 natural	157	62	219	36	255
	BW1-01 Prsnt	1		1		1
	FU Subtotal	**157**	**62**	**219**	**36**	**255**
LC1	LC1-01 natural		11	11		11
	FU Subtotal		**11**	**11**		**11**
MW1	MW1-01 natural			0		0
	MW1-04 Intn1	0		0		0
	MW1-04 ext	16	1	17		17
	FU Subtotal	**16**	**1**	**17**		17
MW2	MW2-01 natural	45	21	67	8	75
	FU Subtotal	**45**	**21**	**67**	**8**	**75**
PJ1	PJ1-01 natural			0		0
PJ1	PJ1-02 basic			0		0
	PJ1-03 Basc1	382		382		382
	PJ1-03 ext	188		188		188
PJ1	PJ1-03 intensive	1,282	0	1,282		1,282
	PJ1-03 prsnt	12		12		12
	FU Subtotal	**1,863**	**0**	**1,864**		**1,864**
PJ2	PJ2-01 natural			0		0
PJ2	PJ2-02 basic			0		0
	PJ2-04 ext	94	4	98		98
	PJ2-04 PRSNT	12	0	12		12
	PJ2-04 Intn1	0		0		0
	FU Subtotal	**106**	**4**	**110**		**110**
PO1	PO1-01 natural	1,291	70	1,360	30	1,390
PO1	PO1-02 prsnt	2		2		2
	FU Subtotal	**1,292**	**70**	**1,362**	**30**	**1,392**
SB1	SB1-04 intensive			0		0
	SB1-01 ext		225	225		225
	SB1-01 PRSNT		7	7		7
	FU Subtotal		**232**	**232**		**232**
SF1	SF1-01 ext	153	0	153	10	163
	FU Subtotal	**153**	**0**	**153**	**10**	**163**
SP1	SP1-01 natural			0		0
SP1	SP1-04 intensive			0		0
	SP1-05 ext	421		421		421
SP1	SP1-05 intensive	662	83	745	20	765
	SP1-05 PRSNT	6	1	6		6
	Forest Unit Subtotal	**1,089**	**83**	**1,172**	**20**	**1,192**
	Harvest Subtotal	**4,722**	**484**	**5,206**	**104**	**5,310**
Natural Disturbance						
	Forest Unit Subtotal					
	Disturbance Subtotal	**0**	**0**	**0**	**0**	**0**
	Total					

Source:
2008 FMP, Approved ARs

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MANAGEMENT UNIT NAME: White River Forest
PLAN PERIOD: 2008 TO 2018
2014 IFA Trends Analysis

AR-14: Assessment of Objective Achievement

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
1) Forest Diversity - natural landscape pattern and distribution								
Move toward a distribution of disturbances that more closely resembles the expected natural disturbance template.	Area distribution of NDPEG forest Disturbances							
	<100	4.1%	5%	4.7 to 5.4%				Target not Achieved
	101-200	2.9%	5%	4% to 7%				Target Achieved
	201-500	5.5%	1%	0 to 1%				Target Achieved
	501-1000	8.5%	1%	0 to 3%				Target Achieved
	1001-5000	16.2%	7%	2 to 12%				Target Not Achieved
	5001-10000	6.5%	13%	5 to 14%				Target Achieved
	>10000	56.3%	65%	62 to 82%				Target Not Achieved, Overall target achieved in 4 of 7 classes. Additional 1,214 hecates of harvest in 7 small patches not expected to alter results.
	Frequency distribution of NDPEG forest disturbances							
	<100	62.00%	61.00%	58% to 63%				Target Achieved
	101-200	12.40%	18.00%	14% to 22%				Target Achieved
	201-500	12.00%	6.00%	4% to 7%				Target Achieved
	501-1000	7.70%	3.00%	0% to 6%				Target Achieved
	1001-5000	4.30%	6.00%	4% to 11%				Target Achieved
	5001-10000	0.40%	3.00%	2% to 4%				Target Achieved
	>10000	1.30%	3%	2% to 8%				Target Not Achieved. Overall Target achievement is 6 of 7 classes. Additional 1,214 hectares of harvest in 7 small patches not expected to alter results.
Forest Diversity Objective - forest structure, composition and abundance								
To provide for a forest age class structure similar to the expected natural landscape dynamics.	Total area of Forest Unit by Term		natural level t1	75% natural t1				AR-11 figures cannot be used as they exclude parks and reserved areas. Desireable levels were based on the null and the target levels were based on 75% of the null. Given these levels would be the same as the plan start levels they were calculated accordingly. Existing FU area levels are equivalent to the natural for the first term so all desireable and target levels are expected to be acheived in 2008-13 period. Best to assess after full implementation of the 10 yr plan after the FRI has been updated.
	Bw1	78,976	78976	59232				
	Lc1	16,376	16,376	12,282				
	Mw1	19,598	19,598	14,699				
	Mw2	51,387	51,387	38,540				
	Pj1	86,021	86,021	64,516				
	Pj2	38,000	38,000	28,500				
	Po1	78,843	78,843	59,132				
	Sp1	41,856	41,856	31,392				
	Sf1	21,561	21,561	16,171				
	Sb1	67,670	67,670	50,753				

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
	Total area mature by Forest Unit by Term		natural level t1	75% natural t1				AR-11 figures cannot be used as they exclude parks and reserved areas and do not have the required age classes to define mature.. Desired levels were based on null level and the target level was based on 75% of null level. Given these levels would be the same as the plan start levels they were calculated accordingly. Existing mature FU area levels are equivalent to the natural for the first term so all desireable and target levels are expected to be acheived in 2008-13 period. Best to assess after full implementation of the 10 yr plan and after the FRI has been updated.
	Bw1 mature	43,440	43,440	32,580				
	Lc1 mature	4,749	4,749	3,562				
	Mw1 mature	6,993	6,993	5,245				
	Mw2 mature	14,351	14,351	10,763				
	Pj1 mature	30,641	30,641	22,981				
	Pj2 mature	13,378	13,378	10,034				
	Po1 mature	31,630	31,630	23,723				
	Sp1 mature	7,986	7,986	5,990				
	Sf1 mature	4,086	4,086	3,065				
	Sb1 mature	16,781	16,781	12,586				
	Total area over-mature by Forest Unit by Term		natural level t1	75% natural t1				AR-11 figures cannot be used as they exclude parks and reserved areas and do not have the required age classes to define mature.. Desired and target levels are poorly documented in FMP-13, but are based on null level and 75% of null level. Given these levels would be the same as the plan start levels they were calculated accordingly. Existing overmature FU area levels are equivalent to the natural for the first term so all target and desireable levels are expected to be acheived in 2008-13 period. Best to assess after full implementation of the 10 yr plan and FRI has been updated.
	Bw1 overmature	26,835	26,835	20,126				
	Lc1 overmature	7,344	7,344	5,508				
	Mw1 overmature	3,663	3,663	2,747				
	Mw2 overmature	8,960	8,960	6,720				
	Pj1 overmature	5,121	5,121	3,841				
	Pj2 overmature	8,097	8,097	6,073				
	Po1 overmature	25,928	25,928	19,446				
	Sp1 overmature	18,345	18,345	13,759				
	Sf1 overmature	2,801	2,801	2,101				
	Sb1 overmature	9,969	9,969	7,477				
Forest Diversity Objective - habitat for animal life								
To maintain wildife.habitat for species dependent on overmature forest condtions	Area of over-mature forest dependent wildlife habitat.		natural level t1	75% natural t1				Habitat figures were derived from the SPMM modeling in the 2008 FMP. Updated Figures will only be available when the new 2018-28 FMP is prepared using an updated FRI. Desired levels were based on the null level and target levels were based on 75% of the null level. Existing overmature habitat levels are equivalent to the natural for the first term so all desireable and target levels are expected to be acheived in 2008-13 period. Best to assess after full implementation of the 10 yr plan and after FRI has been updated.
	Black Bear Fall	51,738	51,738	38,804				
	Lynx	32,738	32,738	24,554				
	Black Backed Wo	46,557	46,557	34,918				
	Red Breasted Nu	76,269	76,269	57,202				

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
To maintain wildife.habitat for forest dependent provinically and locally featured species	Area of Preferred Habitat for Selected Wildlife Species		natural level t1	75% natural t1				Habitat figures were derived from the SFMM modeling in the 2008 FMP. Updated Figures will only be available when the new 2018-28 FMP is prepared using an updated FRI. Desired levels were based on the null level and target levels were based on 75% of the null level. Existing habitat levels are equivalent to the natural for the first term so all desireable and target levels are expected to be acheived in 2008-13 period. Best to assess after full implementation of the 10 yr plan and after FRI has been updated.
	moose summer	29,409	29,409	22,057				
	marten	116,846	116,846	87,635				
	moose winter	69,040	69,040	51,780				
	black bear summ	51,362	51,362	38,522				
	canada warbler	171,727	171,727	128,795				
	bay breasted war	240,285	240,285	180,214				
	olive sided flycato	46,843	46,843	35,132				
	boreal chickadee	174,982	174,982	131,237				
	tennesee warbler	62,520	62,520	46,890				
	mourning warbler	29,575	29,575	22,181				
	snowshoe hare	87,502	87,502	65,627				
	Compliance with wildlife provincially and locally featured species AOC Prescriptions		Full Compliane with Wildlife AOCs	0% significant non-compliances and <5% moderate and minor non-compliances				No non-compliances related to provincially or locally featured species AOC prescriptions. Objective achieved.
Maintain 10 to 20% of the forest which has the cabability to produce marten habitat in suitable conditions in core areas.	% Capable in Suitable Cores	11%	10% to 20%	2008-28 11%, 2028-48 15%, 2048-68 13%				11% suitable core target acheved in 2008 and 2018 so desired and target levels achieved.
To provide early successional shoreline forest habitat similar to what would be created during natural disturbance events.	Riparian shoreline harvest that is planned, assessed and harvested.		Harvest 100% of shoreline assessed and planned for harvest	>= 75% of shoreline areas to be harvested				No shoreline areas were planned for harvesting or were harvested so the objective was not achieved.

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
To maintain wildlife habitat for forest dependent wildlife species at risk with known occurance on the WRF	Area of Preferred Habitat for Selected Wildlife Species at Risk							Habitat figures were derived from the SFMM modeling in the 2008 FMP. Updated Figures will only be available when the new 2018-28 FMP is prepared using an updated FRI. Desired levels were based on the null level and target levels were based on 75% of the null level. Existing habitat levels are equivalent to the natural for the first term so all desireable and target levels are expected to be acheived in 2008-13 period. Best to assess after full implementation of the 10 yr plan and after FRI has been updated.
	Great Grey Owl	35,403	natural level t1 35,403	75% natural t1 26,552				
	Compliance with Species at Risk AOC Prescriptions		100% compliance with Species at Risk AOCs	100% complaince with Species at Risk AOCs				No non-compliancese related to species at risk. Objective achieved.
Social and economic Objective - community well-being								
Ensure that enough roads are in place to allow for effective and efficient forest operations while also limiteing company and ministry liability for roads that are no longer requried.	km road per square km of forest		provide level of access to carry out forest operations	achieve road density of between 0.51 and 1.17 km/km2				WRFP and MNR have went through a road review to determine who is responsible for which roads. Roads were adequate to implement the limited operations the Desireable level was achieved. The 2008 FMP classified a total of 2,629 hectaares as ""UCL" which is expected to be moslty roads. These roads represented a total fo 0.005% of the total forest area of 504,673 hectares.
Silviculture Objective								
Ensure successful renewal of harvested stands	% of harvested forest assessed as free-growing		assess 100% of harvested area as per FMP-25	assess 100% of harvested area				During the current plan term a total of 5,310 hectares of harvest areas from prior plan periods were assessed during the current plan period and 98% were considered free-to-grow so this objective was achieved. However the 1,214 hectares harvested in the 2008-13 plan term have not yet been assessed for renewal as artififical renewal treatments have not yet occurred. This means this objecitve was partially achieved.
	percent of harvest area that was assessed as free-to-grow		100% of area assessed	>90% of area asssessed				See above

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
Forest Diversity - values dependent on the Crown forest								
To reduce the use of pesticides while maintaining forest productificy	area of pesticide application	2,209 ha/yr	minimuze	2,098 ha/yr				No pesticide applications occurred during the 2008-13 plan term due to in-active operations. This objective was achieved.
Social and economic Objective - healthy forest ecosystem								
Implement forest operations in a manner that minimizes conflicts with non-timber resource users, and protects non-timber values, in order to provide the opportunity to benefit from the forest	Compliance with prescriptions for the protection of natural resource features, land use and values dependent on forest cover.		100% compliance with non-timber AOCs	0% significant non-compliances and <5% moderate and minor non-compliances				No non-compliances related to non-timber AOCs. This objective was achieved.
	Compliance with prescriptions for the protection of resource based tourism values		100% compliance with toruism AOCs	0% significant non-compliances and <5% moderate and minor non-compliances				No non-compliances related to toruism AOCs. This objective was achieved.
Social and economic Objective - harvest levels and community well-being								
Provide a continuous, predictable and economic supply of quality timber products required by wood processing facilities that revieve wood from the forest.	Annual AHA by FU	AHA by FU	Maintain FU mix	Remain within +or- 30% of previous 10 yr harvest area except for MW1 which is within +or-40%				Planned harvest area was as depicted, it was not fully utilized. The Plan objective was achieved.
	BW1	760						
	LC1	76						
	MW1	268						
	MW2	644						
	PJ1	990						
	PJ2	567						
	PO1	1149						
	SB1	321						
	SF1	188						
	SP1	412						

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
	Annual AHV by Species Group		Meet MROL	+ or- 20% previous term volume				MROL levels not achieved for SPF, poplar but were achieved for Bw and Ce/La. Target levels also achieved. However, even though volumes were available they were not utilzied due to a lack of demand.
	SPF	380,000	400,100					
	Po	175,000	243,200					
	Bw	74,658	64,500					
	Ce/La	5,635	3,900					
	Planned Annual Harvest Area by FU		100% of the AHA	> 90% AHA				AHA was fully planned for harvest in all Fus except SP1 which was slightly under-allocated. This objective was achieved even thought the AHA was not utilized due to lack of markets.
	BW1	750	760					
	LC1	75	76					
	MW1	255	268					
	MW2	631	644					
	PJ1	946	990					
	PJ2	535	567					
	PO1	1,098	1,149					
	SB1	320	321					
	SF1	185	188					
	SP1	353	412					
	Planned Annual Harvest Volume by Species Group			+ or - 10% planned species group volume				Planned harvest volumes were slightly lower than the AHV for SPF, white birch and cedar/larch sod desireable levels were not alll achieved. However target levels were all achieved.
	SPF	379,928	389,000					
	Po	179,923	175,000					
	Bw	54,015	74,658					
	Ce/La	5,037	5,631					

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
	Planned 1st 5Yr Harvest Area BW1 LC1 MW1 MW2 PJ1 PJ2 PO1 SB1 SF1 SP1	 3,936 344 1,170 3,168 4,891 2,676 5,367 1,648 913 1,397	Achieve 50% 10yr AHA 3,799 381 1,339 3,221 4,949 2,837 5,747 1,604 941 2,061	allocate + or- 10% by fu				Desired levels not met for Lc1, Mw1, Mw2, Pj1, Pj2, Po1, Sf1 and Sp1 due to under-allocations in term 1. However, target levels met for all Fus except Mw1 and Sp1. Overall the objective was partially achieved.
	Planned 1st 5Yr Harvest Volume SPF Po Bw Ce/La	 1,879,460 864,739 255,596 23,803	 1,900,000 875,000 372,838 28,175	allocate + or- 10% by species group				Desireable levels not achieved due to under-allocation. However target levels achieved for SPF and poplar, but not achieved for birch and cedar/larch.
	Actual Harvest Area by FU BW1 LC1 MW1 MW2 PJ1 PJ2 PO1 SB1 SF1 SP1		Harvest 100% of planned harvest area 3,936 344 1,170 3,168 4,891 2,676 5,367 1,648 913 1,397	Harvest >90% of Planned Harvest Area 3,542 310 1,053 2,851 4,402 2,408 4,830 1,483 822 1,257				Actual harvesting was well below planned due to a lack of demand. This objective was not achieved.
	Actual Harvest Volume by Species Group SPF Po Bw Ce/La Fuelwood/Biofibre		Harvest 100% of planned harvest area 1,879,460 864,739 255,596 23,803 na	Harvest >90% of Planned Harvest Area 1,691,514 778,265 230,036 21,423 na				Actual harvesting was well below planned due to a lack of demand. This objective was not achieved.

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
	Percent of forecast volume utilized by mill		Utilize 100% of the planned volume	Utilize >90% of planned volume by mill				There were no mill utilization targets specified however all of the SPF would be expected to be utilzed at the White River sawmill and alll of the poplar/birch OSB would be expected to be utilized at the former Weyherhauser OSB mill in Limer and all poplar veneer would be expected to be utilzied by Columbia Forest Products in Hearst. These mill utilziation objectives were not achieved due to mill closures during the plan term.
	Number of forest operations inspections for wasteful practices.		No wasteful practices non-compliances.	0% significant non-compliances and <5% moderate and minor non-compliances				There were no wasteful practices non-compliances during the plan term. This objective was achieved.
Social and economic Objective - community well-being								
To minimize the impact for forest operations on cultural heritage values.	Compliance with cultural heritage AOCs		No cultural heritage AOC non-compliances	0% significant non-compliances and <5% moderate and minor non-compliances				There were no cultural heritage AOC non-compliances during the plan term. This objective was achieved.
	Compliance with prescriptions for identified aboriginal values.		No aboriginal AOC non-compliances	0% significant non-compliances and <5% moderate and minor non-compliances				There were no aboriginal AOC non-compliances during the plan term. This objective was achieved.

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
Social and economic Objective - healthy forest ecosystems								
To undertake all forest management operations using sound environmental practices such that any negative environmental impacts are avoided or minimized	Number of forest operations inspections in significant non-compliance as a result of forest management activites causing site damage and loss of forest productivity.		No adverse environmental impact non-compliances	0% significant non-compliances and <5% moderate and minor non-compliances				There were no adverse environmental impact non-compliances during the plan term. This objective was achieved.
To ensure the maintenance of riparian zones, water qualtiy and habitat for fisheries resources adjacent to water boides where forest management activites occur.	Compliance with AOC prescriptions to protect riparian zones and water quality.		No riparian, water quality or fishery non-compliances	0% significant non-compliances and <5% moderate and minor non-compliances				There was only one non-compliance regarding a water crossing that was installed outside of the timing window that was issued a warning letter. There were no other riparian, water quality or fishery non-compliances during the plan term. This objective was achieved.
Social and economic Objective - community well-being								
Maintain the are of managed available for timber production at the highest possible level by minimizing the conversion of Crown forest area to non-forest land.	Managed Crown productive forest avaialble for timber production.		< 2% of the harvest area	<2% of the harvest area				No losses of productive forest are predicted as a result of the limited level of harvesting. This objective was achieved.
To provide opportunities for First Nation involvement in forest management planning activities.	Formal diolgue with FN communities with known interest in WRF		Involve all 4 aborginal communities.	Involve all 4 aboriginal communities				All 4 aboriginal communities were contacted 6 months prior to public consultation to discuss opportunites to be involved in the planning and implementation. There was on-going contact with each aboriginal community at each stage of the FMP development and implementation. Approximately 50% of planning team meetings were attended by aboriginal members.
To encourage and support the participation of the LCC known as WRACC in the development of the FMP for the WRF.	Comparison between LTMD and final plan ratings by LCC		Positive score	Positive score				The LCC rating for the LTMD stage was 7.6 and 6.9 for the draft plan stage, showing a slight decline. Both scores were positive indicating this objective was met.

Management Objective	Indicator	Plan Start Level	Desireable Level	Target	Short 2018	Medium 2028	Long 2108	Assessment
To improve forest operations compliance for the White River Forest	Number of Forest Operations Inspections in non-compliance as a result of forest management activities		No incidences of noncompliance as a result of forest management activities	To reduce the average number of Forest Operations Inspections in non-compliance of forest management activities from the 2003-08 FMP				There was only one non-compliance during the current plan period regarding a water crossing that was installed outside of the timing window. This objective was achieved.

Source:
2008 FMP, Approved ARs