

TEMAGAMI CROWN MANAGEMENT UNIT

INDEPENDENT FOREST AUDIT
2001-2006



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1.0. EXECUTIVE SUMMARY

This report presents the findings of an Independent Forest Audit (IFA) conducted on the Temagami Crown Management Unit (TCMU) for the five-year period from April 1st, 2001 to March 31st, 2006.

The audit conformed to the requirements of the 2006 Independent Forest Audit Process and Protocol (IFAPP) prepared by the Ontario Ministry of Natural Resources (OMNR). The Independent Forest Audit process is based on a detailed assessment of eight broad principles. Each principle has a series of specific criteria which are examined to determine whether or not the management of the Unit was in compliance with the legislation, regulations, and policies that were in effect during the audit term.

The audit assessed the forest management performance of the Ontario Ministry of Natural Resources (OMNR) North Bay District and the activities of the Forest Resource Licencees on the TCMU. Specifically, the audit evaluated and assessed;

- The implementation of OMNR forest management activities during the last three years of the 1999-2004 FMP.
- The planning and development of the 2004–2009 FMP.
- The implementation of the first two years of the 2004-2009 FMP.

Temagami is a very high profile Crown Management Unit and there is a public expectation that the delivery of sustainable forest management activities will fully meet all applicable legislative, policy and manual requirements. The 1998 Temagami Land Use Plan (TLUP) sets the framework for the area's resource management planning, and provides direction to resource management decision makers. Forest management planning must adhere to the direction and intent of the TLUP. It is clear that the 2004 FMP conformed to TLUP direction, and OMNR staff displayed a thorough knowledge of, and commitment to adhere to its directions.

We conclude that the implementation of forest management on the Unit was substantially in compliance with the purposes of the Crown Forest Sustainability Act (CFSA) and in accordance with the Forest Management Planning Manual (FMPM). Following a comprehensive review of records and documents, field investigations and information received from interviews, meetings and questionnaires, it is our conclusion that the Temagami Crown Management Unit was well managed during the audit term. While we identified issues that could pose long term risks to forest health, on balance we conclude that forest sustainability is not currently at risk. Our reasons for this conclusion include;

- Forest management planning adhered to the intent and directions of the Temagami Land Use Plan (TLUP).
- The area regenerated was in balance with the area harvested.
- Areas surveyed for regeneration success indicated the forest was regenerating.
- The area of land classified as barren and scattered, or non-satisfactorily regenerated declined significantly during the audit period.
- The OMNR was proactive and successful in implementing the Generic Road Use Strategy (GRUS) for roads in special management areas.
- Water crossings were generally well constructed, and met required standards.
- Silvicultural Ground Rules (SGRs) were appropriate and properly implemented.
- There was little environmental damage or damage to residual stems.
- The performance of the Temagami LCC was excellent and adhered to FMPM requirements.
- OMNR conformed to all requirements of the Forest Management Planning Manual (FMPM) in the forest management planning process.
- OMNR has substantially met its obligations to First Nations with respect to EA Condition 77 and Condition 34. OMNR continues to foster productive relations with First Nations with interests on the Unit.
- OMNR demonstrated initiative and leadership in the Forestry Tourism Agreement process.

However, the audit identified some shortcomings and we provide 10 recommendations and 7 suggestions to address the following issues:

- Actual harvest levels (area and volume) were significantly below planned harvest levels.
- Some Forest Resource Licence (FRL) holders have failed to harvest any of their allocation for extended periods of time.
- The effectiveness of some tending, particularly on some jack pine sites, and the silvicultural requirement for pre-commercial thinning were issues.
- Mandatory timelines for the submission of several Annual Reports, the IFA Action and Status Reports and the Year 10 Annual Report were not met.

- Compliance planning requires improvement.
- Issues related to Strategic Forest Management Modeling (SFMM) were identified.

We are particularly concerned that the continuing inability to achieve planned harvest targets (in the absence of stand replacing natural disturbance events) could pose a risk to forest sustainability in the future. We recognize that the problem of under harvest is complex and reflects the influence of a number of factors. A recommendation is provided to encourage progress on this critical issue.

The lack of disturbance on the Unit has altered the age class structure (skewing the distribution towards older age classes) and, to a lesser extent, the species composition of the forests in the TCMU. The skewed age class imbalance will, over time, compromise the ability of the forest to provide an even flow of forest products. This persistent underachievement will also negatively affect the FMP objective to move towards a natural disturbance pattern template and result in a shift to shade tolerant species (e.g. maple) to the detriment of pine species.

Only 43% of the identified available harvest area was harvested and we believe that reduces the effectiveness of the implementation of the Selected Management Alternative in maximizing the benefits to society that accrue from timber harvesting.

While recognizing the long term risk to forest sustainability associated with the lack of disturbance on the Unit, it is our finding that the management of the Temagami Crown Management Unit was sustainable, and in compliance with the legislation, regulations and policies that were in effect during the audit term.

2.0. INTRODUCTION

This report presents the results of the Independent Forest Audit (IFA) of the Temagami Crown Management Unit (TCMU) for the period April 1st, 2001 to March 31st, 2006.

The Temagami Crown Management Unit is managed by the Ontario Ministry of Natural Resources (OMNR), North Bay District with the same responsibilities as required for a Sustainable Forest Licence (SFL).

2.1. Audit Process

Ontario legislation requires that Forest Management Units (FMUs) and Sustainable Forest Licences (SFLs) be audited every five years by an Independent Auditor. The audit applies to the Ontario Ministry of Natural Resources (OMNR), and all licencees on the FMU. The audit considers the compliance aspect of forest management planning by reviewing the management plan in relation to specific planning manual requirements in place at the time of plan approval, including a review of actual operations and required monitoring and reporting. The effectiveness of forest management activities is examined based on planned vs. actual results as verified through record examination and field sampling. The audit reviews whether actual results in the field are comparable with planned results and determines if they are accurately reported.

The Independent Forest Audit Process and Protocol (IFAPP), developed by the OMNR, provides a comprehensive and consistent method of evaluating forest management activities on Crown land. The IFAPP contains approximately 400 individual procedures that direct the independent auditor to collect, analyze, interpret and document appropriate information to determine if various criteria have been met. The results of the evaluation of evidence against the criteria determine the audit findings. Those findings are then analyzed and aggregated to determine the outcome of the audit.

The IFAPP states that the purpose of the independent forest audit is to assess:

- The compliance of forest management planning activities with the Forest Management Planning Manual (FMPM) and the Crown Forest Sustainability Act (CFSA).
- The compliance of forest management activities with the CFSA and with the Forest Management Plans, the manuals approved under the CFSA and applicable guides.
- The effectiveness of forest management activities in meeting the forest management objectives set out in the Forest Management Plans, as measured in relation to the criteria established for the audit.

- The relative success of forest management activities carried out compared to those that were planned.
- The effectiveness of any Action Plans implemented to remedy shortcomings revealed by a previous audit.
- The licensee's compliance with the terms and conditions of the forest resources licence.

The audit process is based on a detailed assessment of eight IFAPP principles:

- Commitment.
- Public participation.
- Forest management planning.
- Plan implementation.
- System support.
- Monitoring.
- Achievement of management objectives and sustainability.
- Contractual obligations.

Each IFAPP principle has a series of specific criteria which, if met, will result in the achievement of that principle. The specific criteria are based on applicable legislation, manuals, and guidelines related to forest management contained in the 2006 IFAPP.

The audit was conducted by Arbex Forest Resource Consultants Ltd. (Arbex). The audit team consisted of three professional foresters and three specialists with expertise in fish and wildlife management, forest management planning, land use planning, public consultation, and compliance. A list of audit team members and their qualifications is presented in Appendix B.

The audit consisted of the following elements:

Audit Plan: An audit plan describing the schedule of audit activities, audit team members, audit participants and the auditing methods was prepared and submitted to the OMNR North Bay District and the Temagami Local Citizens Committee (LCC) Chair.

Public Notices: Several methods were used to solicit public participation and comment in the audit. Notices describing the audit process, soliciting input and providing the Arbex contact co-ordinates were placed in the North Bay Nugget and the Temagami Talker. Additionally, letters inviting comment and containing

a questionnaire were distributed to a random selection of thirty-five percent of the individuals on the Temagami Forest Management Plan (TFMP) mailing list. The purpose of the questionnaire was to solicit public input on the management of the Unit and to provide respondents with an opportunity to identify sites where they had forest management concerns or issues. Eight responses to the questionnaire were received (~3%). First Nations with an interest in the TCMU were contacted by telephone, email, and mail.

A member of the audit team attended a regularly scheduled meeting of the LCC to inform the committee of the audit, and invite member participation during the field sampling phase.

Field Site Selection: A pre-audit meeting was held with the OMNR and FRL representatives on April 25th to review the audit plan. The LCC Chair also attended the meeting. Prior to the pre-audit meeting, sample sites for the field work phase were selected with the assistance of OMNR staff.

Pre-audit Document Review and Interviews: To prepare for the audit all documents associated with the implementation of the 1999 – 2004 FMP and the planning, development and implementation of the 2004-2009 FMP were reviewed. Telephone interviews and e-mail exchanges were conducted with representative stakeholders.

Site Audit: The Arbex team spent seven days on the TCMU field sampling, reviewing files and interviewing OMNR staff and stakeholders. The site inspections represented approximately a 20 percent sample of the forest management operations (including road maintenance and construction) that had occurred on the Unit over the five-year audit period (Table 1). Sample sites were stratified to ensure representation of silvicultural activity, season of operation, contractors, year of operation, and Areas of Concern (AOC). We also sampled work listed in the “Forest Renewal and Maintenance Agreement, Specified Procedures Report (Draft)” to compare invoiced silvicultural work with actual field activities (Table 1).

Field sampling included site-specific information and landscape-scale examinations made from aerial observations. Individual sites were selected to represent a primary activity (e.g. harvesting, site preparation, tending); however, all associated activities at the site were assessed at the same time, allowing the auditor to augment the planned sampling intensity. The audit team traveled on primary, secondary, and tertiary roads on the Unit. In total, we visited ninety-eight field sites.

TABLE 1. FIELD SAMPLING INTENSITY ON THE TEMAGAMI CROWN MANAGEMENT UNIT

Activity	Total Area (Ha) / Number (2001-2006)	Area (Ha) Sampled	Number of Sites Visited	Percent ¹ Sampled (%)
Harvest	5,250	1,253	33	24
Regeneration (Artificial & Natural)	8,549	1,883	26	22
Site Preparation	2,423	563	15	23
Tending	3,652	956	24	26
Special Purpose Account Sites	14,624	4,655	98	31
Areas of Concern ²	1,763 ³		170 ⁴	10
Water Crossings	57*		20	40%

* Denotes number sampled

Report: This report includes a description of the audit process and a discussion of findings and conclusions. Recommendations contained in the report are directed at deficiencies in forest management and associated processes that require corrective action. Recommendations must be dealt with in a formal Action Plan developed by the OMNR within two months of receipt of the final audit report. Suggestions contained in the report are directed at less serious issues, and provide advice for improvement. The OMNR is not formally required to respond to Suggestions. A “best practice” highlights a forest management practice or level of performance that the auditor felt was exceptional.

2.2. Forest Management Context

The TCMU is administered by the OMNR, North Bay District. The Unit was created in 1996 by amalgamation of the former Temagami (MU # 896) and Latchford (MU # 691) Crown Management Units.

¹ Percent sampled represents the location of prime audit activity. In addition to the prime audit activity all additional silvicultural, protection and construction activities on that site were also inspected. For example, a site selected primarily to audit planting activities was also inspected for associated chemical tending, culvert construction etc.

² A significant number of AOCs on the forest are linear features (e.g. riparian areas, moose aquatic) as opposed to point features (e.g. nest sites). For this reason most of the assessment was area based and observed via helicopter.

³ Calculated from 2004 FMP Supplementary Documentation.

⁴ Examined in the field (ground and air observations) and measured on supplementary aerial photography.

Negotiations to transfer the Unit to a SFL have been underway since 1998. However, no SFL has been signed and the OMNR remains responsible for the preparation and implementation of the FMP. Specific harvest areas on the Unit are allocated to individual licensees through Forest Resources Licenses (FRLs) in accordance with the North Bay District Wood Disposition Strategy.

The North Bay District Land Use Guidelines (1983) were formally amended through the implementation of the Temagami Land Use Plan (TLUP) in 1998. The TLUP provides a strategic framework for the planning in the area, and provides direction to resource management decision makers. Forest management planning must adhere to the intent and direction of the TLUP.

The audit evaluated and assessed;

- The implementation of OMNR forest management activities during the last three years of the 1999-2004 FMP.
- The planning and development of the 2004–2009 FMP.
- The implementation of the first two years of the 2004-2009 FMP.

2.2.1. Map of Management Unit

Figure 1 shows the location of the Temagami Crown Management Unit within the OMNR North Bay District.

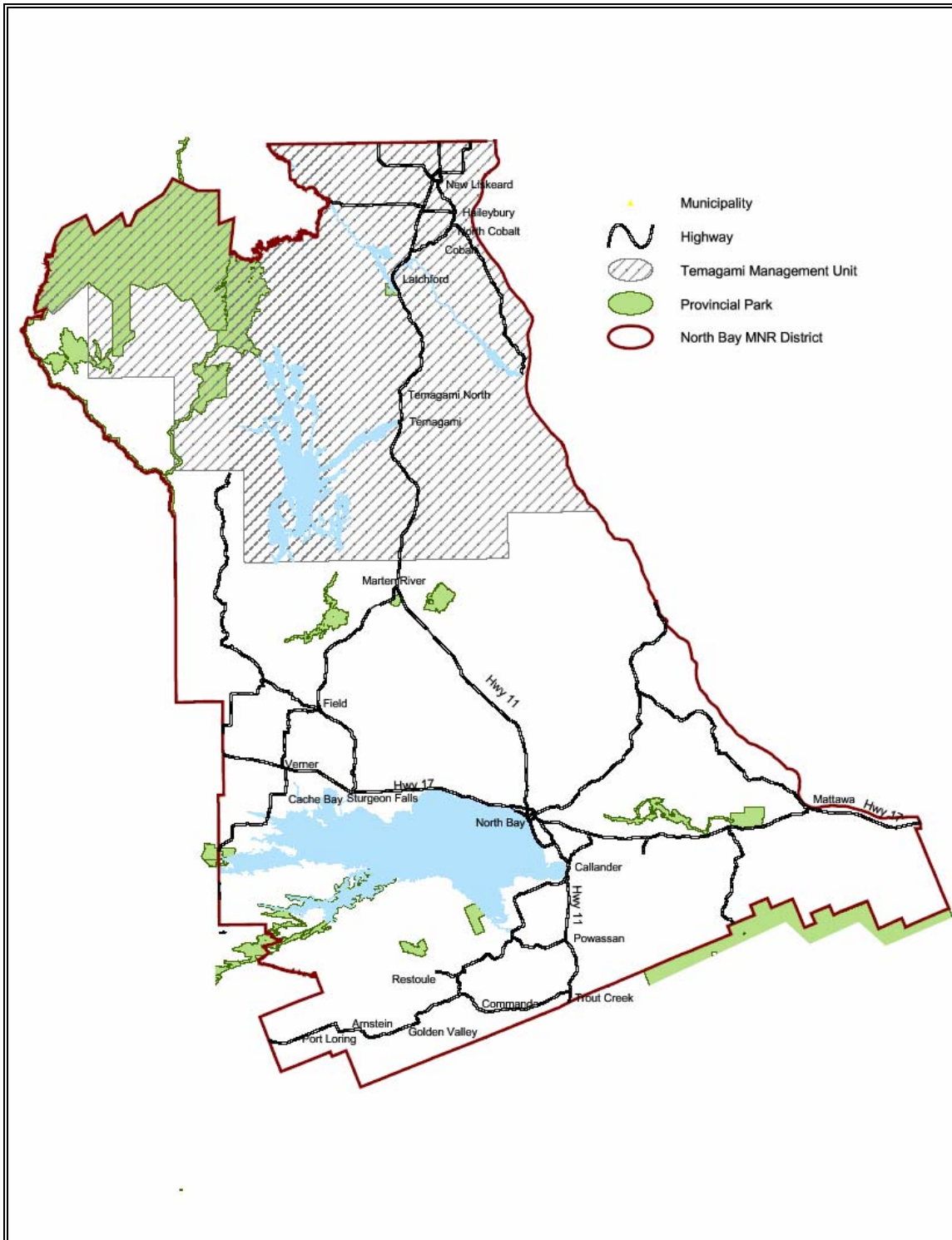


FIGURE 1. TEMAGAMI CMU WITHIN THE NORTH BAY DISTRICT

2.2.2. Description of the Unit

The TCMU has a landbase of 634,065 ha. Figure 2 shows the percentages of forest land that is managed for forestry and held for other purposes. Patented lands occupy 6.0% of the area. Crown lands not managed for forestry include conservation reserves, special management areas, the Lake Temagami Skyline Reserve and lands set aside for native land claim negotiations. Provincial Parks occupy 15.7% of the area; they include Lady Evelyn-Smoothwater, Solace, Obabika River, Finlayson, and W.J.B. Greenwood.

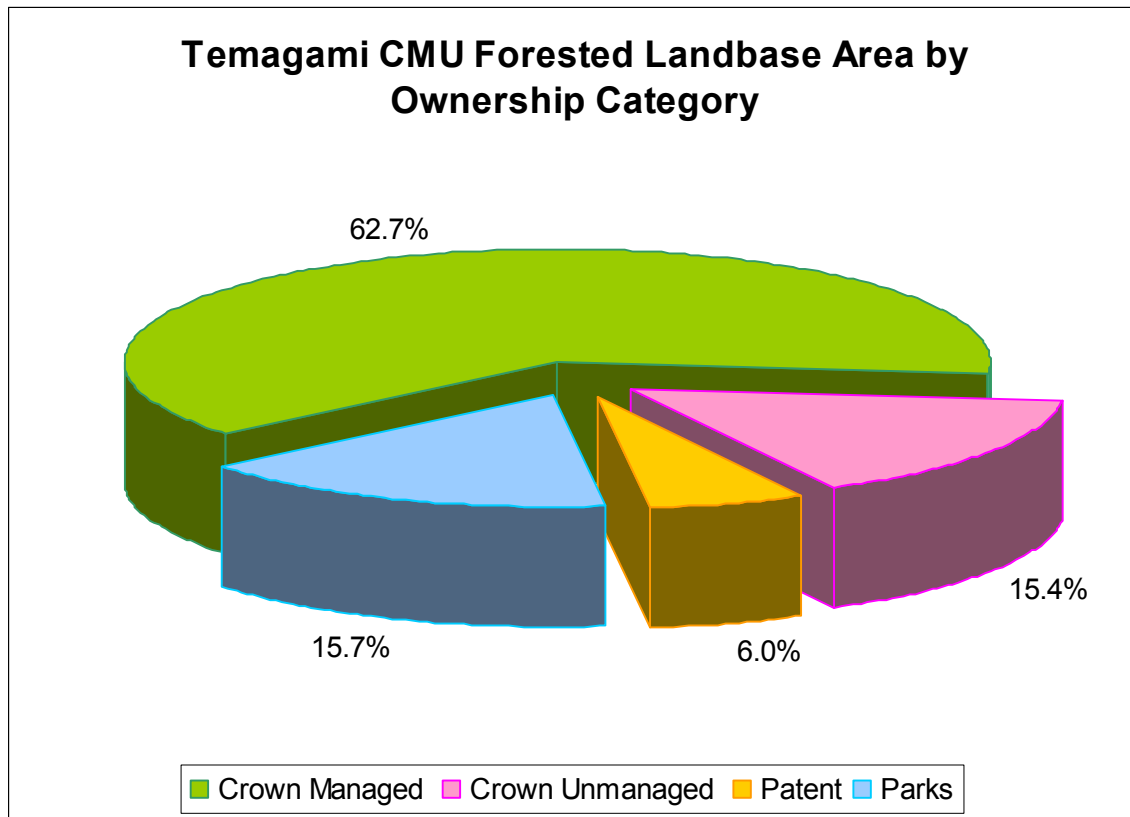


FIGURE 2. TEMAGAMI CMU FORESTED LANDBASE AREA BY OWNERSHIP CATEGORY

Table 2 presents a summary of the land classifications of Crown land that are managed for forestry.

TABLE 2. SUMMARY OF LAND CLASSES OF MANAGED CROWN LAND

Land Class	Managed Crown Forest Area (Ha)	Production Forest Area (Ha)	Percent of Managed Crown Forest Area (%)
Non-Productive Forest ^A	19,759		6.0
Protection Forest ^B	4,266		1.0
Production Forest ^C	297,927		93.0
<i>Forest Stands</i>		261,851	
<i>Barren & Scattered</i>		1,439	
<i>Depleted</i>		29,636	
Total:	321,952	292,926	

^A Non-productive Forest includes rock and muskeg, and is considered incapable of growing commercial timber crops.

^B Protection Forest includes forest growing on environmentally sensitive areas and islands.

^C Production Forest land is capable of growing commercial timber crops.

The TCMU is situated in a transition zone between the Great Lakes-St. Lawrence and Boreal Forest Regions. Mixed stands of white birch, poplar, white and black spruce, balsam fir, white and red pine, cedar, and jack pine predominate on the forest. Figure 3 presents the percent area of each forest working group on the Unit.

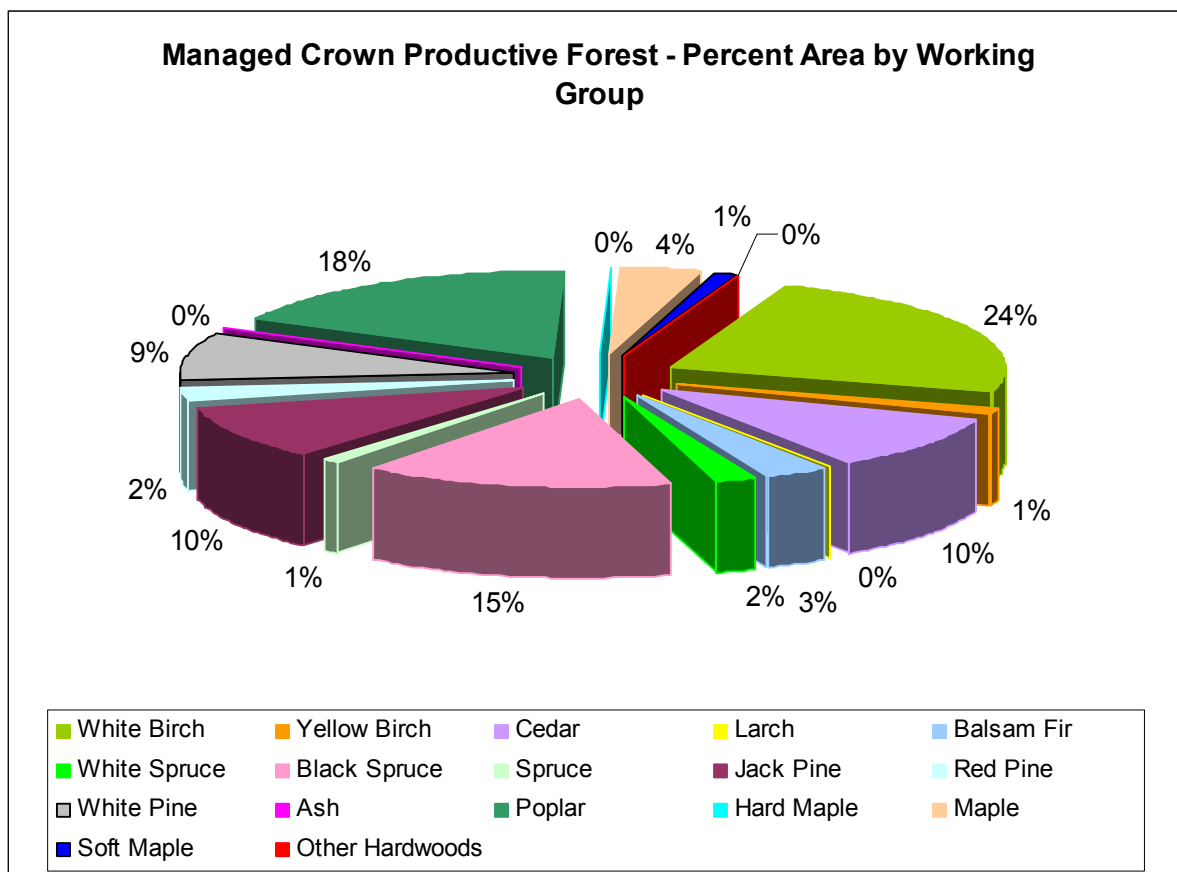


FIGURE 3. PERCENT AREA OF MANAGED CROWN PRODUCTIVE FOREST AREA BY WORKING GROUP

The age class distribution of the managed forest is skewed towards the older age classes. Most of the forest is within the 61-80 year age class, or older, due to large fires which occurred on the Unit during the 1920-1930's. There is a significant under-representation in the 21-40 and 41-60 age classes, reflecting the relative lack of man-made and natural disturbance on the Unit since the 1940's. Figure 4a presents the age class distribution of conifer forests on the TCMU.

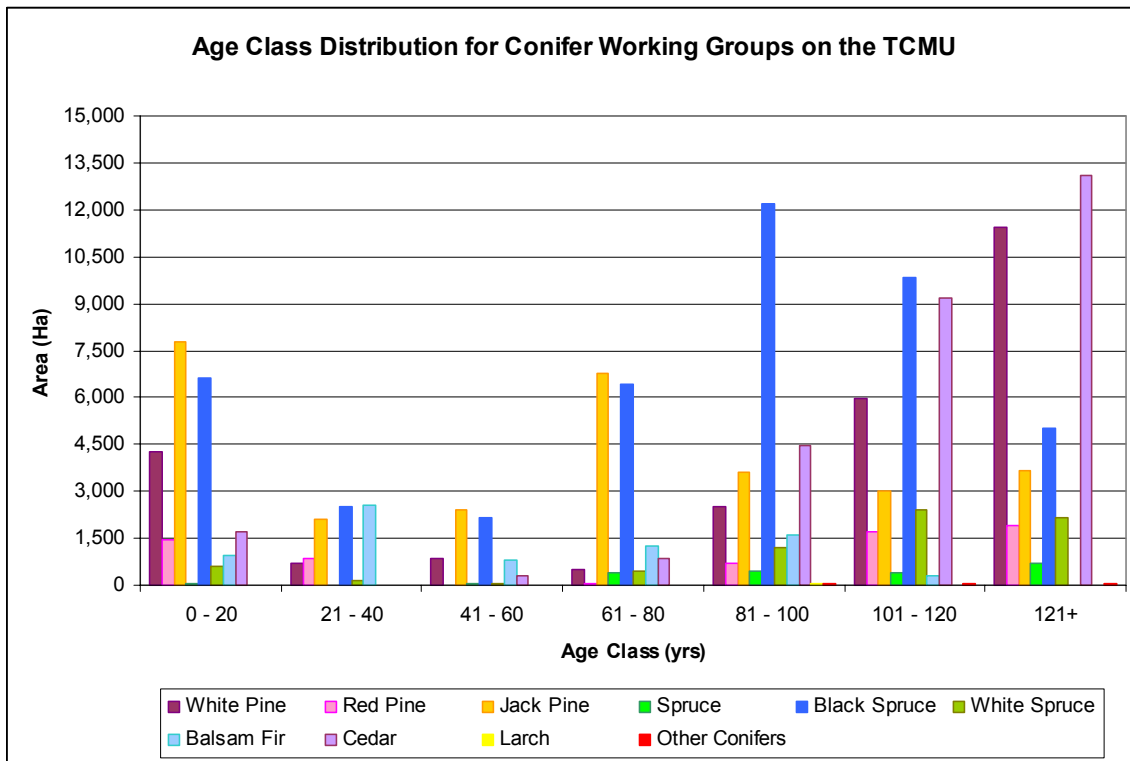


FIGURE 4A. AGE CLASS DISTRIBUTION OF CONIFER FORESTS ON THE TCMU.

Figure 4b presents the age class distribution of hardwood forests on the TCMU.

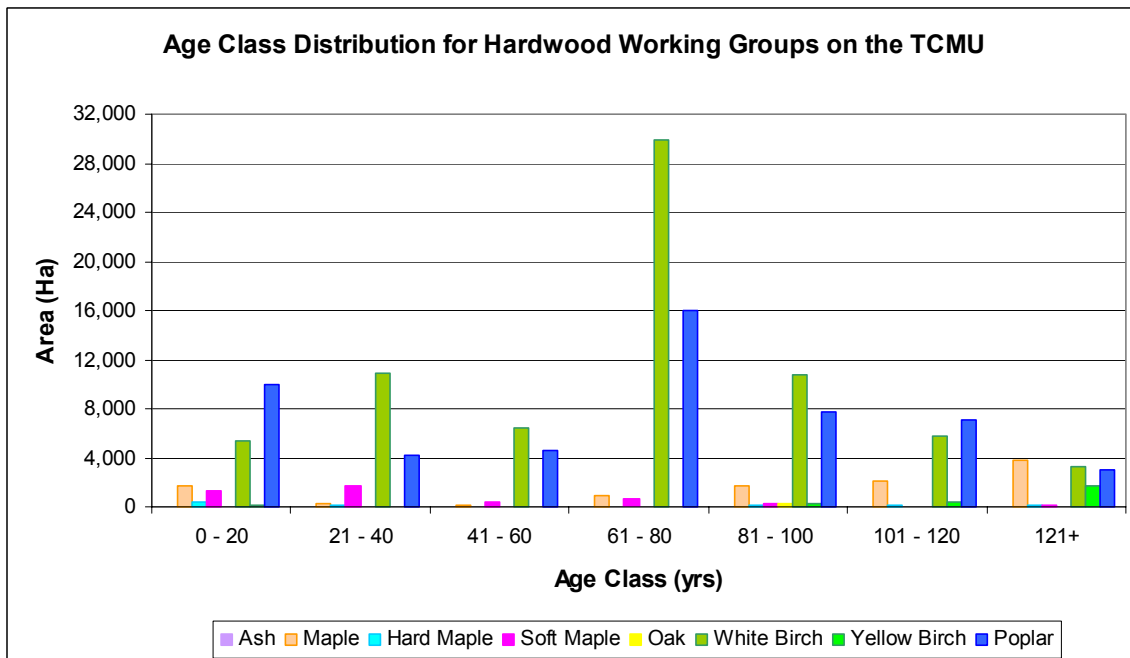


FIGURE 4B. AGE CLASS DISTRIBUTION OF HARDWOOD FORESTS ON THE TCMU.

The skewed age class distribution of the forest is a concern for forest managers as the imbalance may compromise the ability of the forest to provide an even flow of forest products over time.

2.2.3. Forest Management Issues

The following section briefly summarises forest management issues that were identified by the Plan Author in the 2004 FMP. These issues are discussed in the various sections of this report.

Debate with Respect to Land Use Decisions

Groups and individuals concerned about land use decisions in the Temagami Land Use Plan have attempted to change TLUP decisions through the forest management planning process. Groups seeking more protected areas often object to timber harvesting in areas where harvest is permitted by the TLUP.

Old Growth Red and White Pine

Concerns have been raised with respect to the percentage of overall protection of old-growth red and white pine and the harvesting of those species outside of protected areas.

Access

The TLUP established four land use zones which identify where new roads can, and cannot be constructed, and restrictions on their use. The OMNR road use strategy provides direction on how restrictions to public motorized access within special management areas will occur. Despite the presence of this strategy, the forest industry and the tourism industry continue to question the effectiveness of road use restriction efforts.

Wood Disposition

The forest industry continues to express concerns about the low amount of harvest area and species composition of blocks allocated to them. In addition, other non-traditional operators are also seeking new harvesting opportunities within the TCMU.

Primary Access Corridor Selection

Timber harvest in the Kittson Lake Special Management Area (SMA) requires a primary access road corridor to permit timber extraction and hauling. Planning for this access began during the development of the 1999 FMP.

During the development of the 2004 FMP, the planning team considered different alternatives, and made the decision that the new access road should be constructed into the Kittson Lake SMA from the existing Eagle Lake road. There has been ongoing debate between the forest industry, the LCC, recreationalists, and the public on the proposed location.

Environmental Assessment Act Individual Environmental Assessments (“Bump-up”) Requests

There has been a history of Individual Environmental Assessment (IEA) requests⁵ with respect to forest management planning and decisions in the Temagami area. Delays in plan implementation create economic hardship for operators and communities in the Temagami area.

Large Harvest Blocks

The 1999 FMP was “bumped-up” due to concern about several planned harvest blocks in excess of 260 hectares. In denying the request for an individual environmental assessment, the Ministry of Environment (MOE) made several conditions; one was for the OMNR to develop a Forest Management Guide for Natural Disturbance Pattern Emulation. This guide addressed the use of large clearcuts (>260 ha) in forest management. As the guide prescribes the limited use of disturbances greater than 260 ha for emulating large fire disturbance patterns, there will continue to be opposition to their use in Temagami.

Silvicultural Activities in Restricted Public Motorized Access Areas

Silvicultural activities in special management areas require access. During, and after those activities, there is a long term TLUP requirement to implement and maintain effective measures to limit public access.

Forestry/Tourism Agreements (FTA)

The Temagami FMP facilitated a Forestry/Tourism agreement process between the resource-based tourism industry and the forest industry. Concern was expressed that these business agreements between specific members of the forest and tourism industry could violate provisions of the Temagami Land Use Plan by applying new land use directions on specific sites.

Full Implementation of the Natural Disturbance Pattern Emulation Guideline (NDPEG)

The Temagami Management Unit is a transition forest between the Great Lakes forest (where 90% of clearcuts must be less than 260 ha in area) and the

⁵ In this report the terms Individual Environmental Assessment and “bump-up” are used interchangeably.

boreal forest (where 80% of clearcuts must be less than 260 ha in area). The compromise percentage selected for the Temagami Unit was set at 85%. Determining the actual percentage of planned clearcuts that exceed 260 hectares was an issue.

Past Independent Forest Audit (IFA) Recommendations

The 2001 IFA made twenty-two Recommendations and ten Suggestions for improvement. Progress on the implementation of these Recommendations required monitoring.

Harvest

Actual harvest on the Unit continues to remain substantially lower than the planned levels. The reasons for the continuing disparity between planned and actual harvest will require close examination.

Implementing Recreational Elements of the Temagami Land Use Plan

A number of planning participants have cited OMNR's lack of progress in developing a recreation management plan for the Temagami area as evidence of a lack of concern about non-timber uses.

Lands "Set Aside" for Native Negotiations

The approved Temagami Land Use Plan contained lands set aside pending resolution of the Temagami-area Aboriginal Land Claim. These areas have been withdrawn from the area available for timber production until the completion of negotiations. The FMP landbase will have to be adjusted if there are any changes to the area set aside.

Non-Timber Forest Values Information

In the past there were concerns expressed that non-timber values information was not available in the appropriate quantity or quality to assist in planning decisions.

3.0. SUMMARY OF AUDIT FINDINGS

3.1. *Commitment*

The IFAPP criteria require that the forest manager develop a strategic vision for, and commitment to, forest sustainability. The corporate mission and vision must be reflected in the organizations operations, and understood by its employees.

The OMNR has produced a number of strategic directions to attain the Ministry's goals. The most current strategic direction, *Our Sustainable Future* (2005), establishes a long term corporate vision of a "healthy environment through sustainable development", and a mission of "ecological sustainability." The document also describes the Ministry's operating philosophy and contains specific organizational goals which include:

- A healthy natural environment for Ontarians.
- Economic growth for Ontario communities.
- Public health and environmental safety to protect citizens.
- Stewardship, partnerships, and community involvement.
- Organizational excellence for improved public service.

OMNR goal statements contain a specific strategy for "improved aboriginal relations through economic development opportunities and partnerships". That strategy "seeks broader collaboration with First Nations" and seeks to "...develop human resource strategies to employ First Nations people in MNR." A number of additional OMNR documents (e.g. Forest Management Planning Manual) also contain commitments with respect to aboriginal and treaty rights, and aboriginal involvement in forest management.

The TLUP (1998) sets the framework for the area's resource management planning and provides direction to resource management decision makers. Forest management planning must adhere to the intent and direction of the TLUP. It is clear that the 2004 FMP conformed to TLUP direction, and OMNR staff displayed a thorough knowledge of, and commitment to adhere to TLUP directions.

Audit interviews and a review of North Bay District staff meeting agendas, bulletin board information, and training materials indicated that policy directions had been widely distributed to OMNR staff, Local Citizen Committee members and other interested parties and individuals (e.g. environmental groups, Forest Resource Licence (FRL) holders). Interviews with staff and observations of work in the field clearly indicated that employees understood and supported the corporate sustainability objectives.

As a Crown management unit, the OMNR was responsible for both compliance planning and compliance delivery. While not required to produce a Five Year Compliance Strategy (as a Sustainable Forest Licence holder would), the District did so in response to a suggestion in the 2001 IFA (Table 16). Annual Compliance Plans were also produced. Targets for inspections were generally achieved (Section 3.6.1).

The Minister of Environment imposed a condition on the 2004 FMP that the OMNR develop a program to monitor and assess the effectiveness of the Generic Road Use Strategy (GRUS) and annually report the results. The OMNR is meeting this commitment; in 2004-2005, there were 263 inspection reports and in 2005-2006 there were 261 reports, showing a significant field effort.

We conclude that the OMNR North Bay District fully met IFAPP commitment requirements with respect to the long term sustainable management of the TCMU, and this organizational commitment was demonstrated in forest management planning and field operations.

3.2. Public Participation

3.2.1. Local Citizens' Committee

A requirement of the Forest Management Planning Manual is that a Local Citizens Committee (LCC) must be established to help the forest management planning team prepare the forest management plan. Membership of the LCC is to include local citizens representing a range and balance of community interests. LCC responsibilities include ensuring the effectiveness of public consultation, the categorization of FMP amendments, assisting with the identification and analysis of management alternatives, participating in the development of values maps, monitoring the implementation of the plan, and providing advice to the District Manager (DM) on plan amendments and issue resolution. Each forest management plan must contain a LCC general statement of agreement or disagreement with the plan.

In conducting this audit we reviewed LCC meeting agendas and minutes, met with the full LCC, and conducted interviews with individual members and OMNR staff. We conclude that the LCC membership included designates from all major stakeholders on the TCMU, including First Nations. It had a recent Terms of Reference (2005) that conformed to 2004 FMPM requirements.

The LCC was actively engaged in communicating with local residents, and was involved in a full range of forest management planning and operational topics as required in their mandate. LCC agendas included the following items: Planning Team Update, Public Consultation Schedule, Area of Concern Planning, Proposed Allocation Update, Road Corridor Update, Public Comments to Date, Forest Tourism Agreement Update and AWS Update. The LCC was also fully involved in the identification and analysis of management alternatives associated with the development of the 2004 FMP and the development and review of values maps.

During the audit period, the OMNR brought a number of specific issues to the LCC for discussion and recommendations. A review of Annual Work Schedules (AWS), Annual Reports (AR), access development, and compliance reports were regular

agenda topics. Environmental Assessment Act “bump-up’s” were brought to the LCC’s attention as well as the results and actions resulting from past Independent Forest Audits.

We noted that LCC members served on the Planning Team on a rotational basis. It was the view of the LCC that this approach allowed more individual members to be informed and educated about planning team issues. We originally questioned the merits of this approach as we were concerned with a possible lack of continuity on the planning team. However, we were informed by LCC members that the additional knowledge and experience gained by individual LCC members outweighed any possible continuity issues. LCC members felt that the OMNR kept the full LCC well advised, and frequent meetings with the full planning team, and individual planning team members reduced any potential issues related to the rotating LCC membership on the planning team. We agree with this assessment.

The 2001 IFA reported that the LCC occasionally had difficulty reaching consensus agreements, and had to resort to voting on agenda items to achieve closure on some issues. Our review of LCC meeting minutes and follow-up interviews indicates that the LCC now has a better record of achieving consensus agreements.

With OMNR support, LCC operations reflected their Terms of Reference, and we believe the LCC positively contributed to the management of the TCMU. It is our opinion that the performance of the Temagami LCC was notable in that it substantially adhered to and performed as per FMPM requirements. In our experience, very few LCCs actually achieve that level of performance. Our review suggests that the success of this particular LCC is due to the following factors:

- Members have been long serving, and have gained considerable experience (e.g. the Chairperson had been a member for over a decade).
- The LCC is responsible for only one FMU.
- The District Manager utilized the LCC solely for its intended purpose (i.e. FMPM requirements).
- The OMNR assigned an experienced staff member as a “one window” contact for LCC matters.
- The District Manager and/or his designate viewed the Committee as a vital part of the FMP development process.

Suggestion # 1:

Corporate OMNR should review the aspects of the Temagami LCC that have contributed to its success, and circulate those findings to all District Managers.

3.2.2. FMP Standard Public Consultation Process

The FMPM requires that public consultation opportunities be provided during the forest management planning process. These opportunities are to include an invitation to participate in the planning process, two public information centres, review of the draft plan, and inspection of the approved plan. The public has an opportunity to request a Ministry of Environment (MOE) “bump-up” of a specific proposed forest management activity to the status of an individual environmental assessment.

For the 2004-2009 FMP, public notices were issued on time, and their contents complied with FMPM requirements. Planned public consultation timelines were substantially adhered to.

An appropriate mix of communications media was used (e.g. advertisements by the OMNR and the LCC). Public notices were published in four local newspapers.

The material presented at the two information centres was well prepared and included an appropriate information package. The two information centres were attended by more than 250 members of the public. The LCC and OMNR were also represented by several members and staff.

The list of required alterations to the draft FMP was available to the public during the review period. The public was provided with opportunities to identify issues. Opportunities for use of OMNR’s issue resolution process, and the individual environmental assessment process were communicated in notices of information centres and in information centre handout material. Environmental Registry Notices of the planning process were issued as required by the FMPM.

No dispute resolution requests were made during the preparation of the FMP; however, a bump-up request regarding road access was submitted to the Ministry of Environment (MOE) in February, 2004. On June 16th, MOE rendered a decision, with conditions, that an individual environmental assessment was not required. OMNR followed appropriate manual procedures and requested and received advice from the LCC during the process.

It is our conclusion, that public consultation for the 2004 planning process met all FMPM requirements.

3.2.3. Native Peoples’ Consultation

The FMPM requires that First Nation communities have the option of choosing an additional consultation opportunity with respect to forest management planning called the Forest Management Native Consultation Program (FMNCP). Additionally, OMNR District Managers are required to conduct negotiations with

First Nation communities to identify and implement ways of achieving more equal participation by Aboriginal peoples in receiving benefits from forest management.

Three First Nations have interests in the TCMU; the Temagami First Nation (TFN), the Teme-Augama Anishnabai (TAA) and the Matachewan First Nation (MFN). The TFN and TAA are located in the Temagami area, and the MFN is located at the north end of the Unit in the OMNR Kirkland Lake District.

The TFN and TAA have overlapping memberships and a joint Council. Much of the work and decision making for the two communities is cooperative. The TFN is most directly active in forestry, with an FRL and multi-year planting and tending contracts.

For the preparation of the 1999 FMP the MFN did not express a desire to be involved in the Temagami FMP development, and invitations to participate in the FMNCP were only sent to the TFN and TAA. Both those communities declined the program. However, a Native Background Information Report was prepared for the TFN (which included TAA information).

For the preparation of the 2004 FMP, separate invitations to participate in the FMNCP were sent to the TFN, the TAA, and the MFN. All declined the offer. Band representatives informed us that time constraints, capacity in terms of staff and funding, and other priorities resulted in the decision not to utilize the FMNCP. However, they indicated that the decision did not suggest a lack of interest in the FMP development process. Individual band members utilized the standard consultation process, and the communities responded to issues as they emerged from the planning process. The OMNR made information readily available, and held information meetings with the communities as requested. Both the TFN and TAA had participants on the 2004 planning team and the TFN had a representative on the LCC. Native Background Information Reports were prepared for the TFN (with TAA cooperation) and the MFN. The reports and maps provided a summary of the band history and past resource use. Native Values Maps with sacred, historical, and culturally significant sites were produced for the TFN and MFN.

First Nation representatives interviewed indicated that, while not perfect, there is a cooperative and increasingly respectful relationship with the local OMNR. This relationship has been strengthened by the decision of the TFN to assign staff specifically to forest management issues.

Summaries of OMNR initiatives to provide economic opportunities and greater involvement in forest management for aboriginal communities are provided in the Annual Reports (ARs) produced over the audit period. Identified opportunities included:

- Allocation of specific annual harvesting rights to the TFN.
- A three-year commitment (2002 -2004) of Forestry Futures Trust and Special Purpose Account funding to the TFN for manual tending.
- Provision of training within the communities.
- A pilot project to assess the potential for mushroom harvesting on burned blocks.
- A wood value project (Aboriginal Wood Value Academy Pilot Project) was initiated involving OMNR, Canadore College, and College Boreal.
- A First Nation company, Anishnabai Forestry Services, carried out tending and regeneration assessment contracts.

Interviews with TFN forestry representatives identified the following impediments to full First Nation participation in forest management operations on the TCMU:

- The low quality of the wood, and the small size and scattered nature of the blocks often makes it cost prohibitive (harvesting issues are discussed in Section 3.4.2) for the TFN to pursue harvest opportunities.
- The inability to conduct economically viable operations makes it difficult to obtain bank loans to purchase better equipment, fund start-up operations for harvesting, etc.

To offset these impediments, it was suggested by the TFN representatives that OMNR reduce fees and/or designate operations in low density, low quality stands as “stand improvement projects”. We note that in the past OMNR provided funding for silvicultural treatments for the rehabilitation / renewal of low density and low quality stands. We believe these suggestions made by the First Nation representatives (and others), may have merit. The issue of the underachievement of harvesting on the Unit is discussed further in Section 3.4.4.

We find that the OMNR conformed to all requirements of the FMPM with respect to First Nations, and met its obligations with respect to EA Condition 77 and Condition 34. In our view, the relationship between the OMNR and the TFN, TAA and MFN has been productive.

3.2.4. Annual Work Schedule Public Inspection

An Annual Work Schedule (AWS) is produced every year to guide the implementation of operations. It lists operations which were approved in the FMP and are scheduled for implementation that year.

All AWSs were reviewed by OMNR district professional and management staff representing forests, fish and wildlife, lands, cultural heritage, and planning. They were also reviewed by the LCC. All FMPM requirements for public notices were met.

3.3. Forest Management Planning

3.3.1. Planning Team Activities

The FMPM requires that the District Manager appoint a planning team. The team is chaired by the Plan Author who must be a Registered Professional Forester (R.P.F). The planning team must represent a wide range of natural resource expertise. A Terms of Reference must be developed by the Plan Author and approved by the OMNR District Manager. It must identify all the tasks required for the preparation of the plan, and identify the responsibilities of all planning team members.

A multi-disciplinary planning team was established. The planning team's Terms of Reference (TOR) was approved by the District Manager and the Plan Author was a registered professional forester.

A review of the planning team documents and discussions with planning team members indicated that the appropriate background information was available for the FMP process. Meetings were well attended. Discussions were thorough and open.

As required by the FMPM, the LCC was involved with planning discussions. For example, an LCC request was made that the evaluation of alternatives from the 1999-2019 FMP be carried forward to the 2004-2024 FMP. This was done, and the evaluation was presented at the information centres. Joint LCC-planning team meetings were held (e.g. roads planning).

Planned public consultation timelines were adhered to with the exception of a one month delay due to a public service strike.

Public participation in the planning process was effectively solicited. A detailed communications plan was prepared in conjunction with the FMP TOR and the OMNR had a well-documented public correspondence file which included the documentation of responses to comments received on the plan. A sample of the OMNR responses (10%) was reviewed and we found responses were timely and comprehensive. Through interviews and review of documents it was evident that the public had full opportunity to provide input into the planning process.

We conclude that the process to produce the 2004 Temagami FMP met FMPM requirements.

3.3.2. Resource Stewardship Agreements

The FMPM requires that forest management plans must include a statement confirming a commitment to maintain the viability of the tourism industry and to establish a level of remoteness. The FMPM also outlines a process for the establishment of Resource Stewardship Agreements (RSAs). RSAs are typically negotiated between SFL holders and the tourism industry.

Since the TCMU does not have an SFL in place, the OMNR became involved in the facilitation of forestry–tourism discussions. The discussions were consistent with the provincial Management Guidelines for Forestry and Resource-Based Tourism with the objective of establishing Forestry Tourism Agreements (FTA) consistent with the intent of RSAs.

Responsibility for the FTA process was assigned to an OMNR staff member assisted by a consultant hired by the tourism industry. The development of FTAs involved 27 tourism operators and the 8 licensed forest companies. The OMNR initiated the process and sponsored an information session for the tourism operators and the forest industry. It reduced its direct role as discussions between individual operators and forest companies were established.

As the process unfolded, it became apparent that shorter term agreements (annual or for the 5 year term of the FMP) were preferred by the forest industry. During the audit period the development of annual FTAs was commonplace and annual FTA information was included in the 2004-2005 and 2005-2006 Annual Work Schedules.

On the basis of interviews with members of the tourism and forestry industries, OMNR, and the LCC, we conclude that the adaptation of the RSA process to a Crown Unit was appropriate, and successful, for the following reasons:

- The process met the intent of existing guides and agreements.⁶
- The FTA process confirmed OMNR's commitment to maintaining the viability of the tourism industry.
- The process resulted in the establishment of short-term agreements that protected the remoteness of tourism businesses.
- FMP tourism values maps and related information were improved.
- The process increased communications between tourism and the forest industry on the Unit.
- Tourism and forest industry representatives informed us that they were better off as a result of the FTA process.

⁶ Guide to Resource Stewardship Agreements, Management Guidelines for Forestry and Resource-Based Tourism, The Tourism and Forestry Industry Memorandum of Understanding.

We conclude that OMNR demonstrated initiative and leadership in the FTA process.

Best Practice:

The North Bay OMNR showed initiative and leadership in facilitating the development of forestry-tourism agreements when not required to do so.

3.3.3. Source of Direction

A list of manuals, guidelines, policies, directives and administrative procedures was made available to the planning team. The FMP objectives were prepared in accordance with the requirements of the FMPM, and addressed forest diversity, sustainable social and economic benefits, silviculture, and the provision of forest habitat cover.

Management objectives are established within the context of broader legislative direction, policy, strategic regional direction, local land use, and resource management direction. Adherence to those directions was reflected in the AWSs and field operations.

3.3.4. Introduction

The 2004 FMP introduction contained a properly prepared and signed statement of how the OMNR's Statement of Environmental Values (SEV) was considered in the preparation of the plan. As required, an index to the environmental assessment components of the plan was included.

3.3.5. Management Unit Description

The description of the TCMU in the 2004 FMP met FMPM requirements. Description tables adhered to the required formats, and included information about the administration, geology, current forest condition and other forest resources. Social and economic information was provided. An estimate of landscape processes for net primary productivity was provided.

The land base description of the Unit was based on the digital forest resource inventory (FRI) that was created in 1990 and updated to 2004. The update process incorporated field data collected over the previous five years. It documented changes in stand composition and site characteristics. Forest stand descriptions were altered where changes occurred due to depletions and accruals. The results of operational timber cruises and free-to-grow surveys were incorporated. Corrections were made for park boundary and other land designation changes. We conclude that the FRI was updated as required for effective planning and met all Forest Information Manual (FIM) and FMPM requirements.

The 2004 FMP described the full range of non-timber values on the Unit, including cultural heritage sites, native values, and wildlife and fisheries habitat. Appropriate guidelines and manuals were referenced.

The Temagami Unit is home for four endangered species; peregrine falcon, aurora trout, bald eagle and eastern cougar. Moose, marten and pileated woodpecker are featured species within this Boreal - Great Lakes-St. Lawrence/Transitional Forest.

Where possible the FMP combined moose habitat requirements with those of the Natural Disturbance Pattern Emulation Guidelines (NDPEG) thereby minimizing impacts on harvest volumes. Approximately 63% of the Unit has suitable marten habitat with core areas occupying approximately 17% of the area. Pileated woodpecker habitat is also widely distributed on the Unit, and future predictions indicate it will remain so.

Our review of prescriptions for operations, supplemented by field observations indicated that non-timber value strategies and objectives were being properly implemented in the field.

Values maps were located in the North Bay OMNR office and were updated on a continuing basis.

As required by the FMPM, a socio-economic profile for the Unit was prepared. The economic analysis and community profiles prepared met FMPM planning requirements. Community profiles included a description of demographics and migration, the economic environment, non-industrial uses of the forest and investment intention for the major centres in proximity to the TCMU (including Sault Ste Marie to the west). The profile was used to identify the socio – economic impacts expected from the forest management operations related to each management alternative developed in the Sustainable Forest Management Model (SFMM). A demographic profile⁷ specifically based on wood flow (1998-1999) from the TCMU to communities that have dependent wood processing mills (i.e. Chapleau, Cochrane, Kirkland Lake, North Bay, Timmins, Sudbury, and Sault Ste. Marie) was prepared.

We conclude that FMPM and IFAPP requirements with respect to description of the management Unit were met.

3.3.6. Objectives and Strategies/Management Alternatives

Legislation and policy, resource management issues, the current state of the forest and the desired future forest condition all influence the strategic direction of the FMP. These factors are considered by the planning team and the LCC in the development of objectives for the management Unit. The FMPM requires that the

⁷ Source: OMNR Forest Management Branch: "The Demographic Profile for Wood Flow".

planning team evaluate different alternatives for managing the forest. It then selects the alternative which best meets plan objectives and targets, and provides for sustainable management of the forest.

We reviewed the 2004 FMP analysis of management alternatives and results of the Sustainable Forest Management Model (SFMM). This review included an examination of the methodology and assumptions, a review of individual management alternatives, assessments of sustainability and objective achievements.

Objectives, targets and strategies for the TCMU FMP were determined by the desired future forest condition for the Unit. These included:

- An increase in the white and red pine component within managed forest stands.
- A better balance of age classes in the managed forest.
- Movement towards better emulation of natural disturbance patterns.
- An improved ability to provide a sustainable, uniform flow of desired forest products.
- The continued provision of preferred wildlife habitat for selected species.
- The continued protection of forest related values.

The future forest condition was developed with assistance of research on “historic forest condition” (OMNR’s South Central Science and Technology Unit) and were reviewed by the LCC and the public.

FMP objectives were consistent with the desired future forest condition and were organised according to the four objective types required by the FMPM. A fifth objective was included related to fish habitat, cultural heritage, trapping and bear management. Each objective had associated strategies for objective achievement, and where appropriate, quantified targets. In our view, the identification of objectives, targets and strategies was comprehensive and well organised. However, we noted some minor shortcomings with respect to the analyses:

- There is no discussion in the FMP as to how the assigned level for marten core areas was determined.
- Graphical summaries showing each management alternative, the natural run and the relevant objective or indicator of sustainability level were only provided for wildlife habitat, and not all objectives and indicators of sustainability.

Eight management alternatives were considered in the development of the 2004 FMP (four alternatives are mandatory as stipulated by the FMPM). These included:

1. Timber production potential with available funding - *mandatory alternative*.
2. Timber production potential with unlimited funding - *mandatory alternative*.
3. Anticipated industrial demand - *mandatory alternative*.
4. Equal emphasis on all management objectives.
5. Increased emphasis on red and white pine objectives.
6. Increased emphasis on wildlife habitat objectives.
7. Increased emphasis on long-term wood supply.
8. Natural benchmark scenario - *mandatory alternative*.

Each alternative was evaluated against sustainability indicators, the Socio-Economic Impact Model (SEIM) and for the achievement of objectives.

We conclude that the assessment of management alternatives was well done.

Management Alternative Four, “Equal emphasis on all management objectives”, was chosen as the Selected Management Alternative (SMA). This SMA was sustainable and it also ranked the highest in overall objective achievement. It was supported by the planning team and the LCC.

The SFMM results are an integral component of the information used to assess and select the management alternative. We identified some concerns with respect to the use of the SFMM. These were as follows:

- The areas reported in the FMP tables and modeled in SFMM had minor errors in either area reporting or area modeling due to inconsistent areas reported in the FMP (e.g. FMP-9).
- The accumulating reserves inputs identified in the FMP text were different than the SFMM inputs for some forest units (e.g. White Birch Clear Cut Forest Unit).

The following recommendation and a suggestion are provided to address these concerns.

Recommendation # 1:

The Plan Author and the District OMNR must ensure:

- That FMP tables and the SFMM model report available, reserved, and barren & scattered area consistently and accurately.
- Key SFMM inputs should be described in the FMP text. The FMP text should elaborate on how model inputs were developed and provide the results of the sensitivity analysis conducted.

Suggestion # 2:

The planning team should verify that reserve forecasts used for the development of the 2009 FMP (including NDPEG reserves), are based on data derived from past reserves.

3.3.7. Operational Planning

Operational planning selects areas for harvest, tending, and renewal operations for the five-year term of the FMP. Preferred silvicultural treatment packages and the silvicultural ground rules are identified, and prescriptions to protect specific values are developed through Area of Concern (AOC) planning. Locations of new primary and secondary road corridors are determined.

Record reviews and interviews with planning team members and OMNR staff indicated that adequate information was available for planning AOC requirements. Our document review, review of supplementary aerial photography, and site sampling indicated that AOCs had been properly established. In some instances, operational prescriptions for AOCs included alternate methods of operation to support the protection of the AOC. For example, the protection of hawk nests included prescriptions appropriate for the harvesting activity (i.e. clear-cut, selection, shelterwood). Conservation Reserve prescriptions included minimizing potential access by adopting road corridors perpendicular to the reserve boundary. Conditions for tertiary roads that entered AOCs were documented in the FMP. A more detailed discussion on AOCs is included in Section 3.4.1.

The Natural Disturbance Pattern Emulation Guidelines were field tested on the TCMU. We observed that, when possible, the cumulative impacts of values protection on wood supply were lessened by overlapping values protection requirements on the same area (e.g. wildlife habitat and riparian buffers). We felt this approach was appropriate and progressive when adequate information on values was available. OMNR staff compared NDPEG targets (for peninsular and insular patches) against allocated harvest blocks. This approach assisted

operators in identifying which areas to harvest or leave uncut (insular patches). While we determined this was an appropriate and innovative approach, no follow-up had been undertaken by the OMNR to determine if the insular patches retained within harvested patches actually met NDPEG requirements. Additionally, we were unable to determine if staff had calculated what contributions to NDPEG peninsular and insular requirements had been made by past AOC reserves on the Unit. The determination of the contribution of past AOCs reserves would undoubtedly reduce current NDPEG patch requirements. To address these issues we provide the following recommendation.

Recommendation # 2:

The North Bay District should assess the implementation of the NDPE guidelines to determine:

- Planned versus actual results.
- The contributions to NDPEG peninsular and insular requirements made by AOC reserves implemented during past harvest operations.

The Silvicultural Ground Rules (SGRs) were developed according to appropriate guidelines. The Silvicultural Treatment Packages (STPs) developed were appropriate for the Unit's forest types and included the silvicultural system, the harvest method, the renewal and tending treatment, and the regeneration standards and targets. Forecasted renewal activities were consistent with those projected from SFMM, and supported the achievement of FMP objectives.

Areas selected for forest management activities were consistent with the selection criterion described in the FMP and the selected management alternative. For most forest units the planned harvest area correlated closely to the available harvest area. However, the white pine seed tree forest unit (PWST) was the only forest unit for which the planned harvest area was significantly less than the projected AHA. This under-allocation reflected difficulties in identifying contiguous areas of the forest which could be consolidated with existing allocations, and the requirement to drop some identified areas due to operational difficulties, access issues and/or social issues (concern over the harvesting of white pine). We confirmed these difficulties and determined that the under-allocation in the White Pine Seed Tree (PWST) forest unit did not negatively impact on the forest industry during the audit period.

As required by the FMPM, contingency harvest areas (one year's allocation) were identified in the FMP.

Detailed road planning was incorporated in the FMP, and data was provided to support the need for forest access. For public information and consultation purposes, a private consultant was retained to calculate construction costs for different segments of a road. This provided the public with an independent

assessment of costs associated with various road location alternatives. We concluded this approach was an effective method of facilitating the decision making process regarding road locations.

We conclude that FMPM requirements for operational planning were fully met.

3.3.8. Plan Review, Approval

The 2004 FMP included all approvals required by the FMPM. Planning timing and consultation requirements were met, with the exception of a one month delay (approved by the OMNR Regional Director) that did not affect the timing of plan approval. The plan was approved January 15th, 2004 by the Regional Director. A bump-up request (Section 3.2.2.) was received after plan approval.

We note that four OMNR plan reviewers and one planning support team member were also planning team members. This fact contributed to the relatively low number (214) of preliminary required alterations. Our review of those required alterations indicated that they were warranted and added value to the FMP.

3.3.9. Plan Amendments

All required FMP amendment processes and procedures were followed and correctly documented. Amendments were certified by an RPF, distributed as required, and listed in the FMP.

Our review of the 33 plan amendments (all administrative) found that they were reasonable, did not reflect weakness in the FMP process, and were consistent with the FMP and the FMPM. The 69 AWS revisions that were made during the audit period were appropriately documented.

3.3.10. Contingency Plans

There were no contingency plans during the audit term.

3.3.11. Annual Work Schedules

The approved Annual Work Schedules (AWSs) met FMPM requirements. There were no aerial herbicide projects or insect pest management programs. Forest Operation Prescriptions (FOPs) were referenced in the AWS and were certified by an R.P.F. All FOPs and prescribed burn plans were completed before operations commenced.

The AWSs were submitted on time and contained standard licence conditions set by OMNR for FRL Holders (e.g. adherence to SGRs) and some included separate conditions for roads, aggregates, and water crossings.

3.4. Plan Implementation

3.4.1. Areas of Concern

An Area of Concern (AOC) is a defined geographic area within an area selected for forest management activity that contains an identified value. It is an area where forest operations will be reviewed, controlled, modified, or excluded, as required to protect the value(s) associated with the area. A formal amendment to the approved FMP must be made to either introduce or remove an AOC.

AOC prescriptions on the TCMU adhered to provincial guidelines and were properly implemented in the field. In our opinion, they appropriately reflected the number and variety of values that were present. We viewed and measured the distances of AOCs (e.g. riparian buffers) during field sampling and sampled supplementary aerial photography to verify that AOC widths conformed to guideline requirements. Our field and photo measurements confirmed that the prescriptions for AOCs were consistent with the FMP and AWS.

Old growth red pine and white pine are regarded as a special attribute on the TCMU, and as such have been provided special protection in the Temagami Land Use Plan (TLUP). Significant areas (approx. 45% of the stands dominated by white or red pine over 120 years in age) have been set aside to achieve the protection component. These areas include 12 representative old growth pine sites, additional areas protected in the TLUP (such as the skyline reserve on Lake Temagami) and areas in provincial parks.

The large number and variety of AOCs were identified by First Nations, the LCC and forest industry representatives as contributing to the small size and dispersed nature of harvest blocks resulting in high wood costs. OMNR staff did not dispute this assertion, but indicated that the historical controversy between access and protection in Temagami had resulted in a dominant focus on identifying and protecting values. Harvesting issues are discussed further in Section 3.4.2.

Forest industry and OMNR representatives expressed concern about the effectiveness of the current cultural heritage guideline and the model used to assess areas of potential heritage value. While the precautionary approach of the current model can prevent damage to heritage values, there is an associated cost to forest industry for required field inspections. The current verification process requires a site inspection by a registered archeologist, with a direct industry cost of several thousand dollars per site. OMNR and industry representatives indicated that almost none of the inspected sites contained archeological artifacts or other verifiable heritage values. We identified two issues;

- The current process is open to abuse by those who may simply wish to delay, and/or interrupt forest operations.
- The subsequent site inspections have added unnecessary costs and time delays for the forest industry.

We were informed that the District is exploring methodologies to address these concerns, such as the interpretation of aerial photography in lieu of site visits by an archeologist. We were also informed that a new guide is being developed that may improve the process of site selection and reduce the cost of verification.

Recommendation # 3:

Corporate OMNR should adopt a cultural heritage site selection and verification process that establishes rigorous identification criteria, and reduces the time and financial costs to the forest industry.

3.4.2. Harvest

The field audit sampled approximately 24% of the actual harvest activities that occurred during the audit period as a primary audit activity. A significant area of harvest was also viewed in conjunction with field investigations of other audit activities.

The clearcut and shelterwood systems (Photograph # 1) are the most commonly used silvicultural systems used in the TCMU. Forested areas comprised of tolerant hardwoods, or relatively dense areas (>12m²/ha) of white and red pine, white spruce and cedar are typically managed under the uniform shelterwood system.



Photograph # 1. Shelterwood harvest system (Cassels Township).

The majority of the forest is managed under a variation of the clearcut silvicultural system such as clearcut with standards or seed tree (Photograph # 2). Under these approaches, specified trees are retained during harvesting for silvicultural, ecological, and/or wildlife habitat purposes. Selection harvesting is rarely used in managing tolerant hardwoods due to the low quality of stands, and the relatively uniform age class structure of tolerant hardwood working groups.



Photograph # 2. Seed tree harvest system (Cassels Township).

Eight FRL holders operate on the Unit and logging is most commonly conducted with fellerbunchers. Grapple and cable skidders though, are typically utilized in stands harvested under shelterwood or seed tree harvest systems.

Harvest sites inspected during the field audit were approved for operations in the AWS and the harvest prescriptions implemented were in accordance with the SGRs, silvicultural treatment packages⁸ and Forest Operation Prescription (FOP).

Harvest prescriptions were appropriate for the site conditions observed, and most

⁸ Silvicultural Ground Rules (SGRs) specify the silvicultural systems and types of harvest, renewal and tending treatments that are available to manage forest cover and the type of forest that is expected to develop over time. A silvicultural treatment package (STP) is the path of silviculture treatments from the current forest condition to the future forest condition; STPs include the silvicultural system, harvest and logging method(s), renewal treatments, tending treatments, and regeneration standards.

sites where shelterwood and seed tree harvest strategies had been implemented appeared to be effective in achieving pine renewal objectives. On field sites where natural regeneration was lacking, the failure to achieve adequate regeneration reflected persistent poor seed crops rather than the improper implementation of the silvicultural strategy since crown closure and/or basal area retention targets were achieved. This circumstance is discussed further in Section 3.4.3.

There was an active slash pile management program on the TCMU during the audit period. Slash Pile Burn Plans were prepared as required and public notification for the slash pile burning program met requirements. Implementation of the burning program met with mixed results due to poor weather and poor pile conditions (e.g. dirt in the piles) (Photograph # 3). The increased use of excavators to pile slash should result in piles with less compaction, dirt, and debris (Photograph # 4). These measures should result in more effective pile burning.

District slash piling standards require that piles be kept a minimum of 30 metres from standing trees and/or the bush line. We noted several instances where piles had been established too close to residual seed trees on the cutover (Photograph # 5). In these situations a risk exists that the crowns of the residual seed trees could be damaged by heat or flame. Monitoring of operations in conjunction with operator education/training should address this issue, and we provide the following suggestion.

Suggestion # 3:

District OMNR compliance staff should ensure that District slash piling standards are adhered to.



Photograph # 3. Ineffective slash pile burn.



Photograph # 4. "Fluffed" slash pile made with an excavator.



Photograph # 5. Slash pile situated too close to residual white pine.

In the audit period, seventy-three percent (73%) of Forest Operations Inspection Reports (FOIRs) were for harvest activities. Of the 350 harvest reports, eleven percent were deemed Not in Compliance (NIC). These occurred predominantly in the first two years of the audit period (Table 7). The improved compliance record in later years can be attributed to increased District staff and contractor commitment to achieving compliance. This was accomplished through training, the increased use of GPS, regular meetings with contractors, and the use of appropriate sanctions and penalties.

On the basis of our site inspections, we are of the opinion that harvest operations were properly implemented and reflected operator care with regard to environmental site damage, and the minimization of damage to the residual stems.

The most significant forest management trend on the TCMU is that planned harvest levels have not been achieved. For the 1997-1999 and 1999-2004 periods, actual harvest volumes achieved 39% and 45% of planned harvest levels respectively. Over the audit period several factors were cited as having contributed to the low harvest levels. These include:

- Poor markets for low-grade material.
- High road construction and hauling costs associated with dispersed and small harvest blocks.
- Shortages of forestry labour and contractors.
- Delays and uncertainty in operations due to bump-up requests, judicial reviews, and First Nation land claims.
- Harvest constraints arising from the application of the TLUP (e.g. establishment of reserves).

Table 3 presents a summary of the planned vs. actual harvest volumes by forest unit for the 1997-1999 and 1999-2004 periods.

TABLE 3. SUMMARY OF PLANNED VS. ACTUAL HARVEST VOLUMES⁹ (VOLUME IN '000S CUBIC METRES).

Species	Planned 1997-99	Actual 1997-99	%	Planned 1999-2004	Actual 1999-2004	%
White Pine	16,159	10,030	62	24,327	8,295	34
Red Pine	2,097	1,215	58	10,879	6,318	58
Jack Pine	26,570	20,239	76	43,400	37,334	86
Spruce	40,635	20,526	51	52,448	33,097	63
Balsam Fir	4,347	336	8	6,216	5,641	91
Cedar	4,590	80	2	7,862	173	2
Larch	64	0	0	225	10	4
Poplar	73,604	28,333	38	72,389	26,209	36
White Birch	48,799	9,018	18	49,775	13,033	26
Hard Maple	7,826	51	1	10,314	407	4
Upland Hardwood	4,882	2	0	6,697	4	0
Lowland Hardwood	2,772	0	0	2,543	2	0
Total:	232,345	89,830	39	287,075	130,523	45

⁹ Volumes are annualized for the indicated 5 yr period.

* Grant Forest Products Inc. and Grant Forest Products Corp.

** Not available.

It is noteworthy that the harvest of balsam fir increased significantly reflecting increased operations in mixedwood stands and white pine harvests decreased due to a combination of factors including the implementation of the TLUP, access restrictions, the application of NDPEG guidelines, etc.

We also reviewed the planned and actual harvest by individual FRL holder for the larger licencees on the Unit (Table 4). Volume data was derived from OMNR scaling and billing reports.

TABLE 4. PLANNED VS. ACTUAL HARVEST VOLUMES BY FRL 1999-2004.

FRL License	Planned 1999-2004 Conifer (m³)	Actual 1999-2004 Conifer (m³)	Percent of Planned Conifer (%)	Planned 1999-2004 Hardwood (m³)	Actual 1999-2004 Hardwood (m³)	Percent of Planned Hardwood (%)
A.V. Welch	10,869	3,802	35	10,540	2,551	24
Domtar	7,427	6,732	91	1,513	842	56
Goulard Lumber Ltd.	21,176	12,671	60	16,130	5,256	33
Grant Forest Products*	43,390	25,069	58	60,959	20,339	33
Liskeard Lumber Ltd.	50,647	40,303	80	26,983	10,706	40
Tembec	8,379	0	0	22,497	0	0
Total:	141,888	88,577	62	138,622	39,694	28

Note - All volumes are annual harvest volumes.

We note the following significant trends:

- Conifer harvest achieved 62% of planned.
- Hardwood harvest achieved only 28% of planned.
- For all FRL holders the hardwood allocation is being significantly under harvested in comparison to the conifer allocation.

- Some FRL holders have failed to harvest any of their allocation. For example, Tembec has not harvested any of its allocation (~31,000 m³) on the TCMU for the past thirteen years.

The failure to achieve planned harvest levels could pose a risk to the long term sustainability of the forest for the following reasons;

- Movement towards a natural disturbance pattern template (area and frequency of disturbances) may not be realized as this objective is dependent on harvesting.
- There will be a shift in species composition favoring shade tolerant species (e.g. hard maple) to the detriment of pine species.

The lack of disturbance on the Unit by fire or harvesting has altered the age class structure by skewing the distribution towards older age classes. The skewed age class imbalance could compromise the ability of the forest to provide an even flow of forest products over time. Silvicultural objectives may also be compromised as overmature stands typically contain more cull material, and may be bypassed during operations due to poor volume yields and difficult operating conditions. Additionally, the underachievement of harvest also has implications with respect to the delivery of other silvicultural activities which follow harvesting.

Given the serious forest management implications of the on-going failure to achieve planned harvest levels, it is our opinion that OMNR should aggressively investigate mechanisms to promote harvesting on the Unit. Possible approaches/incentives to facilitate increased harvests could include:

- Re-allocation of wood to other FRLs in instances where harvesting has not occurred for extended periods of time.
- More efficient distribution of harvest blocks in operational planning to reduce road building requirements and provide more wood volume per unit area.
- Financial assistance for road construction.
- Within the bounds of sound forest practice, marking of stands to maximize volume removals.
- Reduction of Crown dues to promote harvest in marginally economic stands.
- Increased use of incentives to facilitate harvests/silvicultural interventions in low grade/low density hardwood stands (e.g. Forest Accord 11).

We recognize that the problem of under harvest is long standing, complex, and reflects the influence of number of factors. A recommendation is provided to encourage the allocation of sufficient effort and resources to make progress on this critical issue.

Recommendation # 4:

Corporate and the District OMNR should investigate and implement strategies to increase the amount of wood harvested on the TCMU, including the re-allocation of wood supply to other FRLs in instances where harvesting has not occurred for extended periods of time.

3.4.3. Renewal

The audit sampled approximately 22% of the artificial and natural renewal activities conducted on the Unit during the audit period. All activities observed in the field were approved in the FMP and complied with the applicable silviculture ground rules (SGRs). Renewal activities were consistent with the Forest Operation Prescriptions (FOPs) and were appropriate to the specific site conditions. A successful renewal program was being implemented.

Table 5 compares the area harvested to the area renewed since 1997. The area renewed is in balance with the area harvested.

TABLE 5. AREA HARVESTED VS. AREA RENEWED 1997-2005

Period	Planning Term	Harvest (Ha)	Renewal (Ha)
1997 - 1999	Contingency Plan	2,042	1,101
1999 - 2004	FMP Period	6,690	6,808
*2004 - 2005	2004 -2009 FMP	658	1,371
Total:		9,390	9,280

* Data is for one year of operations

As shown in Table 6, planned natural regeneration targets were not achieved due to the reduced levels of harvesting on the Unit (1997-1999 35% of planned and 1999-2004 52% of planned). Artificial renewal was closer to planned target levels, particularly in the 1999-2004 planning term due to the availability of funding for planting work. Artificial renewal achieved 51% of the planned level in 1997-1999 and 83% of the planned level in 1999-2004.

TABLE 6. PLANNED VS. ACTUAL NATURAL AND ARTIFICIAL RENEWAL (AREA IN HA)

Period	Natural Renewal		Artificial Renewal	
	Planned	Actual	Planned	Actual
1997-1999	1,950	708	776	393
1999-2004	8,965	4,723	2,510	2,085
2004-2009*	7,400	606	3,955	765

*Data is for one year of operations.

Inspected tree planting sites typically had good survival rates and were well-stocked (Photograph # 6). During the field audit, we inspected several areas which had been artificially renewed to jack pine. These plantations exhibited very high densities due to good survival of the planted stock and significant ingress of natural seedlings. Subsequent tending will be required in many of these areas to control future stand densities. The silvicultural expenditure on these sites (e.g. growing and planting seedlings and tending) is higher than necessary. The costs could be reduced by planting at lower densities to take advantage of the high levels of natural ingress.

During the audit term, natural regeneration targets were not achieved, largely due to the reduced levels of harvesting on the Unit. During the field audit, we observed that the strategy for natural regeneration was very successful in stands managed by selection cutting strategies, and for poplar stands managed under clear cut systems. Natural regeneration within white and red pine shelterwood and seed tree cuts met with variable success.

The variable results under the shelterwood and seed tree systems can be attributed to a number of factors, including the quality of seed crops following the harvest, the presence of mineral soil for germination, thickness of duff layer, existing levels of vegetative competition, and other factors such as available light, moisture, etc. White pine in the North Bay District historically produces good seed crops at 7 to 11 year intervals. The previous IFA suggested (Suggestion # 8) that the North Bay District “be willing to wait up to ten years before planting uniform shelterwood harvest sites”. Forest management staff in the North Bay District assesses shelterwood and seed tree cutovers four to five years after harvest to determine if renewal treatments (e.g. site preparation or planting) are required. We believe this approach is appropriate. Delaying treating a site for extended periods of time can adversely effect pine seedling establishment and growth, and can limit the effectiveness of site preparation efforts.



Photograph # 6. Successful artificial renewal of white pine.

During the audit period, site preparation was done with either anchor chains dragged by a skidder, or a root rake attachment on the front of a large skidder. No chemical site preparation was conducted. Our field inspections confirmed that site preparation equipment effectively exposed mineral soil and limited damage to residual seed trees.

Progress has been made in the achievement of FMP objectives associated with the re-establishment of pine / conifer on the Unit. Concentrated efforts to increase red and white pine were undertaken in areas where they existed prior to harvest, and on suitable sites where they likely existed in the past. The regeneration results show that nearly all stands were regenerated (96%). Those that did not meet the regeneration standards were tended to remove competing undesirable species. There were also substantial conversions of white birch and poplar forest units to mixed conifer units through the planting of jack pine and white spruce.

It is our opinion that the forest is being satisfactorily renewed.

3.4.4. Tending and Protection

The audit sampled approximately 26% of the tending activities conducted on the Unit during the audit period. All activities observed in the field were approved in the FMP and complied with the applicable Silviculture Ground Rules (SGRs).

Tending activities were consistent with the Forest Operation Prescriptions (FOPs).

On balance, we determined that the tending program was effectively delivered during the audit period and the majority of sites were effectively treated. However, we did identify three areas of concern discussed below.

1) Unnecessary tending in areas with low levels of herbaceous competition.

Many of the jack pine plantations which had been treated with chemical herbicide exhibited low levels of competition, leading us to question the requirement for, and the timing of the treatment (Photograph #7). OMNR staff indicated that in at least one instance, a pre-spray competition assessment had not been completed prior to the initiation of the spray program. A recommendation is provided to address this concern.



Photograph # 7. Jack Pine Plantation treated for release with herbicide. (Low levels of herbaceous competition are denoted by the lack of ground vegetation and the relatively few killed stems in the foreground).

Recommendation # 5:

District OMNR staff must ensure that pre-treatment assessments are conducted on all sites selected for tending treatment and develop site specific prescriptions prior to the commencement of silvicultural work.

2) The cost-effectiveness of brushsaws with sproutless herbicide applicators.

The use of brushsaws with sproutless herbicide applicators for vegetation management did not appear to be as effective as backpack or mist blower herbicide treatments. Initially, the use of brushsaws with the herbicide applicator was viewed as a positive since treatments could be applied from the early spring to late fall period, rather than the traditional fall period after conifer buds had hardened off. We were informed that the ineffectiveness of brushsaws with sproutless herbicide applicators may be related to herbicide evaporating on hot saw blades, or other mechanical inefficiencies in the delivery of the chemical spray. We believe that the additional cost of the treatment (as opposed to brushsaw only or herbicide only treatments) is likely not justified based on field results observed during the audit.

Suggestion # 4:

The District OMNR should evaluate the cost effectiveness of brushsaws with an herbicide applicator as a vegetation management technique.

3) Management of the pre-commercial thinning program.

Pre-commercial thinning operations were conducted on 890 ha of pine plantations. The audit team visited three sites where pre-commercial thinning¹⁰ had been undertaken in 2001. We were concerned by an apparent low level of tree removal on the sites and therefore we inspected the “Pre-Commercial Thinning Prescriptions” and “Pre-commercial Thinning Audit Forms” for two sites to verify our field observation.

The pre-assessment data on those two sites indicated that the thinned plantations were generally at, or slightly above their optimum stand densities (4,000 stems per hectare) and did not necessarily require a thinning application. Actual stand densities were even lower than the initial stand density used to develop the thinning prescription (e.g. stand density in Block # 5 was 3,350

¹⁰ Pre-commercial thinning is the reduction of density in young stands to control stocking, prevent stagnation, improve crop tree quality and reduce rotation length. It also maintains or increases growth rate of leave trees. The trees that are removed do not yield any commercial value, and are usually left on the site to decompose.

stems per hectare (SPH) and 2,410 SPH on Block #6). The stand management prescriptions targeted the removal of approximately 30% of the stems to achieve a target density of 3,000 trees per hectare. As a result of the lower initial stand densities, relatively fewer stems than anticipated had to be removed to attain the target densities (~12% removal in Block # 5 and 13% removal in Block # 6).

While an acceptable range of residual target densities may have been achieved through the application of the treatments, we are of the opinion that due to the low initial stand densities the silvicultural expenditure was not warranted. Stand density management diagrams based on actual inventory data confirm that the blocks were under stocked. Recommendation # 5 addresses the requirement to conduct pre-assessment surveys to verify the need for silvicultural work and ensure the development of appropriate prescriptions.

Our record review and interviews led to an additional concern with respect to the management of the pre-commercial thinning program. We determined that additional work was undertaken to remove competing poplar and birch from windrows and between rows within the plantations. We could not determine from the files that OMNR verified the field work prior to the issuance of full payment of the contractor invoices, or confirmed the requirement for the additional tending work. OMNR indicated that that the 2001 assessment work had actually been done, but confirmed that it had not been documented. From 2002 onwards OMNR audited 15% of the contractor's assessment plots prior to approving payment.

The following recommendation is provided to address our concerns with respect to the management of the pre-commercial thinning program.

Recommendation # 6:

District OMNR should:

- Conduct pre-treatment assessments on all pre-commercial thinning sites.
- Ensure that post treatment assessments are documented to verify work has been completed.

3.4.5 Renewal Support

Renewal support activities on the TCMU included tree seed collection, planting stock production and tree improvement operations. For the 2001 - 2006 period approximately 3.2 million seedlings and 52 hectolitres of seed were purchased to support the renewal program on the Unit. Levels of renewal support, although less than planned, were adequate to support the renewal program on the TCMU.

3.4.6. Access

During the field audit, we viewed a sample of all access activities including road construction, bridges, culverts, maintenance activities, and road abandonment. Travel to and from the sample sites included travel on primary, secondary, and tertiary roads constructed and/or routinely used during the five-year audit period. The field inspection was supported by a review of the FMP, AWS, and implementation manuals. We concluded that the roads planning process was well done and all reporting requirements were met. The process included a detailed investigation of costs and extensive public consultation.

In general, access roads were rough and not well maintained (largely due to their infrequent use and the lack of availability of quality surface materials) but they were safe and constructed according to standards. Roads were not maintained on an annual schedule; rather, maintenance was conducted on an as needed basis for harvesting, hauling, and silviculture. Road grading was frequently below standard as most of the roads we traveled did not have a centre crown and had berms of material that had been graded to the sides. However, we did not observe any instances where the roadside berms had channeled silt into streams or caused washouts.

Bridges built during the audit period were generally well constructed, although some issues related to the maintenance of the structures were observed (Photograph # 8). Additionally, the decking on some bridges permitted material to fall into the watercourse.

Suggestion # 5:

District OMNR needs be vigilant to ensure that bridges are maintained sufficiently to prevent material from entering the watercourse.



Photograph # 8. Weeds growing through hole in bridge – Blueberry Lake Block.

Culverts were properly installed and maintained during the audit period. A crossing inventory database was in place which reported on the location and condition of watercrossings. Appropriate calculations were performed to determine culvert sizes.

During the audit period, the District signed road construction and maintenance agreements for three roads (i.e. Red Squirrel Road, Eagle Lake Road and Lundy Road). OMNR verified that the work invoiced was completed. During the audit, we confirmed that invoiced work was undertaken.

A review of compliance issues related to forest access and watercrossings indicates that there were few instances of non-compliance during the audit term. From 2001 to 2003 there were 12 NIC reports related to access (See Section 3.6.1.) 11 of which were related to road construction practices (i.e. corridors in AOCs). There were no NIC reports related to road construction or maintenance in 2004 or 2005.

In response to a “bump-up” request the Minister of Environment imposed a condition on the 2004-2024 FMP that the OMNR must develop a program to monitor and assess the effectiveness of the Generic Road Use Strategy (GRUS) for Roads in Special Management Areas and annually report the results. In 2004-2005 there were 263 inspection reports and in 2005-2006 there were 261 reports, indicative of a significant field effort by District staff to monitor the effectiveness of access controls. Our review of the reports submitted to the MOE indicates that reasonable and cost effective efforts are being made to control access. We noted a continuous effort to improve access control methodologies through signage, gating, the removal of bridges and road decommissioning strategies to make breaching of the access more difficult (e.g. strategic placement of rocks, placing fill material more distant from trenches etc.) (Photographs # 9, # 10 and # 11).

Approximately 8% of the inspections indicated that access controls had been breached. The interpretation of this statistic is problematic. In the absence of constant surveillance, or the adoption of costly surveillance monitoring strategies (e.g. aerial surveys, camera surveillance) no data are available to estimate the number of incursions prevented by the control, the number of individuals breaching the access, the type of activity related to the trespass or the duration of the trespass.

It is our opinion, that given cost and labour constraints associated with monitoring access that the District is taking a reasonable, proactive, and successful approach to implementation of the GRUS for roads in special management areas. Additional expenditures to more precisely determine the extent and nature of illegal use is not warranted.



Photograph # 9. Restricted access with posted signs.



Photograph # 10. Bridge removed as an access control measure on the Owain Lake Road.



Photograph # 11. Decommissioned access road which has been breached for ATV access.

3.5. Systems Support

3.5.1. Human Resources

The OMNR staffing level for the TCMU was based on a template that assumed that an SFL would be in place. Because of this OMNR has less staff than are required to operate a Crown management unit. However, due to the current lower level of forest management activity on the Unit, combined with the initiative of the District Manager to make effective use of SPA and/or management fees to enhance staff capacity, the staffing level is appropriate.

The Unit continues to benefit from the presence of experienced and capable staff. Interviews with the DM and OMNR staff confirmed this observation. These discussions also indicated that the current staffing template, while meeting base management requirements, did impose a strain on resources during periods of forest management plan preparation. This audit found problems related to the timely preparation of required documentation (e.g. Ten Year Annual Report, Status Report 2001 IFA). We were unable to determine if this situation was

symptomatic of excessive staff workloads or a result of a low priority assigned to the reporting functions. Temagami is a very high profile Crown Management Unit and there is a public expectation that the delivery of sustainable forest management activities will fully meet all applicable legislative, policy and manual requirements. The OMNR should continue to monitor staff workloads and performance to ensure public expectations are fully met should the Unit not become an SFL.

A review of training records for forest management staff (foresters, technicians) indicated they had been provided with training directly related to their responsibilities on the forest. Training included standard workplace health and safety, first aid, forest hazards (e.g. bear awareness, survival) and use of equipment (e.g. defensive driving, snowmobiling). Forest management training was related to the individual's position. For example, technical staff had tree marker training, forest compliance training and fish and wildlife courses. Professional staff had received training on specific manuals and guidelines (e.g. NDPEG, FMP training). We conclude there was a formal process within the District to identify training needs and assist staff in receiving the training.

Interviews with staff indicated they had a good awareness of forest management issues, and they all displayed a high level of competency and professionalism in carrying out their assigned duties.

Training was delivered to FRL staff through formal annual meetings and in response to new information and/or updated guidelines. Topics included careful logging, NDPEG, water crossings, etc. Industry and First Nation representatives informed us that the training was well done and worthwhile.

We conclude that the OMNR had an effective program for training staff and making training available to FRL holders on the Unit.

3.5.2. Documentation and Quality Control

The District had an effective system for document control and retrieval. All forest management reports were stored in a dedicated area and were readily available for review. The District had a GIS system which it used as a decision support tool for forest management planning, record and document control, and other database functions.

The audit revealed problems with respect to Annual Report quality and the timeliness of reporting. These issues are discussed in sections 3.6.2. and 3.3.11.

3.6. Monitoring

3.6.1. General Monitoring

Compliance Monitoring

The North Bay District is responsible for both compliance planning and compliance program delivery on the TCMU. During the audit period an effective and successful compliance monitoring program was delivered in the field at levels appropriate for the level of forest management activity. This commitment to field effort produced positive results with respect to the number of compliance infractions on the TCMU.

A generic Annual Compliance Operation Plan (ACOP) was prepared which provided optional strategies and tactics to be used each year. Operational details such as staff commitment, annual priorities, and targets were outlined in Compliance Activity Schedules (CAS) which had been prepared by the Area Team up to the year 2002-2003. After that date the District decided to suspend local compliance planning and scheduling, pending a provincial level review of those activities. ACOPs were required for the entire period being audited and there was no indication of annual assessments and reviews of compliance efforts and results.

In our view, the strategic compliance planning completed by the District was adequate, but detailed compliance activity planning did not meet the requirements of the FMPM.

Recommendation # 7:

The District OMNR must ensure that FMPM requirements for compliance planning are met.

The Annual Forest Compliance Plans for the TCMU provided minimal detail regarding scheduling and level of inspection activity and there were no details regarding meetings with FRL holders, or education and training. The highly variable nature of forest harvesting activity on the Unit was cited as one of the main reasons for not providing detailed schedules. However, we note that in other parts of the province, harvest contractors provide monthly reporting of planned activities to facilitate the planning and delivery of inspection activities. We suggest a similar process could be implemented on the TCMU.

Suggestion # 6:

The District OMNR should consider having harvest contractors provide monthly reports of planned activities to enable OMNR staff to better schedule compliance inspection activities.

Our review of the compliance records indicates that, despite of the lack of complete planning documents, the District completed a reasonable program of inspections which resulted in a reduced number of Not in Compliance reports over the audit period (Table 7). The number of field inspections was directly related to the level of harvesting activity.

TABLE 7. FOREST OPERATION INSPECTION REPORTS AND NOT IN COMPLIANCE REPORTS 2001-2006

Period/Activity	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
ACCESS	17 (6)**	31 (5)	12 (1)	17	15
HARVEST	90 (14)	86 (13)	90 (6)	29 (1)	45 (4)
RENEWAL	6	0	8 (1)	6	10
MAINTENANCE	6	2	1	1	7
PROTECTION	0	0	0	*	*
Total:	119 (20)	119 (18)	111 (8)	53 (1)	77 (4)
% NIC:	17	15	7	2	5

Source: 2001-2004 data is AR Table 12.2 using FOCIS, 2004-2006 are from AR Table 13 using FOIP.

* Under FOIP maintenance and protection reports are combined.

** Brackets denote number of not in compliance reports.

Forest Operation Inspection Reports (FOIR's) were prepared by OMNR and we found the reports to be complete. All NIC FOIR's were reviewed and assessed relative to the action taken by the District (Table 8). We conclude the District responded appropriately to NIC reports.

TABLE 8. FOREST OPERATION INSPECTION REPORTS - TEMAGAMI CMU - LEVEL OF NOT IN COMPLIANCE (NIC) REPORTS AND ACTION TAKEN

Year/Title	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006
# of Inspections	119	119	111	53	77
# of NIC	20	18	8	1	4
# Minor	18	13	4	1	4
# Moderate	2	5	3	0	0
# Significant	0	0	1	0	0
# Resolved	12	8	3	1	4
# Warnings	2	7	5	0	0
# Penalties	6	3	0	0	0

Silvicultural Monitoring

Monitoring programs for effectiveness of silvicultural treatments were in accordance with the FMP. There were no silvicultural treatments that were exceptions to the silvicultural guides requiring specific monitoring programs, nor were there any exceptions to the prescriptions for the implementation of AOCs.

District staff completed sufficient regeneration and free-to-grow assessments to ensure regeneration on the TCMU. The area of land classified as barren and scattered or non-satisfactorily regenerated has declined significantly (i.e. from 17,492 ha to 1,439 ha between 1999-2006) on the Unit. This trend is a largely the result of free-to-grow survey work conducted in 2000 and 2001. Areas surveyed for regeneration success indicate that the forest is regenerating. For the period 1991-1996, 96.1% of the surveyed area was satisfactorily regenerated. Audit field observations confirm that the forest is being satisfactorily renewed.

In Section 3.4.4., we provide suggestions and recommendations to OMNR with respect to the cost-effectiveness of tending operations utilizing sproutless herbicide applicators, the silvicultural requirement for pre-commercial thinning and tending on some specific sites on the Unit. It is our opinion that monitoring and pre-treatment site assessments will address the identified shortcomings related to the delivery of these programs.

3.6.2. Annual Report

The audit team reviewed Annual Reports (ARs) completed for each year of the audit period. The content of the ARs met FMPM requirements with the general exception of compliance text. Our review of the reports indicates that information related to forest management activities was accurate.

The text related to compliance did not meet the standards required in the FMPM, and Annual Report Preparation and Review Protocols. For example, in Table 12 (2003-2004) the number of inspections related to the three special report categories had not been completed and a NIC in an AOC was not reported as required. Additionally, the text simply repeated information contained in the Tables, with no assessment or other information about the compliance results.

Annual Reports produced over the audit period contained EA Condition 77 reporting and results (2000-2004), and a District Report for 2004 – 2005 contained a summary of Condition 34 initiatives (Discussed in Section 3.2.3). Table 9 shows that that several of the ARs were submitted late.

TABLE 9. ANNUAL REPORT REQUIRED DATES AND ACTUAL SUBMISSION DATES

Fiscal Year (April 1st – March 31st)	Spring (due April 15th)	Fall (due November 15th)
2001-02	July 4 th , 2003	Feb 9 th , 2004
2002-03	June 3 rd , 2004	March 23 rd , 2004
2003-04	Feb.25 th , 2005	Nov.16 th , 2005
2004-05	Not required (part of fall submission)	May 25 th , 2006
2005-06	Not required (part of fall submission)	Not due until Nov.15 th , 2006

NOTE:

- For Crown management Units the submitted and verified dates are the same.
- Dates in **bold** indicate reports are close to or more than a year late.

The previous IFA identified a problem with late submission of Annual Reports. The importance of completing Annual Reports according to the appropriate manuals with regard to content, review and timing of submission needs to be given a higher priority by the District.

Recommendation # 8:

The District OMNR must ensure that Annual Reports are completed in accordance with FMPM requirements.

3.6.3. Report of Past Forest Operations

The Report of Past Forest Operations examined the planned and actual forest management activities that occurred during the period of 1997-1999. During that

period forest management activities were directed by a Contingency Forest Management Plan (CFMP).

Of the nineteen tables listed in the FMPM (RPFO-1 to RPFO-19), ten tables were completed in their entirety (RPFO 1-7, 10, 11, 12); three tables (RPFO 8, 9, 19) were partially completed where information existed; and eight tables (RPFO 13-18) could not be completed because the information required was not contained in the 1997-99 Contingency FMP. The analysis of management alternatives and the assessment of forest sustainability were the two main sections not contained in the 1997-99 CFMP.

Where completed the RPFO tables were accurate. The RPFO included the required analysis of revenues and expenditures needed to achieve plan objectives. The RPFO included an evaluation of operations, an assessment of forest sustainability (where possible) and an assessment of the achievement of management objectives (to the extent possible). Reasonable explanations were provided for shortfalls in the achievement of planning targets. We conclude that the RPFO met FMPM requirements.

In accordance with the new 10 year planning approach of the 2004 FMPM, a Year 10 Annual Report was to serve as the RPFO for the 1999-2004 term. The 10 Year Annual Report was to augment the normal spring and fall annual report submissions for 2003-2004. The 2003/2004 component was due by November 15, 2004 and the additional year-ten report component was due February 15, 2005. At the time of the audit, this report had yet to be prepared. A recommendation is provided to address this issue.

Recommendation # 9:

The District OMNR must ensure that the Year 10 Annual Report is completed for the 1999-2004 term in accordance with FMPM requirements.

3.7. Achievement of Management Objectives and Forest Sustainability

Achievement of Management Objectives

Table 10a provides a summary of the status of the 1999 – 2004 TCMU FMP objectives with audit team comments.

TABLE 10A. SUMMARY OF THE STATUS OF THE 1999 TCMU FMP OBJECTIVE

Objectives	Assessment of Achievement
<p>Desired Forest Condition</p> <p>To move the current forest condition toward one that's composition, age class structure and disturbance sizes more closely resembles that of the pre-European settlement forest.</p>	<p>The TCMU was a test area for the development of NDPEG, which was designed to emulate natural disturbance patterns on the landscape. Rare forest complexes were protected throughout the period, and allocations were planned to maintain a range of successional stages for all ecological units. Significant portions of the landscape are protected through the application of the TLUP. However, the failure to achieve planned harvest levels and the lack of natural disturbance on the Unit has seriously compromised the achievement of this objective. In our view this objective cannot be obtained unless harvesting/disturbance levels are increased.</p> <p>The planting of conifer and the associated tending has resulted in progress being made in the achievement of FMP objectives associated with the re-establishment of pine / conifer on the Unit.</p>
<p>Old Growth</p> <p>Provide a full range of age classes, including a portion in the late successional stage (emphasizing the forest Units containing the longer lived species such as red and white pine, white spruce and sugar maple).</p>	<p>The TLUP provides for the protection of approximately 45% of old growth pine stands. Aging of the forest and AOC reserves continue to increase the area of protected old growth. Silvicultural systems used in the management of tolerant hardwoods are conducive to the maintenance of a range of age classes. In our opinion this objective is being met.</p>

<p>Natural Heritage Areas</p> <p>1) To recognize the significant contribution that parks, conservation reserves and other natural heritage areas play in maintaining ecosystem health and forest diversity and to minimize the impacts of forest operations and associated road access on these sites.</p> <p>2) To recognize that the identification and protection of representative landform and vegetation community associations within parks and conservation reserves requires that the intervening lands be managed in an ecologically sustainable manner.</p>	<p>The TLUP provides a comprehensive strategy to protect natural heritage areas. Over 30% of the forested land base is in parks, special management areas, skyline reserves and set-asides for land claim negotiations. All natural heritage values identified on the management unit were protected through planning or when encountered in the forest by Area of Concern planning. Area of Concern planning was developed for each specific natural heritage value, and implemented according to its prescription. In our opinion this objective has been met.</p>
<p>Social and Economic Objective</p> <p>To provide for an optimum continuous contribution to the economy (both native and non-native) by forest-based industries and to provide for other uses and users of the forest through environmentally sound forest management practices.</p>	<p>The failure to achieve planned harvest levels represents a loss of economic opportunity. The location and number of protected areas and AOCs has resulted in small disbursed harvest areas which are often marginally economic for operations. Tourism opportunities have benefited from the application of the TLUP. We are of the opinion that this objective has only been partially met.</p>
<p>Wood Supply and Disposition</p> <p>1) Maximize the sustainable supply of roundwood to the forest industry from the Managed Crown Production Forest available for timber production.</p> <p>2) Minimize fluctuation in the sustainable supply of roundwood throughout the next 140-year period.</p>	<p>Available harvest area calculations were conducted using SFMM to determine sustainable supplies of fibre for the forest industry. The selected management alternative provided the best sustainable and uniform flow of desired forest products. The available harvest area was used to select harvest operations</p>

<p>3) To facilitate greater participation by aboriginal peoples in the benefits derived from forest management. More specifically, provide economic opportunities to the Temagami First Nation.</p>	<p>by forest unit and age class, and harvesting did not exceed these levels. This will provide a long-term continuous supply of fibre for the forest industry.</p> <p>Application of environmentally sound guidelines during harvest operations will ensure the forest does not degrade due to poor practices over the long term.</p> <p>The OMNR met its obligations under T&C 77 and 34.</p> <p>We are of the opinion that this objective has been met.</p>
<p>Wood Utilization</p> <p>To increase the utilization of tree species and products (e.g. white birch pulp) that historically have been underutilized while recognizing the need for residual trees to meet silvicultural, wildlife habitat and ecological purposes.</p>	<p>This objective was not achieved, due to poor to non-existent markets although some improvement did occur (Table 3).</p>
<p>Mining Claim Holders</p> <p>To mitigate potential negative impacts of forestry activities on the commercial users of the shared landbase.</p>	<p>Mitigation measures were in place. This objective was achieved.</p>
<p>Forest Cover</p> <p>To preserve and, where possible, to enhance environmental quality and habitat by preventing, minimizing, mitigating or directing the positive and negative impacts of forest management activities on other uses, users and life in the forest.</p>	<p>Forest operations were conducted in accordance with the SGRs and STPs. There was an effective compliance program. Enforcement of access restrictions was effective. The LCC was actively involved in providing recommendations to the DM. In our opinion this objective has been met.</p>

<p>Wildlife Habitat</p> <p>To maintain habitat for all native vertebrate species of wildlife with special emphasis on provincially and locally featured species (moose, marten, and pileated woodpeckers, consistent with the guidelines). For other species, provide, as closely as possible, diversity of habitat conditions that would be created by the historic natural disturbance regime.</p>	<p>The selected management alternative provides a sustainable supply of preferred wildlife habitat for selected species. The effective implementation of AOCs and specific species guidelines ensured continued supply of habitat. The lack of forest disturbance threatens habitat supply for some species dependent on younger forests. In our opinion this objective has been partially met.</p>
<p>Recreation and Remote Tourism</p> <p>To minimize the impact of harvesting and the associated road access on recreation and remote tourism.</p>	<p>Remote tourism and recreational interests are fully protected by the TLUP strategic directions, the Generic Road Use Strategy, and the application of appropriate AOCs. This objective has been fully met.</p>
<p>Cultural Heritage</p> <p>To protect cultural heritage values from forestry related activities that may impact on their value.</p>	<p>The vigorous application of the cultural heritage guidelines and the associated assessment model has ensured full protection for cultural heritage values. Native values maps were produced. In our opinion this objective has been met.</p>
<p>Trappers and Bear Management Operators</p> <p>To mitigate potential negative impacts of forestry activities on other commercial users of the forest.</p>	<p>This objective has been met through the public consultation process, an active and representative LCC, access restrictions and the application of AOCs.</p>

<p>Silviculture</p> <p>1) To effectively implement a harvest, renewal and maintenance program to ensure acceptable establishment and growth of the forest towards the desired future condition.</p> <p>2) To increase the quantity of higher quality timber products available for harvest by performing appropriate tending activities in young and mid-aged stands.</p> <p>4) Conduct prescribed burning where viable recognizing it as a useful silvicultural tool which is environmentally acceptable for site preparation and vegetation management.</p>	<p>An effective silvicultural program was implemented on the Unit. The forest is being renewed successfully. Actual areas renewed are in balance with the area harvested. Harvest levels were underachieved; the failure to harvest has implications for the delivery of other planned silvicultural treatments.</p> <p>Chemical and manual tending treatments were effective. Issues were identified in the audit with respect to the requirement for treatments on jack pine forest units and the management of the pre-commercial thinning program. Prescribed burning was not undertaken during the audit period.</p> <p>In our opinion this objective was substantially met.</p>
<i>Other Objectives</i>	
<p>The objective for fish habitat and water quality is to minimize the impact of harvesting and the associated road access on these values.</p>	<p>Fisheries habitat and water quality were effectively protected with the application of AOCs, appropriate culvert installations and the use of appropriate road construction standards.</p> <p>This objective was fully met.</p>

The 2004 FMP is only in its second year of implementation making it impossible to fully assess objective achievement. Auditor comments on progress towards objective achievement are provided in table 10b.

TABLE 10B. SUMMARY OF THE STATUS OF THE 2004 FMP OBJECTIVES

Objectives	Assessment of Achievement
<p>Desired Forest Condition</p> <p>To move the current forest condition towards one that's composition, age class structure and disturbance sizes more closely resembles that of the pre-European settlement forest.</p>	<p>This objective is the same as the desired forest condition objective in the 1999 FMP. Progress has been made towards objective achievement; however the lack of harvest or natural disturbance continues to negatively affect the progress towards the achievement of this objective.</p>
<p>Composition Objective</p> <p>To increase the forest area classified as conifer forest units (white pine, red pine, jack pine and spruce) forest while producing a corresponding decrease in non-conifer dominated forest (intolerant and tolerant hardwoods).</p>	<p>There is an active program to increase the conifer component within mixed wood forest types. Progress is being made towards the achievement of this objective.</p>
<p>Age Class Structure Objective</p> <p>Over a period of 80 years, move the current age class structure for each forest cover type (generally large % in old age class relative to young age classes) towards a more balanced one having a greater area represented in the younger age classes. Ensure that the area contained in each forest species group is "naturally" distributed within the age classes by meeting the following targets by forest unit and stage of development:</p>	<p>The lack of harvest or natural disturbance continues to negatively affect progress towards the achievement of this objective. The SMA provides for a better balance of age classes within the managed forest. Limited progress is being made towards the achievement of this objective.</p>

<p>Disturbance Size Objective:</p> <p>Create a mosaic of disturbance (patch) sizes that more closely reflects the natural distribution and pattern of disturbances across the landscape by the year 2084.</p>	<p>NDPEG guidelines are being implemented. Limited progress is being made towards the achievement of this objective due to the limited disturbance in the forest.</p>
<p>Old Growth</p> <p>Provide a full range of age classes, including a portion in the late successional stage (emphasizing the forest units containing the longer lived species such as red and white pine, white spruce and sugar maple) by year 2084.</p>	<p>This objective is similar to a 1999 FMP objective for old growth. In our opinion progress continues to be made.</p>
<p>Parks, Conservation Reserves and Natural Heritage Areas</p> <p>To ensure that a minimum of 50% (area based) of the forest cover is undisturbed (i.e. ≥ 20 years of age) at any point in time around the perimeter (within 200 m) of Parks and Conservation Reserves and to protect natural heritage areas through Area of Concern planning.</p>	<p>Progress is being made towards achieving this objective through the TLUP and the implementation of AOCs.</p>
<p>Wood Supply</p> <p>1) Maximize the sustainable supply of roundwood to the forest industry from the Managed Crown Production Forest available for timber production while meeting volume targets (based upon wood supply commitments, Appendix 11).</p> <p>2) Minimize fluctuation in the sustainable supply of roundwood throughout the next 150-year period to a maximum of 10% allowable decrease in wood supply in any term (10-year period).</p>	<p>This objective is similar to the wood supply objective in the 1999 FMP.</p> <p>Available harvest area calculations were conducted using SFMM to determine sustainable supplies of fibre for the forest industry. The selected management alternative provided the best sustainable and uniform flow of desired forest products. We are of the opinion that this objective has been met.</p>

<p>Harvest Operators (Forest Resource Licensees)</p> <p>To meet the harvest disposition strategy outlined in Table 3 found in the DWDS (Appendix 20) which contains the volume targets by species group for the existing licensees operating on the Temagami MU.</p>	<p>Current harvest dispositions are below planned levels based on a two-year trend.</p>
<p>Wood Utilization</p> <p>To increase the utilization of tree species and products that historically have been underutilized while recognizing the need for residual trees to meet silvicultural, wildlife habitat and ecological purposes.</p>	<p>Poor markets for underutilized species continue to exist although some improvement did occur (Table 3).</p>
<p>First Nation Opportunities</p> <p>To facilitate a more equal participation by Aboriginal peoples in the benefits derived from forest management and to increase the involvement of Aboriginal peoples in forest management by providing economic opportunities to First Nation communities.</p>	<p>This is similar to the 1999 FMP objective for First Nation economic opportunities. The OMNR continues to meet its obligations under T&C 77 and 34.</p>
<p>Wildlife Habitat</p> <p>Maintain habitat for all native vertebrate species of wildlife with special emphasis on provincially and locally featured species (moose, marten, and pileated woodpeckers, consistent with the guidelines). For other species, provide, as closely as possible, diversity of habitat conditions that would be created by the historic natural disturbance regime.</p>	<p>The selected management alternative provides a sustainable supply of preferred wildlife habitat for selected species. The effective implementation of AOCs and specific species guidelines ensured continued supply of habitat. The lack of forest disturbance threatens habitat supply for some species dependent on younger forests. In our opinion this objective continues to be partially met.</p>

<p>Recreation and Resource Based Tourism</p> <p>To minimize the impact of harvesting and the associated road access on recreation and resource based tourism.</p>	<p>Resource based tourism and recreational interests are fully protected by the TLUP strategic directions, the Generic Road Use Strategy, Forestry/Tourism Agreements and the application of appropriate AOCs.</p> <p>This objective continues to be met.</p>
<p>Silvicultural</p> <p>To effectively implement a harvest, renewal and maintenance program to ensure acceptable establishment and growth of the forest towards the desired future condition.</p> <p>To increase the quantity of higher quality timber products available for harvest by performing appropriate tending activities in young and mid-aged stands.</p> <p>Conduct prescribed burning where viable recognizing it as a useful silvicultural tool which is environmentally acceptable for site preparation and vegetation management.</p> <p>To utilize herbicides in areas where other manual tending methods will not appropriately reduce competition with crop species.</p> <p>Necessary funding is a critical prerequisite for a successful silviculture program. Therefore, it is important that with the current silvicultural funding system (which is based on revenue retention of the renewal portion of stumpage fees) revenues remain equal to or greater than silvicultural expenditures.</p>	<p>An effective silvicultural program is being implemented on the Unit. The forest is being renewed successfully. Harvest levels are below planned levels. Should this trend continue there will be negative implications for the delivery of other planned silvicultural treatments.</p> <p>Chemical and manual tending treatments are being implemented. Issues were identified in the audit with respect to the requirement for treatments on jack pine forest units and the management of the pre-commercial thinning program.</p> <p>Slash piling was undertaken and the activities were appropriately planned and delivered. Prescribed burning was not undertaken for vegetation management.</p> <p>Based on current harvest levels we anticipate there will be sufficient funding for the delivery of the silvicultural program.</p>

<i>Other Objectives</i>	
To protect all values through Area of Concern planning and to minimize the impact of harvesting and the associated access and road use management strategies on the other commercial users of the forest.	There is effective AOC planning and implementation on the Unit. In our opinion progress is being made towards the achievement of this objective.

Upon review of the level of objective achievement for both the 1999 and 2004 FMP we are of the opinion that objectives have been substantially met. The significant and continuing under harvest of the forest is a major concern which will negatively affect the desired future forest condition and the attainment of socio-economic benefits. In Section 3.4.2., we provide a recommendation to address this issue.

REVIEW OF THE RPFO ASSESSMENT OF SUSTAINABILITY

The analysis of management alternatives and the assessment of forest sustainability were not contained in the 1997-99 Contingency Forest Management Plan (CFMP). This seriously affected the ability of the RPFO Author to assess forest sustainability using the FMPM format, and required that the determination of sustainability be based primarily on information contained in Annual Reports.

While noting it is difficult to provide an assessment of sustainability based on the short term of the CFMP, the Plan Author was of the opinion that the management of the TCMU was sustainable for the RPFO period, and that the majority of short term plan objectives had been met. The assessment of the achievement of forest sustainability was based on the achievement of plan objectives, field performance (i.e. all sites harvested were renewed, wildlife habitat was protected by AOCs etc.) during the plan term and the fact that the approved CFMP followed the all existing legislation, policy, and direction in effect during the plan term.

We concur with the sustainability conclusion. It is our opinion that the RPFO Author provided as complete a summary of forest sustainability as possible with the information available.

REVIEW OF THE COMPARISON AND TRENDS ANALYSIS OF PLANNED VS. ACTUAL FOREST OPERATIONS REPORT

A Comparison and Trends Analysis Report of Planned vs. Actual Forest Operations Report was prepared by the forest manager (North Bay OMNR) as a requirement of the Independent Forest Audit process. The report considered the following three planning terms:

1. 1997-1999 Contingency Forest Management Plan.
2. 1999-2004 term of the 1999-2019 Forest Management Plan.
3. First two years of the 2004-2009 term of the 2004-2024 Forest Management Plan.

The purpose of the report is to provide a comparison and trend analysis of planned vs. actual forest operations over time. This information will provide an interpretation of the current state of the TCMU relative to its historic state on the basis of an analysis of ten years of forest management activity. The report was prepared in accordance with the requirements of Appendix C of the IFAPP.

The following trends are significant on the TCMU:

- 1) The total area of Crown managed productive forest land has remained relatively unchanged since 1997.
- 2) The area of land classified as barren and scattered or non-satisfactorily regenerated declined significantly over the reported terms. This trend is largely the result of free-to-grow survey work conducted in 2000 and 2001 (Section 3.4.3.).
- 3) The area classified as depleted has significantly increased since 1999. This increase in area was attributed to a management decision to label as “depleted” all planned harvest area (15,605 ha) in the 1999-2019 forest management plan in the 2004-2024 planning inventory on the basis of discussions with licensees that indicated that all 1999-2004 harvest allocations would be cut. Approximately 8,900 ha were not harvested and as such, the area classified as depleted in the planning inventory is not correct. In our opinion, the decision to “deplete” all planned harvest areas in the planning inventory was questionable given the history of underachievement of planned harvest levels on the Unit.

Suggestion # 7:

District OMNR should ensure all depleted area is correctly reported for the development of the 2009-2029 planning inventory.

- 4) Actual harvest levels (area and volume) were significantly below planned harvest levels for all three periods. The persistent underachievement in harvest area and volume poses issues with respect to lost wood supply opportunities and the long term sustainability of the forest. Objectives with respect to desired future forest condition and the benefits derived from the forests of Temagami could be invalidated should trends persist over the long term. This issue is discussed in Section 3.4.2.

- 5) The total area regenerated is in balance with the area harvested. However, planned natural regeneration targets were not met due to the reduced levels of harvesting on the Unit (in 1997-1999 (35% of planned) and 1999-2004 (52% of planned)). Artificial renewal was closer to planned target levels, particularly in the 1999-2004 planning term due to the availability of funding for planting work. Artificial renewal achieved 51% of the planned level in 1997-1999 and 83% of the planned level in 1999-2004. Renewal is discussed more fully in Section 3.4.3.
- 6) Areas surveyed for regeneration success indicate that the forest is regenerating. For 1991-1996, 96% of the surveyed area was satisfactorily regenerated.

ACHIEVEMENT OF FOREST SUSTAINABILITY

The assessment of the degree of success in achieving forest sustainability is determined through an examination of measurable indicators of forest sustainability criteria, an analysis of changes to the forest over time and associated socio-economic conditions. Actual values for each measurable indicator are to be recorded for successive plan terms by the FMP Plan Author. Those values can then be analyzed to detect trends and assess forest sustainability.

At the management unit level, five criteria (Biodiversity, Forest Condition and Ecosystem Productivity, Soil and Water Quality, Multiple Benefits to Society, and Accepting Society's Responsibility for Sustainable Development) are commonly used in the determination of forest sustainability. A series of measurable indicators has been developed for each of these criteria.

These indicators are critical for the assessment of sustainability for individual Forest Management Plan alternatives and for the assessment of trends in forest sustainability over successive Management Plan periods.

Biodiversity

The 1999 and 2004 FMPs contained the required indices to describe landscape patterns and forest diversity. These included edge, interior, fragmentation, isolation and spatial patterns and forest diversity. While index values were calculated there was insufficient data for the forest manager to assess sustainability trends over successive plan terms.

The FMP Selected Management Alternative (SMA) was within the acceptable SFMM ranges for forest diversity indices, and long term forest diversity indices were within the acceptable bounds of variation. A projection of forest unit area showed minor movement towards FMP forest diversity targets (i.e. pre-settlement forest condition). Several of the silvicultural systems applied on the

Unit (e.g. selection, seed tree) retained vertical structure which provided habitats for a variety of wildlife species, and the retention of residual stems retained genetic diversity. Additional structural diversity was provided by advanced growth and the retention of unmerchantable trees in many stands.

We are concerned about the continued inability to achieve planned harvest levels on the Unit. The long term lack of disturbance will negatively affect the FMP objective to move towards a natural disturbance pattern template. Additionally, the lack of disturbance (i.e. natural disturbance or harvest) will most likely result in a shift in species composition over time favouring species more tolerant of shade to the detriment of pine species.

Forest Condition and Ecosystem Productivity

The stability of forest cover types is an indicator of forest sustainability. On the Unit the total area of Crown management production forest has remained relatively constant since 1997. Areas surveyed for regeneration success indicated that the forest is regenerating, and the areas classified as barren and scattered and depleted have been declining since 1997.

The lack of forest disturbance has altered the age class structure (skewing the distribution towards older age classes) and, to a lesser extent, the species composition. The skewed age class imbalance will, over time, compromise the ability of the forest to provide an even flow of forest products.

Multiple Benefits to Society

The SMA ranked in the mid-range of all reviewed management alternatives in terms of economic, social, and environmental benefits (e.g. wildlife habitat). Economic benefits tend to increase as more volume is cut. Only 43% of the identified available harvest area was harvested due to factors such as poor or non-existent markets, available labour force etc. As a result of this low level of cutting, the implementation of the SMA cannot be deemed as effective in maximizing the benefits to society (e.g. employment, stable communities, etc.) that accrue from timber harvesting.

Additionally, a considerable proportion of the landbase has been set aside for other purposes (e.g. parks, reserves, lands claims, etc.) leaving approximately 297,000 ha (46%) of productive forest land actually eligible for forest management. Societal benefits that accrue from forest management activities will be extremely difficult to sustain if the area available for timber production continues to diminish.

Soil and Water Conservation

Net primary productivity (NPP) and water yield are expressions of landscape processes, which are measurable indicators of forest sustainability. Base values

for net primary productivity and water yield were calculated for the Unit. These values will have to be compared to future values to enable the assessment of trends.

Our field inspections indicated that forestry operations on the TCMU protected soils and water, and were conducted in accordance with the guidelines.

Accepting Society's Responsibility for Sustainable Development

The TLUP provides long term strategic direction for the Unit and attempts to balance the protection of non timber values with operational forestry needs and activities.

There are three native communities with an interest on the TCMU. These are the Temagami First Nation (TFN), the Teme-Augama Anishnabai (TAA) and the Matachewan First Nation (MFN). The TFN and TAA are closely aligned with a joint band council.

The communities were given the opportunity to participate in formal native consultation programs in the development of the 2004 FMP. None of the bands requested the separate native consultation process; however, Native Background Information Reports were prepared for the TFN (with TAA input) and the MFN. The TFN also participated on the LCC, in forest management activities and holds a FRL on the Unit.

We determined that the OMNR has a strong commitment to forest renewal and maintenance. Funding available for silviculture was sufficient to conduct all activities that were planned in the FMP and scheduled on a yearly basis.

Another measure of "accepting society's responsibility for sustainable development" is public and LCC satisfaction with their participation in the forest management planning process. We determined that the information centres were well attended. The LCC represented all public and industrial interests on the Unit. We determined it was active and effective and members informed us they were satisfied with their positive impact on forest management.

Sustainability Conclusion

The IFAPP requires that the auditor provide an opinion on the achievement of management objectives and forest sustainability. To arrive at our conclusion, in the preceding sections we completed an examination and provided an assessment of;

- The achievement of management objectives.
- The RPFO assessment of sustainability.

- The Comparison and Trend Analysis of Planned vs. Actual Forest Operations.
- Criteria for the achievement of forest sustainability.

Based on our assessment of field performance and forest sustainability criteria, our documentation review and our assessment of the achievement of management objectives we conclude that forest management objectives have been substantially achieved and the TCMU is being managed sustainably. However, as discussed in Section 3.4.2., the continued inability to achieve planned harvest levels in the absence of other stand replacing disturbances will pose a risk to long term forest sustainability.

3.8. Contractual Obligations

An SFL agreement was not in place on the TCMU during the audit period. Table 11 provides a summary of the Crown contractual obligations as defined in the IFAPP, and the obligation attainment during the audit period.

TABLE 11. SUMMARY OF CONTRACTUAL OBLIGATIONS AND AUDITOR COMMENTS ON THE LEVEL OF ATTAINMENT OF THE CONTRACTED OBLIGATIONS

Contractual Obligation	Level of Attainment
1. Maintained minimum balance in the Special Purpose Account.	The minimum required balance was maintained.
2. Maintained records including maps of all activities that were funded from the SPA.	The required documentation was maintained.
3. Assess harvested areas to determine whether they meet standards in the SGR. Maintain records of the assessments for future audit and prepare stand descriptions for entry into the FRI.	All harvested areas inspected during the field audit were in accordance with the SGRs. Records of assessments were maintained and stand descriptions were prepared.
4. Prepare an Action Plan responding to Audit Recommendations within two months of receiving the final audit report.	The Action Plan was submitted 3 months late. The Action Plan dealt effectively with the IFA Recommendations.

<p>Prepare a status report within two years following approval of the Action plan.</p>	<p>The Status Report was submitted months late. The Status Report contained the required follow-up information on the Action Report.</p>
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Harvesting operations were delivered by Forest Resource Licensees. While there were some Not In Compliance (NIC) reports for forest management activities during the audit period, we found no significant violations of the FRL licence requirements.

A requirement of the IFAPP is that the field audit assesses compliance with the Forest Renewal Trust-Specified Procedure Report (SPR). Because this is a Crown Management Unit, the OMNR retained responsibility for managing the Special Purpose Account (SPA). The audit inspected 98 sites (31%) of SPA sites. As discussed in Section 3.4.4, we had concerns with respect to the silvicultural requirement for some tending treatments and the monitoring of contractor work. Recommendations are provided.

During the audit period the North Bay District was required to maintain a minimum of \$220,700 in the Renewal Trust Account (March 31st of each year). The minimum balance was maintained during the audit period.

Progress on Recommendations from Previous Audits

A final report for the 2001 Independent Audit of the Temagami Management Unit was submitted in May of 2002. The three forest management plans audited were:

1. Temagami MU (formerly Temagami and Latchford CMUs) 1996-1997 Contingency Timber Management Plan.
2. Temagami MU 1997-1999 Contingency Forest Management Plan (CFMP).
3. Temagami MU 1999-2019 Forest Management Plan (FMP).

The IFAPP requires that the OMNR prepare an Action Plan within 2 months of the receipt of the final audit report. A Status Report, summarizing progress, is required within 2 years following the approval of the Action Plan. The auditee is required to develop a strategy to deal with each of the recommendations, and to report on progress. There is no formal requirement to respond to suggestions made in an IFA; however, for the 2001 IFA the OMNR elected to do so.

The Action and Status reports outline:

- i. the action required,
- ii. the organization and individual position responsible for doing the work,

- iii. deadline dates,
- iv. the method for tracking progress of the Action Plan.

The OMNR produced the required Action Plan in October, 2002 (3 months late) and it was approved in November, 2002. The Status Report was required in November, 2004 but was not produced until January, 2006. The Status Report delay was excessive (over one year). The information reported in both documents conformed to all IFAPP requirements.

Recommendation #10:

The District OMNR must ensure that the Action Plan and Status Report responding to IFA Recommendations adhere to the required timelines.

Table 12 provides our assessment of the reported progress and completion of Action Plan items.

TABLE 12. REPORTED PROGRESS ON ACTION PLAN ITEMS

Rec #	Recommendation	Status	Auditor Assessment
1	The MNR should continue working with the LCC to develop a decision-making process which will maximize the value of the input provided by the LCC.	Ongoing. Information and training provided through presentations at LCC meetings.	A review of minutes, and interviews with OMNR and LCC staff indicate that the LCC had, whenever possible, moved to consensus decision making.
2	The Planning Team should record and retain minutes of all 2004-2024 FMP planning team meetings, as required by the FMPM.	Completed.	Completed.

3	The MNR should ensure that there is minimal overlap in the membership of the planning team and plan review team for the 2004-2024 plan.	Completed.	Completed. Approximately one third (33%) of planning team members were also plan reviewers. We consider this to be a reasonable representation.
4	The MNR should catalogue, record and retain in an organized manner the information available to the public at each stage of public consultation, at least until the plan has expired and been audited.	Completed. Planning information from the 2004-2024 Information Centres is centrally filed at the North Bay District Office.	Completed.
5	The MNR should review the mailing list for the Temagami Forest to ensure that all required groups are included.	Completed.	Completed.
6	The MNR should ensure that First Nations receive a high priority in decisions related to future harvest allocations.	Ongoing. The 2004-2024 FMP includes the objective "To facilitate a more equal participation by Aboriginal peoples in the benefits derived from forest management and to increase the involvement of Aboriginal peoples in forest management by providing economic opportunities to First Nation communities.	A review of T & C 77 and 34 Summaries, as well as interviews with OMNR and First Nation representatives indicated that the OMNR has made significant efforts to include First Nations in forest management.

7	The MNR should carefully review the 1999-2019 plan and plan summary and amend them as required to correct presentation and data errors.	Completed.	Completed.
8	The MNR should correct mapping errors in the silviculture layer of the digital inventory arising from polygon offsets, and the resulting FRI errors.	Ongoing.	This recommendation is being met through FIM requirements and GIS contract work.
9	The MNR should commit to conducting fish and wildlife surveys in support of forest management in the Terms of Reference for the 2004 FMP and by including a strategy and objectives for fish and wildlife surveys in the 2004 FMP.	Completed.	Completed.
10	The MNR should conduct appropriate fish and wildlife surveys and inventories throughout the implementation of the 1999 FMP.	Completed. Aerial surveys were conducted in July 2002 and again in summer of 2004 and provided information for all areas allocated in the 2004-2009 FMP.	This recommendation was substantially met, recognizing that there will always be a requirement for more current and complete surveys.
11	Corporate MNR should revise direction for the FMP socio-economic profile so that it considers up-to-date information for both the communities within the forest management unit and the entire communities which receive wood from the Unit.	The socio-economic profiling used in the production of the 2004-2024 FMP included the town(ship)s of Temagami, Latchford, and New Liskeard, A "Demographic Profile for Wood Flow from FMU Temagami" was produced for 2004-2024 FMP.	Completed.

12	Corporate and District MNR should develop the socio-economic profile with input from local and regional economic development officers and other knowledgeable people, and be supplemented with more current data sources if required.	Completed. Local communities and industry information was incorporated in the socio-economic profiles developed for the 2004-2024 FMP.	Completed.
13	The MNR should ensure that plans to maintain and protect existing tree improvement areas and genetic tests are developed, implemented, and reported in the FMP.	Completed. Seed Collection and Tree Improvement Operations are discussed in the 2004-2024 FMP. Actual work is reported annually.	Completed.
14	The MNR should develop and implement methods of seed collection with better control over the source and genetic quality of seed than from general collections.	Ongoing. Seed collection information is reported in the 2004-2024 FMP.	This recommendation was substantially met.
15	The MNR should maintain a system of regular silvicultural monitoring that is appropriate for the forest condition(s) being measured.	Completed and Ongoing. The system of silvicultural monitoring is detailed in the 2004-2024 FMP.	Silvicultural monitoring is ongoing.
16	The MNR should ensure that large cull logs, especially white pine, should be left in or moved into the cutover area, away from roads and landings, where they will add to the downed woody material.	Completed and Ongoing. Compliance with this requirement is checked during final inspections of harvest blocks.	Appropriate efforts are being made to retain cull material on site within cutovers.

17	The MNR should develop and implement a slash pile and wood waste management program that would reduce the loss of productive forest.	Ongoing. The OMNR is continuing to implement a slash pile and wood waste management program.	A slash pile management program is being implemented on the Unit. The field audit noted issues related to the effectiveness of the pile burning program and piling of slash too close to residual trees.
18	The MNR, the forest and mining industries and representatives of the tourism, and recreation sector need to review access control procedures to increase their effectiveness, in keeping with the Temagami Land Use Plan.	Completed and Ongoing. A "Generic Road Use Management Strategy for Roads in Special Management Areas" is contained in the 2004-2024 FMP.	The OMNR has responded effectively to the issue of access control. The investment of time and staff resources is appropriate.
19	The MNR should intensify compliance monitoring and enforcement where Goulard Lumber (1971) Limited operates and ensures that all relevant terms and conditions are included in the Forest Resource Licenses issued to this company.	Completed and Ongoing. Intensified monitoring was continued in the 2003-04 and 2004-05 fiscal years.	Completed, intensified monitoring was conducted on Goulard Lumber (1971) Ltd. Terms and conditions of the FRL are being substantially met.
20	The MNR should take steps to ensure a systematic application of high quality operational standards.	Completed and Ongoing. The MNR has improved the quality and detail of the annual compliance plans, beginning with the 2002-03 AWS.	This recommendation was substantially met.

21	The MNR should increase the number of staff assigned to the Temagami Area, bringing numbers to a level above the standard staffing template.	Completed and Ongoing. A permanent Forest Resource Analyst position was filled in 2004 to work on both the Temagami and Nipissing Forest Management Units in the North Bay District.	We believe staffing levels were sufficient, for the delivery of the forest management program, although resources were strained for certain tasks. The DM made use of SPA funding and management fees to hire temporary staff when necessary. ¹¹ Staffing levels and associated workload needs to be monitored. Temagami is a high profile Unit with intense public interest and scrutiny; public expectations are that the OMNR will conform fully with its own legislative and policy requirements.
22	The MNR should record the area of all area-based activities, including marking, in the annual report on SPA expenditures.	Completed.	Completed.

¹¹ Contract staff may be hired with SPA funding to do silvicultural project work.

4.0. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

A total of eleven recommendations and seven suggestions are made to the OMNR to address issues identified during the audit.

Commitment

The North Bay District complied with all OMNR policies and directions associated with forest sustainability, and staff had been provided with the required training and information.

Public Participation

Public participation in the 2004 FMP planning process met the requirements of the FMPM. The LCC was properly established and was involved in the preparation of the plan. The planning process provided the required opportunities for input from stakeholders and the general public. First Nations were provided the opportunity to participate in the FMP planning process. The OMNR substantially met EA Condition # 77 and EA Condition # 34.

Forest Management Planning

The 2004 FMP planning process was in accordance with FMPM requirements. Access planning was well done and included extensive public consultation.

The OMNR demonstrated initiative and leadership in the FTA process and the audit team recognize this as a best practice.

Plan Implementation

The implementation of the Forest Management Plans during the audit period was substantially in compliance with the FMPM requirements. In our opinion the forest is well managed for the following reasons:

- The area regenerated is in balance with the area harvested.
- Areas surveyed for regeneration success indicate that the forest is regenerating.
- The area of land classified as barren and scattered, or non-satisfactorily regenerated declined significantly.
- The District has been proactive and successful in implementing the Generic Road Use Strategy (GRUS) for roads in special management areas.
- Water crossings were generally well constructed and met required standards.

- SGRs were appropriate and properly implemented.
- Minimal environmental damage or damage to residual stems was observed.

However, there were some shortcomings:

- Actual harvest levels (area and volume) were significantly below planned harvest levels. The persistent underachievement in harvest area and volume poses issues with respect to lost wood supply opportunities and the long term sustainability of the forest.
- Some FRL holders have failed to harvest any of their allocation for extended periods of time.
- The effectiveness of some tending, the silvicultural requirement for pre-commercial tending, and the application of chemical herbicide on jack pine forest units was an issue for the audit team.
- Timelines for the submission of several Annual Reports, the IFA Action and Status Reports and the Year 10 Annual Report were not met.
- Compliance planning requires improvement.

System Support

The North Bay District had an effective record keeping system. Completion of some required documentation was an issue.

OMNR had effective training programs in place. OMNR staff was knowledgeable and professional in carrying out their responsibilities.

Monitoring

OMNR conducted an adequate number of compliance inspections and NIC infractions decreased over the audit period; however, annual reporting should be improved, and increased efforts should be made to ensure that reporting deadlines are adhered to.

Achievement of the Management Objectives and Forest Sustainability

The 1999 and 2004 FMPs substantially met the FMPM criteria used in the determination of forest sustainability. The findings of the field audit also support the sustainability conclusion. However, the ongoing inability to achieve planned harvest targets, in the absence of stand replacing natural disturbance events, could pose a risk to forest sustainability in the future.

Contractual Obligations

The audit found that with the exception of meeting required reporting timelines for IFA documentation, OMNR obligations were met.

5.0. AUDIT CONCLUSION

Section 2.1 outlines the principles against which the performance of the forest manager is measured. During the audit period OMNR was in compliance with the legislation, regulations, and policies that were in effect at the time of the audit.

We conclude that the Temagami Crown Management Unit is being managed sustainably, and the OMNR met its management obligations. Table 13 provides a summary of the audit recommendations and suggestions.

TABLE13. SUMMARY OF RECOMMENDATIONS AND SUGGESTIONS

Principle 1: Commitment
No Recommendations or Suggestions.
Principle 2: Public Participation
Suggestion # 1: Corporate OMNR should review the aspects of the Temagami LCC that have contributed to its success, and circulate those findings to all District Managers.
Principle 3: Forest Management Planning
Best Practice The North Bay OMNR showed initiative and leadership in facilitating the development of forestry-tourism agreements when not required to do so.

Recommendation # 1:

The Plan Author and the District OMNR must ensure:

- That FMP tables and the SFMM model report available, reserved, and barren & scattered area consistently and accurately.
- Key SFMM inputs should be described in the FMP text. The FMP text should elaborate on how model inputs were developed and provide the results of the sensitivity analysis conducted.

Recommendation # 2:

The North Bay District should assess the implementation of the NDPE guidelines to determine:

- Planned versus actual results.
- The contributions to NDPEG peninsular and insular requirements made by AOC reserves implemented during past harvest operations.

Suggestion # 2:

The planning team should verify that reserve forecasts used for the development of the 2009 FMP (including NDPEG reserves), are based on data derived from past reserves.

Principle 4: Plan Implementation**Recommendation # 3:**

Corporate OMNR should adopt a cultural heritage site selection and verification process that establishes rigorous identification criteria, and reduces the time and financial costs to the forest industry.

Recommendation # 4:

Corporate and the District OMNR should investigate and implement strategies to increase the amount of wood harvested on the TCMU, including the re-allocation of wood supply to other FRLs in instances where harvesting has not occurred for extended periods of time.

Recommendation #5:

District OMNR staff must ensure that pre-treatment assessments are conducted on all sites selected for tending treatment and develop site specific prescriptions prior to the commencement of silvicultural work.

Recommendation #6:

District OMNR should:

- Conduct pre-treatment assessments on all pre-commercial thinning sites.
- Ensure that post treatment assessments are documented to verify work has been completed.

Suggestion # 3:

District OMNR compliance staff should ensure that District slash piling standards are adhered to.

Suggestion # 4:

The District OMNR should evaluate the cost effectiveness of brushsaws with an herbicide applicator as a vegetation management technique.

Suggestion # 5:

District OMNR needs be vigilant to ensure that bridges are maintained sufficiently to prevent material from entering the watercourse.

Principle 5: Systems Support

No recommendations or suggestions.

Principle 6: Monitoring

Recommendation # 7:

The District OMNR must ensure that FMPM requirements for compliance planning are met.

Recommendation # 8:

The District OMNR must ensure that Annual Reports are completed in accordance with FMPM requirements.

Recommendation # 9:

The District OMNR must ensure that the Year 10 Annual Report is completed for the 1999-2004 term in accordance with FMPM requirements.

Suggestion # 6:

The District OMNR should consider having harvest contractors provide monthly reports of planned activities to enable OMNR staff to better schedule compliance inspection activities.

Principle 7: Achievement of Management Objectives and Forest Sustainability

Suggestion # 7:

District OMNR should ensure all depleted area is correctly reported for the development of the 2009-2029 planning inventory.

Principle 8: Contractual Obligations

Recommendation # 10:

The District OMNR must ensure that the Action Plan and Status Report responding to IFA Recommendations adhere to the required timelines.

Summary of Conclusions and Recommendations

Recommendation # 11 / Conclusion:

With full consideration of 2006 IFAPP principles and criteria, we conclude that management of the Temagami was sustainable, and in compliance with the legislation, regulations and policies that were in effect during the audit term.

Appendix A

Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report.

The Comparison and Trend Analysis of Planned vs. Actual Forest Operations is prepared by the forest manager (North Bay OMNR) responsible for forest management on the Unit. It is included in this report without modification or adjustment by the audit team.

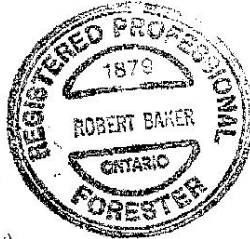
**2006 Independent Forest Audit
of the
Temagami Management Unit**

**Comparison and Trend Analysis of
Planned vs. Actual Forest Operations Report**

prepared by:



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Date: April 28, 2006

And



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Date: April 28/06

Introduction

The *Comparison and Trend Analysis of Planned vs. Actual Forest Operations Report* is prepared as part of the Independent Forest Audit process. The report contains an analysis of forest management operations that have occurred on the Temagami Management Unit (MU) over the past 10 years. The format for this report is outlined in Appendix C of the *Independent Forest Audit Process and Protocol* (February 2006).

The Temagami MU comprises the northern part of the North Bay administrative district, located in the south-eastern corner of the Northeast Region. Due to the short-term and bridging nature of earlier contingency plans (1990-92, 1992-94, 1994-96, 1996-97) this report will overlap the following three planning terms:

1. 1997-99 Contingency Forest Management Plan (CFMP);
2. five year term 1999-2004 of the 1999-2019 Forest Management Plan;
3. five year term 2004-09 of the 2004-2024 Forest Management Plan.

For the 2004-09 term, only annual report data from the first year (2004-05) is available so only limited analysis can occur.

From the mid 1980s until 1997 when the Temagami Land Use Plan was approved no other management unit in the province has posed as many conflicts and challenges as Temagami. An individual environmental assessment for the construction of the Red Squirrel primary access road extension, international media attention associated with environmental and First Nation logging protests/blockades and intense scrutiny of forest management plans (13 bump-ups requests) and practices are but some of the challenges that have faced resource managers here.

Although the pre-1997 conflicts have been reduced, significant challenges have persisted that include harvesting "Old Growth" pine, large clearcuts, effectiveness of public access control in Special Management Areas and the Eye Lake road crossing of the Bob Lake Conservation Reserve. The associated FMP bump-ups and judicial reviews and the implementation of imposed conditions continue to burden the forest managers.

Summary of Total Area under Management

Table 1 breaks down the area of Crown managed land by forested and non-forested land classifications. Production forested areas are separated by barren & scattered (B&S) / not satisfactory regenerated (NSR), depleted and by working group classifications.

The Temagami Management Unit is comprised of approximately 80% forested and 20% non-forested landbase, of which 17% is water (2004-2009). Of the total forested landbase area, 63% is Crown Managed, 16% is Provincial Parks, 15% Crown

Unmanaged (conservation reserves, special management areas with no forestry permitted, Lake Temagami Skyline Reserve, and lands set aside for Native negotiations) and 6% is patent land.

The Crown Managed Productive Forest landbase (297,193 ha) is comprised of protection forest (4,266 ha) and production forest (292,927 ha). The managed Crown Forested Landbase (excluding water) is mainly comprised of production forest stands (81.5%)

The previous Production Forested area has seen a significant decrease in the B&S / NSR area in the Temagami MU. Total B&S / NSR decreased by approximately 16,000 hectares or 92%. The decrease in B&S / NSR area can be explained by the extensive aerial free-to-grow survey projects which occurred in 2000 and 2001.

Conversely, the previous Production Forested area has seen a significant increase in the depleted area in the Temagami MU. One of the contributing factors to this increase is a result of a 2004-2024 planning inventory decision to deplete all the planned harvest area (15,605 ha) in the 1999-2019 FMP (planning team was advised by licensees that all 1999-2004 allocations would be harvested). As a result of this decision, the area depleted in the 2004-2024 FMP is over inflated by approximately 8,900 hectares. This discrepancy will be rectified in the development of the 2009-2029 planning inventory.

Table 1 also shows the breakdown of the Productive Forest by the various working groups (the dominant tree species in the stand determines the working group). The proportionate area by working group for the Total Productive Forest is dominated by white birch, spruce, poplar and pine (jack, white). The proportionate area of each working group has shown slight changes since the 1999-2019 FMP however these slight changes do not show any meaningful trends.

Table 1 shows a much more stable landbase since 1997 when the TLUP was approved than what existed between the late 1980s and 1997.

2006 Independent Forest Audit – Temagami Crown Management Unit

Table 1 – Summary of Total Area under Management

Past and Current Plans – Crown Managed

Land Type		Area in hectares		
		Past Plans		Current
		1997-1999	1999-2004	2004-2009
	Plan Term			
Non-Forested				
	Other Land	6,495	6,431	4,452
Forested				
	Non-productive	18,976	18,959	19,759
	Productive			
	Protection	4,421	5,543	4,266
	Production Forest			
	B&S / NSR	25,558	17,492	1,439
	Depleted	0	3,907	29,636
	Forest Stands by Working Group			
	Pw	23,625	25,735	21,890
	Pr	5,929	6,584	5,550
	Pj	24,178	28,927	25,367
	S	48,436	52,265	47,972
	B	5,967	5,936	7,028
	By	2,438	2,384	2,261
	Ce	29,403	29,155	27,620
	OC	191	191	227
	Po	45,551	43,240	44,513
	Bw	66,787	65,717	64,894
	Mh	10,774	11,160	9,683
	Ms	3,867	3,867	4,435
	Oh	335	335	410
Total Production Forest		292,704	296,560	292,515
Total Forested Land		316,101	321,062	316,540

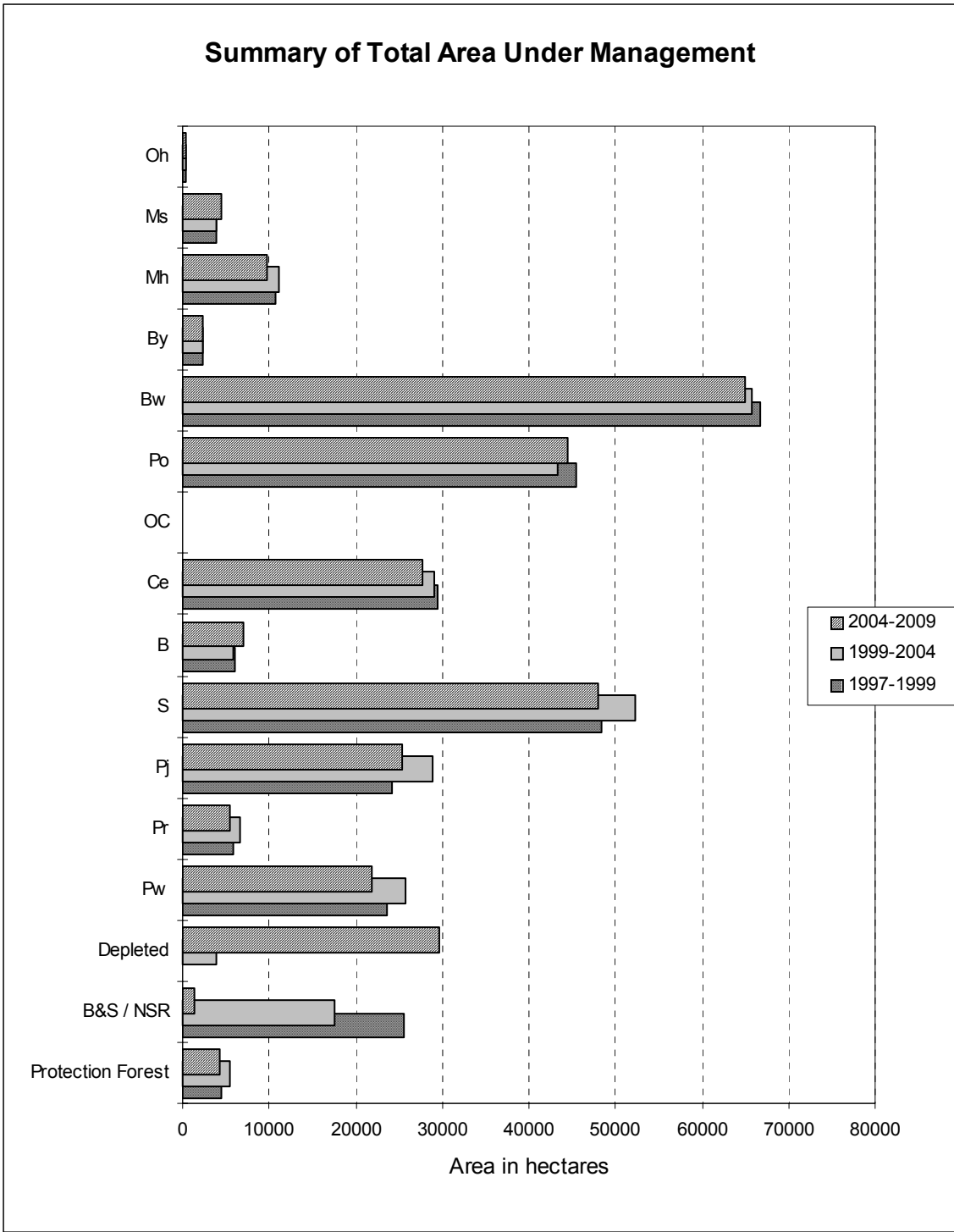


Figure 1. Summary of Total Area Under Management for Past and Current Plans.

Description of Forest Units

Tables 2a, 2b and 2c describe the forest units' classification system for the current and past forest management plans. The current (2004-2024 FMP) and previous (1999-2019 FMP) forest unit classifications are based heavily on forest ecosite classification criteria with consideration of regional standardized forest units. The 1997-99 FMP forest units were largely working group based. The white pine forest unit was the only exception as three forest units (Pw_Co, Pw_Bw and Pw_Se) were created. These three forest unit classifications separated stands with varying levels of white pine for appropriate silvicultural prescriptions ranging from shelterwood cuts in high pine concentrations to seed tree clearcuts in low pine concentrations.

Many sites in the Temagami MU have shallow soils and are relatively low in productivity thereby lessening competition. Unlike areas to the south (Nipissing) and west (Algoma) sugar maple (and other tolerant hardwoods) rarely dominate and successfully regenerate the older stands that remain undisturbed. These two factors combine to provide some of the most capable sites for successfully managing red and white pine in the province provided appropriate vegetation management tools are available.

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Table 2a – DESCRIPTION OF FOREST UNITS (FMP-8) 2004-2024 FMP

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name						
PRST	Red Pine Seed Tree	Conifer	Pr	12	Clearcut with seed trees or strip clearcut	Refer to Appendix 11 'Forest Units' in the 2004-2009	Parameters and Criteria (FU scripts) must be run in order in Appendix 11. Generally sorted in order in FMP-8. Site Types (ecosites) listed in order of most prominent to least prominent (with bold representing 90% of the total proportion)
PWUS	White Pine Uniform Shelterwood	Conifer	Pw	20, 11, 21, 33, 16, 12, 22, 18, 14, 15, 17, 27	Shelterwood		
PWST	White Pine Seed Tree	Conifer	Pw	20, 21, 11, 18, 13, 16, 17, 14, 27, 22	Clearcut with seed trees		
PJCC	Jack Pine Pure	Conifer	Pj	15, 13, 19	Clearcut (with residuals)		
PJSB	Jack Pine / Spruce Mixed	Conifer mixed	Sb	16, 15, 13, 19	Clearcut (with residuals)		
SFCC	Spruce / Fir	Conifer mixed	Sb	16, 22, 21, 33, 18, 34, 19, 13, 20	Clearcut (with residuals)		
HDUS	Tolerant Hardwood	Tolerant Hardwood	Mh	29, 27, 21, 33, 34, 14	Shelterwood		
POCC	Poplar Pure	Intolerant Hardwood	Po	18, 17, 19, 16, 35, 11	Clearcut (with residuals)		
BWCC	White Birch Pure	Intolerant Hardwood	Bw	21, 17, 18, 16, 19, 27	Clearcut (with residuals)		
MHWD	Mixed Intolerant Hardwood	Intolerant Hardwood	Bw	17, 18, 19, 16, 21, 32, 22, 13, 15, 11, 35	Clearcut (with residuals)		
MWUS	Tolerant Upland Mixedwood	Tolerant Mixedwood	Bw	21, 27, 29, 18, 22, 17, 20, 33, 34, 16, 19, 14	Shelterwood		
MWCC	Intolerant Upland Mixedwood	Intolerant Mixedwood	Bw	18, 21, 17, 22, 16, 20, 27, 13, 29, 11, 33, 34	Clearcut (with residuals)		
MCL	Mixed Conifer Lowland	Conifer mixed	Sb	16, 33, 31, 21, 32, 22, 35, 34	Clearcut (with residuals)		

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Table 2b – DESCRIPTION OF FOREST UNITS (FMP-8) 1999-2019 FMP

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name						
Pwus	White Pine U.S.	Conifer	Pw	11	Shelterwood	Pw+Pr>=30% and Stkg >=.4 Ecosite = 12 (Pw+Pr>=30% and Pw+Pr>Pj and Stkg>=50% and SC <3 and ES=13) or (Sw+Pw+Pr>=30%or Pw+Pr+ Ce+Sw=50% and Stkg>=50% and ES = 14,17-22) All other ES 11,13,14,20-22 or (ES =17-19 and (Pw+Pr>=10%)or (Pj+Sw+Sb+Bf>.3)) Ecosite = 15 or (ES=17-19,21 and Pj>.4) Ecosite = 16 ES = 23-30 or ES=17-19,21 & Ms+Qr+By>.4)) Ecosite = 31-35 ES = 17-19,21 and Po+Bw >.3 and Po>Bw ES = 17-19,21 and Po+Bw >.3 and Bw>Po	Parameters and Criteria (FU scripts) must be run in order.
Prcc	Red Pine CC	Conifer	Pr	12	Clearcut		
CM3us	Conifer Mixed US	Mixedwood	Pw	13,14,17-22	Shelterwood		
CM3cc	Conifer Mixed CC	Mixedwood	Bw	11,13,14,17-22	Clearcut		
Pjcc	Jack Pine CC	Conifer	Pj	15	Clearcut		
Sbcc	Black Spruce CC	Conifer	Sb	16	Clearcut		
Hdus	Tolerant Hardwood US	Tolerant Hdwd	Mh	23-30	Shelterwood		
LC2cc	Lowland Mixed CC	Conifer	Ce	31-35	Clearcut		
Popmx	Poplar Mixed CC	Intolerant Hdwd	Po	17-19, 21	Clearcut		
Bwpmx	White Birch Mixed CC	Intolerant Hdwd	Bw	17-19, 21	Clearcut		

Table 2c – DESCRIPTION OF FOREST UNITS (FMP-8) 1997 - 1999 FMP

Forest Unit		Forest Type	Main Working Group	Site Type(s)	Silvicultural System	FRI Parameters & Criteria	Additional Information
Code	Name						
Pw_Co	White Pine Conifer	Conifer	Pw	All	Shelterwood	$((Pr+Pw>+0.5)and(Pr-.1=<Pw)and(Stk>=.4)$ $or(Pr+Pw>=.4)and(Pr-.1=<Pw)and(Stk>=.6)$ $(WG\ not\ in\ ('Po','Bw'))(WG\ not\ in\ ('Po','Bw'))$ $((Pr+Pw>+0.5)and(Pr-.1=<Pw)and(Stk>=.4)$ $or(Pr+Pw>=.4)and(Pr-.1=<Pw)and(Stk>=.6)$	FRI Parameters and criteria must be run in the order they appear. Each criteria is only to update stands that do not have a FU assigned.
Pw_Bw	White Pine Hwds	Mixedwood	Bw, Pw	All	Shelterwood	$(WG = ('Po','Bw'))(WG = ('Po','Bw'))$	
Prall	Red Pine	Conifer	Pr	All	Shelterwood	$(Pr>=.4)and(Pr-.1>Pw)and(Stk>=.6)$	
Pw_Se	White Pine Seed Tree	Conifer	Pw	All	Clearcut	$WG = ('Pw','Pr')or((Pr+Pw)>=.4)$	
Pjall	Jack Pine	Conifer	Pj	All	Clearcut	$WG = 'Pj'$	
Sball	Black Spruce	Conifer	Sb	All	Clearcut	$WG = 'Sb'$	
Swall	White Spruce	Conifer	Sw	All	Clearcut	$WG = 'Sw'$	
Bfall	Balsam Fir	Conifer	Bf	All	Clearcut	$WG = 'Bf'$	
Ocall	Other Conifer	Conifer	Ce	All	Clearcut	$WG = 'Ce'$ or $WG = 'La'$	
Po	Poplar	Intolerant Hdwd	Po	All	Clearcut	$WG = 'Po'$	
Bw	White Birch	Intolerant Hdwd	Bw	All	Clearcut	$WG = 'Bw'$	
Thall	Tolerant Hardwoods	Tolerant Hdwd	Mh	All	Shelterwood	$WG = ('He','Mh','Qr','UH','LH')$	

Summary of Planned and Actual Harvest Volumes

Harvesting is the greatest source of forest disturbance in the Temagami MU since successful wildfire suppression began a half century ago. The actual harvest volumes (all species) as a percentage of planned volumes were 38.6% for 1997-99 and 45.5 % for 1999-2004 (Table 3). The result of this significantly lower level of forest disturbance (harvesting and fire) is that a greater area exists in older age classes and more area is comprised of species that can naturally regenerate in the absence of disturbance (e.g. red maple, balsam fir, cedar).

Many factors have contributed to Temagami's low level of harvest relative to its productive capability. Major factors include:

1. Many stands (especially older ones) have high cull levels (low/pulp grade quality).
2. Poor markets for pulp quality white birch, maple, black spruce, balsam fir and cedar which comprise a sizable amount of the forest .
3. Yields (m³/ha) are comparably low (average < 100 m³/ha) relative to adjacent management units.
4. High road construction costs (rolling topography, gravel shortage and numerous water-crossings).
5. High hauling costs due to distances to mills.
6. Labour force shortage.

Additional factors consist of:

- operational delays due to interest group's requests for environmental assessments and judicial reviews,
- US softwood lumber tariffs have reduced markets and lowered prices for conifer sawlogs,
- MNR has limited ability to encourage licensees on crown units to harvest blocks whereas as SFLs can exert more pressure on their shareholders to harvest,
- extreme weather conditions (excessively dry summers have resulted in fire hazard restrictions and wet autumn have limited operations).

Due to the mixed nature of Temagami's forests limited information can be obtained when looking at the breakdown by species in Table 3. The following section will provide more detail by listing the harvest area by forest unit. Because of the low marketability of white birch, a policy was implemented in the 1980s that limits the ability of operators to "highgrade" better quality trees and more marketable species from forest stands. The policy states that if the operator is not willing to market all of the merchantable trees in a stand (as per the Crown Timber Act Astandards), the allocated stand will not be authorized for harvest. This allows appropriate silvicultural treatments to occur and ensures the future quality of the forest will improve rather than degrade. This likely reduced the desire of some licensees to harvest some of their allocations.

2006 Independent Forest Audit – Temagami Crown Management Unit

Table 3 – Summary of Planned & Actual Harvest Volumes

Species	Volume in '000's cubic metres		
	Past Plans		Current
	1997-1999	1999 - 2004	2004 - 2009
Pw	16,159	24,327	20,876
Pr	2,097	10,879	5,306
Pj	26,570	43,400	29,525
Sp	40,635	52,448	59,011
Bf	4,347	6,216	11,528
Ce	4,590	7,862	13,021
La	64	225	78
Po	73,604	72,389	45,430
Bw	48,799	49,775	58,631
Mh	7,826	10,314	4,647
Uh	4,882	6,697	5,087
Lh	2,772	2,543	2,226
Total Planned Volumes	232,342	287,073	255,367

Actual Harvest Volumes

Volumes are annualized for the indicated 5 year period

Species	Volume in '000's cubic metres		
	Past Plans		Current*
	1997-1999	1999 - 2004	2004 - 2005
Pw	10,030	8,295	2,239
Pr	1,215	6,318	256
Pj	20,239	37,334	9,069
Sp	20,526	33,097	17,709
Bf	336	5,641	4,207
Ce	80	173	70
La	0	10	0
Po	28,333	26,209	29,957
Bw	9,018	13,033	11,388
Mh	51	407	94
Uh	2	4	106
Lh		2	44
Total Actual Volumes	89,829	130,524	75,139

*First year of the 2004 Temagami FMP

Source: Planned volumes – FMPM Table FMP-23 from 1997-99 CFMP, 1999-2019 & 2004-2024 FMP
 Actual volumes – 1997-1999 RPFO, 1999-2004 Annual Reports and 2004-05 Table AR-11

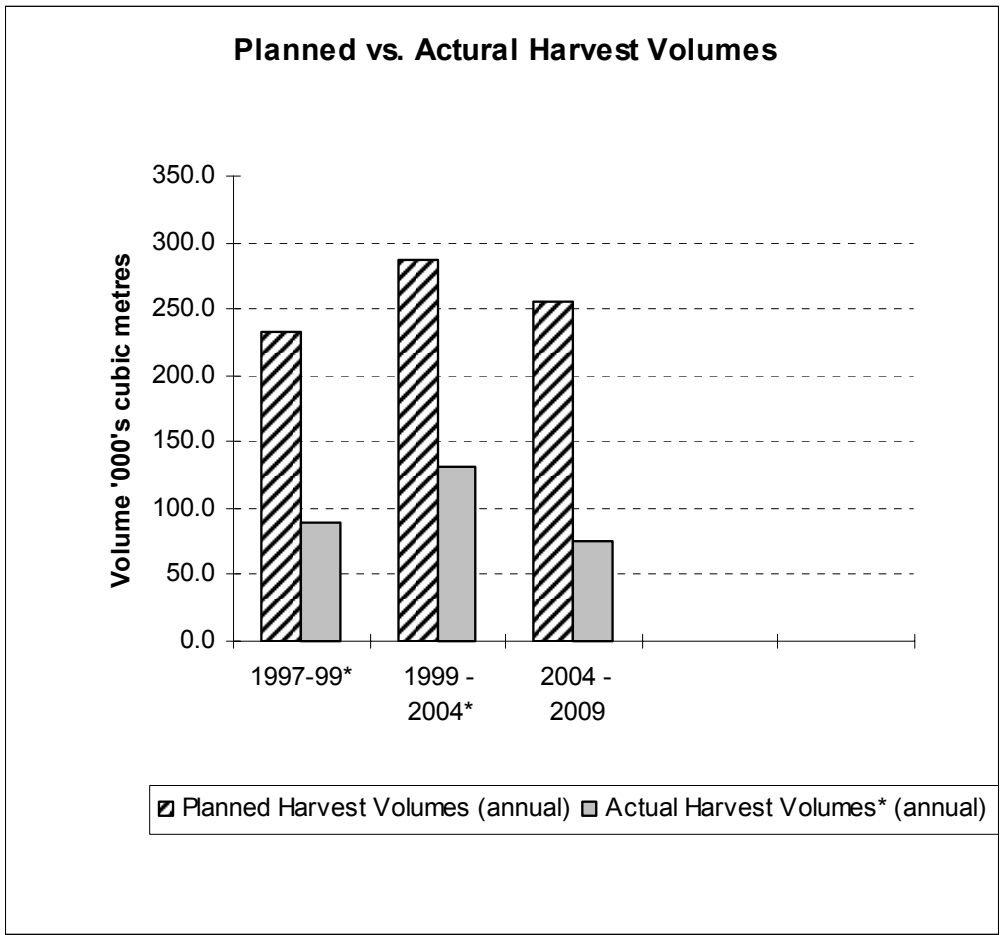


Figure 2. Planned vs. Actual Harvest Volumes

Summary of Planned and Actual Harvest Area

Table 4 contains the summary of planned and actual harvest areas for the past two planning terms. The relative percentages of actual vs. planned closely resemble those low values found in the previously discussed Table 3 (volumes) for the same reasons. 43% of the 1999-2004 total planned annual harvest area (sustainable level) was actually harvested and 38% of the 1997-99 total planned annual harvest area was cut. A similar percentage by forest unit type for the 1997-99 and 1999-2004 terms was observed.

The 1999-2004 percentage of actual vs. planned by forest units from lowest to highest was:

- tolerant hardwood (Hdus – 5%)
- cedar (Lc2cc – 7%)
- white birch (Bwpmx – 31%)
- black spruce (Sbcc – 40%)
- conifer mixed clearcut (Cm3cc – 47%)
- white pine (Pwus – 58%)
- conifer mixed shelterwood (Cm3us – 64%)
- poplar (Popmx – 65%)
- jack pine (Pjcc – 68%)
- red pine (Pjcc – 86%)

Recognizing that a variety of species are found within each of the above ten forest unit groupings, in general the percentages reflect the desirability and quality of the dominant species (i.e. hard maple is generally low quality and the demand for pulp is low whereas red pine is general has low cull and the demand for sawlogs and poles is high).

Changes in forest unit classification in each of the planning terms make it difficult to compare areas harvested by forest unit, however totals for all forest units are easily interpreted and easily compared (see Table 4 graph).

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Table 4 – Summary of Planned & Actual Depletion Area

Past and Current Plans

Area is annualized for the indicated 5 year period

Plan Term	Planned Annual Harvest Area			Actual Depletion Area					
	Area in hectares			Area in hectares					
	Past Plans		Current	Past Plans				Current	
	1997-1999	1999-2004	2004-2009	1997-1999		1999-2004		2004-05*	
			Harvest	Natural	Harvest	Natural	Harvest	Natural	
Forest Units									
BWCC			89					-	
MCL			61					-	
MHWD			454					286	
MWCC			291					94	
PJCC			67					-	
PJSB			310					-	
POCC			67					167	
PRST			4					-	
PWST			255					46	
SFCC			387					-	
HDUS			218					1	
MWUS			180					37	
PWUS			412					27	
Cm3us		230				147			
Pwus		114				66			
Pjcc		290				197			
Prcc		27				23			
Sbcc		606				242	4		
Cm3cc		589				276			
Lc2cc		177				12			
Popmx		393				257			
Bwpmx		310				97			
Hdus		386				20			
Pw_Co	247			170					
Pw_Bw	6			4					
Prall	0			0					
Pw_Se	56			58					
Pjall	293			112					
Sball	336			196					
Swall	16			36					
Bfall	15			10					
Ocall	150			6					
Poall	629			247					
Bwall	692			183					
Thall	257			3					
Total Area:	2,694	3,121	2,794	1,021	-	1,338	4	658	

Source: Planned areas – FMPM Table FMP-18 from 1997-99 CFMP, 1999-2019 & 2004-2024 FMP
 Actual areas – 1997-1999 RPFO, 1999-2004 Annual Reports and 2004-05 Table AR-1

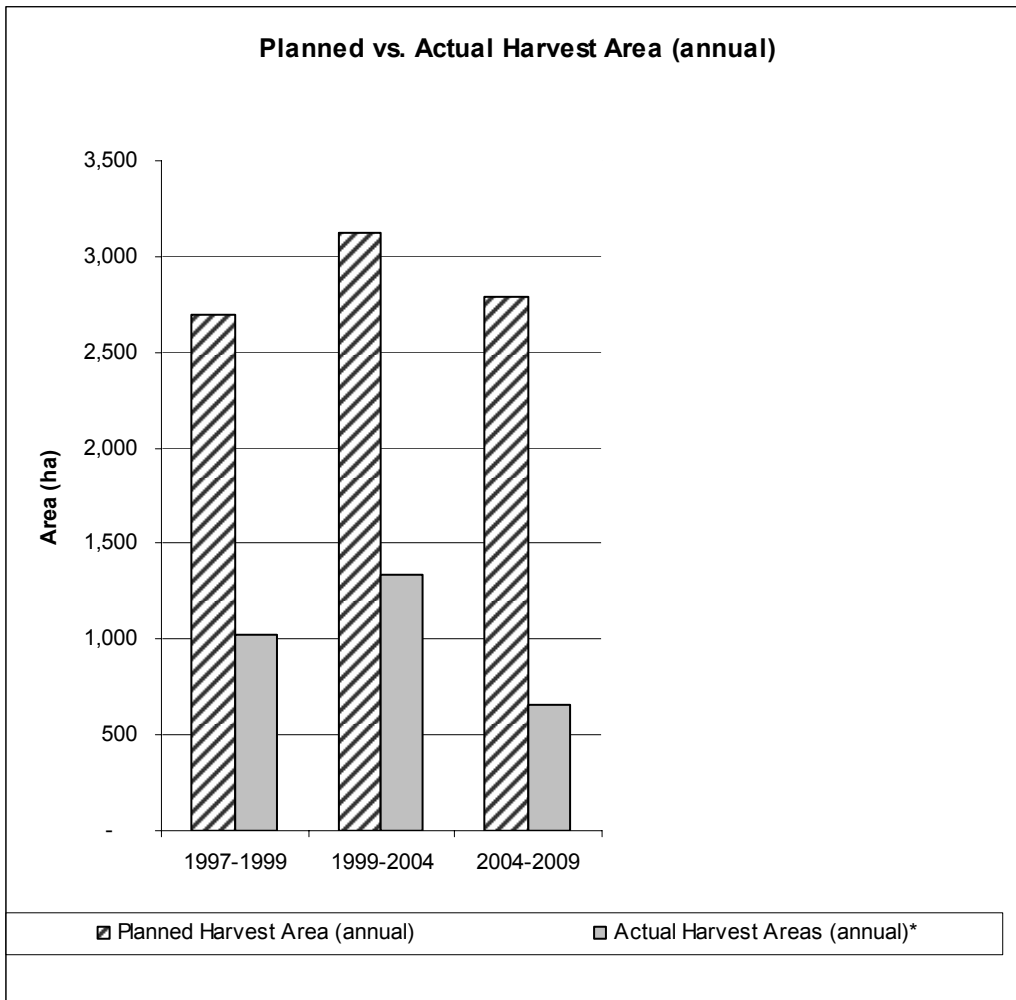


Figure 3. Planned vs. Actual Annual Harvest Area

Summary of Managed Productive Forest by Forest Unit

The managed productive forest by forest unit follows the same trend as discussed in Table 1. Land base changes resulted in changes in productive forest in the management unit, and are reflected by forest unit in Table 5 found in Appendix 1. However, it is difficult to track individual forest unit changes throughout the period in review due to several changes in forest unit definitions. Earlier forest units were largely based upon working group classifications (1996-97), while forest units used in the previous and current plans (1999-2019 and 2004-2024) were based on ecosite classifications (Table 2). This creates difficulties in discussing age class changes by forest unit when combining the land base and forest unit classification changes over the period.

The impact of the new parks and protected areas are evident in the age class structure of the forest. A large percentage of the area removed during the comprehensive planning process for the TLUP was from the older age classes. The 1997-99 plan had a noticeably lower area of managed crown productive forest over the age of 100 years than the earlier plan periods. This was partially due to the selection of 12 designated old growth sites to be protected in the TLUP, as well as the selection of conservation areas which had not been as extensively harvested in the past.

Summary of Renewal and Maintenance – Planned vs. Actual

Table 6 indicates that natural regeneration levels throughout the terms were very similar to harvest levels, as the amount of area planned for natural regeneration was based on the forecast level of harvest. Due to the very low harvest levels and an active renewal program, the levels of naturally regenerated areas were far below planned.

The actual site preparation, planting and tending levels were much closer to those planned than with natural regeneration and harvesting. In particular, actual artificial regeneration levels were almost identical to the planned levels (for 1999-2004 actual vs. planned = 83%). The Forestry Futures Trust Fund provided critical funding for tending (cleaning and pre-commercial thinning) activities, which accounted for the actual levels of work becoming much closer to those planned.

The most significant trend visible is the high amount of planting relative to the level of harvest particularly during 1999-2004. Table 6 indicates that 393 ha were planted during the 1997-99 period were as 2,042 ha (1,021 ha x 2) were harvested (Table 4). During the 1999-2004 term the values were 2,085 ha planted and 6,690 ha (1,338 ha x 5) harvested. Given that most of the area harvested was under the clearcut silvicultural system this illustrates a very high commitment on the Temagami MU to conifer planting. This planting of conifer and the associated tending is intended to ensure that FMP objectives associated with the re-establishment of pine / conifer are achieved.

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Table 6 – Summary Report of Renewal, Tending and Protection Operations (RPFO-7)	Area Summary of all Forest Units (ha)					
	1997-1999		1999-2004		2004-2009	
	Planned	Actual	Planned	Actual	Planned	Actual
Renewal						2004-05 only
Regeneration						
Uneven-Aged Management						
Selection Cut - Harvest	50	20	100	17	-	-
Total Uneven-Aged Management	50	20	100	17	-	
Even-Aged Management						
<i>Natural</i> Regeneration						
Clearcut	1,750	334	5,150	3,353	4,974	539
Strip Cut			660	38		
Seed Tree Cut	50	75	725	332	250	13
Uniform Shelterwood Seed Cut	150	279	2,430	983	2,176	54
Subtotal Natural	1,950	688	8,965	4,706	7,400	606
<i>Artificial</i> Regeneration						
Planting	776	393	2,510	2,085	3,155	765
Seeding						
direct						
with site preparation						
Scarification					800	
Subtotal Artificial	776	393	2,510	2,085	3,955	765
Total Even-Aged Management	2,726	1,081	11,475	6,791	11,355	1,371
Total Regeneration	2,776	1,101	11,575	6,808	11,355	1,371
Site Preparation						
Mechanical	1,125	665	2,920	1,815	2,902	655
Chemical		59				
Prescribed Burn	100					
Total Site Preparation	1,225	724	2,920	1,815	2,902	655
Tending						
Cleaning						
manual	1,504	1,401	4,055	3,198	4,854	
chemical - ground	474	295	1,930		232	697
- aerial	479	420				
mechanical						
prescribed burn						
Spacing, pre-commercial thinning, improvement cutting						
even-aged	800		900	890	450	
uneven-aged						
Cultivation						
Total Tending	3,257	2,116	6,885	4,088	5,536	697
Protection (Insect Pest Control)						
accelerated harvest						
salvage						
manual protection						
ground insecticide						
aerial insecticide						
Total Protection						

Source: Planned areas – FMPM Table FMP-25 from 1997-99 CFMP, 1999-2019 & 2004-2024 FMP
 Actual areas – 1997-1999 RPFO, 1999-2004 Annual Reports and 2004-05 Table AR-7

Harvested Area Successfully Regenerated

The period of 1991-96 was examined to determine the total amount of harvested area that had successfully regenerated (Table 7). This allowed for enough time for harvested areas to reach a “free-to-grow” status. A total of 4,620 ha were harvested during the period from 1991 to 1996.

Of those harvest areas, 1,572 ha were surveyed for regeneration success during this 1991-96 period. The survey findings resulted in 96.1% of those areas declared free-to-grow. The remaining area was deemed not satisfactorily regenerated (NSR). Those areas considered NSR were identified for further tending and will be resurveyed to determine their free-to-grow status.

Areas not surveyed (3,048 ha) are scheduled to be inventoried during August 2006. It is expected that the vast majority of the area will be declared FTG and returned to the inventory used to determine the sustainable harvest level. This is in preparation for the FRI update prior to the commencement of planning for the 2009-2029 Forest Management Plan.

During the period examined (1991-96), forest management objectives were to renew all stands harvested, and specifically to maintain and enhance the pine and spruce component. Concentrated efforts to increase red and white pine were undertaken in areas where they existed prior to harvest and on suitable sites where they likely existed in the past. The regeneration results show that nearly all stands were regenerated (96%). Those that did not meet the regeneration standards required further tending in the near future to remove competing undesirable species.

There were also substantial conversions of white birch and poplar forest units to mixed conifer units through the planting of jack pine and white spruce. The majority of these areas still includes significant components of intolerant hardwoods, but was converted to conifer mixedwood stands through silvicultural activities.

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Table 7 – Harvested Area Successfully Regenerated – Summary of All Forest Units	AREA (ha) all Forest Units	
	Even-aged Management	Uneven-aged Management
Total Area Harvested (1991-96)	4,620	-
Total Area Surveyed for Regeneration Success	1,572	-
Total Unsurveyed Area	3,048	-
Total Area Declared Successfully Regenerated	1,511	-
Total Area Surveyed Not Successfully Regenerated		-
NSR	61	-
B&S	-	-
Not Available for Regen.(eg. Roads & landings)	92	-
Other	-	-
Percent of Area Surveyed Declared Successfully Regenerated	96.1%	

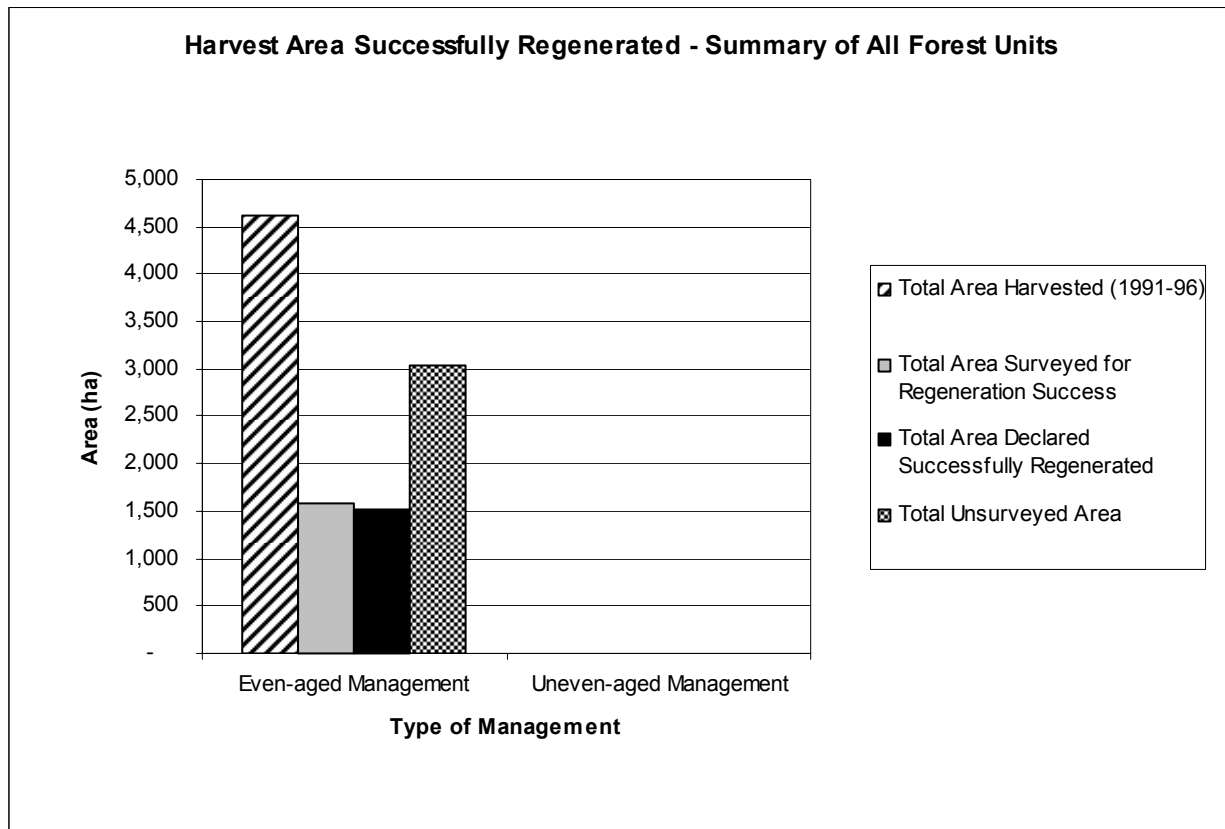


Figure 4. Harvest Area Successfully Regenerated – Summary of All Forest Units

Source: Total area harvested: 1997-99 RPFO, survey results: 2004 FMPM AR-7, AR-14, AR-16 and silviculture/survey records

Summary

Since 1997, tree planting activities have established 3,243 ha of red pine, white pine, jack pine and white spruce plantations. In addition, cone collection, harvest prescription development, tree marking, site preparation for natural regeneration of pine, monitoring, tending and assessment efforts on harvested areas have ensured a successful silviculture program on the unit.

However, only 9,390 ha of forest have been harvested and only a very small area has been naturally disturbed by fire and windthrow. As the level of harvest represents only 43% of the sustainable harvest level, a major concern is the age class imbalance of the managed forest which is excessively represented in the oldest age classes. The age class imbalance compromises the ability of the forest to provide an even flow of forest products over time. Overmature forest stands are less desirable to harvest due to higher cull and more difficult to renew due to the older seed source and higher levels of bypass. Another concern associated with the low level of disturbance is the shift in species composition away from those species (e.g. pine) that rely on disturbance to create a desirable seed bed and optimal sunlight conditions for their establishment.

Failure to address the current low level of harvest at best will represent a lost wood supply opportunity and at worst will jeopardize the long term sustainability of the Temagami MU.

APPENDIX 1

2006 Independent Forest Audit – Temagami Crown Management Unit

Table 5 Summary of Managed Productive Forest by Forest Unit (FMP-9)

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Current FMP – 2004 – 2024

Current 2004-2024 FMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m ³)	Unavailable		Stage of Management	Available	
				(ha)	(m ³)		(ha)	(m ³)
PRST	0-20					Clear Cut	631	67
	21-40					Clear Cut	216	12,422
	61-80					Clear Cut	5	1,039
	101-120					Clear Cut	165	44,124
	121+			15	2,741	Clear Cut	196	34,232
Forest Unit Subtotal		0	0	15	2,741		1,213	91,884
PWUS	0-20					Seeding Cut	1,983	266
	0-20					Removal Cut	425	168
	21-40					Seeding Cut	542	18,733
	21-40					Removal Cut	525	13,610
	41-60					Seeding Cut	789	67,098
	41-60					Removal Cut	7	455
	61-80	17	0			Seeding Cut	991	138,953
	61-80					Removal Cut	77	11,713
	81-100	19	4,066	18	2,018	Seeding Cut	2,153	408,614
	81-100					Removal Cut	223	30,172
	101-120	32	4,211	208	41,749	Seeding Cut	6,116	1,133,220
	101-120					Removal Cut	429	60,911
	121+	28	221	619	88,753	Seeding Cut	7,574	1,090,514
121+					Removal Cut	448	61,167	
Forest Unit Subtotal		95	8,498	845	132,520		22,281	3,035,593
PWST	0-20	9	0			Clear Cut	4,396	1,945
	21-40					Clear Cut	1,425	37,904
	41-60					Clear Cut	794	42,714
	61-80	27	0			Clear Cut	1,217	128,504
	81-100			34	2,972	Clear Cut	3,424	378,771
	101-120	106	0	91	10,982	Clear Cut	3,988	514,095
	121+	98	4,815	85	9,406	Clear Cut	6,323	638,028
Forest Unit Subtotal		240	4,815	210	23,359		21,566	1,741,962

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)

Current FMP – 2004 – 2024

Current 2004-2024 FMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m ³)	Unavailable		Stage of Management	Available	
				(ha)	(m ³)		(ha)	(m ³)
PJCC	0-20					Clear Cut	4,358	8,807
	21-40					Clear Cut	534	14,705
	41-60	17	0			Clear Cut	542	59,707
	61-80	76	0			Clear Cut	2,386	376,054
	81-100	21	0			Clear Cut	1,424	229,679
	101-120	15	0			Clear Cut	359	45,009
	121+	24	0			Clear Cut	787	44,997
	Forest Unit Subtotal		154	0	0	0		10,389
PJSB	0-20					Clear Cut	4,214	2,017
	21-40					Clear Cut	2,070	42,091
	41-60					Clear Cut	2,031	188,908
	61-80	2	0	4	497	Clear Cut	5,736	707,353
	81-100	21	0	23	2,584	Clear Cut	5,705	728,346
	101-120	1	0	16	1,512	Clear Cut	4,798	597,921
	121+	135	0	4	185	Clear Cut	4,123	324,669
	Forest Unit Subtotal		158	0	46	4,778		28,677
MCL	0-20	9	0			Clear Cut	3,152	105
	21-40					Clear Cut	246	1,086
	41-60					Clear Cut	419	19,581
	61-80					Clear Cut	1,889	142,652
	81-100	36	0	37	2,926	Clear Cut	4,796	429,655
	101-120	146	9,208	67	6,038	Clear Cut	5,825	541,144
	121+	217	0	140	11,056	Clear Cut	7,824	612,695
	Forest Unit Subtotal		409	9,208	244	20,019		24,151
SFCC	0-20					Clear Cut	3,804	977
	21-40					Clear Cut	3,400	20,797
	41-60					Clear Cut	1,305	86,481
	61-80			19	1,577	Clear Cut	3,142	326,595
	81-100			24	2,815	Clear Cut	7,186	864,702
	101-120	2	197	86	11,307	Clear Cut	8,206	939,089
	121+	19	1,144	89	6,694	Clear Cut	6,170	501,925
	Forest Unit Subtotal		20	1,341	217	22,393		33,213

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Current FMP – 2004 – 2024

Current 2004-2024 FMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m ³)	Unavailable		Stage of Management	Available	
				(ha)	(m ³)		(ha)	(m ³)
HDUS	0-20					Seeding Cut	813	0
	0-20					Removal Cut	891	0
	21-40					Seeding Cut	205	1,550
	21-40					Removal Cut	251	985
	41-60					Seeding Cut	59	3,428
	61-80	24	0			Seeding Cut	507	62,250
	61-80					Removal Cut	7	838
	81-100	23	0			Seeding Cut	1,805	205,483
	81-100					Removal Cut	197	25,266
	101-120					Seeding Cut	1,334	186,279
	101-120					Removal Cut	279	30,007
	121+	97	4,310	12	1,144	Seeding Cut	3,779	425,478
	121+					Removal Cut	1,038	104,775
Forest Unit Subtotal		144	4,310	12	1,144		11,165	1,046,338
POCC	0-20					Clear Cut	3,515	1,656
	21-40					Clear Cut	1,456	43,006
	41-60					Clear Cut	882	118,390
	61-80	41	0	37	3,776	Clear Cut	1,995	292,335
	81-100	44	0	81	17,144	Clear Cut	880	122,106
	101-120			13	2,288	Clear Cut	371	54,425
	121+					Clear Cut	122	3,009
Forest Unit Subtotal		85	0	131	23,208		9,221	634,926
BWCC	0-20					Clear Cut	1,484	0
	21-40					Clear Cut	1,663	27,061
	41-60					Clear Cut	394	28,041
	61-80	82	0	49	3,985	Clear Cut	4,457	474,172
	81-100	119	0			Clear Cut	413	46,855
	101-120					Clear Cut	69	6,407
	121+					Clear Cut	7	626
Forest Unit Subtotal		200	0	49	3,985		8,486	583,162

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Current FMP – 2004 – 2024

Current 2004-2024 FMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m ³)	Unavailable		Stage of Management	Available	
				(ha)	(m ³)		(ha)	(m ³)
MHWD	0-20			5	40	Clear Cut	8,533	10,020
	21-40	60	0	0	0	Clear Cut	10,873	183,689
	41-60	165	1,030	1	94	Clear Cut	7,820	749,330
	61-80	1,271	0	175	18,625	Clear Cut	30,952	3,282,317
	81-100	494	0	127	15,995	Clear Cut	9,222	1,060,601
	101-120	56	2,792	45	6,489	Clear Cut	5,153	609,338
	121+	89	0	10	724	Clear Cut	1,696	107,295
	Forest Unit Subtotal		2,135	3,823	363	41,966		74,250
MWUS	0-20					Seeding Cut	853	0
	0-20					Removal Cut	932	574
	21-40					Seeding Cut	997	30,459
	21-40					Removal Cut	163	957
	41-60					Seeding Cut	1,697	105,754
	41-60					Removal Cut	79	3,456
	61-80					Seeding Cut	4,451	440,836
	61-80					Removal Cut	505	52,876
	81-100	88	1,638	63	6,527	Seeding Cut	4,843	586,809
	81-100					Removal Cut	483	42,774
	101-120	37	0	61	6,845	Seeding Cut	5,116	649,870
	101-120					Removal Cut	568	59,770
	121+	108	4,744	4	175	Seeding Cut	4,153	422,412
	121+					Removal Cut	733	71,009
Forest Unit Subtotal		234	6,381	127	13,547		25,572	2,467,555
MWCC	0-20					Clear Cut	2,218	661
	21-40					Clear Cut	1,601	23,129
	41-60					Clear Cut	1,262	69,807
	61-80	138	2,828			Clear Cut	3,954	311,036
	81-100	77	925			Clear Cut	3,849	416,553
	101-120	45	2,822	42	3,873	Clear Cut	4,515	490,970
	121+	132	4,671	79	4,980	Clear Cut	2,967	213,866
Forest Unit Subtotal		393	11,247	120	8,853		20,365	1,526,019
Total		4,266	49,623	2,379	298,513		290,548	24,987,776
Total Production Forest							292,927	25,286,288

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past FMP – 1999 – 2019

Past Plans								
1999-2019 FMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m³)	Unavailable		Stage of Mgmt.	Available	
				(ha)	(m³)		(ha)	(m³)
Hdus	0-20			27	5	Seed Cut	1,313	259
	21-40			14	113	Seed Cut	672	5,513
	41-60			15	729	Seed Cut	721	35,732
	61-80			43	4,618	Seed Cut	2,130	226,293
	81-100	20	190	68	7,910	Seed Cut	3,289	387,593
	81-100			0	0	Removal	67	7,736
	101-120	87	867	78	9,736	Seed Cut	3,737	477,069
	101-120			0	0	Removal	76	9,702
	121+	118	949	158	16,114	Seed Cut	7,268	762,057
	121+			0	0	Removal	123	12,897
Forest Unit Subtotal		225	2,006	403	39,226		19,396	1,924,850
Pwus	0-20			18	2	Seed Cut	778	113
	0-20			0	0	Removal	91	13
	21-40			1	36	Seed Cut	31	1,749
	41-60			3	289	Seed Cut	166	14,148
	61-80	14	121	10	1,357	Seed Cut	495	66,490
	81-100	106	1,005	40	5,060	Seed Cut	936	136,265
	81-100			0	0	Removal	20	2,912
	101-120	13	130	49	7,091	Seed Cut	1,659	234,107
	101-120			0	0	Removal	87	12,276
	121+	44	354	55	9,299	Seed Cut	1,250	192,537
121+			0	0	Removal	63	9,704	
Forest Unit Subtotal		177	1,609	176	23,134		5,576	670,314

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past FMP – 1999 – 2019

1999-2019 FMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m³)	Unavailable		Stage of Mgmt.	Available	
				(ha)	(m³)		(ha)	(m³)
Cm3us	0-20			23	9	Seed Cut	935	459
	0-20			0	0	Removal	216	106
	21-40			50	1,188	Seed Cut	2,245	58,231
	21-40			0	0	Removal	192	4,980
	41-60			51	3,410	Seed Cut	2,501	167,087
	61-80	69	596	164	16,132	Seed Cut	6,700	712,672
	81-100	408	3,868	517	73,133	Seed Cut	11,500	1,463,140
	81-100			0	0	Removal	236	30,025
	101-120	147	1,466	587	74,595	Seed Cut	13,908	1,894,202
	101-120			0	0	Removal	287	39,088
	121+	612	68,391	920	108,598	Seed Cut	12,506	1,364,739
	121+			0	0	Removal	378	41,250
Forest Unit Subtotal		1,236	74,321	2,312	277,066		51,604	5,775,979
Bwpmx	0-20			87	29		4,265	1,422
	21-40			112	745		5,485	36,489
	41-60	91	604	86	8,084		3,314	325,144
	61-80	604	5,219	295	32,124		13,112	1,374,996
	81-100	7	66	94	11,161		1,109	107,804
	101-120			12	1,185		583	58,059
	121+	38	306	5	232		236	11,363
Forest Unit Subtotal		740	6,195	690	53,559		28,105	1,915,278
Popmx	0-20			183	78		8,972	3,844
	21-40	59	121	33	753		1,621	36,909
	41-60	93	618	139	14,193		5,616	587,076
	61-80	158	1,365	349	35,559		12,263	1,344,893
	81-100	36	341	155	26,956		2,935	384,116
	101-120	18	1,185	39	4,902		1,300	147,876
	121+			6	311		312	15,232
Forest Unit Subtotal		364	3,630	904	82,752		33,019	2,519,946

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past FMP – 1999 – 2019

1999-2019 FMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m ³)	Unavailable		Stage of Mgmt.	Available	
				(ha)	(m ³)		(ha)	(m ³)
Lc2cc	0-20	9	2	14	0		679	0
	21-40			3	15		161	752
	41-60			6	203		316	9,944
	61-80	1	9	26	1,818		1,279	89,095
	81-100			119	9,100		3,711	298,913
	101-120	136	1,185	125	11,850		4,953	430,450
	121+	273	2,195	198	14,346		6,603	489,649
Forest Unit Subtotal		419	3,390	491	37,332		17,702	1,318,803
Cm3cc	0-20	9		165	52		7,823	2,559
	21-40			111	2,647		5,456	129,706
	41-60	331	2,198	157	10,773		7,691	527,879
	61-80	624	5,391	372	36,475		16,073	1,559,130
	81-100	338	3,204	278	30,706		10,830	1,131,316
	101-120	74	1,185	178	20,934		5,768	658,348
	121+	118	949	157	12,205		4,699	356,862
Forest Unit Subtotal		1,494	12,927	1,418	113,792		58,340	4,365,800
Sbcc	0-20			79	3		3,892	129
	21-40			40	982		1,962	48,112
	41-60	25	166	62	4,960		3,040	243,054
	61-80	205	1,771	209	20,886		9,318	921,726
	81-100	72	683	315	37,055		13,308	1,598,058
	101-120	57	1,185	204	25,871		7,519	978,947
	121+	135	1,085	97	9,759		4,115	440,532
Forest Unit Subtotal		494	4,890	1,007	99,516		43,153	4,230,557
Prcc	0-20			35	55		1,708	2,698
	21-40			1	82		70	4,023
	41-60			0	19		5	944
	61-80			1	220		58	10,769
	81-100			10	2,393		501	117,251
	101-120	19	1,185	24	5,341		687	165,937
	121+	13	105	126	22,049		435	69,093
Forest Unit Subtotal		32	1,290	198	30,160		3,463	370,714

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past FMP – 1999 – 2019

Table 5 - Summary of Managed Productive Forest by Forest Unit									
1999-2019 FMP									
Forest Unit	Age Class	Protection Forest (ha)	(m³)	Production Forest					
				Unavailable		Stage of Mgmt.	Available		
				(ha)	(m³)		(ha)	(m³)	
Pjcc	0-20			148	22		7,247	1,062	
	21-40			9	256		425	12,567	
	41-60	27	179	41	4,502		2,014	220,586	
	61-80	174	1,503	161	21,510		7,645	1,023,008	
	81-100	93	882	43	5,429		2,109	266,028	
	101-120	25	1,185	65	7,248		3,024	341,410	
	121+	44	354	43	2,509		2,120	122,937	
Forest Unit Subtotal		363	4,103	510	41,475		24,584	1,987,599	
Total		5,544	114,360	8,107	798,012		284,944	25,079,840	
							Total Production Forest	293,051	25,877,852
MU: Temagami Crown									
1997-99 CFMP									
Forest Unit	Age Class	Protection Forest (ha)	(m³)	Production Forest					
				Unavailable		Stage of Mgmt.	Available		
				(ha)	(m³)		(ha)	(m³)	
Thall	0-20			622	281		2,487	1,123	
	21-40			91	2,027		366	8,110	
	41-60			254	19,383		1,014	77,533	
	61-80			502	48,661		2,008	194,644	
	81-100			618	73,296		2,473	293,182	
	101-120	32	4,061	582	73,534		2,330	294,134	
	121+			932	92,310		3,729	369,242	
Forest Unit Subtotal		32	4,061	3,601	309,492		14,407	1,237,968	

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past CFMP – 1997 – 1999

MU: Temagami Crown								
1997-99 CFMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m³)	Unavailable		Stage of Mgmt.	Available	
				(ha)	(m³)		(ha)	(m³)
Pw_Co	0-20			14	0		56	0
	21-40			77	3,632		310	14,527
	41-60			79	7,537		315	30,150
	61-80			249	34,523		998	138,091
	81-100			1,027	168,042		4,108	672,166
	101-120			1,142	171,131		4,569	684,523
	121+		43	4,713	985	130,365		3,942
Forest Unit Subtotal		43	4,713	3,573	515,230		14,298	2,060,919
Pw_Se	0-20	9	0	159	1,598		636	6,394
	21-40			76	1,307		303	5,227
	41-60			53	1,788		212	7,153
	61-80			243	24,942		970	99,770
	81-100			457	55,177		1,829	220,709
	101-120			422	44,021		1,686	176,085
	121+			631	60,222		2,526	240,888
Forest Unit Subtotal		9	0	2,041	189,055		8,162	756,226
Pw_Bw	0-20			4	2		14	10
	21-40			35	492		138	1,967
	41-60			59	4,228		236	16,914
	61-80			47	5,264		188	21,055
	81-100			106	14,992		422	59,967
	101-120			39	5,736		157	22,944
	121+			4	605		16	2,419
Forest Unit Subtotal		0	0	294	31,319		1,171	125,276

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past CFMP – 1997 – 1999

Table 5 - Summary of Managed Productive Forest by Forest Unit								
1997-99 CFMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m³)	Unavailable		Stage of Mgmt.	Available	
				(ha)	(m³)		(ha)	(m³)
Prall	0-20			71	334		284	1,334
	21-40			16	808		66	3,231
	41-60			5	607		20	2,426
	61-80			56	11,998		222	47,990
	81-100			232	53,147		930	212,589
	101-120			160	33,127		641	132,506
	121+			82	13,574		329	54,295
Forest Unit Subtotal		0	0	622	113,595		2,492	454,371
Poall	0-20			652	790		2,606	3,158
	21-40			556	35,851		2,224	143,405
	41-60	5	230	2,872	250,340		11,487	1,001,362
	61-80			2,472	260,735		9,888	1,042,942
	81-100	17	2,733	1,646	196,211		6,582	784,846
	101-120	24	2,518	573	63,140		2,292	252,558
	121+			168	7,773		672	31,090
Forest Unit Subtotal		46	5,481	8,939	814,840		35,751	3,259,361
Bfall	0-20			292	124		1,167	496
	21-40			151	5,205		606	20,820
	41-60			202	17,982		810	71,930
	61-80	5	384	404	54,056		1,618	216,224
	81-100			140	15,758		559	63,034
	101-120			3	312		14	1,247
	121+						0	0
Forest Unit Subtotal		5	384	1,192	93,437		4,774	373,751

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past CFMP – 1997 – 1999

Table 5 - Summary of Managed Productive Forest by Forest Unit								
1997-99 CFMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m³)	Unavailable		Stage of Mgmt.	Available	
				(ha)	(m³)		(ha)	(m³)
Bwall	0-20			1,167	1,438		4,670	5,752
	21-40	10	711	1,409	35,186		5,635	140,745
	41-60	21	684	4,956	375,439		19,823	1,501,754
	61-80	14	750	3,475	292,023		13,902	1,168,092
	81-100			1,393	164,128		5,573	656,510
	101-120	26	2,420	557	64,428		2,226	257,710
	121+			205	16,506		821	66,022
Forest Unit Subtotal		71	4,565	13,162	949,148		52,650	3,796,585
Ocall	0-20			2	7		8	30
	21-40			2	63		8	251
	41-60			143	7,161		572	28,645
	61-80			708	55,209		2,831	220,837
	81-100	95	8,823	1,852	164,477		7,410	657,910
	101-120	19	1,643	1,525	131,230		6,102	524,921
	121+	9	1,029	1,631	112,158		6,524	448,631
Forest Unit Subtotal		123	11,495	5,863	470,305		23,455	1,881,225
Pjall	0-20			482	292		1,929	1,168
	21-40			303	16,998		1,212	67,993
	41-60			1,200	124,332		4,799	497,327
	61-80			1,396	176,057		5,585	704,226
	81-100			603	78,169		2,414	312,674
	101-120			603	63,280		2,411	253,121
	121+			240	11,824		960	47,296
Forest Unit Subtotal		0	0	4,827	470,952		19,310	1,883,805

Table 5. Summary of Managed Productive Forest by Forest Unit (FMP-9)
 Past CFMP – 1997 – 1999

Table 5 - Summary of Managed Productive Forest by Forest Unit								
1997-99 CFMP								
Forest Unit	Age Class	Protection Forest		Production Forest				
		(ha)	(m³)	Unavailable		Stage of Mgmt.	Available	
				(ha)	(m³)		(ha)	(m³)
Sball	0-20			129	505		514	2,020
	21-40			323	11,778		1,293	47,110
	41-60			1,117	101,430		4,466	405,720
	61-80			2,719	300,206		10,877	1,200,825
	81-100	16	2,621	2,504	287,561		10,015	1,150,242
	101-120			1,037	101,789		4,150	407,156
	121+			323	26,203		1,293	104,813
	Forest Unit Subtotal	16	2,621	8,152	829,472		32,608	3,317,886
Swall	0-20			40	25		159	100
	21-40			4	31		16	123
	41-60			56	3,798		224	15,190
	61-80			256	34,567		1,022	138,269
	81-100			486	58,767		1,944	235,067
	101-120			264	28,977		1,054	115,907
	121+			230	17,923		921	71,692
	Forest Unit Subtotal	0	0	1,336	144,088		5,340	576,348
Forest Unit Total	345	33,320	53,602	4,930,933		214,418	19,723,721	
Total Production Forest							268,020	24,654,654

Source: FMPM Table FMP-9 from 1997-99 CFMP, 1999-2019 FMP & 2004-2024 FMP

Appendix B

Audit Team Members and Qualifications

<i>Name</i>	<i>Role</i>	<i>Responsibilities</i>	<i>Credentials</i>
Mr. Bruce Byford R.P.F. Arbex Forest Resource Consultants Ltd.	Lead Auditor Forest Management & Silviculture Auditor	Audit Management & coordination Liaison with OMNR & Auditee Review documentation related to forest management planning and review and inspect silviculture practices Determination of the sustainability component.	B.Sc.F. ISO 14001 Lead Auditor Training. FSC assessor training. 27 years of consulting experience in Ontario in forest management planning and resource inventory. Previous work experience on 8 IFA audits and FSC certification assessments.
Mr. Al Stewart Arbex Senior Associate	Wildlife/Fisheries /First Nations Auditor	Review & inspect AOC documentation & practices First Nations consultation Determination of the sustainability component.	B.Sc. (Agr) ISO 14001 Lead Auditor Training. FSC assessor training. 38 years experience in natural resource management planning, field operations, policy development, auditing and working with First Nation communities. Previous work experience on 8 IFA audits.
Mr. David Watton Arbex Senior Associate	Forest Management Planning & Public Participation Auditor	Review documentation and practices related to forest management planning & public participation Determination of the sustainability component.	B.Sc., M.Sc. ISO 14001 Lead Auditor Training. 38 years experience in natural resource management planning, land use planning, field operations, and policy development. Previous work experience on 7 IFA audits.

<p>Mr. Guy Winterton Arbex Senior Associate</p>	<p>Forest Compliance Auditor</p>	<p>Review FMP and related documents to ensure compliance with FMPM and other regulations Review field operations for compliance with regulations and guidelines and other documents.</p>	<p>B.Sc.(Agr), M.Sc. ISO 14001 Lead Auditor Training. FSC assessor training. Previous work experience on 4 IFA audits. 38 years experience in all aspects of fisheries and wildlife planning, policy development, field operations and natural resource law enforcement. Previous work on 7 IFA audits.</p>
<p>Mr. Trevor Isherwood R.P.F. Trilac Forestry Services Arbex Associate</p>	<p>Silvicultural, Forest Management and Contractual Compliance Auditor</p>	<p>Review and inspect silvicultural practices and related documentation Review and inspect documents related to contractual compliance and socio-economics Determination of the sustainability component.</p>	<p>B.Sc.F. Former General Manager of SFL 38 years experience in forest management and operations. Previous work experience on 4 IFA audits.</p>
<p>Mr. Mark Fleming R.P.F. Fleming Professional Forestry</p>	<p>Technical Advisor - SFMM</p>	<p>Analysis of SFMM model outputs and decision criteria and the determination of the sustainability component.</p>	<p>B.Sc.F. R.P.F. Previous work experience on IFA audits and FSC certification assessments. Experience as OMNR Planning Forester & Unit Forest.</p>

Appendix C

Independent Forest Audit Guiding Principles

There are eight guiding principles in the 2006 Draft Independent Forest Audit Process and Protocol, which guide the audit.

Commitment

Commitment is reflected in vision, mission, and policy statements of the Company. Vision and mission statements are intended to provide long-term guidance for the organization. Policy statements reflect how the organization's vision and mission will be achieved. These statements must be reflected in the day-to-day operations of the organization.

Public Participation

The process of sustainable forest planning, implementation, and monitoring is conducted in an open consultative fashion, with input from all members of the planning team, Local Citizen's Committee, native groups and other parties with an interest in the operations of the forest Unit.

Forest Management Planning

The forest management planning process involves the input of a number of individuals and groups to describe the current condition of the forest, the values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve the goal. Certain minimum standards and procedures have been established upon which all management Units are evaluated.

Plan Implementation

Verification of the actual results of operations in the field compared to the planned operations is required to be able to assess achievements of the plan objectives and compliance with laws and regulations. In conjunction with the review of operations, the reporting tables are tested to ensure accurate results are reported.

Support System

System support concerns resources and activities needed to support plan implementation so as to achieve the desired objectives. Appropriate control, documentation and reporting procedures must be in place and operational. Planned action should occur at planned times, in planned places and to the planned degree.

Monitoring

The activities and the effects of these activities in achieving management objectives must be regularly measured and assessed. In particular, the indicators of achievement must be assessed and their effectiveness reviewed.

Achievement of Management – Objectives & Forest Sustainability

Periodic assessments of the management of the forest Unit operations and the forest Unit must be made in order to determine whether forest sustainability and other management objectives are being achieved. This includes comparing the actual values of the predetermined indicators against the planned values and assessing the reasons for any significant deviations.

Contractual Compliance

The licensee must comply with the specific licence requirements.

Appendix D

Glossary for List of Acronyms Used

List of Acronyms

ACOP	Annual Compliance Operations Plan
AHA	Available Harvest Area
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
B&S	Barren and Scattered
CAS	Compliance Activity Schedule
CFMP	Contingency Forest Management Plan
CFSA	Crown Forest Sustainability Act
DM	District Manager
EA	Environmental Assessment
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FMNCP	Forest Management Native Consultation Program
FOCIS	Forest Operations Compliance Information System
FOIP	Forest Operations Information Program
FOIR	Forest Operations Inspection Report
FOP	Forest Operations Prescription
FRI	Forest Resource Inventory
FRL	Forest Resource Licence
FTA	Forestry Tourism Agreements
FTG	Free-to-Grow
FU	Forest Unit
GIS	Geographic Information System
GPS	Global Positioning System
GRUS	Generic Road Use Strategy
HA	Hectares
IEA	Individual Environmental Assessment
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
ISO	International Standards Organization
LCC	Local Citizens Committee
m ²	Square Metres
m ³	Cubic Metres
MFN	Matachewan First Nation
MOE	Ministry of Environment
MU	Management Unit
NDPEG	Natural Disturbance Pattern Emulation Guideline
NIC	Not in Compliance
NPP	Net Primary Productivity
NRVIS	Natural Resource Values Information System
NSR	Not Satisfactorily Regenerated
OMNR	Ontario Ministry of Natural Resources

PWST	White Pine Seed Tree
R.P.F.	Registered Professional Forester
RPFO	Report of Past Forest Operations
RSA	Resource Stewardship Agreement
SEIM	Socio-Economic Impact Modeling
SEV	Statement of Environmental Value
SFL	Sustainable Forest Licence
SFMM	Sustainable Forest Management Model
SGR	Silvicultural Ground Rule
SMA	Selected Management Alternative
SPA	Special Purpose Account
SPH	Stems per Hectare
SPR	Specified Procedure Report
STP	Silvicultural Treatment Package
TAA	Teme-Augama Anishnabai
T&C 77	Term and Condition # 77 of the Class EA Report
T&C 34	Term and Condition #34 of the Class EA Report
TCMU	Temagami Crown Management Unit
TFN	Temagami First Nation
TLUP	Temagami Land Use Plan
TOR	Terms of Reference

Appendix E

Summary of Input to Audit Process

A major focus of the audit was to gain an understanding of how forest management activities on the Temagami Crown Management Unit affected users of the forest.

The following briefly summarizes the contacts and the issues raised. All these contacts and issues are fully discussed throughout the body of the report.

General Public /Other Stakeholders

Notices describing the audit process, and soliciting input, and providing audit dates and contact coordinates of the Auditor were distributed by the following means:

- Newspaper notices in the Temagami Talker and North Bay Nugget,
- Letters sent to a randomly selected 35 percent of the individuals on the OMNR TCMU mailing list.

Telephone contacts were made with representative stakeholders and interviews were conducted as necessary or on request.

The principal issues cited included;

- Access restrictions and road closures.
- Size of clear cuts.
- Poor road maintenance.
- Protection of old growth red and white pine.
- Logging on the TCMU.
- Slash management.

Local Citizen's Committee

The auditor attended a regularly scheduled meeting of the LCC prior to the start of the audit, and LCC members accompanied the auditors during the site investigations.

Principal issues that were identified included:

- Failure to achieve planned harvest targets.
- The complex forest management planning process.
- Use of the forest management planning process to influence land use decisions.
- Lack of rigour in the establishment and verification of values.
- AOCs and related land use constraints on forestry operations.

Native Communities

Invitations to participate in the audit process were sent to the Temagami First Nation (TFN), the Teme-Augama Anishnabai (TAA) and the Matachewan First Nation (MFN). The auditors interviewed representatives of the TFN responsible for the First Nation's forestry and contracting operations. Principal issues that were identified included:

- Requirement for enhanced economic opportunities for First Nations in forestry.
- Lack of financial and technical capacity to participate effectively in forest management planning.
- Problems for forest operations related to low volume and low quality harvest stands and current distribution of allocations.

Tourism Industry

Individual Interviews were conducted with four persons regarding the tourism industry on the Unit (interviewees included tourism operators, forest industry and Ministry of Tourism). Principal messages included:

- OMNR did a good job of facilitating the tourism agreement process.
- Long term agreements were not desirable until the pending FMA was negotiated and both parties preferred to deal with operational issues.
- The tourism agreement template was very complex and intimidating.
- The forest industry representative interviewed was satisfied with the outcome.
- One tourism operator expressed concern about access issues continuing to be a threat to their industry's interests.

Forest Resource License Holders

Interviews were conducted with forest resource licencees operating on the Unit.

Principal issues that were identified included:

- Size and distribution of harvest allocations.
- Lack of meaningful involvement in the planning process.
- Difficulties in implementing seed tree harvest prescriptions.
- AOCs and related land use constraints on forestry operations.

- Lack of rigour and verification costs associated with the implementation of the cultural heritage guidelines.
- High proportions of low quality timber in allocations.
- High hauling and road constructions costs.

Ontario Ministry of Natural Resources

Including a preliminary two day visit to the OMNR North Bay District and the five days of the field audit, the auditor spent many hours with individual OMNR staff representing all levels in the organization. The results of these numerous discussions are reflected throughout this audit report.

Principle issues included:

- Failure to achieve planned harvest targets.
- Failure of operators to harvest allocations.
- Complexity of the forest management planning process.
- On-going access control issues.
- Herbicide use on the TCMU.
- Poor or non-existent markets for some species and products.