Mazinaw-Lanark Forest

Independent Forest Audit

2016 – 2022

Arbex Forest Resource Consultants Ltd.

December 2022

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1.0 Executive Summary

This report presents the findings of an Independent Forest Audit of the Mazinaw-Lanark Forest conducted by Arbex Forest Resource Consultants Ltd. The audit utilized a risk-based approach based on the 2022 Independent Forest Audit Process and Protocol. The audit period is April 1, 2016, to March 31, 2022. The audit scope covers the implementation of Phase II of the 2011-2021 Forest Management Plan (years 6, 7, 8, 9,10), the implementation of the 2021-2022 Short Term Plan Extensions, and the preparation and implementation of the 2021-2031 Forest Management Plan (Year 1). Audit procedures and criteria are specified in the 2022 Independent Forest Audit Process and Protocol.

The Mazinaw-Lanark Forest is managed by Mazinaw-Lanark Forest Inc. under Sustainable Forest Licence # 542621. The Forest is situated in the Ontario Ministry of Natural Resources and Forestry Southern Region and is located within the Bancroft, Kemptville and Peterborough Districts. The Bancroft District has the main administrative responsibility for the Forest. One Local Citizens Committee is associated with the Forest. First Resource Management Group assumed forest management responsibilities on behalf of the Sustainable Forest Licence holder in 2022.

The Forest is certified as sustainably managed by the Forest Stewardship Council[1].

The implementation of COVID-19 protocols commencing in 2020, had significant implications on the delivery of the forest management program. Pandemic-related protocols and guidance resulted in challenges for the delivery of consultation processes for forest management plan development, collaborative planning amongst the planning team, document reviews and approvals, the delivery of planned surveys and other silvicultural field work. The delivery of the forest management program was further complicated by issues such as staff turnovers at both the Mazinaw-Lanark Forest Inc. (including a transition to a service provider for forest management services) and the Ministry District offices, the inherent complexity of the land base (e.g., Algonquin Land Claims process, prevalence of private lands, complex stand attributes, Species at Risk) and late delivery and quality issues with the forest inventory product. Despite these difficulties an effective forest management program was delivered by the Ministry of Natural Resources and Forestry and Mazinaw-Lanark Forest Inc. The forest management planning process and the implementation of the forest management plans met all legal and regulatory requirements and Forest Management Plan targets are consistent with the achievement of plan objectives and forest sustainability.

The audit team further concluded that the Sustainable Licence holder did a credible job planning harvest allocations and managing operations given the inherent challenges associated with managing a significant number of licensees with preferences to harvest within their traditional areas and/or cut certain species.

[1] Certification Code: SA/FM/COC-003811 (Issue Date 22/11/2017 Expiry Date: 21/11/22)

On balance, an effective silviculture program was delivered, with the area renewed generally being in balance with the area harvested. The quality of the tree marking program delivered was commendable. The tailoring of tree marking to existing stand conditions will result in higher levels of silvicultural success in future management terms.

Audit period harvest levels were well below planned. The continued inability to achieve planned harvest levels over successive planning terms will have negative implications with respect to achieving the desired future forest condition, plan objectives (e.g., supply of wildlife habitat for certain species, movement towards desired forest disturbance size class frequencies), and the Long-Term Management Direction.

The impact of severe, repeated, and widespread wildlife browsing (deer and moose) on desirable regeneration (particularly red oak) has given rise to frequent silvicultural failure or low regeneration success rates. The nature, extent and economic and/or social constraints associated with potential remedial actions render the browse problem unresolvable. The Sustainable Forest Licence holder continues to track browse damage (since long-term forest cover objectives could be negatively impacted by the successive failures to establish desired species) and examine potential mitigation measures.

The audit identified some areas for improvement in forest operations and the delivery of the forest management program. The deficient tracking and monitoring of some harvested areas and renewal treatments resulted in regeneration and silviculture failures (Finding # 3). We are concerned that the Silviculture Effectiveness Monitoring program, as implemented, is not fully functional as a monitoring program (Finding # 4). There were also some shortcomings with respect to the administration of the Forest. The Forest Management Planning Manual timelines of the submission and resubmission of Annual Reports were not consistently met (Finding # 2). Two recommendations from the 2011-2016 Independent Forest Audit had not been adequately addressed (Finding # 6) and there are persistent compliance issues associated with the harvest operations of one licensee (Finding # 5). The audit team also found that the internet technology at the Mazinaw-Lanark Forest Inc. office in Cloyne is insufficient for effective operations of the organization (Finding # 1).

One best practice was identified for the initiative to better understand the specific habitat requirements of the Blanding's turtle and apply that knowledge to modify a previous Area of Concern prescription to mitigate potential impacts on forest management operations.

Although outside of the scope of this audit, the audit team cautions that the impacts of a derecho[2] storm in May 2022 will have far-reaching and long-term consequences on forest structure and stand attributes such as species composition and tree quality. This will impact

[2] A derecho storm is a widespread, long-lived, straight-line windstorm that can cause hurricanic and tornadic-force winds (Source: Wikipedia).

the delivery of the forest management program. Damage from the storm is widespread, affecting a large area of productive forest land with many stands toppled. On many sites it is imperative that salvage operations occur immediately to recover merchantable timber (especially pine) prior to the onset of stain and/or rot in the downed material. Funding support is required, likely outside of the Forest Renewal Trust account, and perhaps through the Forestry Futures Trust, to facilitate the renewal of impacted areas back to productive forest, and to administer the management of recovery operations. In addition, the forest resource inventory needs to be updated to address changes in forest unit designations resulting from the storm, and to facilitate and complete other forest management functions such as the preparation of Forest Management Plan amendments. These amendments must reflect changes to the long-term management direction and management objectives, and planned operations, (i.e., revised annual work schedules, and the preparation of revised forest operations prescriptions).

The audit team concludes that the management of the Mazinaw-Lanark Forest was generally in compliance with the legislation, regulations and policies that were in effect during the period covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Mazinaw-Lanark Forest Inc. # 542621. The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol.

Bruce Byford

Bruce Byford R.P.F.
Lead Auditor

2.0 Table of Findings

Table 1 Findings

Concluding Statement:
The audit team concludes that the management of the Mazinaw-Lanark Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Mazinaw-Lanark Forest Inc. # 542621. The Forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol.
Findings:
Finding # 1: Internet technology at the Mazinaw-Lanark Forest Inc. office in Cloyne is inefficient for the effective operations of the Sustainable Forest Licence Holder. **Finding # 2:** Annual Reports were not consistently submitted and/or resubmitted in accordance with the Forest Management Planning Manual schedule. **Finding # 3:** Deficient tracking and monitoring of some harvested areas and renewal treatments by Mazinaw-Lanark Forest Inc. resulted in regeneration or silviculture failures. **Finding # 4:** The Silviculture Effectiveness Monitoring program, as implemented, is not fully functional as a monitoring program. **Finding # 5:** Despite the actions implemented to address Recommendation #15 of the 2011 - 2016 Independent Forest Audit, the implicated Licensee remains a compliance risk.

Finding # 6:

The action items in the 2016 Independent Forest Audit Action Plan did not fully resolve the issues identified by Recommendations #s 15 and 16 of the 2011-2016 Independent Forest Audit.

Best Practice # 1:

The proactive cooperation and training by Ministry of Natural Resources and Forestry and Mazinaw-Lanark Forest Inc. to protect the Blanding's turtle while reducing the impact on forest operations is both practical and innovative.

3.0 Introduction

This report presents the findings of the Independent Forest Audit (IFA) of the Mazinaw-Lanark Forest (MLF or the Forest) conducted by Arbex Forest Resource Consultants Ltd. for the period of April 1, 2016 to March 31, 2022. The audit utilized a risk-based approach based on the 2022 Independent Forest Audit Process and Protocol (IFAPP).

The audit scope covers the implementation of Phase II of the 2011-2021 Forest Management Plan (FMP) (years 6,7,8,9,10), the implementation of the 2021-2022 Short Term Plan Extensions[3], and the preparation and implementation of the 2021-2031 FMP (Year 1).

Details on the audit processes are provided in Appendix 4. The audit field site investigations were completed in October 2022.

The Forest is situated in the Ontario Ministry of Natural Resources and Forestry (MNRF) Southern Region and is located administratively within the Bancroft, Kemptville and Peterborough Districts. The Bancroft District has the main administrative responsibility for the Forest. The Forest has been managed by Mazinaw-Lanark Forest Inc[4]. (MLFI) under Sustainable Forest Licence (SFL) # 542621. Forest management functions are provided by a third-party service provider on behalf the SFL holder[5]. Harvesting is conducted by Forest Resource Licence holders (FRLs) under Overlapping Licence Agreements (OLLs) with MLFI. Overlapping Licensees have the option of undertaking other forest management activities (e.g., tree marking, tree planting, site preparation) approved in the FMP.

The 2016 IFA was conducted by ArborVitae Environmental Services Ltd. That audit made twenty recommendations for improvement to the forest management program (Section 4.8). That audit determined that the MLF was sustainably managed and recommended that the SFL term be extended for an additional five years.

3.1 Audit Process

The Crown Forest Sustainability Act (CFSA) requires that all SFLs and Crown Management Units (CMUs) be audited once every ten to twelve years by an independent auditor. The 2022 IFAPP provides guidance in meeting the requirements of Ontario Regulation 319/20 made under the CFSA. The scope of the audit is determined

[3] There were four Short Term Extensions as follows: April-June 2021, July-September 2021, October-December 2021, and January-March 2022.
[4] MLFI is a private company owned and funded by local forest products companies and a group of independent loggers. Shareholders include 12 independent loggers, five sawmills and one pulp mill. Most of the shareholders are overlapping licensees and hold individual Forest Resource Licences for their operations.
[5] First Resource Management Group (FRMG) as of 2022.

by the MNRF in specifying mandatory audit criteria (Appendix A of the IFAPP). The audit scope is finalized by the auditors who conduct a management unit risk assessment by identifying optional audit criteria from Appendix A to be included in the audit[6]. The final audit scope is reviewed and accepted by the Forestry Futures Trust Committee (FFTC) and approved by the MNRF with any subsequent changes to the audit scope requiring agreement between the FFTC, MNRF and the Lead Auditor.

The procedures and criteria for the delivery of the IFA are specified in the 2022 IFAPP. The audit generally assesses licence holder and MNRF (the auditees) compliance with the Forest Management Planning Manual (FMPM) and the CFSA in conducting forest management planning, operations, monitoring and reporting activities. The audit also assesses the effectiveness of forest management activities in meeting the management objectives set out in the 2011-2021 FMP. The audit reviews whether actual results in the field are comparable with planned results and determines if the results were accurately reported. The results of each audit procedure are not reported on separately, but collectively provide the basis for reporting the outcome of the audit. The audit provides the opportunity to improve Crown Forest Management in Ontario through adaptive management. Findings of *"non-conformance*" are reported. A "*Best Practice*" is reported when the audit team finds the forest manager has implemented a highly effective and novel approach to forest management or when established forest management practices achieve remarkable success.

Details on the audit processes are provided in Appendix 4. Arbex Forest Resource Consultants Ltd. conducted the field audit October 2022, utilizing a five-person team. Profiles of the audit team members, their qualifications and responsibilities are provided in Appendix 6.

3.2 Management Unit Description

Created by the amalgamation of the Mazinaw and Lanark crown forest management units in 2001, the MLF is the most southernmost management unit in Ontario (Figure 1). The Forest resides within MNRF's Southern Region. Three MNRF administrative Districts are associated with the Forest; the Bancroft, Kemptville and the Peterborough Districts. Most of the Crown managed land is situated within Bancroft District.

The Town of Cloyne is at the approximate center of the Forest. Other communities within the management unit boundary include Tweed, Lanark, Perth, and Madoc.

The Mazinaw-Lanark Local Citizens' Committee (LCC) is the only LCC associated with the Forest.

The Forest is certified as sustainably managed by the Forest Stewardship Council (FSC)[7].

[6] Five optional audit criteria were selected for audit.
[7] Certification Code: SA/FM/COC-003811 (Issue Date 22/11/2017 Expiry Date: 21/11/22)

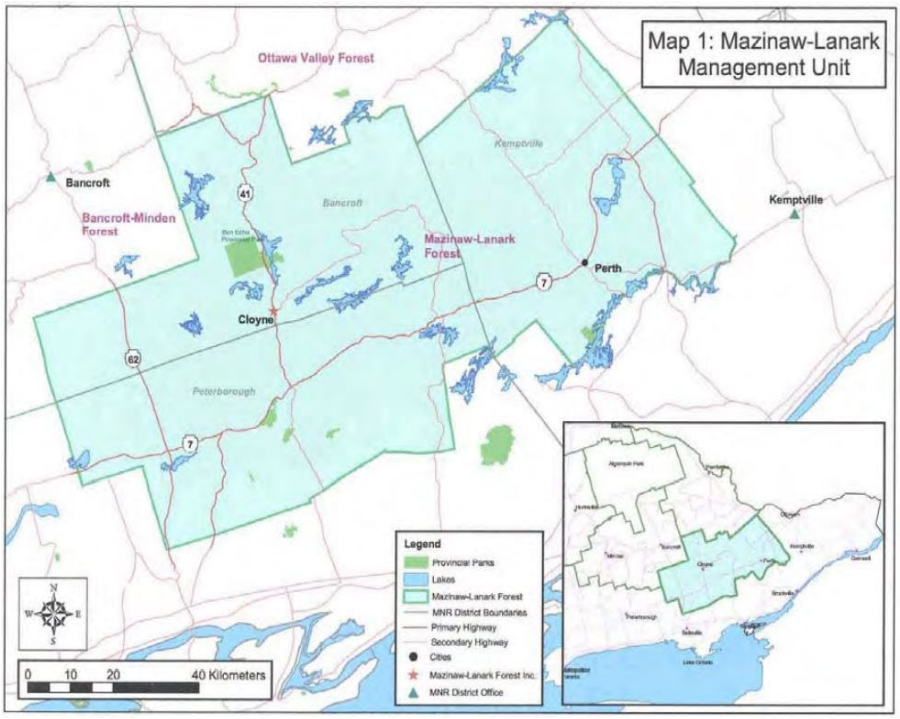

Figure 1 Location of the Mazinaw-Lanark Forest.

Total forested land occupies 210,549 ha of which 88% is classified as productive forest land available for timber production (Table 2). However, due to the prevalence of private holdings some areas of Crown land which are embedded amongst private holdings may not be available for harvest and/or have access challenges for forest management activities. Protected areas encompass approximately 18% of the Crown Forest area (140,000 Ha).

Table 2 Area of Crown Managed Land by Land Type (Ha).

Managed Crown Land Type	Area (Ha)
Non-Forested	84,477
Non-Productive Forest	25,760
Protection Forest[8]	1,877

[8] Protection forest land is land on which forest management activities cannot normally be practiced without incurring deleterious environmental effects because of obvious physical limitations such as steep slopes and shallow soils over bedrock.

Production Forest[9]	182,911
Forest Stands	179,544
Recent Disturbance	2,730
Below Regeneration Standards[10]	637
Total Productive Forest[11]	184,788
Total Forested:	210,549
Total Crown Managed:	295,025

Source: 2021-2031 FMP

The Forest is situated within the Great Lakes-St. Lawrence Forest Region (Site Region 5E). Approximately 41% of the forest cover is comprised of tolerant hardwood forest types dominated by hard maple. The tolerant hardwood forests situated on productive forest sites occur mainly within Lanark County although other occurrences are scattered throughout the management unit. Red oak forest types occupy approximately 15% of the managed crown productive forest area.

Intolerant hardwoods (e.g., poplar and white birch) occur because of fire and harvest disturbance. This forest cover type typically succeeds to either tolerant hardwood or white pine mixed forest types depending on site conditions. Stands dominated by white pine or mixed white pine in association with other species occur most frequently. Tolerant and mid-tolerant hardwood stands with a diverse mix of species are also common, as are stands with a major component of red oak. Stands of red pine or associations of red pine occur infrequently.

[9] Production forest is land at various stages of growth, with no obvious physical limitations on the ability to practice forest management.
[10] Below Regeneration Standards refers to the area where regeneration treatments have been applied but the new forest stands have yet to meet free-to-grow standards.
[11] Islands are excluded.

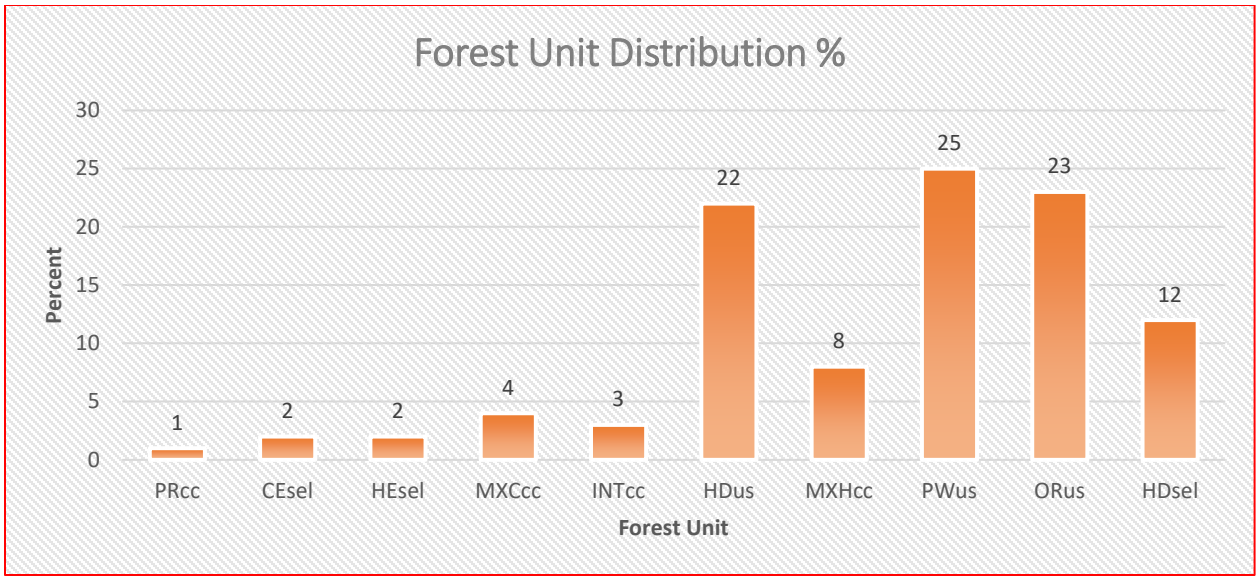

Figure 2 Forest Unit Distribution (%) within the Available Crown Managed Forest[12] Source 2021-2031 Mazinaw-Lanark FMP Base Model Inventory.

There are sixteen First Nation communities located in or adjacent to the MLF whose interests and or traditional uses may be affected by forest management activities. These communities are the Algonquins of Ontario communities including Greater Golden Lake, Bonnechere, Algonquins of Pikwakanagan First Nation,Snimikobi, Kijicho Manito Madaouskarini, Whitney and Area, Ottawa Algonquins, Antoine, Mattawa/North Bay; Williams Treaties First Nation communities including Alderville First Nation, Curve Lake First Nation, Hiawatha First Nation, Mississaugas of Scugog Island First Nation; Kawartha Nishnawbe and the Mohawks of the Bay of Quinte.

Approximately 20 individual Licensees conduct harvest operations on the MLF. Harvests operations utilize three silviculture systems clearcut (10%) shelterwood (60%) and selection cutting (30%). Tree marking for selection and shelterwood cuts is conducted by certified tree markers. Harvest levels over the audit period were below planned levels. The low level of harvest achievement was attributed to several factors including restrictions for Areas of Concern (AOC) for Species at Risk (SAR) (e.g., timing restrictions), reductions in harvesting capacity and competition from other wood sources such as private land.

The lower than planned level of harvesting negatively affected the achievement of planned silviculture targets linked to the harvest area (i.e., renewal, site preparation and tending).

[12] Forest units are as follows PRcc=Red Pine Clearcut, PWus=White Pine Uniform Shelterwood, INTcc=Intolerant Clearcut, MXCcc= Mixed Conifer Clearcut, MXHcc= Mixed Hardwood Clearcut, HEsel=Hemlock Selection, CEsel=Lowland Conifer Selection, ORus=Red Oak Uniform Shelterwood, HDsel= Hardwood Selection, HDus=Hardwood Uniform Shelterwood
% Area may not = 100% due to rounding.

The Forest supports a wide diversity of wildlife species including numerous Species at Risk (SAR) which exert strong influences on the delivery of the forest management program. Harvesting timing and access restrictions, enacted in the 2011 FMP, as a protection measure for American ginseng and Blanding's turtle, resulted in a significant decline in the available harvest area from previous plans. This circumstance was cited as a significant reason for the migration of harvest contactors from Crown land to private holdings between 2011-2016. This issue was not as prevalent in the current audit period as timing restrictions on harvest operations and buffers were modified and additional harvest blocks were identified in the Annual Work Schedules (AWSs) to allow for the movement of contractors to alternative areas.

The Forest is well accessed by provincial highways and forest access roads. It is used extensively for recreation activities by the local and regional population.

4.0 Audit Findings

4.1 Commitment

The 2022 IFAPP commitment principle ensures that an organization's commitment is reflected in the auditees' vision, mission, and policy statements and in their adherence to legislation and policies.

MLFI met the 2022 IFAPP Commitment Principal criterion through its FSC certification.

MNRF vision and mission statements are widely distributed on its websites and posting at its various District offices. It is our assessment that MNRF met the requirements of the IFAPP commitment principle.

4.2 Public Consultation and First Nations and Métis Community Involvement and Consultation

FMPM public and First Nation consultation requirements were met although public safety protocols associated with the COVID pandemic (i.e., no indoor public meetings) complicated the planning and delivery of information centres and other consultation initiatives (e.g., First Nation Community information sessions). Strategies adopted to meet consultation requirements included the augmented use of social media platforms for public outreach, virtual meetings on digital platforms, etc. The delivery of some initiatives during the pandemic was also challenged by access to stable internet services in rural areas.

Our interviews and record review indicated that stakeholders were made aware of the planning process and that opportunities were provided for input and engagement in the forest management planning process. All consultation requirements for the development of the 2021-2031 FMP, Annual Work Schedules (AWSs), and Plan Amendments for the audit period were met.

Public comments were documented in the Supplementary Documentation and appropriately addressed. Public input with respect to values protection was also documented, verified and where appropriate, added to values maps.

Our review of the correspondence files indicated that responses to public comments and inquiries (including those from First Nations), were timely and comprehensive.

Issue Resolution and Individual Environmental Assessment (IEA)

There was an issue resolution process implemented during the 2021-2031 FMP planning process in response to concerns regarding shoreline harvesting, the protection of recognized trails, lake viewscape management and water quality concerns associated with harvest operations. The request resulted in the application of Shoreline Use Area of Concern (SUAOC) prescriptions and Area of Concern (AOC) prescriptions for recognized trails being incorporated in the FMP. The issue resolution process also supported the inclusion of outcomes of negotiations with other cottage associations in the FMP.

We concluded that the FMPM requirements for issue resolution were met.

First Nations Communities

As required by the Forest Management Planning Manual (FMPM) all the identified FN communities were invited to participate in the development of the 2021-2031 FMP. We note that there are no Métis communities in or adjacent to the Forest and that fact is not stated in the FMP. This circumstance provided some confusion as FMP section headings reference Métis communities. A finding is not provided as we determined the oversight is minor and inconsequential to the delivery of the forest management program.

All required notifications related to the 2021-2031 FMP development met FMPM content and timeline requirements and the communications were properly documented.

There was strong Indigenous representation on the 2021-2031 FMP planning team with active representation from ten Aboriginal communities[13]. Additionally, an Indigenous Task Team supported the development of the FMP. We were informed that the presence of a large Indigenous representation on the planning team was instrumental in the development of a comprehensive Indigenous values category and development of appropriate Area of Concerns (AOCs) (e.g., material gathering, cultural landscapes, historical camps, etc.). We note that the Forestry Transition Plan developed in concert with the Algonquins of Ontario was considered in strategic and operational planning.

[13] Shabot Obaadjiwan FN, Algonquins of Greater Golden Lake FN, Kijicho Manito Madaouskarini FN, Hiawatha FN, Whitney and Area Algonquins, Algonquins of Ontario, Pikwakanagan FN, Bonnechere Algonquin FN, Snimikobi FN and Mohawks of Bay of Quinte.

Customized community consultations were also offered, but pandemic-related restrictions with respect to gatherings challenged the delivery of the program[14]. The Algonquins of Ontario elected to utilize a formal agreement previously negotiated with Ontario as part of the land claim process (i.e., Consultation Process Interim Measures Agreement).

Background Information Reports and community demographic profiles were updated and utilized for plan development when available.

Our assessment is that FMPM requirements for First Nation participation in the forest management planning process were met.

Local Citizens' Committee (LCC)

The Mazinaw-Lanark Forest Local Citizens' Committee is a standing committee with members appointed by the MNRF Bancroft District Manager. Committee membership ranged from seven to nine members during the audit period. Members were selected to provide representation of various interests associated with the management of the Forest. Representation has included trappers, anglers, hunters, naturalists, recreationalists, municipal and Indigenous representatives. The Committee has a mix of experienced members (i.e., ten plus years of experience) as well as relatively new members (i.e., four months). The LCC focus is on forest planning and plan implementation.

The LCC was actively involved with the implementation of the 2011-2021 FMP, the four short-term plan extensions and the development of the 2021-2031 FMP. The Committee's Terms of Reference was updated. A Committee member participated on the Planning Team. The LCC has had a strong and focused Chair and our review of the meeting minutes indicated meetings were regularly scheduled, with agendas, minutes, and a quorum in attendance. With the onset of COVID safety protocols the meetings shifted to a digital format.

[14] Despite the COVID restrictions presentations were provided at critical stages of the planning process (e.g., LTMD).

For the development of 2021-2031 FMP, the Committee participated on the Planning team with involvement in the various stages of the public consultation process (i.e., Stages two through five). The minutes and interviews show updates were provided to the full Committee. As required, the Committee members brought forward the views of their representative groups. Issues were discussed and a level of compromise was attained.

The LCCs report of its activities during the FMP development (Supplementary Document K) provides an excellent summary of LCC activities. A self-evaluation process indicated most of the members were generally satisfied with their participation in the FMP planning process. For the 2021-2031 FMP the LCC provided a statement indicating "…*general agreement amongst LCC members with the 2021-2031 Forest management Plan".*

Our interviews with LCC members indicated they were satisfied with the efforts by MLFI and MNRF to respond to questions, provide information and seek their views on forest management activities.

4.3 Forest Management Planning

The 2021-2031 FMP was prepared in accordance with the 2020 Forest Management Planning Manual (FMPM) and its identified phase-in requirements. As per these requirements, the 2017 FMPM was used up to the completion of Stage Two: Review of the Proposed Long-Term Management Direction (LTMD) with the remainder of the plan prepared per the direction of the 2020 FMPM. All progress checkpoints (e.g., planning inventory, management objectives checkpoint, LTMD checkpoint) were confirmed and documented in the Analysis Package[15]. The FMP was submitted late. The delays were attributed to several factors including staff turnovers (at both the SFL and MNRF), delays associated with the consultation process because of the COVID pandemic and the late delivery and quality issues with the eFRI.

As a result of the delays in plan production, four Short-Term Plan Extensions[16] to the 2011 FMP were required to enable the operations prior to the approval of the 2021-2031 FMP. The inherent complexity of the land base (e.g., Algonquin Land Claims process, prevalence of private lands, complex stand attributes, Species at Risk) also contributed to some of the delays. Despite these difficulties a high-quality FMP was developed and approved on January 27, 2022.

[15] A discrepancy between the date of the Stage 5 consultation in the FMP documentation (i.e., Summary of Public Consultation, Final Plan) was noted due to the fact that the delays in plan production resulted in the date being changed multiple times.

[16] Short Term Extensions were approved as follows: April-June 2021, July-September 2021, October-December 2021, and January-March 2022.

The 2020 FMPM short term extension proposal requirements were met for all submissions and the requests were approved by the MNRF. It is noteworthy that there was not a requirement for public consultation processes as all areas of operations (e.g., harvest, renewal, tending etc.) had been approved in the previous plan and no new contingency areas were proposed. Public notification requirements per the 2020 FMPM were met. The extensions were rationalized to mitigate the negative impacts of the interruption of operations between approved FMPs. Negative impacts included increased forest management planning costs, interruptions to harvest activities, the cessation of road construction and maintenance and delays in the implementation of planned silviculture. The audit team concurred that requests for short-term extensions were warranted and supported by the background rationale put forward in the proposal letters.

Although not a requirement in the FMPM, there is no reference to the short-term extensions in the 2021-2031 FMP. The audit team believe some discussion in Section 1 of the FMP would benefit the public reader of the plan (i.e., there is not a specific start date to the plan on the certification page), however, we do not provide a finding as current FMPM standards were met. There is a discrepancy between the reported and the actual date of the Stage 5 Consultation between the Final Plan and other documentation. This discrepancy was attributed to the multiple failures to meet plan submission dates and staffing changes that occurred during the planning process. A finding is not provided as the oversight is minor and inconsequential to the delivery of the forest management program.

Annual Work Schedules (AWSs) and Annual Reports (ARs) were appropriately revised to reflect and report on operations and activities associated with the extensions.

Information sources for the development of the 2021-2031 plan included previous FMPs, MNRF guides and planning directions, Annual Reports (ARs) and past IFAs. Operational prescriptions for AOCs were consistent with the Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales (Stand and Site Guide). An analysis of silvicultural activities and past silvicultural performance was completed by a Registered Professional Forester (R.P.F.) to develop growth and yield projections, post-harvest succession rules and silviculture treatment options consistent with local forest conditions and contemporary silviculture practices.

For the six-year audit period the planned yield was estimated to be 2.05 million m^3 of net merchantable pulpwood and sawlog material (excluding undersized and defect material). The actual yield was 376,068 m^3 or 18% of planned utilization[17]. The variance between actual harvest area and actual volume realized compared to planned levels was attributed to inaccuracies in the forest resource inventory and yield curves, and factors such as tree quality, tree size and other stand attributes (e.g. site, stand species

[17] For the period of the audit, planned harvest, renewal and tending numbers were taken from the 2011-2021 Phase 2 FMP. Those amounts were annualized. As year 6 (2021-22) of the audit period was an extension to the 2011-21 FMP, the annualized numbers from Phase 2 were applied.

composition etc.). In the forest management planning process growth and yield data is derived from yield curves developed for each forest unit and modelled in MIST (Modeling and Inventory Support Tool) with the rationale for selecting the yield curve specifications provided. Yields are adjusted upwards or downwards based on accumulated harvest data. Work was undertaken to revise growth and yield curves in the development of the 2021-2031 plan. Volume data was not available to assess the accuracy of the revised estimates.

The planning composite inventory was based on 2007 imagery updated in 2017 for harvest and natural depletions, regeneration and Free-to-Grow FTG survey results, ownership and regulated provincial park and conservation reserve boundaries in a geographic information system (GIS).

Plan objectives, indicators[18], desirable levels and targets for harvest and wildlife were developed by the Planning Team with input from the LCC, and MNRF advisors. The outcomes of a Desired Forest Benefits Meeting also informed the development of objectives and targets. We note that the Planning Team strived to provide new opportunities for the meaningful and increased involvement of Aboriginal people in the planning process. The audit team was informed that this approach resulted in a more meaningful consideration of Aboriginal concerns, incorporation of Traditional Ecological Knowledge for mapping and protecting Indigenous values and a better understanding of the holistic approach to forest management planning.

The Strategic Forest Management Model (SFMM)[19] was utilized to model timber production capabilities and landscape indicators at various levels of management intensity. Base assumptions and constraints for management are detailed in the FMP Analysis Package and were in accordance with the direction(s) in the FMPM.

Targets were developed with consideration of historic wood utilization and current wood requirements and other social, economic, and environmental considerations. The overall wood volume was reduced from levels in the 2011 FMP but planned volumes are still above the Industrial Wood Requirements and the projected utilization rate[20]. There is one wood supply commitment to make merchantable wood fibre available to Lavern Heidemen & Sons Limited's sawmill in Eganville, Ontario outlined in Appendix E of the amended SFL document. As the shareholder's agreements constitutes a memorandum of agreement (MOA) for the purposes of Supply Agreement # 536265, no additional MOA is in place. MLFI is to make available on the open market during the five-year term of each FMP, 41% of the sawlog and veneer-quality log component of the harvest to a maximum of 62,500 m^3 and 13% of the pulpwood component of the

[18] The FMP established 14 management objectives with 26 indicators of objective achievement.
[19] SFMM is a non-spatial model based on linear programming techniques that is used to assess the capability of a forest to meet FMP objectives at various levels of management intensity. The tool is also used to evaluate the potential of any number of aggregated forest units to provide resource benefits at multiple scales by assessing outcomes for wood supply, wildlife habitat and forest diversity and other forest sustainability indicators (ML FMP Analysis Package).
[20] Utilization targets were set at >75% of the planned forest unit harvest area.

harvest, to a maximum of 23,700 m^3. This wood is subject to the conditions outlined in Appendix F of the SFL which states that wood is also made available for harvest through tendered timber sales, and wood waste in cutovers is available to the public for fuelwood.

Our interviews indicated that allocations were maintained to account for the possibility of new market entrants and to provide some flexibility for operators to address issues such as access, adverse weather, undocumented values or other unforeseen situations including markets within their traditional operating areas. While the recommendations in previous IFAs and ARs highlight the risks of the on-going inability to achieve planned harvest targets it is noteworthy that the scoping analysis and risk assessment models demonstrate that more than half of the plan objectives can be achieved in low utilization scenarios. Based on the foregoing discussion we concur with the utilization strategy adopted.

The development of the LTMD considered several management unit specific issues; Beech Bark Disease (BBD)[21], Operational Bypass[22], Utilization, Non-fire disturbance modelling[23] and climate change. Two Strategic Management Zones (SMZs) were identified; the Madawaska Highlands and the Mazinaw-Lanark Forest Zone. We note that the spatial distribution of harvest is balanced across the SMZs, for at least 40 years implying that wood supply will be relatively consistent geographically. Deer Wintering Emphasis Areas (DWEA) and Moose Emphasis Areas (MEA) were also identified and subject to Conditions on Regular Operations (CROs).

The LTMD was deemed to provide a realistic available harvest area and volume projections that met current mill demands and allowed for new market entrants, although there is an expected shortfall in poplar and white birch volumes in the long term and the variation between modeled management terms is greater than desired.

Product yield proportions (i.e., sawlog vs. pulp), and volume yields were appropriately developed in consultation with licensees, and reviews of data in past Annual Reports (ARs) and experience on nearby Forests. The post-harvest successional pathways[24] were developed based on an analysis of past performance.

Although the selected scenario indicates progress with respect to the Forest Management Guide for Great Lakes-St. Lawrence Landscapes direction for creating forest structure and composition, targets for reductions in the amount of tolerant

[21] The MLF is described as an “Aftermath Forest” that has been affected by BBD for a long period of time with canopy gaps and associated dense thickets of beech regeneration that prevent the recruitment of other tree species.
[22] Previous plans had not fully reflected the proportion of the allocated harvest area that would be unavailable due to operational constraints (i.e., steep slopes, lowland areas etc.).
[23] The negative impacts of wind disturbance are highlighted in the previous IFA. The analysis of wind disturbance on patterns and natural succession pathways is not commonly incorporated in the planning process.
[24] The process by which the mix of species and habitat in an area change over time following a harvest.

hardwood and mixed forest types were not fully achieved. The challenge to move Landscape Classes towards their simulated ranges of natural variation (SRNV) is constrained by the relatively small area available for forest management (approximately 50% of the land base). Additionally, the trend of natural succession to tolerant hardwood cover types on a significant proportion of the Forest further hinders the capacity of forest managers to significantly affect landscape level forest cover type changes in the absence of increased harvest or significant natural disturbance events. Continued low harvests are projected to contribute to a continued build-up of areas of mature and old forest. As such, it is evident that an inability to achieve projected harvest levels will pose a significant management challenge to the achievement of LTMD objectives and indicators.

We concluded that the interpretation of the projected trends in the modelling exercise were valid and that the LTMD achieved a satisfactory balance of all objectives and indicators. The LTMD was consistent with legislation and policy, and appropriately considered the directions in the forest management guides and provided for forest sustainability.

Proposed forest management operations were consistent with the LTMD. Operational prescriptions were prepared in accordance with the Forest Management Guide for Conservation of Biodiversity at the Stand and Site scales (Stand and Site Guide). Wildlife habitat assessments and management strategies utilized a broad ecosystem approach (coarse filter). Area of Concern (AOC) prescriptions were developed according to broad categories[25] and documented in FMP Table 11.

The FMP was not designated as a Section 18 *Overall Benefit Instrument under the Endangered Species Act* (ESA) and was prepared under the regulatory exemption for Crown forestry (O.Reg.242/08 s.22.2.). As such, a summary of monitoring for species at risk (SAR), and the Supplementary Documentation required by Part B, Section 4.7.5 of the 2017 FMPM, was not required. While forest operations are exempt from the permitting process under the ESA, there is still a requirement for SAR to be protected. Protection is provided through Area of Concern (AOC) prescriptions and ensuring implementation of those prescriptions during operations (as required in Ontario Regulation 242/08 Section 22.1.)[26]. For the plan term, there are no requirements or conditions related to SAR that required the implementation of a monitoring program. SAR were appropriately considered during planning. Habitat descriptions, the application of guidelines and operational prescriptions are provided in the plan text.

Some operational prescriptions allow for flexibility in extraordinary circumstances where modified activities would not have an adverse effect on the AOC objective (e.g.,

[25] AOCs were grouped into the following broad categories, Indigenous, Biodiversity and Wildlife, Cultural, Social and Economic, and Operational for conditions on roads, landings, and forestry aggregate pits.

[26] Where a Species at Risk's habitat feature, such as a nest, den or hibernacula is encountered during implementation of forest operations and no applicable AOC for the species is documented in the FMP, forest operations are to be suspended in the site-specific feature, application is to be made to MNRF for an AOC to be amended into the FMP, as required in Ontario Regulation 242/08 Section 22.1.

operational timing). We note that some operational flexibility is linked to formal operator training. For example, some AOC timing restrictions address protection for turtles utilizing roads. Close cooperation between the MNRF and MLFI includes specific training for operators to understand, identify and respond to the issue. For operators who have completed that training some of the timing restrictions may be relaxed. This is an excellent example of a cooperative and pragmatic educational program by the MNRF and MLFI (Best Practice # 1).

Our document review and interviews with MLFI and MNRF staff indicated that timing of MNRF values surveys in advance of operational marking is challenging particularly at plan onset (Phase I and Phase II) when a significant number of stands are identified for operations. Measures implemented to address the issue include SAR values training for operators, refining AWS submissions, ongoing communications, exploring potential GIS applications, etc. Both organizations worked cooperatively to ensure the schedule for the start-up of operations start-up were met.

Planned operations met the intent of the LTMD with operational prescriptions and conditions for AOCs developed in accordance with the requirements of the FMPM. All Operational planning for AOCs considered the direction and recommendations in forest management guides. As such, there was no requirement for an exceptions' monitoring program.

The MLF contains an extensive road network requiring that only 2.2 km of new branch roads be constructed during the audit period. Road locations are also constrained by AOC requirements and existing land use directions. The 2021 FMP Supplementary Documentation provides direction on primary roads that includes an environmental analysis of alternate primary road corridors, use management strategies and access provisions. We conclude that access planning was well done and met FMPM, AWS and guideline requirements.

We note that a decision was made (Steering Committee Meeting October 15, 2020) to reassess some of the roads planning requirements after the approval of the FMP. Items to be assessed included clarification and direction on road responsibility, road transfer protocol, clarification, and updates to road classifications. The updated road documents were to be incorporated in the FMP by amendment. We were informed that work and dialogue on these issues remains ongoing.

There were no amendments associated with the 2021-2031 FMP and nine administrative amendments to the 2011-2021 FMP within the scope of the audit. The amendments were prepared in accordance with the requirements of the FMPM and FIM and were consistent with the FMP.

The content of AWSs conformed to FMPM and Forest Information Manual (FIM) requirements. Proposed forest management activities were consistent with the FMPs.

We concluded that the 2021 FMP is well-written and met the requirements of the applicable FMPM documents or Phase-In provisions. The Short-term extensions met

FMPM requirements and FMP objectives, and targets are consistent with the achievement of forest sustainability.

4.4 Plan Assessment and Implementation

Our field assessments confirmed that Silvicultural Ground Rules[27] (SGRs), Silvicultural Treatment Packages[28] (STPs) and Forest Operations Prescriptions (FOPs) were appropriate for the forest cover types and site conditions. SGRs were appropriately updated/confirmed in the SGR update layer per AR requirements.

Harvest

Harvesting is conducted by twenty Forest Resource Licence holders (FRLs) under Overlapping Licence Agreements (OLLs) with MLFI. The OLLs are responsible for planning access to harvest blocks and conducting forest operations. Operations are typically scheduled within their traditional operating areas. A range of harvesting equipment is utilized depending on the scale of the contractor's operations and terrain. Typically, feller-bunchers or cut-to-length harvesters are used in combination with grapple skidders or forwarders. Harvest operations utilized the clearcut, selection or shelterwood silvicultural systems. Generally, shelterwood stands are managed using a two-cut system consisting of a seed cut and a final removal cut when the target regeneration species has achieved the SGR height standard. All harvests were consistent with the directions in the Annual Work Schedules (AWS).

The audit team concluded that the SFL holder did a credible job managing harvest allocations and operations given the inherent challenges associated with managing the significant number of licensees with preferences to harvest within their traditional areas and/or cut certain species.

The planned harvest area for the audit period was 28,266 hectares. The actual audit period harvest area was 28% planned (Table 3) The lower than planned harvest level was attributed to;

1. Restrictions for areas of concern (e.g., timing restrictions[29]).
2. Reductions in harvest capacity.
3. Competition from private land wood supply.

[27] Silvicultural Ground Rules 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.
[28] A Silvicultural Treatment Package is the path of silvicultural 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.
[29] Timing restrictions limit operations during a prescribed period of the year and can increase the cost and complexity of harvest operations

4. Market conditions for some forest types and species groups that have high levels of pulpwood volumes.

As previously noted, the inability to achieve planned harvest targets had implications with respect to the achievement of other planned silvicultural activities which follow harvesting, and will, should the trend continue, affect the achievement of objectives related to habitat supply, forest age class distributions and future wood supply.

The challenge to move Landscape Classes towards their simulated range of natural variation (SRNV) is also constrained by the relatively small area available for forest management (approximately 50% of the Forest's land base). Additionally, the trend of natural succession to tolerant hardwood cover types on a significant proportion of the Forest, further hinders the capacity of forest managers to significantly affect landscape level forest cover type changes in the absence of increased harvest or significant natural disturbance events. Continued low harvests are projected to contribute to a continued build-up of areas of mature and old forest and the inability to achieve projected harvest levels will pose a significant management challenge to the achievement of LTMD objectives and indicators. It is noteworthy that the derecho storm in May 2022, will result in area shifts to younger age cohorts with the toppling of mature forest stands in the storm's path.

All inspected sites were approved for operations in the Annual Work Schedules (AWSs) and harvest prescriptions were implemented in accordance with the SGRs and required guidelines. Area of Concern prescriptions were properly implemented. Operator due diligence and care to minimize site damage and damage to residual stems was evident on all the inspected sites.

To facilitate the development of tree marking prescriptions all stands are assessed prior to the development of the forest operation prescription (FOP). Information is collected on species composition, basal area by size class, stem quality, stand height, soil, stand history and the status of regeneration.

Experienced certified tree markers (MLFI staff or contractors) conducted all tree marking operations for selection and shelterwood cuts. Marking quality is audited by MLFI with a minimum quality threshold of 93% required for contractor payment[30]. Stands are re-marked in instances when the threshold is not achieved. Marking prescriptions were appropriately prepared by a Registered Professional Forester (R.P.F.). Tree marking standards followed the accepted SGR's and the tree marking principles in the Ontario Tree Marking Guide (TMG) and Stand and Site Guide were implemented. MNRF staff conducts formal, informal and joint site inspections of pre-harvest and post-harvest marked stands.

The applications of selection and shelterwood silviculture systems within harvest blocks were inspected. In general, the applicable SGRs were properly applied through the

[30] Tree marking must achieve the Provincial Minimum Standard of 90%, a result of 93% or less requires a review of circumstances and/or remarking to ensure that all silvicultural objectives are achieved.

provided FOPs, and silvicultural treatments have resulted in specified regeneration standards being met. Selection harvested stands showed appropriate regeneration primarily through natural means, with no supplemental planting necessary. Clearcutting was not widely adopted as a silviculture treatment reflecting the limited area of forest units suitable for the treatment (approximately 10% of harvest operations). Clearcut blocks inspected generally met regeneration standards to intolerant and mid-tolerant species. The auditors did inspect two sites planned for stand conversion to red pine by artificial renewal. The treatment had not been implemented and the sites had transitioned to poplar. We concluded that the tracking and monitoring of silviculture treatments on some sites was deficient and provide a finding to address that concern (Finding # 3).

Conifer shelterwood stands generally showed adherence to SGR regeneration standard, except in a few notable instances where recent salvage operations following the derecho event resulted in regeneration mortality. For deciduous shelterwood stands, especially red oak shelterwood, ironwood and poplar regeneration following harvest was often observed, however; this was not found to negatively impact meeting regeneration targets as specified with the applicable SGR. Pre-harvest tree marking was observed on two sites[31]. Tree marking was consistently in compliance with the relevant FOPs. Residual basal areas, wildlife tree identification and retention, as well as identification and delineation of existing values within the harvest area was investigated and found to be consistent. All tree marking sites had tree marking audits performed and demonstrated a passing Tree Marking Quality score. Appropriate tree marking practices support objectives to maintain or improve forest health and biodiversity and ensure a continuous supply of high-quality timber (on appropriate sites) by maintaining and enhancing timber quality and yield through the application of appropriate silvicultural techniques.

We note that for several of the inspected stands, tree markers were delegated responsibility to determine the best silvicultural treatment for stand management. The direction in the TMG permits tree markers to shift the marking approach from a selection harvest to uniform or irregular shelterwood to improve overall stand quality and to reset previous silvicultural applications administered in the management of the stand. The shift from one SGR to another was appropriately documented based on the majority balance of stand conditions encountered within the sampled harvest block and input into the geographic information system (GIS) to facilitate inventory updates and management planning. Residual basal area targets were achieved in all the marked stands inspected. The audit team found the tree marking program was delivered with a high degree of technical expertise.

[31] Block IDs 168 and 21_036.

Table 3 Actual vs. Planned Harvest Area (Ha) by Forest Unit (2016-2022)

Forest Unit	Planned Harvest Ha	Actual Harvest Ha	Actual vs Planned %
HDsel	10,256	2,247	21
HDus	2,205	1,529	69
MXHcc	2,046	480	23
ORus	4,576	1,029	22
INTcc	1,213	89	7
CEsel	54	1	.2
MXCcc	197	73	37
PRcc	223	102	46
PWus	6,676	1,954	29
HEsel	820	447	54
Total	**28,266**	**7,851**	**28**

Source: 2016-2021 Annual Reports (2021-22 figures included are estimates).

As outlined above, only 28% of the planned forest area was harvested (26% of planned conifer and 32% of planned hardwoods by forest unit. A high pulpwood component frequently makes many stands uneconomical to harvest under typical market conditions. Pulp-quality wood derived from species other than poplar exceeds current demand. Markets for pulp-quality conifer did not exist. The marketability of some mixedwood stands is complicated by the situation that demand for white/red pine sawlogs is high but due to the high concentrations of unmarketable species the marketable stems must be retained to achieve stand silviculture objectives/requirements. To address the over-supply of pulp-quality material four strategies were adopted by the planning team 1) stand deferrals in instances where greater than 50% of the stand was comprised of unmarketable species, 2) deferring areas of stands dominated by unmarketable species, 3) felling/lopping of merchantable-sized unmarketable stems and 4) retaining the material on site (this approach provides for the removal of mid-story and understory stems necessary for pine or oak renewal) or the adoption of high intensity harvest methods such as irregular shelterwood in selection stands or seed tree cuts in shelterwood stands.

It is also important to note that, 1,912 hectares were bypassed due to physical limitations, ownership access issues, sensitive sites, merchantability and deferral. This bypass was managed in the 2021-31 plan by removing it from the eligible harvest area.

Salvage operations were conducted on 61.7 ha affected by dieback caused by drought and repeated defoliation by forest tent caterpillar and 12.6 ha affected by wind damage. SFL conditions for salvage operations were met.

During the audit period, 130,838 m^3 of conifer was harvested and 245,240 m^3 of hardwood, 14% and 17% of planned respectively. The SFL contains provisions that

enables MLFI to make available tendered wood sales[32]. During the audit period tendered wood sales accounted for 14,112 m^3 of the volume utilized. The 2016 IFA (Recommendation # 9) recommended that the forest manager increase tendered sales. We determined that this recommendation has been addressed to the extent possible under prevailing market conditions.

We concluded that, with a few exceptions, harvest operations were properly implemented (See Section 4.6 Monitoring).

Slash Management

The application of silvicultural systems which retain slash and logging debris on site rather than at roadside landings significantly reduced debris at roadside or at landings. Logging debris is also made available as fuelwood to the public.

Area of Concern Management

AOC operational prescriptions and conditions for operations are provided in FMP Table-11. The requirements of the Endangered Species Act (ESA) are addressed through the AOC prescriptions and Conditions on Regulator Operations[33] (CROs). The MNRF has identified five endangered species, ten threatened species and twenty-two species of concern.

MNRF staff assess the requirement for additional values surveys when reviewing AWS documents. During marking operations, if an unmapped value is encountered, there is a formal process documented in the FMP which requires MLFI to notify the MNRF of the value for inclusion in a values database and to implement the appropriate FMP AOC prescription to ensure the value is not compromised by operations.

No Resource Stewardship Agreements were signed with tourism operators as resource-based tourism facilities are located on private land and AOC prescriptions were deemed to be sufficient to protect and/or maintain recreational values.

Our sampling of AOC prescriptions confirmed that they were in accordance with guidelines and were appropriate for the protection and/or maintenance of the identified value.

Site Preparation (SIP)

FMP targets for site preparation were not achieved (32% of the forecast area) principally due to the reduced harvest level, the silvicultural systems utilized (e.g.,

[32] 20% of the available volume from the former Mazinaw Management Unit and 7% from the former Lanark Forest. 23,604 m^3 was forecast for the audit period.

[33] CROs provide direction on ecological features (e.g., nests, etc.) encountered during forest operations that are not within established AOCs. CRO categories are described in the FMP with an identifier code (e.g., CRO-woodland pools).

selection and shelterwood cuts) and a lack of area conducive to chemical and mechanical treatments (Table 4).

During the audit period, mechanical site preparation was conducted by a root rake mounted on a skidder. Our site inspections found debris were piled on non-productive areas (i.e., exposed rock) where available, and that the treatment facilitated natural seeding. We did not observe incidences of environmental damage associated with the activity.

Chemical site preparation treatments were conducted on 195 ha. Treatments were by ground spray techniques (e.g., air blast, manual) and appeared to be effective in achieving initial vegetation control and natural renewal.

Table 4 Area (Ha) of Actual vs. Planned Site Preparation (2016-2022)

Site Preparation Treatments	Planned Ha	Actual Ha	Actual vs Planned %
Mechanical SIP	1,513	402	27
Chemical SIP	312	195	62
SIP Total	**1,825**	**592**	**32**

Source: 2016-2021 Annual Reports (2021-22 figures included are estimates).

Renewal

Table 5 presents the planned vs actual area renewed. The area renewed (artificial and natural) constitutes 75% of the reported area harvested. Levels of renewal (artificial and natural) are below planned targets because of the lower than planned harvest.

Artificial renewal was typically adopted to establish or augment pine renewal. Natural renewal was adopted for stands managed under the selection or shelterwood silviculture system which are conducive to the natural regeneration of mid-tolerant and tolerant hardwoods.

Areas managed for white pine typically showed adequate stocking levels to pine. On sites where the canopy was more open, competition from other vegetation may necessitate multiple tending interventions and/or in-fill planting may be required to achieve the stocking standard.

Areas managed for hardwoods under the even-age and uneven-age harvest systems were typically well stocked to desired species.

Artificial renewal treatments were generally effective with stocking levels ranging from adequate to good on most of the inspected sites. There is a strong requirement to monitor renewal sites as sites on the MLF can be characterized as rich and competition from non-crop species can be severe and detrimental to the desired crop trees (Finding # 3).

Table 5 Area (Ha) of Actual vs. Planned Renewal Treatments (2016-2022).

Renewal Treatments	Planned (Ha)	Actual (Ha)	Actual vs Planned %
Natural Renewal			
Irregular and Uniform Shelterwood	12,230	1,599	13
Selection	9,937	2,133	21
Clearcut	3,291	1,625	49
Artificial Renewal – Plant	1,404	561	40
Total Renewal	**28,862**	**5,918**	**22**

Source: 2016-2021 Annual Reports (2021-22 figures included are estimates).

Renewal Support

MLFI in partnership with several organizations shares management responsibilities for the Taylor Lake White Pine Seed Orchard situated in the Lanark County. The Ferguson Forest Centre in Kemptville stores seed and produces planting stock for MLFI. White pine seed is sufficient but there has been a noted lack of collection of red pine seed to maintain inventory requirements. Based on recommendations from the Forest Gene Conservation Association the SFL holder is investigating possible sources of seed from other seed zones. We do not provide a finding as the issue of seed collection requirements is well-known and increases in the inventory of red pine seed is subject to seed crop limitations.

Tending

Table 6 presents the planned vs actual area treated by tending during the audit period.

Table 6 Area (Ha) of Actual vs. Planned Tending Treatments (2016-2022).

Tending Treatments	Planned (Ha)	Actual (Ha)	Actual vs Planned %
Manual	1,116	279	25
Chemical – Ground	20	0	0
Precommercial Thinning	895	234	26
Total Tending	**2,031**	**513**	**25**

Source: 2016-2021 Annual Reports (2021-22 figures included are estimates).

Precommercial thinning occurred on 234 ha. Without thinning interventions site productivity will not be maximized and potential future economic opportunities will be lost.

Protection

No protection programs other than monitoring functions were implemented during the audit period.

Access Management

Forest access was constructed in accordance with the FMP, AWS and relevant forest management guidelines with construction and maintenance responsibilities assigned to individual FRLs.

During the audit period, there was 2.2 km of branch road construction and 23 km of operational road construction. One operational road was decommissioned.

Access controls (gates and signs) within the Madawaska Highlands were in accordance with the direction in the "*Guidelines for Closing and Abandoning Forest Access Roads within the Madawaska Highlands*".

Four water crossings were inspected and found to be well-constructed. No instances of environmental damage or public safety concerns related to water crossings were observed.

Seven hundred and sixty-three kilometers of primary and branch roads were maintained, of which $2.5 million in maintenance costs was covered by the Crown and an additional $502,000 by the SFL holder.

4.5 Systems Support

MLFI met the 2022 IFAPP Human Resources and Information Management requirements through its FSC certification. We did have a concern with the internet technology available at the Cloyne Office. The current internet service is broadband. Digital file transfer is slow and unreliable for the delivery of some forest management planning initiatives (i.e., planning team meetings, consultation processes, information sharing and transferring of files). An appropriate back-up system and process was in place. We were informed that employees in Cloyne often work from their homes in adjacent areas, with reliable services, to facilitate communications, file transfers and other digital work.

Work is underway to migrate computer records and systems to the FRMG platform in New Liskeard with the intent that the GIS system will be cloud-based and non-GIS information managed with Microsoft SharePoint[34]. Never-the-less, reliable internet service is an essential for the efficient operation of businesses dependent on digital information and digital technology. Inefficient internet services results in lost time and low productivity adding costs to operations (Finding # 1).

[34] SharePoint will be used to share and manage information content and applications and facilitate teamwork and communications amongst staff and partners across the FRMG network.

The MNRF Bancroft District has current organization charts. Files are retained with individual staff members or entered/updated into District and/or Provincial data systems. Generally, current staff training is relevant to their responsibilities.

4.6 Monitoring

The 2021-2031 FMP contained Compliance Plans as required by the FMPM and in accordance with the Guidelines for Industry Compliance Planning.

The Bancroft District prepared Annual Compliance Operating Plans (ACOPs) that identify priority areas, targets and assigned staff responsibilities on behalf of the three MNRF Districts. Inspection activities documented in the Forest Operations Information Program (FOIP) over the audit period generally reflected directions in both the FMP and MNRF Compliance Plans. Inspection approvals and submissions to FOIP by both MLF and the MNRF generally adhered to submission deadlines.

During the audit period, MLFI and the Bancroft District MNRF completed 271 inspections. MNRF completed approximately 12% (33)[35] while MLFI completed 238 inspections (87%). There were 13 Not-in-Compliance findings. (95 % in-compliance rate). The most common issues associated with operations compliance occurred around standards associated with AOCs. Most non-compliance issues were rectified through communication, training, and the voluntary cooperation of the licensee.

The 2011-2016 IFA provided a Recommendation (#15) directed at the continuing poor compliance record of a specific Licensee. One Licensee was assessed eight of the nine penalties levied during that audit period as well as the majority of identified Operational Issues. The 2016 IFA auditors noted that the Licensee's poor compliance performance had been identified in two previous IFAs. In this audit period, the problematic Licensee accounted for 4 of the 13 Not-in-Compliance filings (32%). Our interviews and document reviews indicate that while there is evidence of improved performance by the Licensee in the final years of the audit period, a compliance risk remains (Finding # 5).

<u>Monitoring of Silvicultural Activities</u>

If forest sustainability and FMP objectives are to be achieved, timely and appropriate silviculture treatments are required to ensure that investments in forest management are not lost and that forest operations prescriptions achieve the desired forest unit.

In accordance with the FMPM, FIM, and Forest Operations and Silviculture Manual (FOSM), a monitoring program must be developed and implemented to determine the effectiveness of silvicultural treatments. The SFL holder is required to assess and report the overall effectiveness of those treatments. MLFI staff monitor silviculture effectiveness through regular assessments, ad-hoc observations and in some instances

[35] The number of MNRF compliance inspections is a function of a risk-based assessment which considers the compliance history on the management unit. In the audit team's experience, the sample is typically between 10-15%.

site-specific analyses. During the field audit several sites were encountered where renewal (natural or in-fill planting) would have benefited from the timely delivery of follow-up tending treatments to assist in either the establishment of regeneration or its release from competing vegetation. In addition to tending interventions, some of the sites inspected would have benefited from artificial renewal treatments (initial or in-fill planting) to establish the target species or augment the existing stocking levels of desired species. We concluded that in some instances poor post-harvest tracking and monitoring of harvest stands resulted in the failure to implement appropriate and timely silviculture treatments which contributed to either regeneration or silviculture failures (Finding # 4)

Free to Grow Survey (FTG)

FTG surveys are not formally completed in tolerant hardwood stands managed using the selection and shelterwood systems. Tolerant hardwoods regenerate vigorously and are not prone to site competition by conifer or intolerant species.

During the audit period 1,708 ha were assessed FTG status with all areas declared FTG. A small backlog in the area requiring FTG survey exists due to issues with a contractor.

Our field sampling (visual assessments) of FTG survey blocks substantiated the free-to-grow condition.

Assessment of Past Silviculture Performance

Performance assessments were not completed during the 2011-2021 FMP as they were not required under the 2009 FMPM.

Silviculture Effectiveness Monitoring (SEM)

A key principle of Ontario's Forest Policy Framework is to ensure that regeneration efforts are achieving the standards in the FMP. The effectiveness of forest operation prescriptions in achieving the desired forest unit must be understood to facilitate reporting on forest sustainability and to provide reliable information for forest management planning.

The effectiveness of forest operations prescriptions in achieving the desired forest unit must be understood to provide reliable information for forest management planning (i.e., development of SGRs, Sustainable Forest Management Model (SFMM) inputs, FMP objectives). Information collected assists in the determination/assessment of the extent to which regeneration efforts meet the regeneration standard and also aids in the assessment (over time) of the effectiveness of the SFL holder silviculture program, conformance of silviculture activities with the FMP and forest sustainability.

The results of the MNRF SEM program were significantly inconsistent with the FTG results reported by the SFL holder. For example, in 2016, the MNRF surveyed 69

hectares (10% of the area released as FTG) and the MNRF silviculture success rate was 47% compared to the SFL holder's rate of 74%. A major contributing factor for the data variations and discrepancies is the application of different survey methodologies and sampling intensities. MNRF implements the SO-iSTARS methodology, while the SFL holder utilized three different sampling strategies for FTG assessment (SO-iSTARS, post-cut surveys, or extensive ocular estimations). All harvest blocks must be assessed by the SFL holder for the FTG condition. MNRF assesses a 10% sample of the areas declared FTG. The MNRF sampling strategy can be influenced by factors such as;

- A preference to survey sites with difficult FTG targets (i.e., white pine, red oak)
- Stand location (i.e., preference may be given to forest stands near/adjacent to other potential assessment areas).
- Stand accessibility.
- Stand area (i.e,. smaller stands are typically not identified as a priority for survey).

In 2018, the MNRF Regional Office did carry out a SEM training course for SFL holders and MNRF District staff. MNRF also extended an invitation to the SFL holder to discuss SEM results. Unfortunately, the inconsistent results were not fully discussed nor addressed. We concluded that the SEM program as implemented is not fully functional as a monitoring program. The programs audit function is undermined by the inherent variability in the data generated when different survey methodologies and/or sampling intensities are utilized (Finding # 4).

We were also informed of the impact of severe, repeated, and widespread wildlife browsing (deer and moose) on desirable regeneration. This problem has been well documented in ARs and past IFAs and has given rise to silvicultural failure or low regeneration success rates. Red oak renewal has been the most affected although impacts have been observed on white pine, red pine, hemlock, sugar maple and yellow birch. MLFI is tracking browse damage as a component of its SEM program as FMP long-term forest cover objectives could be negatively impacted by successive failures to establish desired species.

Exceptions Monitoring

Exceptions monitoring is carried out to determine the effectiveness of prescriptions in forest management plans that are "*not recommended*" in the MNRF forest management guides. There are no exceptions to the approved forest management guides in the 2021-2031 FMP, therefore; exceptions monitoring is not required.

Monitoring of Forest-Related Species at Risk

No monitoring programs for forest-related SAR were included in the FMP.

Forest Renewal Trust Specified Procedures Report

The Forest Renewal Trust (FRT) provides dedicated funding (reimbursement of silviculture expenses) to renew the forest according to the standards specified in the FMP. Our inspections and document review of activities invoiced in the "*Forest Renewal Trust Specified Procedures Report"* (SPR) confirmed that FRT payments were for eligible silviculture work.

Monitoring of Roads and Water Crossings

MLFI staff and the OLLs monitor roads and water crossings through the course of normal operations. Primary access and branch roads were well maintained. The status and classification of roads is updated and reviewed with the development of the forest management plan and a roads inventory is maintained.

Aggregate Pits

Standards for Forestry Aggregate Pits are included in the FMP document. The audit team inspected four pits and with the notable exception of one pit there were no significant non-compliances related to pit operations. The non-compliant pit had a significant safety issue and MLFI staff took immediate measures to address the issue upon its discovery. Since the issue was immediately addressed and was not symptomatic of a broader issue with pit management, a finding is not provided.

Annual Reports (ARs)

ARs were available for each year in the audit scope except for the 2021-2022 AR, which is not required until November 15, 2022. FMPM timelines for the submission and/or resubmission of ARs was not consistently met by the SFL holder. The MNRF review of the 2019-2020 AR resubmission was not completed during the audit period.

The late submission of ARs was the focus of Recommendation # 16 of the 2011-2016 IFA (Finding # 2).

4.7 Achievement of Management Objectives & Forest Sustainability

FMP objectives are monitored annually (as appropriate) and formally reported in Annual Reports. FMP objectives and associated desirable levels (and targets) were generally achieved during the development of the LTMD. Appendix 2 provides more details on our assessment of plan objective achievement. Based on our site inspections, interviews and document reviews the audit team concludes, that on balance forest sustainability, as assessed by the IFAPP, is not at risk. This conclusion is premised on the following findings and observations:

- Forest management was planned and implemented in accordance with the CFSA and FMP targets are consistent with the achievement of plan objectives and forest sustainability.

- Forest management modeling demonstrated that the planned operations met the intent of the LTMD and even under reduced harvest many FMP objectives or targets were attainable.

- The Planning Team was duly constituted with active representation from several Aboriginal communities.

- The 2021-2031 FMP followed the standards and guidelines of MNRF's approved forest management guides to mitigate, minimize, or prevent potential adverse effects of forest operations on values.

- MLFI maintained its Forest Stewardship Council Certification throughout the audit period.

- On balance an effective field silviculture program was delivered although we did find that silviculture monitoring and tracking was insufficient on some sites which resulted in regeneration or silvicultural failures.

- Forest operations were largely compliant with relatively few instances of non-compliance reported in FOIP (95% in compliance rate was achieved). The most common issues associated with operations compliance occurred around standards associated with AOCs.

- We did not observe any significant instances of environmental damage related to forest operations or wasteful practices.

- Silvicultural Ground Rules (SGRs) and Forest Operations Prescriptions (FOPs) were appropriate for the forest cover types and site conditions observed in the field.

- The recommendations of the 2011-2016 IFA with a few exceptions were addressed.

- The contractual obligations of the SFL holder were largely met.

4.8 Contractual Obligations

We concluded that MLFI is substantially in compliance with the terms and conditions of the SFL (Appendix 3).

The IFAPP requires auditors to assess the effectiveness of the actions developed to address the recommendations of the previous audit. The 2011-2016 IFA produced 20 recommendations. The required Action Plan and Action Plan Status Report were completed within the required timelines. Most recommendations were appropriately actioned (or work is on-going) with the exceptions of recurring failures to meet the submission schedule for Annual Reports (Finding # 2) and an on-going compliance risk associated with the operations of one Licensee (Finding # 5). Finding # 6 addresses the requirement to better action two recommendations from the 2011-2016 IFA.

The issue of planning for full utilization of the available harvest area was discussed in the previous audit and recommendations were provided to address volume reductions arising from wind events, to increase tendered wood sales and to align the planned harvest area more closely with actual historic cut levels. Reductions in available volume to account for losses arising from wind events and initiatives to expand tendered wood sales were implemented. We note that during FMP development overall wood volume was reduced from levels in the 2011 FMP but planned volumes are still above the industrial wood requirements and the projected utilization rate. This management decision was intended to account for unforeseen potential impacts on harvest operations (i.e., access, adverse weather) and to accommodate future new market entrants. It is noteworthy that despite the higher than historic utilization levels planned, the 2021-2031 FMP scoping analysis and risk assessment models demonstrate that more than half of the plan objectives can be achieved in low utilization scenarios. We caution that the continued low harvests are projected to contribute to a continued build-up of areas of mature and old forest which will have implications on wildlife habitat supply and other social and economic objectives.

The Forest Renewal Trust Fund minimum balance was maintained.

4.9 Concluding Statement

The implementation of COVID-19 protocols commencing in 2020 had significant implications on the delivery of the forest management program. Pandemic-related protocols and guidance resulted in challenges for the delivery of consultation processes for forest management plan development, collaborative planning amongst the planning team, document reviews and approvals, the delivery of planned surveys and other silvicultural field work.

The delivery of the forest management program is/was further complicated by issues such as staff turnovers at both the SFL (including a transition to a service provider for forest management services) and the MNRF District offices, the inherent complexity of the land base (e.g., Algonquin Land Claims process, prevalence of private lands, complex stand attributes, Species at Risk) and the late delivery the forest inventory product. Despite these difficulties an effective forest management program was delivered by the Ministry of Natural Resources and Forestry and Mazinaw-Lanark Forest Inc. The forest management planning process and the implementation of the forest management plans met all legal and regulatory requirements. FMP targets are

generally consistent with the achievement of plan objectives and forest sustainability (although the continued low harvests will pose a significant management challenge to the achievement of some LTMD objectives and indicators).

The audit team further concluded that the Sustainable Licence holder did a credible job planning harvest allocations and managing operations given the inherent challenges associated with managing a significant number of licensees with preferences to harvest within their traditional areas and/or cut certain species.

Based on our field site visits, the audit team concluded that, on balance, an effective silviculture program was delivered. The tailoring of tree marking to stand conditions will result in higher levels of silvicultural success in future management terms. The area renewed is generally in balance with the area harvested. Our field sampling (visual assessments) of FTG survey blocks substantiated the free-to-grow condition.

The audit team cautions that the continued low harvests are projected to contribute to a continued build-up of areas of mature and old forest which will have implications on wildlife habitat supply and other social and economic objectives

Although outside of the scope of this audit, the audit team cautions that the impacts of the derecho storm (May 2022) will have far-reaching and long-term consequences on forest structure and other stand attributes such as species composition and tree quality. This will impact the delivery of the forest management program and may have potential implications on wood supply (particularly within the traditional management areas of some licensees). Damage from the storm is widespread, affecting a large area of productive forest land, with many stands toppled. On many sites it is imperative that salvage operations occur immediately to recover merchantable timber prior to the onset of stain and/or rot in the downed material. Funding support is required, likely outside of the Forest Renewal Trust account, and perhaps through the Forestry Futures Trust, to facilitate the renewal of impacted areas back to productive forest, and to administer the management of recovery operations. In addition, the forest resource inventory needs to be updated to address the changed Forest Unit descriptions, and to facilitate and complete other forest management functions such as the preparation of FMP amendments to reflect the changes to the LTMD and management objectives, and other planned operations, (i.e., revised annual work schedules, and the preparation of revised forest operations prescriptions).

The audit identified some areas for improvement in forest operations and the delivery of the forest management program. The deficient tracking and monitoring of some harvested areas and renewal treatments resulted in regeneration and silviculture failures (Finding # 3). We are concerned that the Silviculture Effectiveness Monitoring program as implemented is not fully functional as a monitoring program (Finding # 4).

There were also some shortcomings with respect to the administration of the Forest. The FMPM schedule for the submission and/or resubmission of ARs were not consistently met (Finding # 2). Two recommendations from the 2011-2016 IFA had not been adequately addressed (Finding # 6) and there are persistent compliance issues associated with the forest operations of one operator (Finding # 5). The audit team also

found that the internet technology at the MLFI office in Cloyne is insufficient for effective operations of the organization (Finding # 1).

One best practice was identified for the initiative to better understand the specific habitat requirements of the Blanding's turtle and apply that knowledge to modify a previous Area of Concern prescription to mitigate potential impacts on forest management operations.

The audit team concludes that the management of the Mazinaw-Lanark Forest was generally in compliance with the legislation, regulations and policies that were in effect during the period covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Mazinaw-Lanark Forest Inc. # 542621. The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol.

Appendix 1

Findings

Independent Forest Audit – Record of Finding

Finding # 1

Principle 5: System Support

Audit Criterion # 5.2.: Document and record quality control

Procedure(s):

The auditee's information management system must include processes for identification, preparation, distribution, collection and maintenance of forest management documents and records.

Background Information and Summary of Evidence:

The Mazinaw-Lanark Forest Inc. is headquartered in the village of Cloyne, Ontario. FRMG Inc. staff assigned to the management unit work out of the Cloyne office as a satellite office to the organization's main office in New Liskeard. FRMG warehouses its data on a central server at that location. A server at the Cloyne office warehouses the MLFI geographic information system, silviculture records, compliance data and other information.

The current internet service is broadband. Digital file transfer is slow and unreliable, but appropriate back-up system and processes are in place. The auditors were informed that employees in Cloyne often work from their homes in adjacent areas (with reliable services) to facilitate communications, file transfers and other digital work.

Internet service in rural areas within the MLF is not stable and resulted in challenges for the delivery of some forest management planning initiatives (i.e., planning team meetings, consultation processes, information sharing and transferring of files).

Work is underway to migrate computer records and systems to the FRMG platform in New Liskeard with the intent that the GIS system will be cloud based and non-GIS information will be managed with Microsoft SharePoint. SharePoint will be used to share and manage information content and applications and facilitate teamwork and communications amongst staff and partners across the FRMG network.

Discussion and Conclusion:

Reliable internet service is an essential for the efficient operation of businesses dependent on digital information and digital technology. Inefficient internet services results in lost time and low productivity adding costs to operations.

Finding # 1:

Internet technology at the Mazinaw-Lanark Forest Inc. office in Cloyne is inefficient for the effective operations of the Sustainable Forest Licence Holder.

Independent Forest Audit – Record of Findings

Finding # 2

Principle 6.: Monitoring

Criterion # 6.5: Annual Reports

Procedure(s):

6.5.1. Determine if Annual Reports have been prepared in accordance with the applicable FMPM including associated deadlines.

Background Information and Summary of Evidence:

Annual Reports are to be submitted in accordance with the requirements of the Forest Management Planning Manual and the Forest Information Manual. The FMPM requires that "*An Annual Report will be prepared for each one-year period of the forest management plan and will be submitted by the following November 15*."

Recommendation # 16 of the 2016 IFA required the SFL to submit its ARs in accordance with the FMPM schedule. The Status Report indicates that "Significant *progress has been made on submitting Annual Reports on time and that no future tracking was required"*.

And "*MNRF will provide the results of the review to the author within 30 days of receipt. A revised annual report will be submitted by February 15, or 60 days from the receipt of MNRFs comments."*

The submission/resubmission and published dates for the ARs is shown in the table below. Apart from the 2016-2017 and 2021-2022 ARs, SFL initial submission dates were not met.

The FMPM deadline for the resubmission of ARs after the receipt of MNRF review comments were also not consistently met.

AR Year	Type	SFL Submission Date	MNRF Review Submitted	SFL Resubmission Date	AR Published Date
2016-2017	Regular	14/11/2017	13/12/2017	19/04/2018	8/05/2018
2017-2018	Enhanced	24/01/2019	4/04/2019	4/08/2022	24/08/2022
2018-2019	Regular	11/12/2019	10/01/2020	7/02/2020	19/02/2020

2019-2020	Regular	27/11/2020	17/12/2020	29/06/2022	NA
2020-2021	Regular	19/07/2022	NA	NA	NA
2021-2022	Enhanced	14/11/2022	14/12/2022		

Source: MNRF email.

Discussion and Conclusion:

FMPM schedules for the submission and/or resubmission of ARs were not consistently met. We were informed that staffing issues were the major contributing factor in the inability to meet the prescribed deadlines.

It is noteworthy that the MNRF review of the revised 2019-2020 AR resubmission was not completed during the audit period. This delay was attributed to other work commitments and priorities (i.e., administrative responsibilities associated with the salvage of derecho storm damage) and the lack of advance information confirming the resubmission date to facilitate the scheduling of the work.

Finding # 2:

Annual Reports were not consistently submitted and/or resubmitted in accordance with the Forest Management Planning Manual schedule.

Independent Forest Audit – Record of Finding

Finding # 3

Principle 6: Monitoring,

Audit Criterion # 6.3: Silviculture standards and assessment program

Procedure:

To review and assess whether an effective program exists to assess the status of regeneration in accordance with the applicable FMPM, FIM, FOSM.

Background information and summary of evidence:

In accordance with the FMPM, FIM, and FOSM, a monitoring program must be developed and implemented to determine the effectiveness of silvicultural treatments. The SFL holder is required to assess and report the overall effectiveness of those treatments. During the field audit several sites were encountered where renewal (natural or in-fill planting) would have benefited from the timely delivery of follow-up tending treatments to assist in either the establishment of regeneration or its release from competing vegetation. In addition to tending interventions, some of the sites inspected would have benefited from artificial renewal treatments (initial or in-fill planting) to establish the target species or augment the existing stocking levels of desired species.

Poor post-harvest tracking and monitoring of harvest stands resulted in the failure to implement appropriate silviculture treatments (on some of the inspected sites) which contributed to either regeneration or silviculture failures.

Discussion and Conclusion:

MLFI staff monitor silviculture effectiveness through regular assessments, ad-hoc observations and in some instances site-specific analyses. Despite these efforts, our field inspections indicated that some treated areas resulted in regeneration failures (due to intensive competition from raspberry and brambles) or a silviculture failure to achieve the desired forest unit. In most instances, the lack of tending was a significant contributing factor for the failure of harvested areas to achieve the projected forest unit.

If forest sustainability and FMP objectives are to be achieved, timely and appropriate silviculture treatments are required to ensure that investments in forest management are not lost and that forest operations prescriptions achieve the desired forest unit.

Interviews indicated that the tracking, monitoring and implementation of silviculture activities had been affected (to varying degrees) by human resource capacity issues, the transition to a

new forest management services provider in 2022, system challenges (e.g., access to shared computer services via remote internet) and issues associated with the COVID pandemic.
Finding # 3: Deficient tracking and monitoring of some harvested and renewal treatment areas by Mazinaw-Lanark Forest Inc. resulted in regeneration or silviculture failures.

Independent Forest Audit – Record of Finding

Finding # 4

Principle 6: Monitoring

Audit Criterion # 6.3: Silviculture Standards and Assessment Program

Procedure(s):

Assess whether the management unit assessment program (SFL and MNRF District) is sufficient and is being used to provide the required silviculture effectiveness monitoring.

Background Information and Summary of Evidence:

The Silviculture Effectiveness Monitoring (SEM) program has four basic tasks. Each year the Southern Region districts and regional SEM staff agree to completing a set of Core Tasks for the field season. Only Core Task # 1 (survey stands declared free to grow) was completed five out of the six years during the audit period by the MNRF Districts of Bancroft, Peterborough and Kemptville. Core Tasks 2, 3, and 4 are generally optional and are left to District discretion to complete.

The results of the MNRF SEM program were significantly inconsistent with the FTG results reported by the SFL holder. For example, in 2016, the MNRF surveyed 69 hectares (10% of the area released as FTG) and the MNRF silviculture success rate was 47% compared to the SFL holder's rate of 74%.

Despite the SEM training provided by the MNRF Southern Region in 2018 (to SFL holders and District staff) inconsistencies in survey results continue. A major contributing factor for the data variations and discrepancies is the application of different sampling methodologies and sampling intensities. MNRF implements the SO-iSTARS methodology, while the SFL holder utilized three different sampling strategies for FTG assessment (SO-iSTARS, post-cut surveys, or extensive ocular estimations). Different approaches to survey methodologies and/or sampling intensities can result in significant variances in sample metrics.

Despite the requirement in the Southern Region Silviculture Effectiveness Monitoring Strategy, a working group was not established to address known SEM program issues. Opportunities for joint training and joint surveys/inspections were provided; however, meetings to discuss the approach and outcomes were not held.

Discussion and Conclusion:

Between 2016 and 2022 approximately $ 1.94 million was invested in silviculture and an additional $ 508 K was invested by the Forestry Futures Trust in selected forest management activities.

A key principle of Ontario's Forest sustainability framework is to ensure that regeneration efforts are achieving the standards in the Forest Management Plan(s). The effectiveness of forest operations prescriptions in achieving the desired forest unit must be understood to facilitate reporting on sustainability and to provide reliable information for forest management planning (e.g., development of SGRs, SFMM inputs, FMP objectives). Information collected through the SEM Core Tasks assists in the determination/assessment of the extent to which regeneration efforts meet the regeneration standard. The information also aids in the assessment (over time) of the effectiveness of the SFL holder silviculture program, conformance of silviculture activities with the FMP, and forest sustainability.

The SEM program as implemented, is not fully functional as a monitoring program as the programs audit function is undermined by the inherent variability in the data generated when different sampling methodologies and sampling intensities are utilized.

Effective learning, continuous improvement and improved decision-making requires the documentation of outcomes in order that knowledge gained can be transferred to others and to ensure that investments in silviculture are appropriate and effective in achieving planned outcomes. The program would benefit from regular meetings between the MNRF and the SFL holder to address discrepancies in SEM survey results.

Finding # 4:

The Silviculture Effectiveness Monitoring program, as implemented, is not fully functional as a monitoring program.

Independent Forest Audit – Record of Finding

Finding # 5

Principle 6: Monitoring

Audit Criterion # 6.1: District Compliance Planning and Associated Monitoring

Procedure(s):

Procedure 6.1.1: …determine how forest management activities were to be monitored for compliance by MNRF…

Criterion 6.2: SFL Holder Compliance Planning and Monitoring

Procedure 6.2.4: …the SFL has continued to maintain their overall forest management oversight role related to development and maintenance of the compliance plan and its implementation…

Background information and summary of evidence:

The 2016-2021 IFA provided a Recommendation (#15) directed at the continuing poor compliance record of a specific Licensee. The Licensee had been assessed 8 of the 9 penalties levied during that audit period as well as the majority of identified Operational Issues. The auditors noted that the same Licensees poor compliance performance had been identified in two previous IFAs.

In the 2016-2022 audit period 271 FOIP reports were filed by MLFI and the MNRF. There were 13 not-in-compliance reports with the problematic Licensee accounting for the most filings (31% or 4 of the 13 filings). Fifteen joint inspections were completed on the Licensee operations. Our interviews and document reviews indicate that there is evidence of improved performance by the Licensee over the audit period. This improvement was attributed to actions by the MLFI Board of Directors (2021) which included an increase in the level of compliance monitoring on the Licensee's operations, utilization of a pre-start checklist to address concerns in advance of operations and the inclusion of reporting on the Licensee's compliance status as a standing agenda item of Board meetings. We were also informed that a candidate for a Registered Professional Forester designation has become more involved in a supervisory capacity on the Licensee's operations.

In this audit period, the Bancroft District elected to proceed with enforcement actions under Section 64 of CFSA (FOIPs 697420, 695937) to initiate a change in behaviour of the

Licensee. A Section 64 charge might be applied against a Licensee when the "*offender history that demonstrates that the application of other remedies has not been effective;* or in situations when *"actions and/or attitudes of an offender that demonstrates an intent to, or a disregard for, or an unwillingness to comply with regulatory requirements".* A judicial decision on the compliance actions has not been rendered.

Discussion and Conclusion:

Two previous IFAs have identified this issue and actions were implemented to address associated compliance problems with the operator. While the operator's compliance performance improved during the audit period, the issue of non-compliant operations by the Licensee has not been fully resolved. Compliance issues included non-compliance with AOC prescriptions (e.g., washing equipment in a water course, construction of a landing in an AOC) and incorrect completion of bills of lading tickets.

The Licensee remains the most problematic operator on the MLF despite the actions implemented to address Recommendation # 15 of the 2016 IFA.

Finding # 5:

Despite the actions implemented to address Recommendation # 15 of the 2011-2016 Independent Forest Audit, the implicated Licensee remains a compliance risk.

Independent Forest Audit – Record of Finding

Finding # 6

Principle 8: Licence and Contractual Obligations

Audit Criterion:

8.1.9 Action plan and reporting on progress towards the completion of actions

8.1.2… the extent the actions were implemented; and the actions were effective in addressing the audit findings.

Background Information and Summary of Evidence:

The IFAPP requires auditors to assess the effectiveness of the actions developed to address the recommendations of the previous audit. The 2016 IFA produced 20 recommendations. The required Action Plan and Action Plan Status Report were completed within the required timelines. As required by the FMPM the IFA results were considered in the development of the 2021-2031 FMP and other forest management functions.

Our assessment is that most recommendations were appropriately actioned (or work is on-going) with the exceptions of the recurring failure to meet the FMPM submission/resubmission schedules for Annual Reports (Finding # 5) (Recommendation # 16 required that MLFI submit draft Annual Reports on time) and Recommendation # 15 which required the Bancroft District and MLFI to work jointly to encourage a particular Licensee to improve its compliance performance (Finding # 5).

Appropriate actions were proposed and were to be implemented as follows:

<u>Recommendation # 15:</u>

1. Risk-based priority assessment to ensure that the highest risk operators were the primary focus of MNRF compliance inspections.
2. Conduct of joint compliance inspections.
3. Annual Meetings between MNRF and MLFI to discuss options to promote and encourage better compliance performance.

<u>Recommendation # 16:</u>

1. Staff involved in preparing ARs were assigned specific timelines to complete tasks.
2. Monitoring would be implemented to ensure timelines were met.

Discussion and Conclusion:

Despite appropriate actions being implemented, there are on-going problems specific to resolution of the issues identified in Recommendations #s 15 and 16 in the 2016 Independent Forest Audit.

Finding # 6:

The action items in the 2016 Independent Forest Audit Action Plan did not fully resolve the issues identified by Recommendations #s 15 and 16 of the 2011-2016 Independent Forest Audit.

Independent Forest Audit – Record of Finding

Best Practice # 1

Principle: 3 Forest Management Planning

Criterion: 3.5.2 FMP Area of Concern (AOC) Prescriptions

The FMP must contain specific prescriptions for all AOCs…

Procedure(s): Review AOC prescriptions and assess:

Planning of AOCs included environmental analysis of alternatives that would support protection of values.

Background information and summary of evidence:

AOC prescriptions are described in FMP-11 of the 2021-2031 FMP. Some AOC prescriptions allow for flexibility to deviate from direction in the prescription under extraordinary circumstances (4.2.1). 7The MLFI and MNRF have negotiated a proactive *Protocol for Reasonable Efforts and Extraordinary circumstances*. The protocol has a formal process of notification, review, decision making and documentation. One of the protocol principles is that any modified activities do not have an adverse effect on the protection objective of the AOC.

AOC Prescription BLT/BLTn (Blanding's turtles and Blanding's turtles nesting sites) includes a comprehensive list of protection measures associated with roads, landings and forestry aggregate pits. It details summer and nesting habitat including "use *of roads within the entire AOC will be accompanied by driver awareness training".* With the support of MLFI, MNRF has provided training for operators with respect to the life history of the Blanding turtle, the objectives of the AOC and ways and means to support those objectives. For operators who have completed the training the MNRF has eased some of the travel restrictions (e.g., timing) during the turtles' egg laying season. This continues to provide protection while reducing the impact on forest operations. Monitoring by MNRF, MLFI and operator/compliance inspector feedback indicates the initiative has been successful.

Discussion and Conclusion:

This is a proactive practical example of MLFI and MNRF cooperation reducing restrictions on forest operations while providing protection to the Blanding's turtle.

Best Practice # 1:

The proactive cooperation and training by the Ministry of Natural Resources and Forestry and Mazinaw-Lanark Forest Inc. to protect the Blanding's turtle while reducing the impact on forest operations is both practical and innovative.

Appendix 2

Management Objectives Table

OBJECTIVE	AUDITOR ASSESSMENT (ACHIEVED, PARTIALLY ACHIEVED, OR NOT ACHIEVED	AUDITOR COMMENTS
Objective 1: Forest Diversity 1.1: Natural Landscape Pattern and Distribution To move toward a more natural forest landscape pattern and distribution	PARTIALLY ACHIEVED	Under-utilization of harvest area (28% of planned) continues to pose negative impacts on indicators such as the area of young forest patch distribution and texture of mature and old forest.
1.2. Forest structure, composition, and abundance To move towards a more natural forest landscape structure, composition, and abundance.	PARTIALLY ACHIEVED	The desired target was achieved for the PWR Forest Units. The low level of harvest and the lack of large natural disturbances negatively impacted the achievement of targets for other forest units.
1.3 To provide a composition of select tree species as identified in the Madawaska Highlands Land Use Plan.	PARTIALLY ACHIEVED	The desired level and targets were achieved for most working groups. Poplar, Birch and Balsam Fir had minor increases in growing stock levels.
Objective 2: Habitat for Animal Life and Forest Cover 2.1: To move towards a more natural forest landscape condition that provides for non-spatial wildlife habitat for species dependent on late development stage forest conditions.	PARTIALLY ACHIEVED	The low level of harvest resulted in the under-achievement of desired levels of habitat for the black-backed woodpecker (old growth), Canada lynx denning sites (old growth), ruby-crowned kinglet and moose late winter habitat. However, the target to increase the area of habitat was achieved.
2.2: To move towards a more natural forest	PARTIALLY ACHIEVED	The desired levels for moose foraging were

landscape condition that provides for forest-dependent provincially features species.		achieved. The desired levels for moose late winter habitat were not achieved but area of available habitat increased. The desired habitat levels for Pileated Woodpecker were achieved.
2.3 To move towards a more natural forest landscape condition that provides for spatial wildlife habitat for species dependent on over-mature forest conditions and forest-dependent provincially features species.	PARTIALLY ACHIEVED	In general, spatial targets were not achieved but there was progress towards increasing landscape conditions suitable for species dependent on over-mature forest conditions. Beech Bark Disease is reducing the supply of mature mast trees.
2.4: To move towards a forest landscape condition that provides for spatial wildlife habitat for species as identified by the Madawaska Highlands Land Use Plan	ACHIEVED	Planned levels and targets to increase habitat supply were achieved for the red-shouldered hawk.
2.5: To protect the habitat of forest dependent species at risk.	PARTIALLY ACHIEVED	SAR habitats and requirements were protected/maintained by AOC prescriptions. Harvest blocks that include SAR habitat were prioritized and values surveys were completed before tree marking and harvest operations commenced. There was one non-compliance associated with SAR habitat.
2.6: To conserve water quality and fish habitat.	PARTIALLY ACHIEVED	There were some minor compliance issues associated with water crossings. Actions were

		taken to resolve the identified issues.
Objective 3: Social and Economic – healthy forest ecosystems. 3.1: To continually improve forest management operations	PARTIALLY ACHIEVED	The target of 100% in compliance was not achieved. An in-compliance rate of 95% was achieved.
3.2: To maintain or improve quality resource-based tourism opportunities by implementing forest operations in a manner that minimizes conflicts with non-timber resource users and protects non-timber values.	ACHIEVED	Tourism values were identified and protected or maintained by AOC prescriptions. There were no FOIP issues associated with tourism values. An issue resolution request resulted in the application of Shoreline Use AOC prescription and AOC prescriptions for recognized trails were incorporated in the FMP. The issue resolution process also supported the inclusion of outcomes of negotiations with other cottage associations in the FMP.
3.3: Sustain a variety of motorized and non-motorized recreational land use opportunities.	ACHIEVED	Recreational values were protected by AOC prescriptions. (There were no FOIP issues associated with AOCs for recreational values).
3.4: To protect the productive capacity of the soil and water.	ACHIEVED	AOC prescriptions were developed and implemented to protect water. There were no observations of soil damage (i.e., compaction)

		or erosion resulting from forest operations during the site inspections.
3.5: To improve the product ratio of higher value forest products in the Madawaska Highlands Land Use Plan area.	ACHIEVED	Tree marking operations and silviculture treatments adopted will improve stand quality over time. Operator care and due diligence was evident from the lack of damage to residual timber in harvest areas.
Social and Economic – community well-being and forest cover 3.6: To provide the levels of access to adequately carry out forest operations while minimizing impacts on other values.	ACHIEVED	Road networks were carefully planned, with public input. Compliance plans, AOC prescriptions and CROs ensured roads minimized impacts on other values.
3.7: To protect natural resource features, land uses and values dependent on forest cover.	ACHIEVED	The FMP identified values to be protected. AOCs and CROs provided protection and/or prescriptions to ensure protection. FOIP inspections indicate that harvesting operations were mainly compliant with the prescriptions.
3.8: To protect cultural heritage values and aboriginal values.	ACHIEVED	Identified cultural and heritage values were protected/maintained by AOC prescriptions. A full complement of AOCs were developed to protect Aboriginal values. No non-compliances were reported in FOIP.
Social and Economic – harvest levels and community well-being 3.9: Provide a sustainable, continuous and predictable wood supply from the forest that will meet the	ACHIEVED	Although harvest levels were below planned, the current industrial demand was met.

current industrial demand of the forest.		
3.10: To minimize the loss of Crown productive forest to infrastructure development thereby maintaining harvest levels and related community well-being.	ACHIEVED	The desirable level and target to have a less than 2% reduction in productive forest area was achieved.
3.11: To provide opportunities for Aboriginal involvement in forest management planning	ACHIEVED	Aboriginal engagement in the development of the FMP was significant with ten communities represented on the planning team. Consultation requirements in the FMPM were met.
3.12: To support and encourage interested Aboriginal Communities to participate in identifying values and interests which provide social/economic benefits from the forest.	ACHIEVED	FMPM requirements with respect to First Nations were fully met. Aboriginal values were addressed in the planning process and incorporated in the FMP.
3.13: To encourage and support the participation of Local Citizens Committee in the development of the Forest Management Plan	ACHIEVED	A majority of LCC members indicated that they were satisfied with the effectiveness of the LCC in FMP development.
4.0 Silviculture 4.1: To ensure the successful renewal of harvested stands (naturally or artificially) to the most silviculturally appropriate species and tended until management standards or Free To Grow is met, using the most appropriate and cost-effective methods to achieve.	PARTIALLY ACHIEVED	The target to achieve 100% regeneration success was met. The target to achieve an 80% silvicultural success rate was not achieved (64%) principally due to the effects of widespread and repeated wildlife browse on some species (e.g., red oak, white pine) and poor monitoring of silviculture treatments on some sites.

4.2: To maintain or enhance biodiversity through the conservation of genetic diversity of forest tree species on the management unit.	ACHIEVED	The MLFI has over 3 million seeds stored and requires 170,700 seeds annually (white pine, red pine). A 100% regeneration success rate was reported on naturally regenerated areas.
4.3 To improve red oak renewal success within the Madawaska Highlands Land Use Plan area.	PARTIALLY ACHIEVED	Red oak regeneration is used as the primary silviculture option on sites with good potential for oak renewal (including maintaining oak as an associate species in mixedwood stands). Repeated browsing by wildlife has been detrimental to the renewal effort.

Appendix 3

Compliance with Contractual Obligations

Licence Condition	Licence Holder Performance
Payment of Forestry Futures and Ontario Crown charges.	Forest Futures and Crown charges were paid.
Wood supply commitments, MOAs, sharing arrangements, special conditions.	Wood supply commitments were met, to the extent possible, under prevailing market conditions.
Preparation of FMP, AWS and reports; abiding by the FMP, and all other requirements of the FMPM and CFSA.	FMPs, AWS and ARs were prepared and approved. The FMPM schedule for AR submissions/resubmissions was not consistently met (Finding # 2).
Conduct inventories, surveys, tests and studies; provision and collection of information in accordance with FIM.	Inventories and surveys were completed. Information was collected and provided in accordance with FIM requirements. FTG surveys were not completed annually and a small backlog in the area requiring survey exists.
Wasteful practices not to be committed.	There was an incident of merchantable stems left in a cutover reported in FOIP which resulted in a compliance order being issued. No other wasteful practises were noted in the documentation reviewed or observed in the field site inspections.
Natural disturbance and salvage SFL conditions must be followed.	Requirements for salvage were met.
Protection of the licence area from pest damage, participation in pest control programs.	No protection activities other than monitoring were undertaken.
Withdrawals from licence area.	There were no withdrawals from the licence area.
Audit Action Plan and progress towards the completion of actions as reported in annual reports or status reports prepared under previous versions of the IFAPP.	An Action Plan Status Report was prepared in August 2019. Most action items were satisfactorily completed or are on-going. Two recommendations were not fully addressed (Finding # 6) as problems persist in meeting FMPM timelines for the

	submission/resubmission of ARs (Finding # 2) and with a Licensee's poor compliance record (Finding # 5).
Payment of forest renewal charges to Forest Renewal Trust (FRT).	Renewal charges were paid.
Forest Renewal Trust eligible silviculture work.	The field audit verified that payments from the FRT were for eligible silviculture work.
Forest Renewal Trust, forest renewal charge analysis.	A FRT charge analysis was completed on an annual basis.
Forest Renewal Trust account minimum balance.	The minimum balance of $376,100 was maintained in each year of the audit period. As of April 1st, 2022, there was a surplus in the account.
Silviculture standards and assessment program.	Silviculture assessments were completed on an annual basis. A small backlog in FTG survey work exists.
Addressed X-Y-Z land obligations	Approximately 99% of obligations have been addressed (with the exception of an eight hectare block which is unavailable for survey or renewal as it is surrounded by patent land).
First Nations and Métis opportunities.	First Nations were actively engaged in the FMP planning process. As a result of the Algonquin Land Claim harvest royalties are paid to Algonquin communities. Local processing facilities employ Indigenous people.
Preparation of a compliance plan.	A compliance plan was completed.
Internal compliance prevention/education program.	Annual education and training programs for contractors were conducted.
Compliance inspections and reporting; compliance with compliance plan.	Compliance inspections were conducted in adherence with the Compliance Plan and submitted to the FOIP in a timely manner. The in-compliance rate was 95%.
SFL forestry operations on mining claims.	There were no forestry operations on mining claims.

Appendix 4

Audit Process

The IFA consisted of the following elements:

Risk Assessment: A risk assessment was completed in July 2022 to determine which IFAPP optional procedures would be audited. The risk assessment report was submitted to the Forestry Futures Trust Committee and MNRF Integration Branch for review and approval.

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 MLFI, the Bancroft District Office, MNRF Southern Region Office, the Forestry Futures Trust Committee and the LCC Chair in August 2022.

Public Notices: Public participation in the audit was solicited through print notices placed in the Kemptville Advance, Smith Falls Record News, Carleton Place Almonte, Perth Courier. On-line notices were placed on the InsideOttawaValley.com and Bancroft This Week digital platforms. No public comments were received.

All Indigenous communities with an interest in the Forest were contacted by mail and invited to participate and/or express their views. Indigenous community leaders/consultation staff received several follow-up calls and/or e-mails. No community representatives provided any comments with respect to the Forest or its management during the audit period.

All LCC members received an email explaining the audit process with an invitation to participate in the audit process. A sample of LCC members (70%) received follow-up telephone calls and interviews.

Harvest contractors were invited by email to participate in the field audit and/or provide comments to the audit firm. One OLL spent two half days on field audit.

Field Site Selection: Field sample sites were selected randomly by the Lead Auditor in August 2022. Sites were selected in accordance with the guidance provided in the IFAPP (e.g., operating year, contractor, geography, forest management activity, species treated or renewed, and access) using GIS shapefiles provided by the MLFI. It is noteworthy that a 2022 derecho storm limited access to some areas and complicated the sample selection. The sample site selections were reviewed by representatives for the SFL and MNRF District staff during a Zoom Meeting on September 7, 2022.

Site Audit: Two audit teams spent four days each conducting field site inspections in October. The field audit achieved a minimum 10% sample of the forest management activities that occurred during the audit period (see the IFA Field Sampling Intensity on the MLF below). A sample of the areas invoiced in the "*Forest Renewal Trust Specified Procedures Report*" (SPR) was also inspected to verify work was performed.

The Closing Meeting was held on November 2, 2022.

Not every hectare of the area sampled is surveyed, as this is not feasible. Individual sites are selected to represent a primary activity (e.g., harvesting, site preparation) but all associated activities that occurred on the site are assessed and reported in the sample table below. The audit team also inspected the application of Areas of Concern prescriptions, aggregate pits (including site rehabilitation) and water crossing installations and removals.

Report: This report provides a description of the audit process and a discussion of audit findings and conclusions.

Procedures Audited by Risk Category

Principle	Optional – Applicable (#)	Optional – Selected (#)	Optional - % Audited	Mandatory Audited (#) (100% Audited)	Comments
1. Commitment	N/A	N/A	N/A	N/A	MLFI FSC certification met IFAPP Principle 1 criterion.
2. Public Consultation and FN/Métis Community Involvement& Consultation	5	3	60	2	
3. Forest Management Planning	44	21	48	40	
4. Plan Assessment & Implementation	4	1	25	9	
5. System Support	N/A	N/A	N/A	N/A	MLFI FSC certification met IFAPP Principle 5 criterion.

6. Monitoring	10	9	90	9	
7. Achievement of Management Objectives and Forest Sustainability	0	0	0	14	
8. Contractual Obligations	6	6	100	28	

IFA Field Sampling Intensity on the Mazinaw-Lanark Forest (2016-2022)

ACTIVITY[36]	TOTAL AREA	PLANNED SAMPLE AREA (Ha)	ACTUAL AREA SAMPLED (Ha)	NO. SITES VISITED	PERCENT SAMPLED
Harvest[37]	7,849	785	802	15	10
Renewal (Artificial)	561	56	148	6	26
Site Preparation	596	59	108	6	18
Tending	513	51	68	4	13
FTG	1,708	171	183	5	11
No. Water Crossings	40	4	4	4	10
No. Aggregate Pits	30	3	4	4	13
SPA Activities	1,143	114	294	4	26

Source: MLFI Forestry Shapefiles

Summary of Consultation and Input to the Audit

Public Stakeholders

No public comments were received.

MNRF

MNRF staff comments expressed to the audit team were concerns with::

- staffing changes and loss of corporate memory.
- the tracking and monitoring of silviculture on some sites.
- the implications of the derecho storm on the Forest and the forest management program.

[36] Planned and unplanned sites observed in sample of aggregate pits and water crossings.
[37] Includes salvage harvest and audit of tree marking associated with uneven age silviculture.

- the workload associated with values surveys at plan start-up.

MLFI (FRMG)

Service provider (FRMG) staff for the SFL provided the following comments to the audit team:

- poor internet services often made operations inefficient.
- staff capacity had affected the ability to conduct operations.
- issue of wildlife browsing negatively impacting renewal success.
- concern with the financial and forest management implications of the derecho storm.
- difficulties in securing silviculture contractors and harvesters to address salvage requirements because of the derecho storm.

LCC Members

LCC members provided the following comments to the audit team:

- excellent relations with both MLFI and MNRF.
- concern with MNRF staff changes and retention of SAR knowledge on the forest.
- a requirement for an increased focus on the non-forestry values.
- the need to address large areas of blow down resulting from the derecho storm
- the loss of beech trees and the impact on wildlife.
- difficulty recruiting new LCC members.
- significate time associated with LCC member involvement in FMP development requires some level of compensation.
- the importance of the forest industry to numerous small communities within the forest.

First Nations Communities

No community representatives provided any comments with respect to the Forest or its management.

OLLs

A licensee spent two half days with the audit team during the field audit. Comments included:

- Concern with the implications of the derecho storm on the forest management program.
- A general satisfaction with the management activities of the MNRF and MLFI.

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Appendix 5

List of Acronyms Used

AHA	Available Harvest Area
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
B.A.	Bachelor of Arts
BBD	Beech Bark Disease
B.Sc.F.	Bachelor of Science in Forestry
CFSA	Crown Forest Sustainability Act
CRO	Conditions on Regular Operations
DWEA	Deer Wintering Emphasis Area
ESA	Endangered Species Act
FAP	Forestry Aggregate Pit
FFTC	Forestry Futures Trust Committee
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FN	First Nation
FRMG	First Resource Management Group
FOIP	Forest Operations Information Program
FOP	Forest Operations Prescription
FOSM	Forest Operations and Silviculture Manual
FRT	Forest Renewal Trust
FSC	Forest Stewardship Council
FTG	Free-to-Grow
FU	Forest Unit

Ha	Hectare(s)
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
KM	Kilometer
LCC	Local Citizens Committee
LTMD	Long-Term Management Direction
MEA	Moose Emphasis Area
MLFI	Mazinaw-Lanark Forest Inc.
MNRF	Ministry of Natural Resources and Forestry
m^3	Cubic Meters
M.Sc.F.	Master of Science in Forestry
R.P.F.	Registered Professional Forester
SAR	Species at Risk
SEM	Silviculture Effectiveness Monitoring
SFL	Sustainable Forestry Licence
SFMM	Sustainable Forest Management Model
SGR	Silvicultural Ground Rule
SIP	Site Preparation
SPR	Specified Procedures Report
SRNV	Simulated Range of Natural Variation
SUAOC	Shoreline Use Area of Concern
TMG	Tree Marking Guide
VS	Versus

Appendix 6

Audit Team Members and Qualifications

Name	Role	Responsibilities	Credentials
Mr. Bruce Byford R.P.F. President Arbex Forest Resource Consultants Ltd.	Lead Auditor Forest Management Planning Harvest & Silviculture Auditor	Audit Management & coordination. Liaison with MNRF, MLFI and FFTC. 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. 43 years of consulting experience in Ontario in forest management planning, operations and resource inventory. Previous work on 46 IFA audits with lead auditor responsibility on all IFAs. 27 FSC certification assessments with lead audit responsibilities on seven.
Mr. Al Stewart Arbex Senior Associate	Public Participation including First Nations & LCC Participation in Forest Management Process Forest Compliance	Review documentation and practices related to forest management planning & public participation/consultation processes. Review & inspect AOC documentation & practices. Review of operational compliance related to AOC implementation. Determination of the sustainability component.	B.Sc. (Agriculture) ISO 14001 Lead Auditor Training. FSC assessor training. 51 years of experience in natural resource management planning, field operations, policy development, auditing and working with First Nation communities. Previous work experience on 46 IFA audits.
Riet Verheggen R.P.F. Senior Arbex Associate	Silviculture Contractual Compliance Assessment of Achievement of Forest Management Objectives	Determination of the sustainability component. Review and inspect silvicultural practices and related documentation. Review and inspect documents related to contractual compliance. Determination of Objective Achievement.	B.Sc.F. 32 years of experience in natural resource management, policy development and auditing. Previous work experience on 9 IFA audits.
Jon Peroff Arbex Associate	Harvest Compliance	Review of the planning and delivery of the operational compliance program	Forest Technologist Certified FOIP Compliance Inspector.

	Road Construction and Maintenance Forestry Aggregate Pits		30 years of experience working in forest industry in various capacities such as field operations and management planning. Previous work experience on 2 IFA audits.
Fraser Smith R.P.F. Arbex Associate	Silviculture and Tree Marking	Review of tree marking prescriptions and confirmation of compliance with the marking prescription in the field.	M.Sc.F. B.A. Certified Tree Marker and Ontario Tree Marking Course Instructor. Auditor on 2 IFAs.