Bancroft-Minden Forest Independent Forest Audit 2025 April 1st, 2017 – March 31st 2025

Prepared by KBM
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1.0 EXECUTIVE SUMMARY

This report summarizes the results of the Independent Forest Audit of the Bancroft-Minden Forest conducted by KBM Resources Group. Independent Forest Audits are a requirement of the Crown Forest Sustainability Act. The procedures used during this audit were in accordance with the Independent Forest Audit Process and Protocol. The audit included opportunities for First Nations, Métis communities and stakeholder input, and a review of all documentation and records associated with management of the Bancroft-Minden Forest during the audit term.

The Bancroft-Minden Forest is located within the Peterborough Bancroft District of the Ministry of Natural Resources' Southern Region. The Forest is currently licenced to Bancroft-Minden Forest Company which is a partnership of 18 independent milling and harvesting companies. Under its Sustainable Forest License #542585 granted by the Ministry of Natural Resources, Bancroft-Minden Forest Company assumes the responsibility for: Planning, Monitoring, Forest Renewal and Reporting.

The audit covers forest management planning and implementation activities carried out on the Bancroft-Minden Forest during an eight-year period from April 1, 2017, through March 31, 2025. Within the scope of the audit was the 2011-2021 Forest Management Plan (Years 7, 8, 9 and 10) and the preparation and implementation of 2021-2031 Forest Management Plan (Years 1, 2, 3 and 4).

The audit team found that most of the forest management planning, reporting and operations were adequately completed by Bancroft-Minden Forest Company and Ministry of Natural Resources staff. Improvements to the Local Citizens Committee are needed to meet its intended purpose and further efforts are required to meet key objectives of the Irregular Shelterwood and Roads Planning working groups. Focused improvements are needed to certain elements of tolerant hardwood and white pine management systems, and improved reconciliation mechanisms are needed to address Silvicultural Effectiveness Monitoring data discrepancies and issues.

The audit team concludes that, with critical exceptions noted in Section 2.0, below, management of the Bancroft-Minden 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 the Bancroft-Minden Forest Company Inc. (License #542585). The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol.

The exceptions noted do not detract from the work of the dedicated professionals in meeting the overall goals of sustainable management.

Stamped and signed by: Stéphane Audet, R.P.F., Lead Auditor

2.0 TABLE OF FINDINGS AND BEST PRACTICES

Audit findings are to be addressed by the Bancroft-Minden Forest Company and/or the Ontario Ministry of Natural Resources.

Concluding statement
The audit team concludes that, with critical exceptions noted below, management of the Bancroft-Minden 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 the Bancroft-Minden Forest Company Inc. (License #542585). The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol. The critical exceptions are as follows: • Improvements are needed to refine the current approach in implementing the Irregular Shelterwood System at the planning, prescription and monitoring phases. • White Pine management on the Bancroft-Minden Forest requires further attention to meet crown closure and basal area residual requirements stipulated in the prescribed silviculture ground rules. Greater attention is needed in meeting planned artificial renewal targets of White Pine. • Hardwood management on the Bancroft-Minden Forest requires further attention to meet minimum basal area targets within the selection silvicultural system and minimum regeneration standards within the shelterwood and uniform shelterwood silvicultural systems.
Findings
Finding #1: The Local Citizens Committee is not meeting the Forest Management Planning Manual criteria for its purpose, membership, and organization.
Finding #2: The Irregular Shelterwood System Working Group has not reached the stated Objectives and Performance Measures, completion date, and has not been active within the audit period since 2023.
Finding #3: Access planning in the 2021-2031 Forest Management Plan was not fulfilled as per the requirements of the Forest Management Planning Manual and the committed timelines stated within the Forest Management Plan.
Finding #4:

• Policy improvement is required to ensure that appropriate silvicultural standards are consistently identified, interpreted, and applied during both the planning and implementation phases of the forest management plan. • Applied Silvicultural Ground Rules should reflect the original management intent rather than a realized outcome after silviculture treatments have been applied as shelterwood regimes are implemented. • Silvicultural Ground Rules with multiple silvicultural systems do not follow policy.
Finding #5: White Pine Shelterwood Silvicultural Ground Rule standards for minimum crown closure and residual basal area are not being met.
Finding #6: Within the Hardwood Uniform Shelterwood and Hardwood Shelterwood forest units, final cut and irregular treatments fail to meet Silvicultural Ground Rule direction and regeneration standards.
Finding #7: Within the hardwood selection silviculture program, the residual basal areas are being left below the Forest Operation Prescription and Silvicultural Ground Rules targets.
Finding #8: The implementation of the hardwood irregular shelterwood silviculture program needs improvements in site planning and mapping, Forest Operation Prescription development, monitoring and follow-up treatments.
Finding #9: Renewal effort conducted in White Pine Shelterwood stands during the audit term underachieved planned levels.
Finding #10: The District's compliance monitoring program lacked sufficient planning rigor and sampling intensity throughout the audit period.
Finding #11: Bancroft-Minden Forest Management Company is not meeting the submission timelines for Forest Operations Information Program reports for most of its compliance inspections.
Finding #12: Discrepancies between the Bancroft-Minden Forest Company and the District Ministry of Natural Resources' Silvicultural Effectiveness Monitoring programs are not being adequately addressed.
Best Practice

Best Management Practice #1:
The Bancroft-Minden Forest Management Company is going beyond their consultation, reporting and values protection requirements by reaching out to communities with mutual interests in the forest to conduct field knowledge sharing to help find, identify, record, and protect Indigenous values.

Table 1. Summary table of the Bancroft-Minden 2025 Independent Forest Audit Findings, Best Practices and Concluding Statement

3.0 INTRODUCTION

This report presents the findings of an Independent Forest Audit (IFA) of the Bancroft-Minden Forest (BMF). The audit was conducted by KBM Resources Group (KBM). KBM is an independently owned natural resources consulting firm with a head office located in Thunder Bay, Ontario. The audit team, their roles, responsibilities, and qualifications are described in Appendix 6.

The Bancroft-Minden Forest is located within the Peterborough Bancroft District of the Ministry of Natural Resource's (MNR) Southern Region. The Forest is currently licenced to Bancroft-Minden Forest Company (BMFC), under license #542585, which is a partnership of 18 independent milling and harvesting companies.

The audit term covers the implementation of the 2011-2021 Forest Management Plan (FMP) (Years 7, 8, 9, and10) and the preparation and implementation of 2021-2031 FMP (Years 1, 2, 3, and 4). The audit included a review of documentation and records, field assessments and provided opportunities for stakeholder input. The audit followed the risk-based approach as outlined in the 2025 Independent Forest Audit Process and Protocol (IFAPP)[1]. The on-site portion of the audit took place during the week of October 13th, 2025; with document examination and interviews taking place prior to, during, and after the on-site period.

3.1 Audit Process

Independent Forest Audits are a requirement of the Crown Forest Sustainability Act (S.O. 1994, c. 25) (CFSA)[2]. Every publicly owned Management Unit (MU) in Ontario must be audited by an independent audit team. The auditees for this IFA are the Sustainable Licence (SFL) holder (Bancroft-Minden Forest Company) and the Ministry of Natural Resources. The direction for the IFA comes from the Independent Forest Audit Process and Protocol, to assess if the forest is meeting the requirements of Ontario Regulation 319/20.

The IFAPP includes a set of audit protocols that provide a systematic review of the forest management planning, operational and monitoring activities in Ontario Forest

[1] OMNR. 2025. Independent Forest Audit Process and Protocol, https://www.ontario.ca/page/independent-forest-audit-process-and-protocol. 94pp

[2] Crown Forest Sustainability Act, 1994, S.O. 1994, c.25

Management Units. The audit assesses the effectiveness of the forest management activities in meeting the objectives set out in the FMP.

The auditors examine the audit criteria (Appendix A of the IFAPP), past audit findings, and relevant background materials. The audit report outlines non-conformance as well as best management practices. Findings of non-conformance are observations of the audit team that identify situations in which there is a significant lack of effectiveness in forest management activities. Conversely, the audit team may highlight best practices in cases where auditees' actions go above and beyond legal requirements and result in positive outcomes for the forest and communities.

Findings of non-conformance will be analysed by the auditees to identify remedial action(s), mitigation measures, and to identify the parties responsible for addressing the non-conformance. Non-conformances to be addressed by the auditees (SFL holder and MNR) will be described in an action plan and progress towards the completion of these actions will be later reported in the Annual Reports (AR) for the Management Unit.

3.2 Management unit description

The BMF is located within the Peterborough Bancroft District of the MNR's Southern Region. BMFC has been the SFL holder since July of 2001. BMFC has been Forest Stewardship Council (FSC) certified since 2012.

The BMF encompasses 461,085 ha of Crown Land, of which 312,000 ha is considered a productive forest component. Currently, 240,321 ha of this productive forest area is eligible for timber production. A defining feature of the BMF is the extent to which the forest is fragmented by private land. Private land accounts for approximately 54% of the area within the BMF boundaries (Figure 1).

The BMF has 10 different Forest Unit (FU) types which require different management strategies according to the Provincial Silviculture Guide. These types include Red Pine Clear-Cut (PrCC), White Pine Uniform Shelterwood (PwUS), Red Oak Uniform Shelterwood (OrUS), Hemlock Shelterwood (HeSH), Cedar Shelterwood (CeSH), Hardwood Selection (HDSEL), Hardwood Shelterwood (HDSH), Intolerant Hardwood Clear-Cut (INTCC), Mixed Conifer Clear-Cut (MXCCC) and Mixed Hardwood Clear-Cut (MXHCC). In the 2021-2031 FMP the planned forest units include: 2 Uniform Shelterwood Units, 1 Selection/Irregular Shelterwood Unit, 2 Irregular Shelterwood Units, 1 Selection Unit and 4 Clearcut Units.

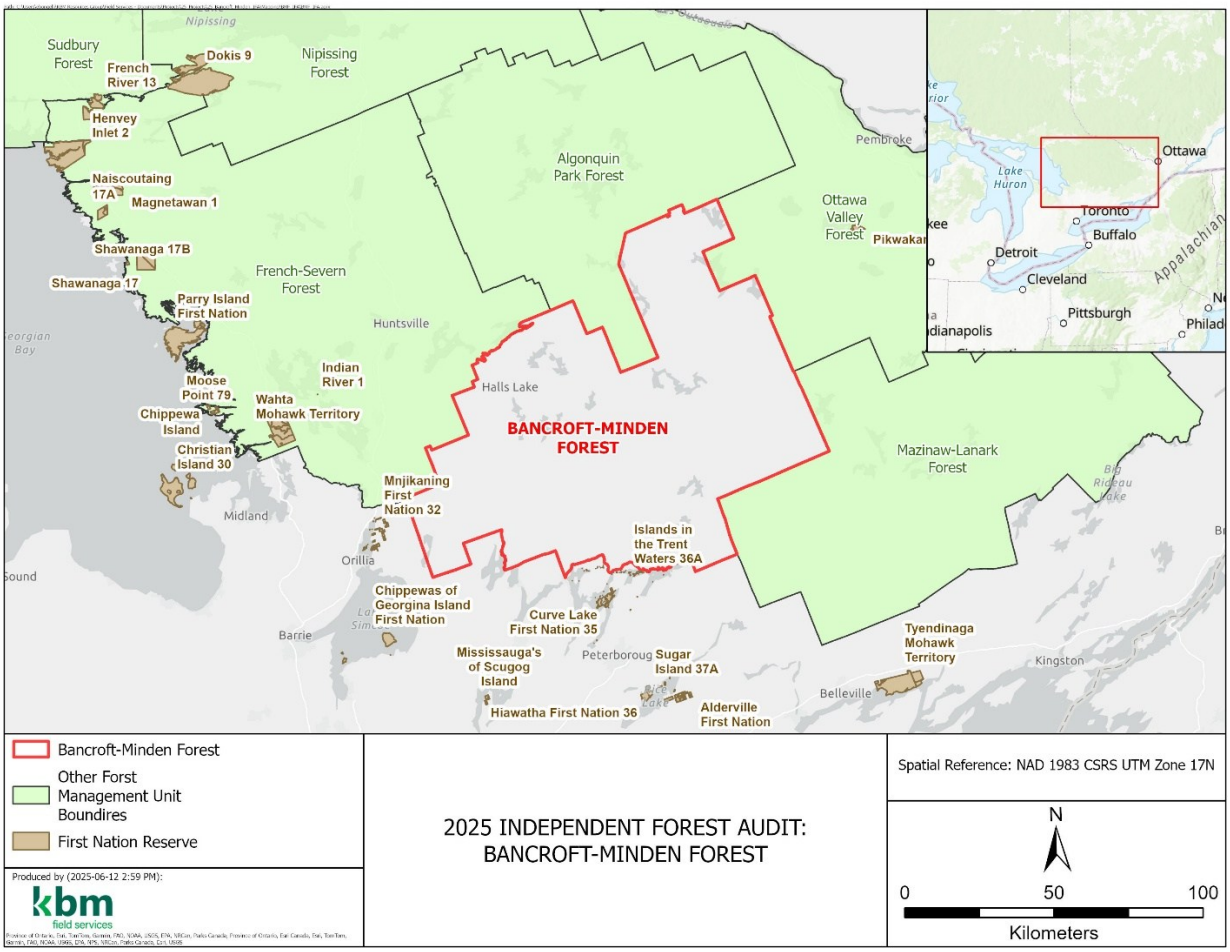

Figure 1. A map of the Bancroft-Minden Forest.

The municipalities of the District of Muskoka and the District of Nipissing as well as portions of the County of Haliburton, City of Kawartha Lakes, County of Peterborough and County of Hastings all lay within the boundaries of the BMF. There are also several communities that obtain substantial social or economic benefits related to forest management activities in the BMF including Bancroft, Brudenell-Lyndoch-Raglan, Faraday, Hastings Highlands, Havelock-Belmont-Methuen, Madawaska Valley, Minden Hills, North Algoma Wilberforce, Papineau-Cameron, Quinte West and South Algonquin.

The Bancroft-Minden Forest overlaps with the traditional territory of the Williams Treaties First Nations (WTFN); the Algonquins of Ontario (AOO) and the Kawartha-Nishnawbe. The WTFN includes the following seven Indigenous communities: Alderville; Beausoleil; Chippewas of Rama; Chippewas of Georgina Island; Curve Lake; Hiawatha and Mississauga's of Scugog Island.

There are also ten Algonquin First Nations communities that are located within or adjacent to the BMF whose interests may be affected by forest management activities including: Antoine, Bonnechere Algonquins, Whitney and Area Algonquins, Algonquins of

Pikwakanagan First Nation, Algonquins of Greater Golden Lake, Ottawa Algonquins, Kijicho Manito Madaouskarini (Bancroft), Shabot Obaadjiwan, Snimikobi and Mattawa/ North Bay Algonquins.

All communities were invited to participate in the creation of the 2021-2031 FMP. The Forest has a single Local Citizens Committee (LCC): The Bancroft-Minden Local Citizens Committee.

4.0 AUDIT FINDINGS

A: Compliance

The process of forest management planning, implementation and monitoring must be conducted in an open and consultative manner. The auditors checked for evidence that forest management on the BMF included the First Nations individuals and communities, Métis individuals and communities, local citizens advisory committees and others who have an interest in the ongoing operations within the management unit.

A.1.1 First Nation and Métis communities' involvement and consultation:

There is a total of 18 communities (listed above) that are within or adjacent to the BMF whose interests or traditional uses may be affected by forest management activities.

Our review of the FMP materials indicates that the MNR has properly engaged with the First Nation and Métis communities. The planning team included a significant number of community members (ten) and alternates (five).

During the interview process, the audit team found that Kijicho Manito Madaouskarini and Whitney and Area Algonquins, and potentially other First Nation communities, were originally advised that the MNR was establishing a task team to resolve the roads classification issue and that they would be invited to be members. Although the First Nation communities provided some initial input regarding a decision tree (matrix) they were not invited to the task team meetings and feel their voice was left out of an issue in which they have concerns as it affects continued access to their territorial lands.

Following the extensive and sustained efforts of the MNR to build communication, trust and capacity funding, BMFC developed an excellent program for knowledge sharing exchanges and capacity building for company field staff regarding pre-identification of Indigenous values on the landscape. The staff have built a strong working relationship with the Natural & Cultural Resource Strategist from Algonquins of Ontario. He has provided training to BMFC staff, and the staff will often attend site visits during the Annual Work Schedule (AWS) to increase the number of Indigenous values identified and protected during operations.

BMFC has also been providing Curve Lake First Nation (CLFN) with annual field tours to help the community staff and members learn about how forest management is conducted and to answer questions they have regarding operations and planning.

This work to build relationships and exchange knowledge is above and beyond what is required by the forest management process. It will help with forest management planning and implementation as it increases awareness and facilitates further comprehensive conversations. Our interviewees at AOO and CLFN both expressed deep appreciation for the friendly, professional approaches of BMFC staff and the willingness to engage with their communities. They trust the company is concerned about their interests and feel they are practicing good forestry.

Best Practice
The Bancroft-Minden Forest Management Company is going beyond their consultation, reporting and values protection requirements by reaching out to communities with mutual interests in the forest to conduct field knowledge sharing to help find, identify, record, and protect Indigenous values.

A.1.2 Local Citizens' Committee (LCC):

The role of the LCC is significantly driven by its participation in most aspects of the forest management plan and all aspects of public consultation. The LCC has a very important role in continuing to provide a public consultation venue throughout the implementation phase of the FMP.

The current documented membership for the Bancroft-Minden Forest has representation from the forest industry (also on the SFL board), trail recreation, property owners (2), municipalities (2) and an Indigenous community member. This leaves several key user groups underrepresented including woodworkers, small independent loggers, local business/economic development, local heritage groups, other resources users (mineral sector) and recreationalists. This limited membership, some with overlapping interests, reduces the potential for the committee to be representative of the wide breadth of public interest.

The chair's position has not been re-elected annually as is the requirement of the LCC Terms of Reference (TOR). Interviews and data gathering have revealed that the chair and potentially other committee members have acted independently of the committee in terms of asking questions, participating in discussions, and providing advice to both the MNR and BMFC.

Finding #1
The Local Citizens Committee is not meeting the Forest Management Planning Manual criteria for its purpose, membership, and organization.

A.1.3 Public consultation:

The MNR and BMFC did a complete job of providing notification, considering input and responding to public inquires.

A.2 Issue resolution:

During public consultation, concerns were identified, and questions and concerns were dealt with in a comprehensive manner in ways that were meant to mitigate the Issue Resolution Process. Based on discussions with staff (MNR, and BMFC) and First Nations, opportunities were communicated at the appropriate times during the planning process, amendments, plan extensions, and contingency planning stages.

A.3 Plan production activities:

The development of the current forest management plan (2021-2031) saw extensive reclassification of several forest units as well as the introduction of silvicultural systems not present within previous plans. Two notable issues were highlighted with plan production and slated to be addressed for plan approval to proceed: 1) the formation of the Irregular Shelterwood System (ISS) Working Group, and 2) the reclassification, responsibility and transfer protocol for forestry access roads. There were several delays requiring two separate 3-month extensions to the approval of the plan. Final approval of the plan took place on September 30th, 2021.

Prior to the field audit, the audit team spent considerable time conducting interviews and reviewing documentation related to the stated outcomes and past and present activities of the ISS Working Group. The ISS Working Group was formed as a condition of the Long-Term Management Direction (LTMD) endorsement and as a response to the relative infancy of this silvicultural system in the province. The ISS Working Group's charter speaks directly to several critical checkpoints within the plan production and implementation schedule and represents a condition of acceptance of the LTMD including several actions aimed towards a range of questions and issues with the planning, modelling, implementation, prescription setting, monitoring, and reporting of the ISS Working Group to be completed by March 31st, 2023. It appears that the original working group is no longer functioning and although there is some communication between a very small sub-set of the members it is unclear as to the plan for the larger working group. There has been no indication of a revision of the charter membership, objectives, deliverables, or timeline for several years.

With these elements still outstanding at the time of the IFA, the audit team found numerous audit criteria where a lack of clarity on ISS resulted in an inability to determine whether the system is being appropriately implemented.

Finding #2
The Irregular Shelterwood System Working Group has not reached the stated Objectives and Performance Measures, completion date, and has not been active within the audit period since 2023.

Roads classification on the BMF was a noted issue during the development of the 2021-2031 FMP. During the production of the 2011-2021 FMP there was a major reclassification of access roads with nearly 90% of roads transitioning to a primary designation.

During the development of the 2021-31 FMP, the MNR proposed a re-classification of the BMF roads to be more in line with adjacent MUs and current road class definitions. The SFL did not agree with what was put forward insisting that an update of the entire Existing Roads Use (ERU) management strategy was necessary. The planning team identified that this issue would not be resolved in time for plan approval and committed to form a roads steering committee 30-days after plan approval with the submission of an amended FMP Table 18 to be completed within a year of plan approval. Although progress has been made in agreeing on the current road's classification for approximately 80% of the roads on the BMF, an updated FMP Table 18 has yet to be completed and approved through the FMP amendment process.

Finding #3
Access planning in the 2021-2031 Forest Management Plan was not fulfilled as per the requirements of the Forest Management Planning Manual and the committed timelines stated within the Forest Management Plan.

A.4 Assess the proper development of the FMP:

The 2021-2031 FMP generally addressed the planning requirements of the 2020 FMPM. The FMP contained a total of 85 Areas of Concern (AOC) prescriptions protecting three broad value categories: Cultural Heritage Values, Indigenous Values, and Biological Values. The 2021-2031 FMP provides sufficient protection measures for the threatened and endangered species known to exist within the BMF.

Modeling assumptions were applied without quantified knowledge of growth-and-yield responses to the Irregular Shelterwood treatment. Uncertainty exists in both the volume removed and the volume retained, and the post-treatment residual size-class distribution. A nominal 50-year rotation was assigned to mimic the timing of a Uniform Shelterwood

System, but the timing of return harvest is uncertain. Model inputs would benefit from field data describing species by size class that were removed and retained, as well as a clear definition of the practice as it is being applied on the forest and the resulting post-harvest stand condition.

Silvicultural Ground Rules (SGRs), as directed by the FMPM and Forest Information Manual (FIM), serve as the connection between what is modeled within the FMP and the operational implementation and reporting of assessment results against management and regeneration standards. These results feed into the trends analysis required for forest management planning, and forest inventory products. Forest inventories require accurate data to ensure planning properly optimizes and directs wood supply, management entries, and habitat results as identified in modeling.

Requirements to declare results following harvest, renewal, and tending treatments are not being met. Post-treatment assessments, final removal declarations, and associated reporting obligations remain incomplete leaving gaps in documentation and accountability. Failure to declare these results prevents confirmation that treatments achieved their intended objectives and undermines compliance with forest management policy and monitoring standards.

SGRs that have identified planned failures are not being implemented in accordance with the original intent assigned during the regeneration stage of management. The results of the assigned SGR must be tracked through the full treatment sequence—final harvest, renewal, and tending—to ensure that the complete treatment package can be properly declared. Without monitoring outcomes across all stages, the intent of the original SGR is not validated or confirmed. Offering an alternate treatment with a different silvicultural system within the same SGR is not supported by policy and would have different growth and yield projections, future forest conditions and would also result in a different FU (an SGR can have only one FU in the desired future condition). Adjusting an SGR after the fact to match treatment results—rather than following through on the original intent—is not consistent with policy.

While policy framework is designed to offer flexibility to forest practitioners and support adaptive management for improved operational outcomes, it appears to have introduced uncertainty regarding the documentation requirements needed to clearly demonstrate management intent and compliance with established standards. Clearer policy direction is required to ensure that appropriate standards are consistently identified, interpreted, and applied during both the planning and implementation phases of the FMP. Improved clarity will support practitioner decision-making, reduce ambiguity, and help ensure that management intent is properly documented and carried through operational activities.

Finding #4
• Policy improvement is required to ensure that appropriate silvicultural standards are consistently identified, interpreted, and applied during both the planning and implementation phases of the forest management plan. • Applied Silvicultural Ground Rules should reflect the original management intent rather than a realized outcome after silviculture treatments have been applied as shelterwood regimes are implemented. • Silvicultural Ground Rules with multiple silvicultural systems do not follow policy.

Several challenges were noted throughout the development of the planning inventory used for the 2021-2031 FMP. Forest inventory development was led by the MNR Forest Resource Inventory (FRI) branch who subcontracted imagery capture, field data collection and photo-interpretation. An initial inventory product was received by the SFL in 2013 which subsequently rejected the submission citing several critical errors including species misidentification and poor water polygon delineation. MNR FRI branch hired a second contractor to re-interpret the Crown Forested polygons. This version of the inventory was delivered to the planning team in 2017. MNR FRI branch acknowledged inherent difficulties in applying the FRI photo-interpretation manual to Great Lakes – St. Lawrence (GLSL) MU's including single stocking values for two-tiered conditions, minimum polygon size rules compared to the size of harvest activities and forest layer age's relationship with the stated year of depletion. The planning team cited difficulties in reconciling two-tiered stand ages in the final planning composite.

The MNR FRI branch has since taken a new direction in its inventory production workflow with the added acquisition of LiDAR data. The LiDAR derived inventory places added emphasis on permanent fixed plot data which allow for a multi-tiered stand level designation. The effectiveness of the new inventory protocol in improving stand data within the GLSL will be evaluated through the delivery and assessment of the next FMP. This new direction emphasizes the need for accurate and timely field data driven information to support high quality inventory information.

Regulatory Requirements B – Meeting FMP Objectives

B.1 Areas of concern (AOCs):

A wide sample of implemented AOC prescriptions was reviewed throughout the field audit to confirm their implementation was done in accordance with the FMP and AWS. The audit team did not find any issues related to the operational implementation of AOC prescriptions on the BMF.

B.2 Access:

The FMP contains all the required documentation for road planning, construction and decommissioning. Forest access activities conducted during the audit term were largely focused on the construction of operational roads and the maintenance of primary and branch roads.

A wide sample of forest aggregate pits were viewed throughout the field audit. All pits viewed were found to be in compliance with the direction provided in the FMP. Active pit walls were properly sloped when not in use. Water crossing installations and removals were determined to be largely compliant with a few minor exceptions noted during the field audit (i.e., 2 perched culverts, 1 clear-span bridge with excessive debris under the structure).

B.3 Harvest:

During the audit term a total of 16,162.2 hectares were harvested (57% of planned), of which, 807 ha were salvage operations from blowdown events (2022 and 2023), and 2,086 ha were bridged from the 2011-2021 FMP and harvested during the start of the 2021-2031 FMP. Nearly 75% of the actualized harvest completed during the audit term was completed under the Selection and Shelterwood Silvicultural Systems (Table 2). Irregular Shelterwood prescriptions were only implemented in the last three years of the audit term (20% of harvest 2021-2024). Bridging and salvage operations were implemented and consistent with the approved FMP and AWS.

Table 2. The harvested amount and harvest methods used during the audit term.

Silvicultural System	Harvest Method	Hectares
Clearcut	Conventional	3,128.3
Clearcut	Commercial Thinning	583.5
Clearcut	Seedtree	474.4
Selection	Singletree	5,502.4
Shelterwood	Commercial Thinning	640.8
Shelterwood	Uniform	4,479.8
Shelterwood	Irregular	1,353.0
	Total:	**16,162.2**

The Bancroft-Minden Forest relies heavily on partial-harvest silvicultural treatments, where consistent tree marking following stand-level Forest Operation Prescriptions (FOP) is critical. The audit team conducted many post-harvest examinations that demonstrated the results of tree marking and found it regularly demonstrated a commitment to prescribed direction, with wildlife and other values for retention clearly identified in the field. FOP

implementation through tree marking, tree marking audits and overall harvest block layout was regularly found to result in minimal harvest damage.

No major site disturbance was noted (e.g., rutting, damaged residual trees, damage to advanced regeneration etc.,). High stumps were noted on a couple of the blocks viewed however this was not determined to be a systematic issue throughout the audit term. Wood utilisation was good with minimal roadside slash. Contractors often use container scaling agreements for collecting and moving roadside cut pieces and slash.

Blocks harvested under the clearcut silvicultural system were all found to be operated in accordance with the direction of the applicable FMP, SGR and assigned FOP. Sampled areas of operational bypass were determined to be justified based on the observed stand conditions falling below minimum merchantability standards.

FOPs for white pine stands managed under the (PwUS) as regeneration harvests include reasonable expectations for crown closure and minimum residual basal area (BA). However, blocks that were assessed during the field audit did not meet these prescribed minimums or targets.

White pine management prescriptions specify maintaining a crown closure of one-half to full crown and a residual basal area of 12–14 m^2/ha. In contrast, the white pine regeneration cuts observed during the audit (blocks 2009, 1101, 1721, and 1625) exhibited crown closures of less than 30% and residual BA below 10 m^2/ha.

Field audit observations found white pine shelterwood management, at the regeneration stage of management, was implemented as directed by the FOP. Managing white pine regeneration in this open canopy will promote white pine weevil and blister rust and provides light conditions more suited to regenerating poplar and other intolerant tree species. With limited return volumes, final removals are often not planned, and this does not follow forest management plan modeling direction of a two cut shelterwood regime.

Finding #5
White Pine Shelterwood Silvicultural Ground Rule standards for minimum crown closure and residual basal area are not being met.

Within the audited Hardwood Uniform Shelterwood (HDus) and Hardwood Shelterwood (HDsh) final removal FOPs, the lack of target residual BA, percent removal figure, or crown closure direction to the tree marker makes auditing and other assessment difficult. Lack of comprehensive stand structure data or other stand analysis info makes it difficult to determine if an SGR was properly applied or if a FOP could be directing a high-grade treatment. Further direction is provided in the three audited FOPs within wildlife

considerations for a stems/ha threshold, yet these retention targets do not detail any information on retained stem size or quality.

Within the HDsh FU, three stands were assessed using a final removal depletion within the audit period, and where no records exist for a preliminary prep or seed cut with assessment of regeneration success following such a first cut. The Enhanced AR-10 shows that between 2011 and 2021, the HDus forest unit alone increased by 56,139 ha (4.3 times), representing a significant component of available and planned harvest activities within the current planning term. The audit of final cut applications on HDus and HDsh forest units within the audit period regularly showed stands that did not appear to have sufficient regeneration for a final removal to be warranted or regeneration was not surviving post harvest. The audit team additionally found that minimal monitoring and documentation is taking place.

The audit team determined that implementation of final cut treatments in the HDus and HDsh forest unit shows a lack of sufficient regeneration on site to justify a final cut. Further, the auditors found that the use of one-cut shelterwood treatments is contrary to the Forest Management Guide to Silviculture in the Great Lakes-St. Lawrence and Boreal Forests of Ontario, and the SGRs describing the system. Records available contain insufficient detail to assess whether silvicultural application was appropriate, or effective, in meeting stated objectives. There is insufficient documentation to warrant the choice of silvicultural application, and monitoring is regularly not undertaken following harvest to justify silvicultural and renewal success.

Finding #6
Within the Hardwood Uniform Shelterwood and Hardwood Shelterwood forest units, final cut and irregular treatments fail to meet Silvicultural Ground Rule direction and regeneration standards.

An assessment of the implementation of the hardwood selection system was done through a review of available tree marking audits along with an assessment of sample blocks throughout the field audit. The audit team observed that residual targets outlined in the SGR's were being underachieved, often resulting in a variable stand stocking condition post-harvest. While the HD selection FOPs allow for a drop of 12m^2 BA in areas with declining forest conditions and limited Acceptable Growing Stock (AGS), the minimum BA target of the SGR for the entire blocks must still be attained. Concerns arise when stand removals are >40% and residual BA falls below the 18m^2 target.

Finding #7
Within the hardwood selection silviculture program, the residual basal areas are being left below the Forest Operation Prescription and Silvicultural Ground Rules targets.

The planning and implementation of the irregular shelterwood system on the BMF was reviewed in detail by the audit team. The introduction of this system was largely driven by the previous IFA which suggested this approach to deal with variable, low quality, tolerant hardwood stand conditions that aren't necessarily suited to uniform shelterwood management. The audit team supports the previous IFA's finding related to the consideration of the irregular shelterwood system. However, there is concern that the current planned approach for this system lacks the necessary rigour to ensure proper implementation, assessment for follow up remedial action, and long-term monitoring. These concerns are further compounded by the underperformance of the ISS Working Group and the full-scale implementation of this system on the BMF. The core of this finding highlights a system that is in its relative infancy on Crown forests. Since 2021, 1,353 ha have been harvested under the Irregular Shelterwood System. A collaborative and metered approach to refining key elements of this system will improve the management of hardwood stand conditions that aren't well served with traditional approaches.

Finding #8
The implementation of the hardwood irregular shelterwood silviculture program needs improvements in site planning and mapping, Forest Operation Prescription development, monitoring and follow-up treatments.

B.4 Renewal:

Natural regeneration is the predominant method of planned renewal (90%) on the BMF, particularly under the hardwood selection silvicultural system. Artificial renewal is primarily prescribed under the white pine shelterwood and clear-cut silvicultural systems. Implemented artificial renewal fell significantly short of planned targets even when considering the actualized rate of implemented harvest during the term. Most tending activities (9,173 hectares) consisted of stand improvement cuts where smaller trees and low-quality materials are removed. Reported chemical tending activities were predominantly focused on beech sprout management.

Table 3. Planned vs actual renewal activities April 1st, 2017 – March 31st, 2025.

April 1st, 2017- March 31st 2025

Activity	***Planned (hectares)***	***Actual (hectares)***	***% Accomplished***
Planting	2,048	338	17%
Site Preparation (Mechanical)	2,036	220	11%
Site Preparation (Chemical)	820	167	20%
Tending - Cleaning	2,802	1,852	66%
Tending - Stand Improvement	5,996	9,173	153%

Post-harvest renewal and tending direction is not included in the FOPs. The FMP directs that post-harvest assessments occur only if there are significant compliance issues. It is unclear where follow up silvicultural direction for individual blocks comes from.

The field audit visited highly competitive sites, with a natural tendency for stands to grow poplar, sugar maple, pin cherry and raspberry when exposed to high levels of sunlight.

It was noted during the field audit that multiple blocks did not receive mechanical site preparation, vegetation management, or planting. Some areas were planted in ground that was not prepared. Some blocks were partially mechanically site prepared, partially chemically site prepared and fully planted. Significant amounts of advanced hardwood regeneration were viewed throughout areas without site preparation. Only 10% of the chemical tending implemented during the audit term was focused on vegetation management in white pine stands.

High levels of sunlight within white pine stands will promote significant levels of competition, will be impacted by white pine weevil and blister rust, and will have reduced seed trees available to provide natural regeneration. Significant renewal efforts will be required to ensure success. Mechanical and chemical site preparation, as well as artificial regeneration all fell well below forest management planning targets for white pine stands (

Table 3).

FMP Tables identifying levels of planned renewal and tending is not identified by planned FU or SGR. Annual Reports do not provide information on treatments by planned FU or SGR. This lack of information prevents effective tracking and monitoring of progress by forest type over time. Without complete post-treatment data, it is not possible to evaluate regeneration success, assess trends, or confirm whether management objectives are on track. Annual report requirements identified within the FIM are insufficient to track regeneration success by forest type.

Using Forest Explorer, red pine clearcut and white pine shelterwood harvest areas were reviewed for 7 of 8-years within audit period. Although the stage of management is unknown, the FMP identifies the majority of shelterwood harvests to be at the regeneration stage of management.

Only 14% of all pine shelterwood hectares were treated with mechanical site preparation. The AR information does not provide information on what forest unit is being site prepared; therefore, this number is potentially an underestimate of Pw mechanical site preparation as some of this effort was completed on the red pine clear cut areas. Artificial regeneration was carried out 3 times over 7 years (Figure 2). Mechanical site preparation occurred in 4 of the 7 years, chemical site preparation occurred twice in 7 years with a large amount being applied for beech bark disease projects (Figure 3).

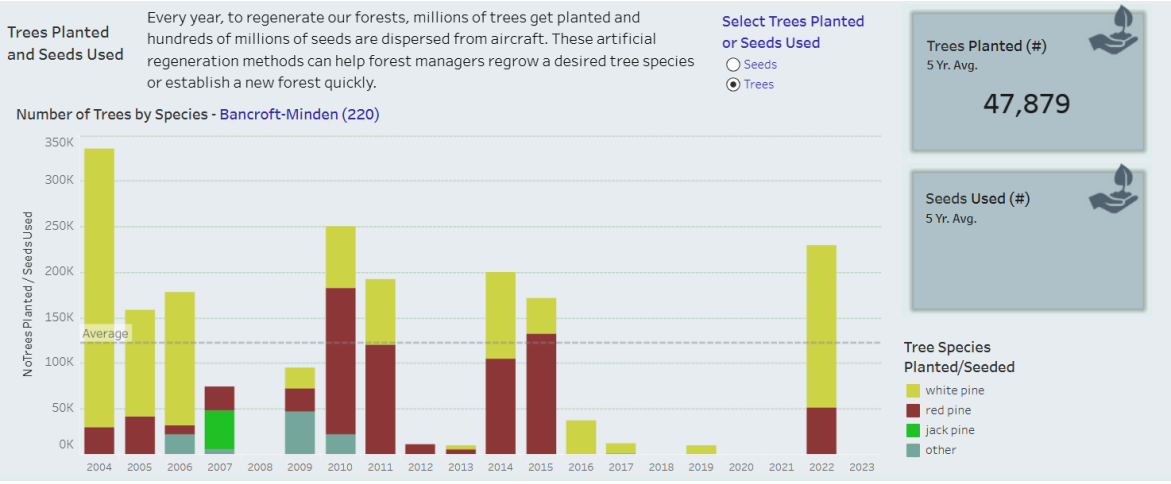

Figure 2. Forest Explorer artificial regeneration reported by species and year.

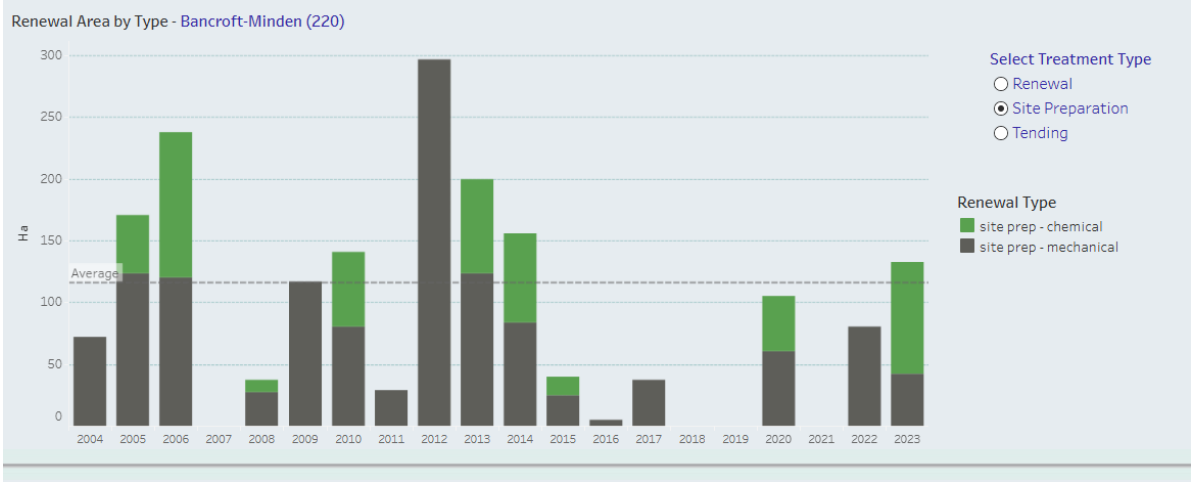

Figure 3. Forest Explorer mechanical and chemical site preparation hectares by type and year.

In the BMF there are 130.4 ha, that represent 28% of the forests white pine, which was reported as being managed under the clearcut silviculture system. There are also 88 ha (19%) which is currently planned to renew to mixedwood or oak. It will be difficult to achieve management objectives of maintaining white pine levels with this direction.

Finding # 9
Renewal effort conducted in White Pine Shelterwood stands during the audit term underachieved planned levels.

Within the current planning structure for the irregular shelterwood system there is a lack of clarity in the existing documentation (FOPs/SGRs) that ensures patches within Irregular Shelterwood blocks that have been treated with regeneration treatments will receive the necessary follow-up, such as planting or tending. The main concern is that with a 35 to 40 year cutting cycle the timing of silvicultural interventions will be lost.

B.5 Tending:

Most of the implemented tending activities fall under the stand improvement category to cover the removal of smaller trees and low-quality material. Implemented stand improvement activities surpassed planned levels by 53% (3,177 ha's). It was noted that stand improvement treatments appear to be helping to address non-commercial aspects of these cuts.

The implemented tending program has generally been effective except in terms of the white pine program where it does not seem to be used aggressively, or only to a limited extent when it appears to be required.

An active beech tending program was implemented throughout the audit term supported by the Forestry Futures Trust (FFT) to reduce aggressive sprouts with a total of 1,519.8 ha treated. The Beech Bark Disease tending program accounts for nearly 90% of chemical tending activities undertaken throughout the audit term.

B.6 Renewal support:

The current seed inventories were found to be adequate to meet the planned artificial renewal program in the FMP. With the closure of the Angus seed plant, extraction is being done by the Fergusson tree nursery addressing a continuity gap highlighted in the previous IFA. Site improvement work was completed at the beginning of the audit term at the Snowden white pine seed orchard to extend its usability.

B.7 Assessment of objective achievement:

The 2011-2021 FMP objectives were evaluated in the 2021 enhanced year-10 AR. Some key factors were found to influence the achievement of plan objectives during the term.

Current forest composition greatly influenced the achievement of forest diversity objectives especially when measured against the Simulated Range of Natural Variation (SRNV).

The current forest condition has a larger amount of stands in the mature age class making younger forest targets more difficult to achieve. Additionally, the underachievement of planned harvest area and the low proportion of stands treated under silvicultural systems that shifts productive forested areas to a younger age class compounds the difficulties in meeting these targets. These factors also contributed to the variable achievements of forest cover objectives particularly for wildlife species that prefer early seral stages and browse-producing habitat.

Socio-economic objectives targeting >85% of planned harvest levels were underachieved due to variable market demand throughout the audit term. The underachievement of planned harvest area is consistent with utilization trends throughout the Province driven by fluctuating market demand and reductions in processing capacity for low grade timber.

The assessment of the objective addressing the implementation of sustainable silvicultural practices in accordance with the SGR was deemed to be achieved in the 10-year AR stating, “Zero instances of noncompliance related to the adherence of FOP direction”. Several findings during this IFA indicate that SGRs were not being followed for White Pine Shelterwood and Hardwood Selection cuts. The audit team determined that this objective was not met during the 2011-2021 term.

Objective achievement for the 2021-2031 FMP was also evaluated showing similar trends to the previous plan. A complete assessment of the achievement of these objectives will occur in the year-10 AR and the next IFA.

Regulatory Requirements C – Planned versus actual

C.1 Annual reports:

A review of the submitted Annual Reports found that they were prepared in compliance with the FMPM and FIM manuals used at the time of submission. Some minor discrepancies were found between the submitted spatial layers and the report text however overall reporting accuracy and product completeness was satisfactory.

It was noted by the MNR District in 2023 that some final removals were not being surveyed and subsequently not reported in the Free-to-Grow (FTG) AR layers. This was communicated to the SFL along with a corrective action request for the next annual reporting period. This was not actioned in the 2024 AR submission with the SFL citing staffing turn-over and internal communication gaps as causal factors in not meeting the Ministry's requests.

C.2 Enhanced annual reports (as per applicable FMPM):

The 2011–2021-year 10 enhanced Annual Report was prepared in accordance with the 2020 FMPM meeting the requirements for data content and analysis. The report highlighted the impact of the current forest condition and the reduced achievement of planned harvest toward meeting the 2011-2021 FMPs objectives.

Annual report products do not contain sufficient information to track the progress of treatment regime outcomes for stands managed under uniform shelterwood and selection silvicultural systems. Renewal and tending treatments are reported without associated FU or SGR identifiers, preventing analysis of results by forest type and limiting the ability to evaluate treatment performance over time.

C.3 District compliance planning and associated monitoring:

A review of the Bancroft MNR District compliance planning and monitoring efforts found a general underachievement of the compliance program. The MNR District did not prepare a formal Annual Compliance Operational Plan (ACOP) throughout the audit term. Although a risk-based assessment was regularly completed, several of the planning requirements stipulated in the Forest Compliance Handbook were not met. Furthermore, issues were noted relative to the total number of inspections completed throughout the term and the timing of inspections submission to the Forest Operations Information Program (FOIP) portal.

Finding #10
The District's compliance monitoring program lacked sufficient planning rigor and sampling intensity throughout the audit period.

C.4 SFL holder compliance planning and monitoring:

Planning requirements for the SFL's compliance program were determined to be in accordance with the FMPM and Forest Compliance handbook. A review of report submission timelines to the FOIP portal found over 338 inspections submitted past the maximum 20-working day timeline stipulated for in-compliance reports. The SFL stated that harvest inspections were often completed prior to the completion of wood haul operations and that the current reporting format does not allow the entering of a date of operation completion to accurately track when submission timelines are not met. The SFL was unable to provide evidence of when timber hauling was completed and acknowledged late report submission for renewal, access and maintenance inspections.

Finding #11
Bancroft-Minden Forest Management Company is not meeting the submission timelines for Forest Operations Information Program reports for most of its compliance inspections.

C.6 Silviculture standards and assessment program

During this audit term a total of 62% (8,834 ha) of planned FTG surveys were completed. In 2018, there was a concerted effort to address the back log of older survey areas. Current surveying efforts are mostly aligned with FMP targets with minimal back log areas requiring assessment. Approximately 25% of the surveys were completed under the Site Occupancy Index (SOI) Stars approach with the remainder using tree marking audit data.

Figure *4* summarises the submitted FTG AR data throughout the audit term. The targeted FU is reported as being met for nearly 81% of the surveyed blocks. Mostof these areas are managed under the hardwood selection system and declared FTG based on tree marking audits. Surveyed blocks which targeted Red Oak (OR1) and White Pine (Pw1, PwU, PwUS) FU's showed the lowest level of success in achieving the targeted FU with roughly 40% of the assessed stands meeting the targeted FU (highlighted in green) or FU's that have similar targeted forest compositions (highlighted in blue). The majority of the white pine silviculture failures move to the INTcc FU.

FTG Declared Forest Units 2017-2024 (Hectares)																					
Target FU	***CEsel***	***CM1***	***HD1***	***HD4***	***HDsel***	***HDsh***	***HDus***	***HEsel***	***HEsh***	***INT1***	***INTcc***	***MW1***	***MXCcc***	***MXHcc***	***OR1***	***ORus***	***PR1***	***PRcc***	***PW1***	***PWus***	***Grand Total***	***% achieved FU***
CEsel	81.3																				**81.3**	100%
CM1	6.4	41.7		7.3			17.5			3.1	16.1	22.6		6.2			34.6	16.9	25.4	4.0	**201.7**	21%
CMN		0.0										38.1									**38.1**	
HD4		1.3	96.5	31.9			7.7			14.8										10.7	**163.0**	20%
HDsel					4385.8	4.0															**4389.7**	100%
HDsh					5.0	331.8															**336.8**	99%
HDus					65.0		348.2							1.9							**415.1**	84%
HEsel								219.6													**219.6**	100%
HEsh									71.8												**71.8**	100%
INT1		6.1	53.6	108.9						396.7	94.6	33.8						27.7	10.0		**731.4**	54%
INTcc							25.7				709.7			70.0							**805.5**	88%
MW1		12.7		19.4						2.1		157.0									**191.2**	82%
MXCcc											8.9			3.4							**12.3**	0%
MXHcc						1.7	34.9							81.6							**118.2**	69%
OR1				72.2											38.6	8.8					**119.6**	32%
ORus							16.8				0.0					51.0					**67.9**	75%
PR1													7.3				38.8	14.6			**60.7**	64%
PRcc														9.5				10.9			**20.3**	53%
PW1		4.1		88.0						17.1	9.6	34.8		28.7					114.2	138.4	**434.8**	26%
PWU																				5.2	**5.2**	100%
PWus											179.8			62.0		1.9				49.5	**293.2**	17%
total	**87.7**	**65.9**	**150.1**	**327.7**	**4455.8**	**337.4**	**450.9**	**219.6**	**71.8**	**433.7**	**1018.8**	**286.3**	**7.3**	**263.3**	**38.6**	**61.7**	**73.4**	**70.0**	**149.6**	**207.8**	**8777.5**	

Figure 4. The FTG Declared Forest Units from 2017-2024.

When compared to the post harvest transition rules in the 2021-2031 FMP the majority of the reported FTG stands are in alignment with the projected FU transitions in FMP-5. A notable exception is the PwUS forest unit which has a modeled target of meeting a pine FU 55% of the time when treated naturally and 80% of the time when artificial renewal treatments are implemented. This underperformance can largely be attributed to the underchievement of planned artifical renewal treatments in white pine shelterwood stands.

The District MNR conducted an extensive Silvicultural Effectiveness Monitoring (SEM) program throughout the audit term with a primary focus on Core Task 1 (10% sample of submitted FTG data) and Core Task 3 (Tree marking audits). A total of seven SEM reports were completed with only the 2020 report missing. All the reports were found to be comprehensive with sufficient supporting information and discussion. These reports highlighted issues that were observed by the audit team including poor White Pine regeneration and low post harvest residual BA in hardwood selection stands. The following was cited in the District SEM reports:

Table 4. Observations from the District SEM reports.

2017 SEM Report	Results indicate that Pw and Pr targets have issues with successful regeneration. Bancroft-Minden continue to struggle on the regeneration of Pw based on MNR audits, similar to findings presented in previous SEM reports. Or regeneration continues to be an issue.
2017 SEM Report	The residual BA from post-harvest surveys ranged from 14.2 - 14.7 m^2/ha - all three selection blocks with selection hardwood stands had an FOP residual BA target of 18 m^2/ha.
2018 SEM report	Results indicate difficulty in regenerating PwUS and ORus FUs similar to findings presented in previous SEM reports.
2018 SEM report	There continues to be discrepancy in the FTG forest unit types between MNRF and BMFCI as per the results section of this report
2019 SEM report	There are significant discrepancies regarding BMFC's ability to achieve their target forest unit of PwUS and ORus as per MNR's audit results. [...] The conflicting results between the MNR and the SFL need to be addressed.
2021 SEM report	There were differences between SFL and MNR results with the most notable being Block 305 – 28 ha (FID 85 & 86) in which the Target species was Pw and Pr.

The MNR and the SFL met on two occasions (2021, 2022) to review the District SEM data and attempt to reconcile data differences, however very little progress has been made throughout the audit term to address data gaps between the MNR and the SFL. The MNR expressed frustration with the SFL's inaction in dealing with the SEM findings while the SFL contends that very little information was provided to them during the audit period.

Currently there is no recourse or corrective action protocol when dealing with District SEM findings. Generally, these are dealt with in a professional and collaborative manner under the principles of continual improvement and adaptive management. Further prescriptive rigour may be required when the collaborative spirit breaks down, and significant differences cannot be resolved. There is no current policy direction that addresses this reconciliation gap.

Finding #12
Discrepancies between the Bancroft-Minden Forest Company and the District Ministry of Natural Resources' Silvicultural Effectiveness Monitoring programs are not being adequately addressed.

The current policy framework is designed to offer flexibility to forest managers and allow for adaptive management. However, this has created uncertainty regarding what the documentation requires and what is needed to demonstrate management intent and compliance. The monitoring requirements are a concern as there should be a policy regarding consistent follow-up work after these various harvesting systems are implemented.

For example, the PwU–PwU SGR provides regeneration standards and monitoring requirements solely for the regeneration stage of management. It does not identify standards or assessment requirements for management or regeneration outcomes associated with final removals, nor does current policy offer guidance in this area. This gap is significant, as the final removal represents the most critical stage of the silvicultural system when harvest, renewal, and tending activities have been completed and treatment results should be evaluated.

Gaps were noted under the irregular shelterwood monitoring and assessment program. It was found that the current system lacked a spatially explicit component to identify areas requiring follow up assessment to determine if minimum regeneration standards are being met. Furthermore, refinements to the timing of follow up surveys are needed to match the stage of management of the various irregular patch types.

Regulatory Requirements D – Action Plan

D.1 Action plan development

The previous Bancroft-Minden Forest independent audit was completed in 2017- 2018. Three months after the final audit report delivery, an action plan addressing all the findings was created and approved. Overall, the actions, reporting timelines and methods of tracking their progress post audit were found to be appropriate for findings directed to the SFL and MNR District and MNR Region.

D.2 Reporting on progress towards completion of actions

In May of 2021, reporting on the progress towards meeting the audit action plan was completed through the endorsed status report as well as, the 10-year annual report for the 2011-2021 FMP.

Overall, the intent of the action plan was generally met by the SFL, MNR District and MNR Region, however, there are still gaps that will require further action. At the operational level, there have been improvements made in terms of communication; however, further work will be needed to share values collection data among all organisations in a collaborative manner. In the previous IFA, similar compliance program issues with both the MNR and SFL were flagged.

Regulatory Requirements E – License

E.2 Ontario Crown Timber Charges payments:

The Bancroft-Minden Forest Renewal Trust (FRT) is currently above its minimum required balance. Although most years show small arrears at year end, FFT and stumpage fees continue to be paid.

Crown timber charges within the audit period have largely been observed to be paid in full and raise minimal concern. During the audit period, auditors recognized that there appeared to be a declining trend in the account balance, beginning in 2020-2021. In 2023-2024 the year-end balance ($660,525.16) was below the minimum balance for the License (≥$795,600). Interviews with the SFL noted several contributing factors for this including a major blowdown event in early 2022 with the salvage harvest that followed, and adjustments to crown charges for said salvage operations. The General Manager confirmed that these had been corrected to reverse any potential trend. At the close of fiscal year 2024-2025 the account balance was comfortably above the minimum balance at $946,311.19.

E.3 FRT eligible silviculture work

Following the review of the Special Procedures Report there were no significant variances to note. All the records and mapping information were kept on file. The invoices and other activities were consistent with the FMP and AWS and confirm as accurate during field audit verification.

E.4 SFL or Agreement conclusion in final audit report

Overall, the audit team concludes that the management of the Bancroft-Minden Forest was generally in compliance with the legislation, regulations and policies that were in effect during the period covered by the audit and that the Crown Forest was managed in compliance with the Crown Forest Sustainability Act and with the principles of sustainable forest management, as assessed through the IFAPP with the following critical exceptions:

1) Improvements are needed to refine the current approach in implementing the Irregular Shelterwood System at the planning, prescription and monitoring phases.

2) White Pine management on the BMF requires further attention on meeting crown closure and BA residual requirements stipulated in the prescribed SGRs. Greater attention is needed in meeting planned artificial renewal targets for White Pine.

3) Hardwood management on the BMF requires further attention in meeting minimum BA targets within selection silvicultural systems and minimum regeneration standards within the shelterwood and uniform shelterwood silvicultural systems.

Regulatory Requirement F – Sustainability

F.1 Determination of sustainability

The primary source of review and assessment of objective achievement is the 2020 Year 10 enhanced AR. Underperforming objectives were largely tied to the current forest condition being heavily weighted towards over maturity with little opportunity for change through forest management due to the underachievement of planned harvest and the inability to implement silvicultural harvest systems that move stands to a younger age class.

Gaps were noted in the implementation of certain SGR's particularly for crown closure requirements for White Pine shelterwood stands, minimum basal area retention targets for Hardwood selection stands and minimum regeneration requirements for HDSH and HDUS stands. In addition to being noted within the sample of the field audit, several of these issues were flagged by the MNR's SEM program throughout the audit term. Work is needed to reconcile these issues and ensure that they don't impact long-term sustainability indicators.

The implementation of the irregular shelterwood system took place after the enhanced year 10 AR. Work is needed to refine this system in order address several gaps the audit identified at the planning, FOP, and monitoring stages of this system.

The action plan from the previous IFA has been largely implemented with no outstanding action related to objective achievement or forest sustainability.

Critical exceptions listed in the final sustainability conclusion were determined based on the consideration of several factors. These included the proportion of noted issues within the total field audit sample, the level of corrective action implemented throughout the audit term, corroborating monitoring data and potential long-term impacts on critical sustainability indicators and objectives.

F.2 Monitoring indicators of forest sustainability

Indicators of forest sustainability are described in the current FMP. A forest compliance program is in place and generally functioning as described. Minor improvements are needed and addressed in two separate findings. A silvicultural assessment program has been executed by both the SFL and MNR. Mandatory FTG Surveys are being conducted in relative proportion to historic harvest levels. Further refinement of the SEM system is required to reconcile differences between the SFL and MNR. Improvements are needed to address gaps in the implementation of the Irregular shelterwood system which is still in its planning and operational infancy.

F.3 Assessment of long-term trends

Actualized harvest levels show a downward trend since the 1996-2001 planning period (Figure 5). During the 2011-2021 period, 55% of the planned harvest volume was harvested with most of those volumes falling withing the Tolerant hardwood species group. Over the last three planning periods, pine harvest volumes achieved 55% of planned levels with the highest total volume achieved during the 2011-2021 planning period. The underachievement of planned harvest volumes is largely attributable to fluctuations in market demand however other contributing factors include stand bypass, Species at Risk (SAR) operating restrictions, and workforce capacity. The underachievement of planned harvest levels is not unique to the BMF with similar utilization levels occurring in adjacent MUs and throughout the province.

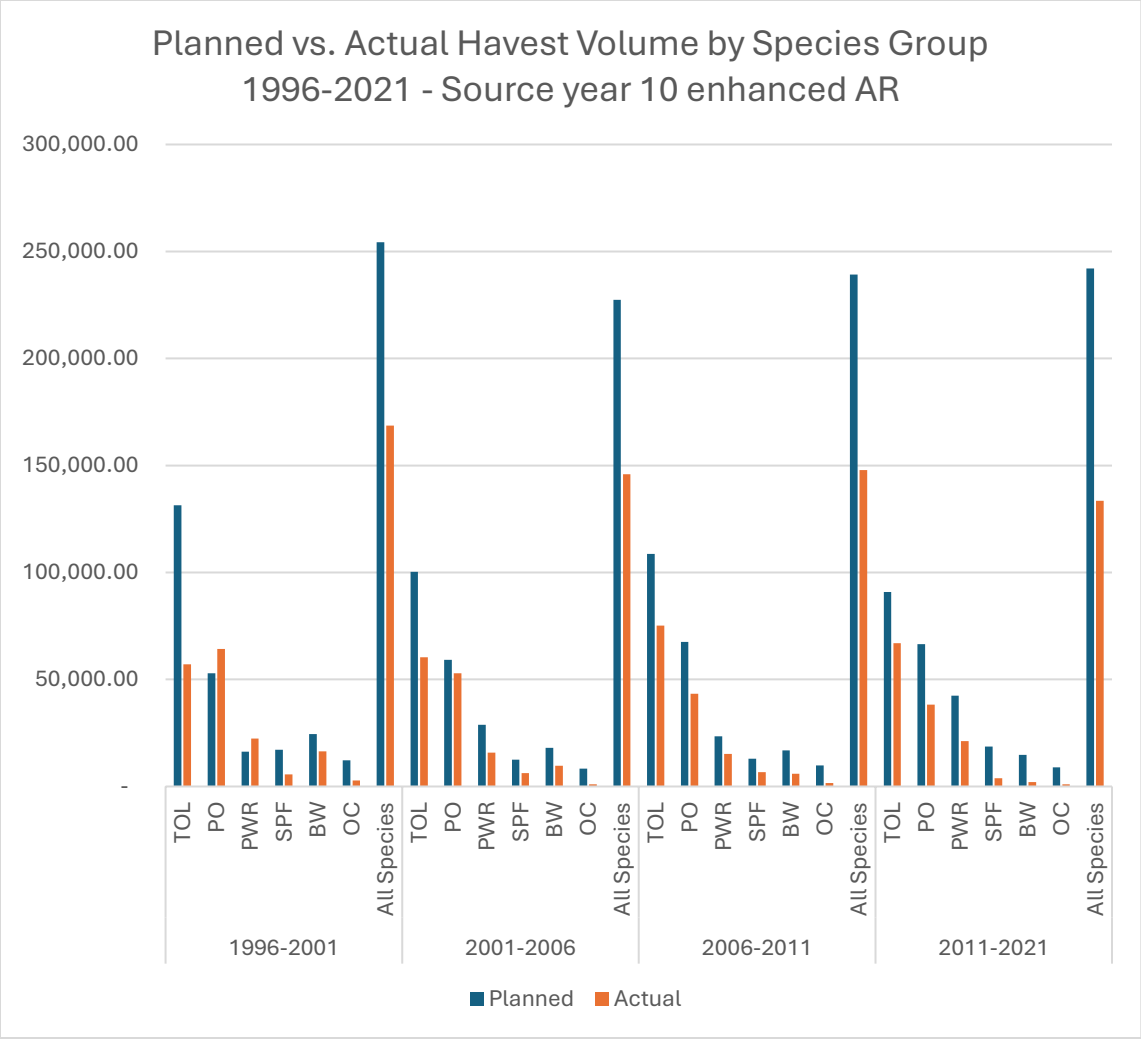

Figure 5. The Planned vs. Actual Harvest Volume by Species Group 1996-2021.

Renewal trends since 1996 show a relative proportional decrease in renewal efforts compared to the actualized harvest. Artificial renewal is the exception with a notable decrease in planting and site preparation activities over the previous two planning terms. While harvesting of pine has remained relatively stable over the last three planning terms artificial renewal levels have dropped by nearly 37% when compared to the 2001-2006 term. During the 2011-2021 term, 15% of planned site preparation was completed and 21% of planned planting activities were completed. While the overall size of the planned artificial renewal program is rather small (>5%) it's underachievement should not be overlooked.

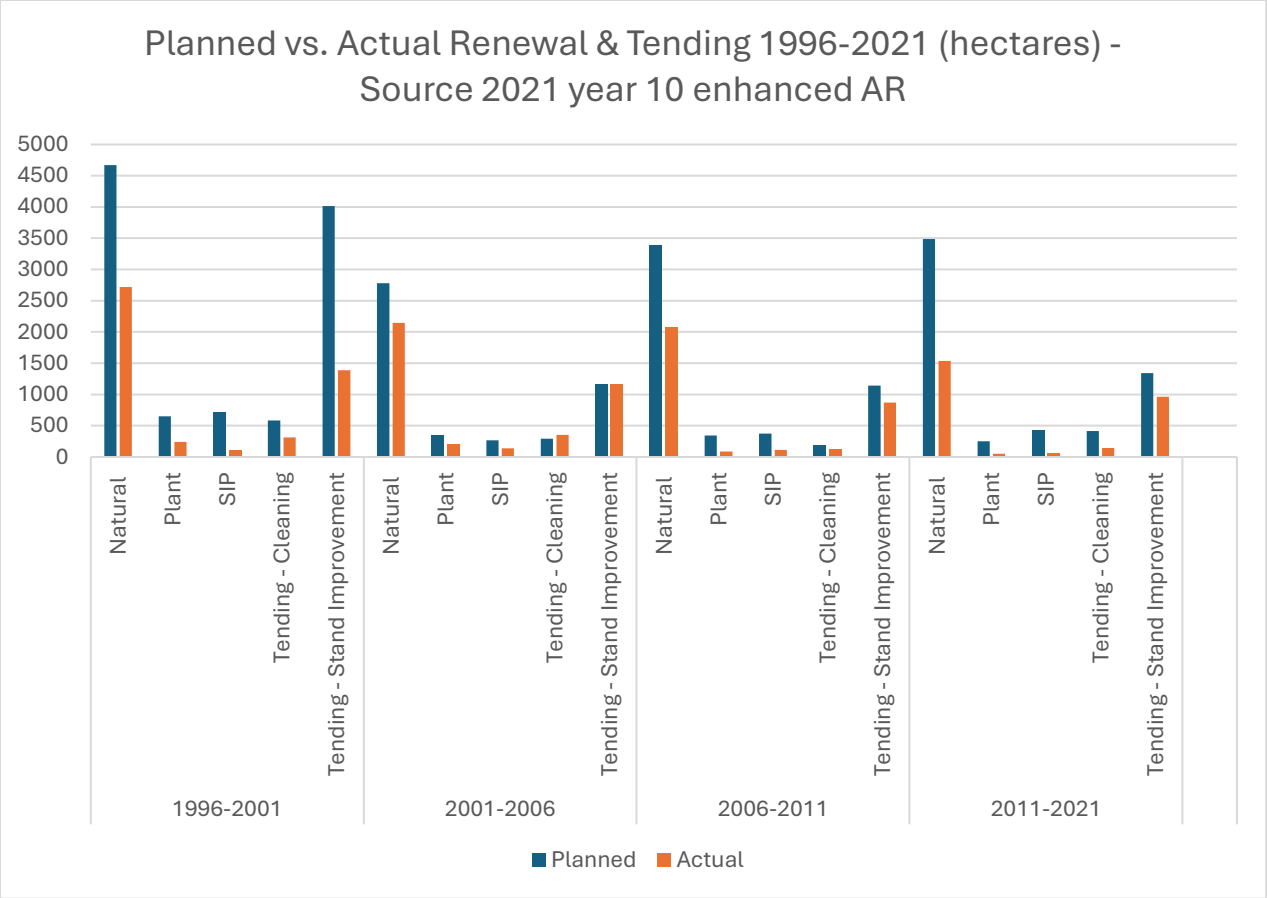

Figure 6. The Planned vs. Actual Renewal & Tending 1996 - 2021.

4.1 Concluding statement

The audit team concludes that, with the critical exceptions noted above, management of the Bancroft-Minden 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 the Bancroft-Minden Forest Company Inc. (License #542585). The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol. The critical exception(s) are as follows:

- Improvements are needed to refine the current approach in implementing the Irregular Shelterwood System at the planning, prescription and monitoring phases.

- White Pine management on the BMF requires further attention on meeting crown closure and BA residual requirements stipulated in the prescribed SGRs. Greater attention is needed in meeting planned artificial renewal targets for White Pine.

- Hardwood management on the BMF requires further attention in meeting minimum BA targets withing the selection silvicultural system and minimum regeneration standards within the shelterwood and uniform shelterwood silvicultural systems.

APPENDIX 1 – FINDINGS AND BEST PRACTICES

Independent Forest Audit – Record of finding **Finding # 1 – A.1.2; Local Citizens' Committee (LCC)**
Regulatory Requirement: A Compliance **Audit Criterion**: A.1.2; Local Citizens' Committee (LCC) **Procedure(s)**: 1. Assess establishment and function of the LCC during the term of the audit. This shall involve a review of the LCC membership, the LCC terms of reference, the LCC minutes, and other LCC requirements as per the applicable FMPM. 2. Review and assess whether the LCC met the purposes and conducted its activities in accordance with the applicable FMPM. 3. Review and assess whether the LCC effectively communicated local interests in forest management planning to the MNR and FM.
Background information and summary of evidence: Within the Forest Management Planning Manual (Section 1.2.5.1, Figure A-3, pg. A-35) is a requirement for the LCC to provide a "self-evaluation of its effectiveness in plan development". LCC members were asked about why they felt the self-evaluation had fallen between the current plan (2021-2031) and the previous plan (2011-2021): 8.6/10 to 8/10. They felt the committee had become less effective over time and was continuing to decline and would now rate it at less then 8/10. There is a concern that the LCC is taken less seriously with issues outside of the FMP process and that there is a negative feedback loop for volunteers who see very little progress and are not asked to contribute to real concerns and needs. In our interviews with the two LCC members we asked about the following: *In the 2021-2031 FMP the LCC noted two main areas for improvement 1) the ability to have greater input and feedback in specific planning topics through increased learning / training opportunities and stakeholder outreach abilities; and 2) see a formal feedback loop implemented that confirms or demonstrates how LCC input is being considered and utilized by the Planning Team, the SFL and*

MNR. Both items were listed as in development/being created. Are you satisfied with the level of progress made on these two action items?

Both members felt very little progress had been made on these two items. BMFC's efforts to provide field training opportunities were acknowledged as being well done and educational. One member mentioned that a spreadsheet used to track issues and responses was stopped when the management planning needs were fulfilled and there was a change in MNR staffing. There was a recommendation to provide a standardized (all LCC's across the province) conflict and issues resolution process.

In Section 2.2 of the FMPM under the LCC Purpose (Section 2.2.2), which is also reflected in the TOR, we find most of the LCC tasks are related to the development, review, and finalization of the FMP. This was generally a success for the LCC. Two of the sections relate more to ongoing activities during the plan implementation phase:

> FMPM Section 2.2.2 d) iv) *providing advice on any additional public consultation opportunities that would be useful in the context of local circumstances and needs*.
>
> FMPM Section 2.2.2 j) *providing advice to the MNR when discretionary decisions must be made (e.g., categorization of amendments, and issue resolution decisions)*.
>
> Section 3b Terms of Reference*: Where the Citizens Committee wishes to provide a written recommendation to the FMP Planning Team or District Manager, the group will use the consensus approach or … a majority/minority vote for the recommendation*.

In principle, the LCC should be utilized as an advisor to MNR on public concerns and deciding on the level of involvement to pursue. In the auditor's opinion the Roads Reclassification project was very clearly a high-level issue with public concerns from many groups of road users including First Nations that should have involved the LCC. The surprise that a significant amount of roads reclassification discussion had happened between MNR and the SFL before including the LCC seemed to have caused some turmoil within the committee which seemed to sidetrack the regular process of seeking consensus, acquiring information and preparing letters. We understand that the letter that was sent to the District Manager from the LCC Chair dated March 31, 2025, requesting a detailed MNR presentation on the roads issue, was primarily the work of one LCC member with some support from the SFL. The letter was reviewed and approved by LCC members via email and later sent to the MNR by the LCC chair. We have concerns

with the LCC not following its consensus protocols (Section 3b of TOR) and with BMFC's and the MNR's working relationship with the LCC.

> FMPM Section 2.2.2 m*) participating in the independent forest audit process by having the opportunity: iii) to provide a representative to participate in field visits*.

One of the LCC members did attend one day of the field audit. We did not get the impression that his participation was at the recommendation of the committee or the chair. The audit team made several attempts to contact the chair, we did not get to speak to him, he did not come to the field audit, and he did not advise us of who would be the representative from the LCC.

> FMPM Section 2.2.3 Membership and Organization: *The membership of the LCC will include local citizens representing a range and balance of interests from the communities within or adjacent to the management unit*.

The FMPM and TOR provide lists of 19 membership categories. The Bancroft-Minden LCC has dwindled to 6 active members (originally 8 when the TOR was passed in 2020) that do not represent an adequate cross section of the public. In September 2022 the LCC and MNR conducted a Recruitment Analysis, and the document suggested 3 potential candidates and a need for a First Nations and/or Metis representative. One of the candidates is currently a member. The documented membership has representation from the listed categories in black. Those bolded have no representative:

a) **Local business**
b) Tourism industry
c) Anglers and hunters
d) First Nation and Metis communities (not active)
e) Forest industry
f) Naturalists
g) Municipalities (2)
h) Trappers and other resource users
i) Crown land recreationalists
j) **Forest industry trade unions**
k) **Woodworkers**
l) **Small independent loggers**
m) **Mineral sector**
n) Waterpower sector
o) **Chamber of commerce member or economic development officer**
p) **Local environmental groups**
q) **Local heritage groups or organizations**

r) Interest groups (i.e. property owners / lake associations)
s) General public

- TOR Section 3a - members missing 50% of meetings over 6 months may be replaced – the LCC request for MNR to replace the First Nation and Metis community representative, who has not been active for more than 2 years, has not been fulfilled. In January 2022, letters were sent from the District Manager to seven First Nations and Algonquins of Ontario requesting them to consider putting forward an LCC representative. Interviews with 5 of the First Nation and Metis communities, or collective representative, during the IFA indicated that they had not recently (past few years) been contacted about filling this role but also that some would decline if asked.

The Recruitment Analysis and letter writing campaign to the First Nations and Metis communities in 2022 has not successfully increased the diversity of the LCC membership. With only 6 active members, the LCC is not representative of the breadth of the public who are associated with the forest. This makes it difficult for the LCC to serve its purpose.

Section 3a Terms of Reference (TOR) Chair Elections: *The LCC will be chaired by a person elected by the committee for a term of one year. Individuals may be re-elected for more than one term. The selection process will occur annually at the meeting closest to April 1, 2020 (start of the new fiscal year and AWS).*

- The Chair's position is to be re-elected each year. Multiple efforts were made to interview the chair who has been in this position for more than 6 years. We had no response from the chair, but other interviews suggest that annual re-elections are not always happening.

Discussion:

The role of the LCC is significantly driven by its participation in most aspects of the forest management plan and all aspects of public consultation. The LCC also has the very important role of continuing to provide a public consultation venue throughout the implementation phase of the FMP.

The two members that we spoke to expressed concerns with the LCC not being effective or having much influence and that this may be partly due to a breakdown in proper committee function in terms of seeking consensus, sharing information, and bringing conversations with the District Manager and others back to the whole committee for

discussion and decisions. The chair's position has not been re-elected annually as is the requirement of the TOR. The sentiment of LCC members includes statements such as:

- "The effectiveness of the LCC is being eroded due to lack of impact"
- "The LCC is a public consultation check box for MNR that does not have much influence"

Conclusion:
We reviewed the Terms of Reference, meeting minutes and had interviews with LCC members, and District staff. The current LCC is not effective at meeting its purpose as it relates to its role in supporting plan development along with the implementation of the FMP and monitoring its performance.
The LCC is not meeting its purpose of providing effective public consultation during the implementation phase of the FMP. The FMPM and Terms of Reference are not being followed. The active membership of the LCC does not provide adequate representation of the public consultation community. The annual chair re-election and confirmation of the chair's role is not always occurring.

Finding #1:
The Local Citizens Committee is not meeting the Forest Management Planning Manual criteria for its purpose, membership, and organization.

Independent Forest Audit – Record of Finding
Finding #2

Regulatory Requirement: A Compliance

Audit Criterion: A.3: Plan production activities

Procedure(s):

1. Determine whether background information provided to the planning team was sufficient to fulfill their role in planning.
2. Assess whether issues that may affect the schedule for plan production were appropriately addressed. Consider:
   - Issues as identified in the terms of reference.
   - FMP summary of major issues encountered and addressed during plan preparation, and any related FMP text, including any significant disagreements among planning team members on major issues.
   - The steering committee was successful in resolving any resourcing issues and disagreements among planning team members.
3. Assess implementation of the planned terms of reference planning schedule and associated checkpoint milestones.

Background information and summary of evidence:

Irregular Shelterwood System Working Group

Preliminary LTMD endorsement letter dated November 30, 2020, calls for various actions to be undertaken within the Draft Plan that are specific to the irregular shelterwood system. This includes a joint MNR-SFL learning program that includes examples such as:

- Silvicultural monitoring and reporting mechanisms incorporating elements beyond regular annual reporting requirements.
- Inclusion of guiding principles for FOP writers and tree markers to provide guidance based on science and other jurisdictions' experience.

The SFL notes that these elements have been satisfied, however documentation review and interviews with auditees indicates that these elements continue to be lacking and the learning program described has not provided sufficient clarity for ISS implementation nor for the audit team to determine whether the system was appropriately applied.

ISS Working Group Project Charter

A 2021 a Project Charter for the ISS Working Group outlines the background, goals, membership, and a high-level schedule with a March 31st, 2023, target date to accomplish charter objectives and deliverables. A review of documentation and interviews with SFL, MNR District, and MNR Region personnel indicates that the group has not formed an updated Charter since that time. The ISS Working Group Charter lists the following objectives and performance measures:

Objectives:

1. Review and develop an approach to prescribing ISS with intention based on the stand objectives and conditions (structures and composition)
2. Review and develop an approach that direct and audit tree marking in stands managed under ISS and recommend document to the Ontario tree markers instructors' group
3. Review and propose modification, if necessary, the ISS monitoring approach developed in the 2021 BMF management plan
4. Document standards and best management practices for managing tolerant hardwood stands under ISS as part of a learning module
5. Propose standards and best management practices to be incorporated in the silvicultural guide

Performance measures:

1. An approach to prescribing ISS based on stand objectives and conditions developed
2. Clear directions for tree marking and auditing tolerant hardwoods stands managed under ISS developed; document discussed with Ontario tree markers instructors' group
3. The monitoring and reporting approach of ISS reviewed; approach modified as required and provided for incorporation in the 2021 BMF management plan
4. A learning module that incorporates standards and best management practices for managing tolerant hardwood stands under ISS developed and recognized
5. Standards and best management practices for managing tolerant hardwood stands under ISS in Ontario provided to MNRF policy division.

The SFL agrees, that "some elements of the broader ISS Project Charter remain outstanding, including province-wide alignment on modelling assumptions, prescription setting, regeneration monitoring protocols, and reporting standards."

Supplementary Document G

Supplementary Document G, Section 6.3 outlines Training and Continuous Improvement actions that commit to a joint MNR/SFL Working Group that will meet annually, at a minimum, and encouraged to meet quarterly to view field examples. Group collaboration lists: Policy Division, Science and Research Branch, Forest Research and Monitoring section, Regional Operations Division, and communication with professionals form other jurisdictions (namely Quebec and the northeastern United States). This section acknowledges the complexity and infancy of ISS in Ontario and is cited as a work in progress which will be addressed through a continual improvement framework. Further, the section lacks the detailed benchmarks of group membership, deliverables (beyond annual reporting), and timelines that are outlined within the ISS Working Group Project Charter.

2023 ISS Working Group Meeting Summary

The last meeting of the Working Group within the audit period occurred on May 16, 2023, and no other evidence of the Working Group meeting the stated deliverables could be located. Minutes are not available from that meeting, however multiple Working Group members interviewed shared the same summary information, that the mandate of the group had not been met at the time. Interviews with Working Group members clearly articulate that the objectives and performance measures were not met and that disagreements regarding ISS implementation persist. The Working Group Chair noted several key issues, including:

- MNR's concern that SFL declares overstory established/FTG immediately after harvest rather than waiting for desirable regeneration - a position rejected by SFL
- Stands reported as ISS appearing, upon MNR field review, to be suitable for uniform shelterwood or selection treatments, also rejected by the SFL.

The lack of agreement on these points led to the Working Group becoming inactive, with SFL indicating participation may resume once its General Manager returns from leave.

Three site visits with only the SFL Silviculture Forester and District Forester occurred following this last meeting, and notes were provided that do address some elements of the ISS Working Group Project Charter being discussed generally. In interviews, several auditees cited a lack of cohesion between MNR and SFL representatives along with protracted disagreements on the silvicultural basics of the ISS, as well as communication issues at the local level of the Bancroft Minden Forest Company and Bancroft District MNR.

Discussion:
As outlined in the Project Charter: the ISS Working Group was formed to address the approaches to prescribing, tree marking, monitoring, learning modules, and Guide Best Management Practices.

It appears that the original working group, with its broad membership, is no longer functioning and although there is some communication between a very small sub-set of the members it is unclear as to the plan for the larger working group. There has been no indication of a revision of the Charter membership, objectives and deliverables, or timeline for several years. The issue arising from the schedule for plan production has not been comprehensively addressed, and the planned terms of reference within the planning schedule and associated checkpoint milestones have not been implemented. Since 2023, the SFL Silviculture Forester and MNR District Forester have performed site visits to review ISS, among other silvicultural approaches. Documented evidence shows three site visits between July 2024 to March 2025.

It should be noted that there was one meeting of members of the Working Group that fell outside of the audit period, in June 2025, and the minutes indicate that much of the original deliverables of the Project Charter have yet to be realized and implemented.

Conclusion:

The ISS Working Group was formed because of LTMD endorsement and as a response to the relative infancy of the silvicultural system in the province. The ISS Working Group's charter speaks directly to several critical checkpoints within the plan production and implementation schedule and represents a condition to acceptance of the FMP including several actions aimed towards a range of questions and issues with the planning, modelling, implementation, prescription setting, monitoring, and reporting of the Irregular Shelterwood System to be completed by March 31, 2023. With these elements still outstanding at the time of the Independent Forest Audit, the audit team found numerous audit criteria where a lack of clarity on ISS resulted in an inability to determine whether the system is being appropriately implemented.

Finding #2:
The Irregular Shelterwood System Working Group has not reached the stated Objectives and Performance Measures, completion date, and has not been active within the audit period since 2023.

Independent Forest Audit – Record of Finding
Finding #3

Regulatory Requirement: A: Compliance

Audit Criterion: A.3: Planned production activities

Procedure(s):

1. Determine whether background information provided to the planning team was sufficient to fulfill their role in planning.
2. Assess whether issues that may affect the schedule for plan production were appropriately addressed. Consider:
   - Issues as identified in the terms of reference.
   - FMP summary of major issues encountered and addressed during plan preparation, and any related FMP text, including any significant disagreements among planning team members on major issues.
   - The steering committee was successful in resolving any resourcing issues and disagreements among planning team members.
3. Assess implementation of the planned terms of reference planning schedule and associated checkpoint milestones.

Background information and summary of evidence:

The 2011-2021 Phase II FMP for the BMF saw a major reclassification of primary and branch roads. In total, 620.8 km (92.5%) were classified as primary, and 49 km (7.5%) were classified as branch. Primary roads nearly doubled compared to the Phase 1 FMP. The plan author at the time stated that this was largely done by the SFL with some input from the MNR District forester and planning team. Three key priorities were used in the reclassification exercise.

1. Aligning road classifications with updated roads definitions in the FMPM;

2. The Forest Roads and Water Crossings initiative which provided direction on road classifications:

3. The beginning of the MNR roads funding initiative which in its inaugural year only funded primary roads.

The plan author at the time noted that the MNR District was very proactive at extending invitations to the participate to the First Nation communities. Consultation and approval were conducted based on the current FMPM at the time.

During the development of the 2021-2031 FMP there were several delays requiring two separate 3-month extensions to the approval of the plan. Final approval of the plan took place on September 30th, 2021. During the development of the plan, the planning team was unable to fulfill several planning requirements related to roads classification for existing roads. The FMP (section 4.5 Roads) addressed this gap by requiring the following:

> *"A decision was made at the Steering Committee Meeting on October 16, 2020, to defer some of the roads planning requirements regarding road classifications for existing roads, clarification and direction on road responsibility and developing a road transfer protocol. No later than 30 days following the approval of the 2021-2031 FMP, the SFL-holder and MNRF shall form a joint task team (the "Joint Task Team") to reassess the matters specified above (the "Reassessment Work"). The SFL-holder shall participate in the Joint Task Team and shall carry out or assist with components of the Reassessment Work on an equal basis with MNRF. The Reassessment Work shall be completed by the Task Team no later than the first anniversary of date of the approval of the 2021-2031 FMP. The Task Team's work shall not extend to the preparation or submission of a plan amendment as provided for in the paragraph below which shall be the sole responsibility of the SFL-Holder.*
>
> *The SFL-Holder's Plan Author shall submit the completed Reassessment Work to MNRF Bancroft District in the form of a proposed FMP-amendment that satisfies the requirements of Part C, Section 2.0 of the FMPM. The amendment submitted to MNRF Bancroft District must include the following:*
> - *Updated documentation to Section 4.5 of the 2021-2031 FMP;*
> - *Revised table FMP-18;*
> - *Updates to Supplementary Documentation H (as determined by the task team);*
> - *Updated Existing Road Use Management Strategy and Existing Road Water Crossing Layers, and*
> - *Updated FMP maps."*

The District MNR stated that the road classification work completed during Phase II of the 2011-2021 FMP misidentified a significant number of roads as primary citing that they did not meet the current FMPM definition and did not align with the ratios on

adjacent MU's (approximately 50% primary roads and 50% branch roads)). The District MNR had hoped to implement this update within the FMP planning process to dovetail with the FMPM's requirements and obligations for public, stakeholder, First Nation and LCC feedback and input. District supervisory staff involved during the planning phase of the 2021-2031 FMP stated that the high proportion of roads classified as primary leads to the SFL having an incorrect distribution of funds as current classification of roads does not align with policy.

The SFL stated an unwillingness to accept the District's initial re-assessment of roads classification prior to the October 16, 2020, deferral decision. The SFL manager cited a lack of suitable rationale backing the MNR's reclassification work. The SFL manager further stated that the reclassification of roads would impact its ability to evenly allocate available roads funding dollars to all its shareholders. The SFL manager further expressed concerns with the Existing Roads Use (ERU) Management Strategy and access planning for intermingled municipalities within and adjacent to the MU. They stated that the ERU should be fixed prior to addressing the reclassification of roads on the MU. The SFL manager further stated that this work should include the roads responsibility/transfer efforts in tandem to ensure that all processes are aligned (ERU, roads classification and responsibility/transfer). The SFL manager also stated that First Nations and the LCC needed further involvement in the roads planning exercise. The representative from AOO expressed a desire for continued involvement throughout the road's classification exercise.

The road's steering committee was unable to draft a project charter prior to the required deadline. A draft project charter was presented to the SFL on July 22nd, 2024, nearly 1 ½ years past the deadline in the approved FMP. This charter strictly focused on updating FMP-18, while committing to the legislated requirements of the FMPM for public, stakeholder and First Nations consultation. District MNR stated the *"MNR's position throughout was that the role of the task team remained scoped to the reclassification of roads to align with the FMPM definitions, while BMFC expressed a need to broaden the scope and incorporate an in-depth review of their roads network first. While the idea of a charter was to motivate, it ended up stalling the work and became a distraction."*

Throughout the remainder of the audit term there was significant back and forth between both parties, but no progress was made regarding amending the FMP. It was noted that since the end of the audit term (March 31st, 2025) there has been a tentative agreement on reclassifying ~80% of the roads on the MU. This would result in an approximate split of 70% primary and 30% branch roads which is closer in line with adjacent MU's. Some of these roads were viewed during the field audit and determined to align with the current

road classification definition. The field audit sample of reclassified roads does not allow for an accurate determination of overall MU road reclassification.
Discussion: The failure of the roads planning committee to meet its intended goals and timelines was due in large part to an inability to set a joint project charter that met the intent of the FMP directive and the requirements of the FMPM. This highlighted a significant divergence in opinion between the SFL and MNR on the process and scope guiding the Roads Steering Committee. Several parties involved throughout the process emphasised a very strained relationship between both parties which did not support a collaborative environment.
Conclusion: Road's planning in the 2021-2031 FMP was not fulfilled as per the requirements of the FMPM. Commitments in the FMP to resolve these issues within a year of plan approval were not met. The roads committee was ineffective in resolving these issues in a collaborative and productive manner.
Finding #3: Access planning in the 2021-2031 Forest Management Plan was not fulfilled as per the requirements of the Forest Management Planning Manual and the committed timelines. stated within the Forest Management Plan.

Independent Forest Audit – Record of Finding
Finding #4

Regulatory Requirement: A Compliance

Audit Criterion: A.4 Assess the Proper Development of the FMP

Procedure(s):
Review and certify that the FMPs (and contingency plans and plan extensions) have met the following requirements for approval:

1. The FMP has been prepared in accordance with the FMPM, the FIM, and relevant policies and obligations (including any relevant Ministry agreements with First Nation and Métis peoples).

2. All silviculture treatments in the SGRs which are exceptions to the recommendations in the silviculture guide(s) have been identified.

3. All operational prescriptions or conditions for areas of concern which are exceptions to the specific direction or recommendations in the applicable forest management guides have been identified.

4. Review that the AWSs have been prepared in accordance with the requirements of the FMPM and FIM and are consistent with the approved FMP

Background information and summary of evidence:

SGRs, as directed by the FMPM and FIM track the connection between what is modeled within the FMP and the results of the operational implementation. These results feed into the trends analysis required for forest management planning, and into forest inventory products. Forest inventories require accurate data to ensure planning properly optimizes and directs wood supply, management entries, and habitat results as identified in modeling. Offering an alternate treatment with a different silvicultural system is not supported by policy as this would have different growth and yield projections and future forest conditions.

Although policy identifies the clearcut with seed option as a treatment option with a high probability of success, it further qualifies this by stipulating that it should be applied only when the white pine overstory is insufficient to support the crown closure required for shelterwood management and cautions that low densities of white pine regeneration are anticipated.

The Forest Management Planning Manual

A silvicultural ground rule (SGR) identifies the current forest condition, silvicultural system, future forest condition at maturity (e.g., silvicultural stratum), development information, management standards, regeneration standards, and acceptable alternative harvest, renewal and tending treatments. SGRs identify regeneration standards for the assessment of establishment (at a time when composition can be determined) and performance (at a time when growth can be measured). Establishment is the period between harvest and the completion of silvicultural treatments.
Performance is the period between establishment and when projected yield can be assessed. Modelled silvicultural options exhibit the following characteristics:
(a) they apply to the same initial forest conditions (e.g., forest units and ecosites); and
(b) they achieve the same future forest conditions (e.g., silvicultural stratum, regeneration standard).
Each silvicultural option will identify the silvicultural stratum to which it applies and will have assumptions about the future forest condition, treatment costs, and success rates in response to treatments (e.g., post-harvest renewal transition rule). The silvicultural options of the base model will reflect the most commonly used SGR(s).
The analysis of past silvicultural performance will serve as the default post-harvest renewal transition rules. The analysis of past silvicultural performance will consider:
(a) results of past silvicultural treatments.
(b) results of SGRs.
(c) assessments of regeneration results; and
(d) the relationship between new forest classifications and growth and yield assumptions and historic records.

Forest Information Manual

The SGR describes the silvicultural system and types of treatments that may be used to manage forest units for a specific current forest condition to achieve a target future condition.

Silviculture Guide

Clearcut with Seed Tree high probability but with expectation of low density of white pine regeneration and limited to low preharvest overstory white pine composition.

Regeneration and management standards found within existing SGRs do not contain the requirements and rigour needed to document these results and provide information to future inventory products.

Discussion:

PwU-PwU SGR management standards identify requirements to document pre and post harvest information as referenced in operations prescriptions but the pre harvest information does not include basal area by species and size class which would provide

information on residual tree retention post harvest. SGR regeneration standards include needing 610 well spaced white or red pine with a minimum height of 1 meter. This stocking is quite low and does not provide adequate stocking to support the development to a mature white pine stand. FTG surveys are scheduled to occur within 10-years post regeneration harvest. Policy directs FTG determination to occur after all harvest, renewal, and tending activities are completed. Declaring results prematurely does not provide accurate information on the implementation of the full SGR, nor will it provide accurate results in forest inventory products.

The intent of the PwU-MXH SGR found within the FMP is to declare failed uniform shelterwood stands and stands where site conditions limit silvicultural operations. The management intent of white pine stands that have received a regeneration harvest is to renew that stand to white pine. Previous harvest entries must inform prescription development. Shelterwood systems are long-term management commitments that depend on continuity of intent and accurate stand history. Even when a prescription writer is implementing their first entry, the original management intent predates their involvement and must be maintained. The SGR, therefore, should remain PwU-PwU until after all harvest, renewal and tending activities are complete in order to make a declaration of the silvicultural treatment package that was implemented within the SGR as directed by policy.
This would apply to those SGRs where harvest results in planned failures:

PwU-MXH (white pine shelterwood to hardwood mixedwood)
PwU-MXC (white pine shelterwood to conifer mixedwood)
PwU-INT (white pine shelterwood to intolerant hardwood)
PrC-MXH (red pine to hardwood mixedwood)
HDI-MXH (irregular hardwood to hardwood mixedwood)

While the policy framework is designed to offer flexibility to forest practitioners and support adaptive management for improved operational outcomes, it appears to have introduced uncertainty regarding the documentation requirements needed to clearly demonstrate management intent and compliance with established standards. Ultimately, clearer policy direction is required to ensure that appropriate standards are consistently identified, interpreted, and applied during both the planning and implementation phases of the forest management plan. Improved clarity will support practitioner decision-making, reduce ambiguity, and help ensure that management intent is properly documented and carried through operational activities.

For example, the PwU–PwU SGR provides regeneration standards and monitoring requirements solely for the regeneration stage of management. It does not identify

standards or assessment requirements for management or regeneration outcomes associated with final removals, nor does current policy offer guidance in this area. This gap is significant, as the final removal represents the most critical stage of the silvicultural system when harvest, renewal, and tending activities have been completed and treatment results should be evaluated.

Conclusion:
Clearer policy direction is required to ensure that appropriate silvicultural standards are consistently identified, interpreted, and applied during both the planning and implementation phases of the forest management plan.

Finding #4:

- Policy improvement is required to ensure that appropriate silvicultural standards are consistently identified, interpreted, and applied during both the planning and implementation phases of the forest management plan.

- Applied Silvicultural Ground Rules should reflect the original management intent rather than a realized outcome after silviculture treatments have been applied as shelterwood regimes are implemented.

- Silvicultural Ground Rules with multiple silvicultural systems do not follow policy.

Independent Forest Audit – Record of Finding
Finding #5

Regulatory Requirement: B Meeting FMP Objectives

Audit Criterion: B.3: Harvest

Procedure(s):

1. Review and assess in the field the implementation of approved harvest operations. Include the following:

    - Select a representative sample from those areas where operations have been conducted during the audit period and for each of the various types of operations (winter and summer harvest, different harvest and logging methods, silvicultural systems, all stand types within the forest, salvage, areas harvested under a "utilization strategy") including any exception prescriptions implemented, bridging operations, second pass harvest. Spread samples out among operators.
    - Examine aerial photographs/imagery, FOIP reports, annual report information and maps, for these operations.
    - Determine whether the harvest operations implemented were consistent with the locations in the approved FMP, AWS.
    - Assess whether: the harvest and logging methods implemented were consistent with the FOP; the FOP was consistent with the SGRs; the FOP was certified by an R.P.F., and actual operations were appropriate and effective for the actual site conditions encountered including:
        - Whether wood utilization followed the Scaling Manual by considering evidence such as stump heights, wood left on site.
        - If any utilization strategies were implemented (e.g., due to marketability issues), assess the results of the utilization strategies, whether the FOPs were properly followed, and whether the FOPs were effective in achieving silviculture objectives.

Background information and summary of evidence:

White pine management SGR (PwU-PwU) specify maintaining a crown closure of one-half to full crown and a residual basal area of 12–14 m^2/ha. In contrast, the white pine regeneration cuts observed during the audit (blocks 2009, 1101, 1721, 1625) exhibited crown closures of less than 30% and residual basal areas below 10 m^2/ha. No tree-marking audits were included in the field package to verify marking quality.

The following uniform shelterwood white pine regeneration harvests were assessed during the field audit and resulted in the following observations.

Block 2009

- Pre-harvest analysis describes this harvest area as mature well stocked dominant white pine stand containing 24-34 m^2/ha basal area. Advanced, undesirable regeneration is present with no site limitations. Half to full crown spacing is prescribed, which is further identified as 12-14 m^2/ha residual basal area.
- Harvested in 2020, post harvest field observations noted crown closure to be less than 30% and less than 10 m^2/ha basal area.
- Advanced maples, poplar and pin cherry was noted along with heavy raspberry competition.

Block 1101

- Pre harvest analysis describes this harvest area as mature, well to moderately well stocked dominant white pine stands containing 18-33 m^2/ha basal area. The prescription notes areas containing moderate amounts of white pine regeneration. Although full crown closure is prescribed, additional notes in comments section directs crown and a half spacing where white pine regeneration exists, additionally, in areas where white regeneration measures 4 meters in height, final removal is prescribed.
- Harvested in either 2015, 2017, 2018, or 2019. Post harvest field observations noted irregular crown closures all below 30% and less than 8 m^2/ha basal area. Limited white pine regeneration was noted. Advanced well stocking of hardwood regeneration was noted included poplar and sugar maple with heavy raspberry.

Block 1721

- Pre harvest analysis describes this harvest area as mature well stocked dominant white pine stands containing 37-40 m^2/ha basal area. Advanced, undesirable regeneration is present with some steep conditions. Half to full crown spacing is prescribed, which is further identified as 12-14 m^2/ha residual basal area.
- Harvested in 2017-2019, post harvest field observations noted crown closure to be less than 30% and less than 10 m^2/ha basal area on flat section. Steep sections remain mostly unharvested.
- Full stocked, advanced 3-meter-tall poplar, sugar maple and pin cherry regeneration was noted on site, along with heavy raspberry.

The following white pine final removal observations are noted below.

Block 1101 (PwU-PwU SGR)

- A prescribed white pine shelterwood final removal with pre harvest basal areas measuring between 14-22 m^2/ha.
- Pre harvest white pine regeneration is described as moderate to heavy measuring 2-8 meters in height. Information is not provided on when or how this information was collected.
- Prescription directs tree markers to mark as final removal when white pine regeneration measures 4 meters in height.
- Harvest history is not provided; this information would create a complete description of the full silvicultural treatment package applied and provide an opportunity to understand the results
- Post–final removal assessments are not scheduled in accordance with the assigned SGR. As a result, the effectiveness of the final treatment is not evaluated, and no new information is generated to support forest resource inventory (FRI) updates.

Block 1686 (PwU-MXH SGR)

- A prescribed white pine shelterwood final removal with pre harvest basal areas measuring 18 m^2/ha.
- Pre harvest white pine regeneration is described as medium – light measuring 6 meters in height. Information is not provided on when or how this information was collected.
- Prescription confirms a regeneration harvest has occurred but does not provide harvest or renewal/tending history. The prescription also confirms the future stand will result in mixedwoods.
- Advanced regeneration species within the prescription is described as 60% white pine and 40% poplar. Balsam is identified as competition but does not appear in the species description.
- The assigned SGR does not reflect the original management intent for white pine nor the outcomes of the silvicultural treatment package that has been applied to date.
- Post–final removal assessments are not scheduled in accordance with the assigned SGR. As a result, the effectiveness of the final treatment is not evaluated, and no new information is generated to support forest resource inventory (FRI) updates.

Discussion:
Forest Operations Prescriptions for white pine (PwU-PwU) stands managed under the uniform shelterwood system as regeneration harvests include reasonable expectations

for crown closure and minimum residual basal area. However, blocks that were assessed during the field audit did not meet these prescribed minimums or targets.

FOPs for white pine (PwU-PwU) stands managed under the clear-cut system as seed tree harvests appear to contain significant amounts of pre-harvest basal areas. Pre harvest stand analysis and information such as species by size class should be provided within FOPs to support the decision to manage these stands as clearcut stand conversions rather than pine shelterwood management. This clear cut with seed tree option is an alternate treatment that projects different yield curves and results compared to shelterwood management. This SGR alternate treatment is not included in forest management planning models for white pine management.

FOPs for final removals in white pine (PwU–PwU) stands currently provide limited information regarding understory conditions. To support accurate post-harvest compliance inspections, details on understory species composition, stocking levels, and height classes are required. Without this information, it is difficult to determine whether acceptable damage thresholds for existing regeneration have been exceeded during harvest activities. To ensure that a final removal is indeed the most appropriate silvicultural treatment, a pre-harvest regeneration survey should be completed to determine target species stocking levels. This survey should document species present, stocking density, and regeneration height, which would provide a reliable baseline for both treatment planning and subsequent compliance monitoring. No harvest history is provided which is needed when documenting implemented silvicultural treatment packages found within the SGR.

As indicated within the SGR, the resulting stand following the final removal will not be assessed, nor will free-to-grow status be reported in annual reports. This is inconsistent with the direction provided in Silvicultural Guide Section 4.1.3, which states that performance standards differ by silvicultural system and measure attributes such as species composition, abundance, size, and quality of both regeneration and retained stems (4.1.3.1). The Guide further specifies that formal assessment of regeneration standards (e.g., free-to-grow) typically occurs after harvest and renewal activities are complete and trees have reached a size where they are free from vegetative competition.

Forest Management Plan modeling describes a two cut shelterwood regime with regeneration harvests occurring at 85 years and final removals planned after a 30-year delay. Final removals are not always being planned for these sites. This is contrary to the direction and modeling provided in the Forest Management Plan.

Regeneration standards for white and red pine at the regeneration stage of management is 610 white and red pine per hectare at a height of one meter. A white pine calculator was developed by the MNR to understand more clearly the amounts of regeneration

needed at each stage of management to meet the minimum standards successfully. To successfully achieve 59% species composition of mature white and red pine within a stand, 823 trees per hectare would be required at one meter tall. Reference graphic below.

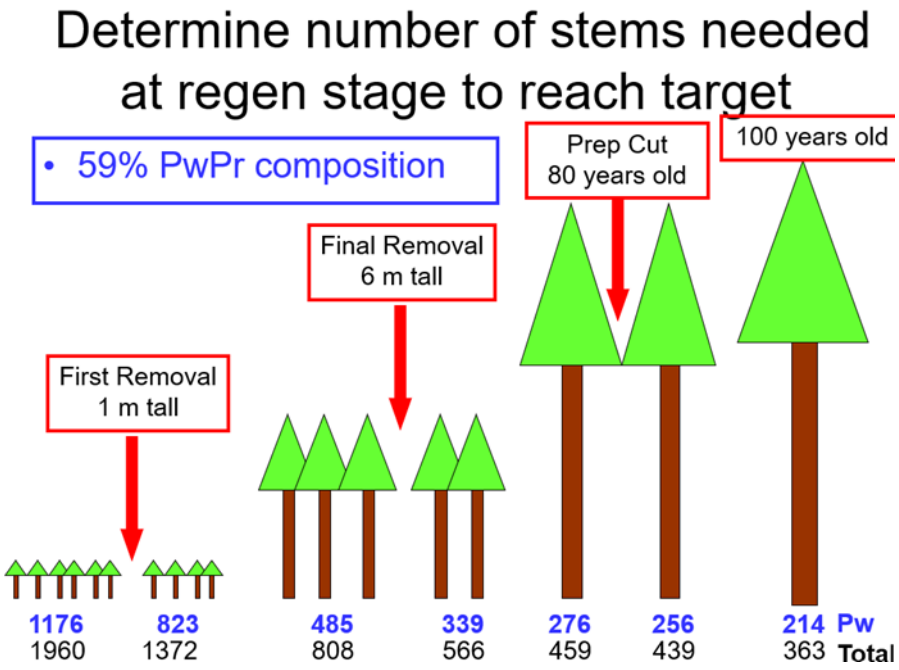

Figure 1.1: Illustration of determination of number of stems needed at each stage of regeneration to achieve target density

Conclusion:

Field audit observations found white pine shelterwood management, at the regeneration stage of management, to not be implemented as directed by the forest operations prescription. Managing white pine regeneration in this open canopy will promote white pine weevil and blister rust and provides light conditions more suited to regenerating poplar and other intolerant tree species. With limited return volumes, final removals are often not planned, and this does not follow forest management plan modeling direction of a two cut shelterwood regime.

Final removal prescriptions do not document information required to determine results of silvicultural treatment packages that were implemented.

SGRs identified for this species (PwU-PwU) directs shelterwood as most common harvest treatment. Although clear cut has been identified as an acceptable alternative, it is not included in FMP modeling and yield curve projection is different compared to shelterwood. Policy does not support multiple silviculture systems in one SGR.

Finding #5:

White Pine Shelterwood Silvicultural Ground Rule standards for minimum crown closure and residual basal area are not being met.

Independent Forest Audit – Record of Finding
Finding #6

Regulatory Requirement: B Meeting FMP Objectives

Audit Criterion: B.3: Harvest

Procedure(s):

1. Review and assess in the field the implementation of approved harvest operations. Include the following:

- Examine aerial photographs/imagery, FOIP reports, annual report information and maps, for these operations.
- Determine whether identified conditions on regular operations have been conducted in accordance with the approved FMP for important ecological features.
- Determine whether the harvest operations implemented were consistent with the locations in the approved FMP, AWS.
- Assess whether: the harvest and logging methods implemented were consistent with the FOP; the FOP was consistent with the SGRs; the FOP was certified by an R.P.F., and actual operations were appropriate and effective for the actual site conditions encountered including:
    - Whether harvest operations were conducted to minimize site disturbance taking soil and weather conditions into account.
    - If any utilization strategies were implemented (e.g., due to marketability issues), assess the results of the utilization strategies, whether the FOPs were properly followed, and whether the FOPs were effective in achieving silviculture objectives.
- Assess the effectiveness of implementation of the approved exception monitoring program for any exception prescriptions implemented.

Background information and summary of evidence:

Hardwood Uniform Shelterwood Final Removal and Hardwood Irregular Shelterwood Final treatments have been regularly applied within both planning terms covered by the audit period; however, questions have been raised as to the pre-harvest condition that warranted application of final treatments, levels of regeneration with established

benchmarks, previous (seed cut) treatments, adherence to SGRs, and benchmarks for monitoring and FTG determination.

Level of harvest within the Year 10 AR listed HDus as a significant component of undertaken activities, and FMP-8 of the current FMP lists HDsh at 11,511 ha of the AHA (1,151 ha / year) representing the largest single FU by available harvest area. This information was not available for specifying how much is planned in either HDsh - Lastcut or HDsh – Irregular Shelterwood. The field audit found several blocks where a Lastcut or Irregular Shelterwood (with Lastcut as an included/embedded silvicultural application). Regardless, the provided Enhanced AR-10 table shows that between 2011 and 2021, the HDus forest unit increased by 56,139ha (4.3 times), representing a significant component of available and planned activities.

Information provided to date does not list whether these stands have been treated previously under the shelterwood system with preparatory or seed cut, and interviews with auditees regularly referred to the application of a "One Cut Shelterwood" application as a common practice within the tolerant hardwood (HDsh) forest unit.

The Forest Management Guide to Silviculture in the Great Lakes-St. Lawrence and Boreal Forests of Ontario lists a two-aged stand option (Option 4) under suggested management approaches – sugar maple. This option describes significant criteria under which the option may be pursued, and deviates significantly from conditions noted in SEM reports, Tree Marking Audits, FOPs, and conditions observed during the field audit. Most notably, the principles to be applied illustrate that if sapling regeneration is largely not present, and polewood and small sawlog stems are being counted towards regeneration to be released, then the specific criteria used to determine whether what is present meets standards such as vigorous vs flat-topped, was not documented. Minimum retention thresholds are clearly articulated, and this guidance states that the released crop tree component "should not be suppressed and flat topped". Further, "manual or selective chemical tending for timely control of competition around established seedlings" should be considered.

The SGR for HDU-HDU within the 2011 FMP lists that the ground rule is a "2-cut shelterwood: seed cut and final removal" with FTG regeneration direction "Assessment at < or = 5 years post regeneration treatment".

The SGR for HDI-HDI within the 2021 FMP lists that "Pre-harvest to document BA by species, size class, AGS/Unacceptable Growing Stock (UGS); Pre-harvest Tree Marking Audit to confirm adherence to direction & potential AGS improvement; Post harvest

compliance to confirm conditions described in Tree Marking Audit based on effects of logging", and that for a residual BA target one should "refer to forest operations prescription".

Block 1720

- 2016-2020 HDus Last Cut application of the HDU-HDU Silvicultural Ground Rule from the 2011-2021 FMP with a depletion of the FU in 2020.
- FOP lists moderate stocking of 4m to polewood sized regeneration in Mh, By, Aw.
- Target Residual BA or % Removal direction in FOP lists "N/A".
- No records or empirical information provided on previous entries for preparatory or seed cuts within shelterwood system and stand structure or composition information limited to Mh6 Be1 He1 Ms1 Aw1 and 19m^2/ha - from FOP Stand Analysis Section.
- Field audit found residual BA range of 10-14 m^2/ha with nearly all in AGS condition.
- Significant areas of large canopy opening where no mid or desired understory exists, with some nearly 1ha in size.
- Residual stand appears to be uneven-aged, much like immediately adjoining uncut stand.
- Little tolerant hardwood regeneration presents several years post-removal, including in polewood, and understory dominated by raspberry and blackberry throughout stand. Majority of hardwood regeneration observed was ironwood competition.

Figure 1.2: Field Audit photos from Block 1720 showing residual overstory of primarily AGS stems (left), and removal of overstory more than 1ha with little to no regeneration to be found (right).

Block 2825

- 2021-2023 HDsh Last Cut application of the HDI-HDI Silvicultural Ground Rule from the 2021 FMP with no stage of management, or projected FTG year indicated on Silviculture Activity and Assessment Summary. Monitoring Summary states "Follow-up: N/A marking audit passed"
- FOP lists medium stocking of 6m+ to polewood sized regeneration in Mh 60 By 20 Cb 10 Iw 10.
- Target Residual BA or % Removal direction in FOP lists "N/A".
- On The House Species lists
  "All trees above 36cm (14" DBH) (unless marked with blue paint)"
- No information provided on previous entries for preparatory or seed cuts within shelterwood system and stand structure or composition information limited to Mh 50 Aw 20 Mr 10 Or 10 Oh 10 and 22.2m^2/ha - from FOP Stand Analysis Section.
- FOP lists treatment to be applied where: "Site class 3 to 0 tolerant/mid tolerant hardwood stands with less than 20 m^2/ha total basal area and/or less than 9m^2/ha

AGS basal area…Adequate regeneration of desirable species present." Starting BA was above 20m^2/ha and retained BA indicates that >9m^2/ha was AGS.

- Starting BA for HDsh area of the block within Tree Marking Audit of 24.9m^2/ha (4-7.3-6.7-6.9), with 14m^2/ha AGS ("A1" within BMFC 6-class quality system).
- Retained BA ranging from 12-16m^2/ha (14.2m^2/ha according to Tree Marking audit, with 11.1m^2/ha AGS), which deviates considerably from SGR direction on where/when to apply treatment.
- Discussion with auditees indicates that polewood and small sawlogs are considered the regeneration to be released within FOP, and that one-cut shelterwood application was applied.

Figure 1.3: Field Audit photos from Block 2825 showing largely open overstory following harvest and little to no regeneration in understory.

Block 2878

- 2021 HDsh Last Cut application of the HDI-HDI Silvicultural Ground Rule from the 2021 FMP.
- FOP lists light stocking of 6m+ to polewood sized regeneration in Mh4 Bf4 Mr1 He1.
- Target Residual BA or % Removal direction in FOP lists "N/A".

- No information provided on previous entries for preparatory or seed cuts within shelterwood system and stand structure or composition information limited to Mh3 Bd1 Po1 Bf1 Ce1 Bw1 He1 Oh1 and 22m^2/ha - from FOP Stand Analysis Section.
- On The House Species lists “All species with stump diam > 36cm (14") (unless marked with blue paint)”
- Tree marking direction lists “All trees to be cut to CFSA standards except those marked with blue paint for retention as well as “Mark for wildlife values only (blue)”. This direction results in neither marking for removal, nor for retention (except in the case of wildlife trees), and harvest direction delegated to the harvest operator with a stump diameter threshold for “on the house species”. This is difficult for any auditor to differentiate from a specific FOP direction against a Diameter Limit Cut direction.
- SEM Report by MNR in 2022 highlighted issues noted above and resulted in little to no collaboration on resolution from the SFL.
- SOI STARS performed by MNR and SFL produced contradictory results, despite ample efforts made by both parties to share plot locations, process, procedure, and findings.
- The opinion of the auditor is that the site was not suitable for a Final Removal, and evidence of regeneration as noted within the SGR and FOP is not present on site.

Figure 1.4: Field Audit photo of Block 2878 panoramic shot of roughly 180 degrees showing heavy balsam fir occupancy and little hardwood regeneration in the sapling to polewood regeneration sizes. The area of green raspberry foliage (left) is a skid trail.

Figure 1.5: Field Audit photos of Block 2878 showing largely open overstory following harvest and little to no regeneration in understory. Note that care was taken to choose vantage points where skid trails are not in the foreground.

Discussion:

The application of HDus and HDsh within the audit period is regularly showing stands that do not appear to have sufficient regeneration for a Final Removal to be warranted or are not surviving post harvest and little monitoring is taking place. This is contrary to provincial standards such as the Forest Management Guide to Silviculture in the Great Lakes-St. Lawrence and Boreal Forests of Ontario, and the SGRs describing the system. If the stated FOP objective is to “release established sapling stage mid tolerant and tolerant hardwood regeneration” (block 1720 and 2825) or “release established sapling, pole and small sawlog stage mid tolerant and tolerant hardwood regeneration” (block 2878), the pre-harvest stand structure should be documented. If regeneration is not surviving following the harvest to meet the stated objectives, then why are monitoring and tending generally not performed?

SOI STARS assessment methodology allows for the accounting of poles as regeneration. In the survey these are considered "LARGE trees ('Pole' (10cm<DBH<24cm) or > 6m tall"

and states "Note: the LARGE tree must be young and vigorous to be considered regeneration that OCCUPIES the site." If the Provincial method to confirm SEM success allows for poles to be counted, then small sawlogs should not be contributing to determination of regeneration success, as noted by the SFL in comments for all blocks. Also of note, if polewood and small sawlogs are considered the targets to be released within FOP document or the opinion of the author, then the species, vigor, and quality of such stems should be noted and documented to aide in auditing and assessment where less vigorous specimens of ancillary species predominates.

Lack of Target Residual BA, % Removal, or Crown Closure direction to the tree marker makes auditing or other assessment difficult. Lack of stand structure or other stand analysis info makes it difficult if not impossible to determine if SGR was properly applied or if FOP could be directing a high-grade treatment. Further direction is provided in all three FOPs within Wildlife Considerations for a stems/ha threshold, yet these retention targets do not detail any information on stem size or quality. The reference to “pole and small sawlog stage mid-tolerant and tolerant hardwood regeneration” poses an issue in that polewood and small sawlog stems appear to be included as the regeneration within a shelterwood system and would offset the presence/absence of sufficient regeneration that would comprise the intended future forest unit being fully released through a final cut.

Conclusion:

The implementation of final cut treatments in the HDus and HDsh forest unit show a lack of regeneration on site. The use of one-cut shelterwood treatments is contrary to SGR direction in the 2011-2021 FMP. Records available contain insufficient detail to assess whether silvicultural application was appropriate, or effective in meeting stated objectives. Insufficient documentation information is provided to show decision on choice of silvicultural application, and monitoring is regularly not undertaken following harvest to justify silvicultural and renewal success.

Finding #6:
Within the Hardwood Uniform Shelterwood and Hardwood Shelterwood forest units, final cut and irregular treatments fail to meet Silvicultural Ground Rule direction and regeneration standards.

Independent Forest Audit – Record of Finding
Finding #7

Regulatory Requirement: B Meeting FMP Objectives

Audit Criterion: B.3: Harvest

Procedure(s):

1. Review and assess in the field the implementation of approved harvest operations. Include the following:

    - Select a representative sample from those areas where operations have been conducted during the audit period and for each of the various types of operations.
    - Examine aerial photographs/imagery, FOIP reports, annual report information and maps, for these operations.

Assess whether: the harvest and logging methods implemented were consistent with the FOP; the FOP was consistent with the SGRs; the FOP was certified by an R.P.F., and actual operations were appropriate and effective for the actual site conditions encountered.

Background information and summary of evidence:

Single tree selection for hardwoods has reasonable SGRs and most of the FOPs provide suitable direction however, the results on the ground do not meet the minimum residual basal area standards set in the FOPs and SGRs. Our review of five HDsel sites (1664, 1663, 2078, 2745, and 2251*) along with tree marking FOPs (5) and tree marking audit reports (8) (2 MNR) indicated that the requirement to meet the residual BA target of 18 m2/h or 1/3rd BA removal which ever leaves the higher residual BA, was not being met on 4 out of 5 of the HDsel sites. The target residual BA is what is achieved as an average when multiple assessment points or plots are installed across a site. Meaning any FOP direction that allows for locations where BAs might drop below this will be accounted for by other areas where it is higher. Site 2251 met the residual BA standard and was directly at a 1/3rd removal rate. All the other HDsel passed tree marking audits showed residual BAs of 16.6 m^2/ha, 16.6 m^2/ha, 17.3 m^2/ha, 12.4 m^2/ha, 16.1 m^2/ha, 18.1 m^2/ha,16.6 m^2/ha and removal rates of 38.6%, 38.8%, 40%, 48%, 42.9%, 41.5%, 39.5%. All these stands had pre-harvest BAs (27 m^2/ha, 27.1 m^2/ha, 27.5 m^2/ha, 28.9 m^2/ha, 24 m^2/ha, 30.9 m^2/ha, 27.5 m^2/ha that were high enough to allow for a harvest while meeting the stated residual targets. As well, the MNR audits and SEM reports identified a concern that BMFC pre and post

marking BA measurements were higher than what the MNR found and MNR residual BAs were an additional 2 m^2/ha lower. The beech content in these stands was low, meaning minimal BA was being lost to dying or salvage beech.

The following table summarizes the results captured from BMFC tree marking audits:

Table 1.1: Summary of SFL Tree Marking Audit data

Block	**Pre-Harvest BA (m^2/ha)**	**Marked Residual BA (m^2/ha)**	**% BA removed**	**Change in BA for Medium and Large sawlogs**	**Total BA Left in Medium Sawlog.**	**Total BA Left in Large Sawlog**
	Targets ⟶	**Prescription = 18**	**Prescription = < 33**	**Silv. Guide = 8**	**Silv. Guide = 5**	**Silv. Guide = 3**
1664	27.0	16.6	38.6	5.3 to 2.3	2.3	0 (not available)
1663	27.1	16.6	38.8	14.6 to 7.1	4.5	2.6
2251*	27.5	18.4	33.1	7.7 to 4.9	2.5	0.3
2078 (2018-10)	28.9	17.3	40.1	10.3 to 5.6	3.7	1.9
2078 (2018-13)	24.0	12.4	48.3	2.4 to 1.6	1.6	0 (not available)
2078 (2018-17)	28.3	16.1	42.9	4.7 to 2.4	2.4	0
2078 (2019-29)	30.9	18.1	41.5	7.2 to 3.1	3.1	0
2745	27.5	16.6	39.5	11.6 to 5.3	3.0	2.3
Average	27.65	16.5	40.35	8.0 to 3.8	2.9	0.9

The MNR conducted audits in Blocks 1664 and 2745. Block 1664 was a post-harvest audit, and it showed the residual BA to be 14.3 m^2/ha (3 m^2/ha in medium and large sawlogs) with only 4 of the 12 prism plots having BAs at or above 18m^2/ha. In Block 2745 MNR found the total BA to be reduced by 37% (24 m^2/ha to 14.4 m^2/ha) with only 3 m^2/ha in the medium and large sawlogs compared to an initial BA of 7m^2/a in these size classes. In both these cases the MNR audit found the residual BAs to be an additional 2 m^2/ha (2.3 and 2.2 m^2/ha respectively) lower than BMFC's audits showed. These residual BAs of 14.3 and 14.4 m^2/ha are well below the 18 m^2/ha targets in the FOPs.

BMFC tree marking audit plots where too many trees are removed have not been given sufficient spacing infractions to account for the low BAs. As well, the consistent overcutting in the medium and large sawlog size classes (Table 1.1) (average 50% removal rate leaving 50% below provincial targets) may have been difficult for the tree marker and auditor to evaluate since the FOPs are not specific about how to address quality and diameter distributions (quality and size infractions). The results are tree marking audits that allow for average residual stand BAs that are below the minimum FOP and SGR standards (16.5 vs. 18 m^2/ha residual BA and 40.35% removal rate vs. 33.33%).

A review of MNR SEM reports for the BMF dating back to 2017 found similar results: in all cases the target residual BA was 18 m^2/ha: 2017 Residual BA 14.2 to 14.7 m^2/ha; 2018 no assessments completed; 2019 no records provided; 2020 no records provided; 2021 residual BA 13.3 to 14.4 m^2/ha; 2022 residual BA 15.4 m^2/ha; 2023 no residual BAs provided: 2024 no records provided. This suggests the issue of accepting lower than target BAs has been occurring across the audit period despite being advised by the MNR that these standards were not being met.

Given the state of the inventory, it seems critical that pre-harvest data be collected and summarized in the FOPs. The direction for diameter distribution adjustment and UGS removal could be supported by a stand analysis table in the FOPs showing these breakdowns. This would clarify the need to maintain a greater proportion of the BAs in the understocked size classes (often medium and large sawlogs) and avoid moving these stands away from the stated goal of balancing size class structures towards the standard 6-6-5-3 (BA m^2/ha by Poles-SmallSaw-MedSaw-LargeSaw).

Discussion: The selection stands are often being left with highly variable conditions as is the case in Block 2745 which received a thorough review during the IFA. One large area of about 2-ha was left with residual BAs of 8 to 12 m^2/ha, while other sections averaged 16 m^2/ha and there is an uncut marked section which when cut will have a residual BA of 32 m^2/ha. This does not support the selection system's goal of increasing uniformity to benefit the growth of tolerant hardwoods (See Tree Marking Guide pg. 143: "…an average target BA should be achieved across the entire stand. Reducing the BA by more than 1/3rd at either the site or stand level is not recommended, if single tree selection continues to be the objective, because of the risk of overexposure and invasion of undesirables.").

Significantly understocked areas (< 12 m^2/ha) and average residual BAs of 16.5 m^2/ha (or 14.4 m^2/ha as was found by the MNR) with removal rates of 40% or more, brings into question how well these stands will track on the expected growth rates. The SGRs and FOPs have followed the minimum standards in the Forest Management Guide to Silviculture in the Great Lakes-St. Lawrence and Boreal Forests of Ontario and the Tree Marking Guide. The operations observed and the records reviewed indicate that the residual BA and removal rate standards are not being met more than 60% of the time in the hardwood selection component of the forest.

Conclusion: Tree markers are not being held to the standards for residual basal area described in the FOPs, SGRs and Provincial Guides.

Finding #7:
Within the hardwood selection silviculture program, the residual basal areas are being left below the Forest Operation Prescription and Silvicultural Ground Rules targets.

Independent Forest Audit – Record of Finding
Finding #8

Regulatory Requirement: B Meeting FMP Objectives

Audit Criterion: B.3: Harvest

Procedure(s):

2. Review and assess in the field the implementation of approved harvest operations. Include the following:

    - Select a representative sample from those areas where operations have been conducted during the audit period
    - Examine aerial photographs/imagery, FOIP reports, annual report information and maps, for these operations.

3. Determine whether the salvage operations implemented were consistent with the approved FMP and AWS.

Background information and summary of evidence:

Although the implementation of irregular shelterwood in this FMP was conditional on developing a learning program under the guidance of a joint MNR-SFL working group, Irregular shelterwood has proceeded and several blocks were available for the audit team to view. Much of what was seen as weakness in the application can be linked to the things the working group had identified as their objectives in the project charter:

> 1. Review and develop an approach to prescribing ISS with intention based on the stand objectives and conditions (structures and composition).
> 2. Review and develop an approach that directs and audits tree marking in stands managed under ISS and recommend document to the Ontario tree markers instructors' group.
> 3. Review, and propose modification, if necessary, to the ISS monitoring approach developed in the 2021 BMF management plan.
> 4. Document standards and best management practices for managing tolerant hardwood stands under ISS as part of a learning module.
> 5. Propose standards and best management practices to be incorporated in the silvicultural guide.

Blocks visited: 2277, 2700, 2745, 2756, 3712, 2888 (changed to ISS)

MNR also provided audit or SEM reports for Blocks 2277, 2700, 2745, 3712, 2888,

Examples of FOPs: 2277, 2756

All the FOPs are similarly written. One of the of the initial concerns is the lack of pre-harvest inventory (stand analysis) data or history descriptions to allow tree markers and auditors to understand more clearly what the pre-harvest condition is.

Below highlights the other parts of the FOPs that left the auditors with concerns:

> Block 2756 and 2277: contain many varying conditions, including final removal, seedcut, two-aged management, group openings, commercial thin, and modified selection. Both even and uneven aged conditions are present. Desirable advanced regeneration is present.

Concerns: - Desirable advanced regeneration is present but there is no quantification. How much regeneration at what stocking is required to apply this system? If the treated stand has multiple conditions that cannot be monitored through management standards (single-tree selection), then the SEM needs to include assessments for regeneration standards and a methodology that explains how to map and install plots.

<u>General Objective:</u>
2277: This harvest aims to improve the acceptable growing stock of the stand, maintain structural complexity, and encourage the establishment of advanced desirable regeneration.

2756: To release established hemlock, moving the area towards a hemlock forest unit. In all cases, ISS aims to improve the acceptable growing stock of the stand, maintain structural complexity, and encourage the development of advanced desirable regeneration.

Concerns: the establishment component requires regeneration monitoring as noted above.

<u>Direction of Monitoring Program:</u>
2277: Stand will be declared FTG using a Tree Marking Audit and Compliance Inspection/Post Cut Assessment, but regeneration requires a follow-up assessment.

2756: Stand will be declared FTG using a Tree Marking Audit and Compliance Inspection/Post Cut Assessment.

Concerns: the declaration of FTG at time of harvest seems inappropriate when there is still a requirement to follow-up with regeneration assessments – no indication of how much area or how it will be mapped or assessed.

2756 – even though a significant amount of the site (30+%) has been left completely open (convoluted and continuous group openings) there is no indication of a monitoring program for this component of the forest.
Marking Direction:
1. A single-tree selection prescription for areas with basal areas (BAs) greater than 25 m^2/ha, target of 18 m^2/ha and uneven-aged structure (6-6-4-2), removing UGS.
2. Where insufficient regeneration is present, reduce BA to 12-16m^2/ha, retaining highest quality (AGS) seed trees (essentially a regeneration cut under shelterwood).
3. A crop tree thinning in poles and small sawlogs.
4. Create yellow birch group openings (20x20m) where there are seed trees, high UGS and insufficient regeneration (establishment), with no indication of how many.

Concerns: this describes four different types of patches (potentially 1 and 3 could occur in the same space). There are at least three patch types and two of them require regeneration assessments.

Next Intervention: The intention of this harvest is to improve the quality of the stand, while establishing new regeneration. Ideally, the subsequent harvest will be approaching single tree selection management. Return Interval: 35 years.

Concerns: difficult to understand the proportioning of the various treatments and how well it will track on the reverse J curve for stand structure, especially when there are no pre-harvest data and no mapping of the patch types.

2756 Stand Specific Marking Instructions:
Group Openings for Release:
Group openings should be created to release established hemlock regeneration, by removing competing hardwood component.
Group Openings for Establishment:
There is a mid-tolerant hardwood component of this stand that includes Aw, By, Or and Cb. Opportunistic group openings can be created to establish new mid-tolerant regeneration.
Improvement:
Areas of this stand that do not have a significant hemlock component, or adequate mid-tolerant seed trees should be marked for improvement.
Next Intervention: Hemlock harvest.

Return Interval: 40 years

Concerns: this describes three different types of patches. The FOP for establishment gaps does not identify the number of gaps or area they are to cover. We observed the establishment gaps cover a significant amount of the site (30+%) and require regeneration assessments. The conditions are quite open and competition prone for hemlock. There is no clear program for monitoring or tending this area to ensure it meets regeneration standards, which still needs to be described. As well the establishment openings allow for the retention of poles and small sawlogs so the title is likely incorrectly labelled, it should be Release and Establishment Gaps.

Discussion:

The implementation of irregular shelterwood is intended to recognize variable conditions in the managed forest and presumably be a better tool for tolerant hardwood stands that previously may not have met selection criteria and are not suited to uniform shelterwood approaches. As the FOPs describes in "Where to apply", they are to have desirable advanced regeneration and will have multiple conditions (silvicultural types), with a minimum of two and often utilizing three or more. Because of these variable conditions we see a need to have a more complex silvicultural program and have identified the following deficiencies in the current program:

1. Pre-harvest stand structure data: This pre-harvest stand structure data is required to determine that there is enough well distributed advanced desirable regeneration to apply the system. It is also required to understand which of the different conditions (silviculture types) are found in what proportions and where they are located (mapping).
2. FOPs: Based on the initial mapping, the FOPs should clearly describe each treatment type and where it applies. For treatments that create establishment openings the FOP should provide direction as to how many group openings, their size and how much area they are intended to cover. The volume removals and open areas created need to match the modelling. Limits or ranges for open areas need to be set in the FOPs.
3. Monitoring and assessment: The monitoring and assessment program should be comprehensive and spatially explicit. Mapping should show which areas (patch types) are to be monitored using management standards and which areas should be monitored using regeneration standards and where the plots will be established. As well, the timing of the various surveys needs to match the stage of management of the different patch types.

4. Regeneration treatments: It is not clear from the documentation that patches within Irregular Shelterwood blocks that have been treated with regeneration treatments may need follow-up, such as planting or tending. If these are not looked at over the 35 to 40 year cutting cycle the timing of silvicultural interventions may be lost.

Conclusion:

The audit found that progress on the implementation of the new irregular shelterwood system and adaptive management would be improved if the basic components of forest operations prescriptions and monitoring were utilized and displayed in more detail to accommodate the complexity of the sites being managed and the treatment decisions required.

Finding #8

The implementation of the hardwood irregular shelterwood silviculture program needs improvements in site planning and mapping, Forest Operation Prescription development, monitoring and follow-up treatments.

Independent Forest Audit – Record of Finding
Finding #9

Regulatory Requirement: B Meeting FMP Objectives

Audit Criterion: B.4: Renewal

Procedure(s):

- Assess the effectiveness of renewal prescriptions and stand establishment success by selecting a representative sample from those areas where operations have been conducted (including salvage and areas where silviculture exceptions have been applied) during the audit period, for each type of regeneration and site preparation operation across a range of forest and site types.
- Examine aerial photographs/imagery, FOIP reports, annual report information and maps, for these operations.
- Determine whether the renewal operations implemented were consistent with the locations in the approved FMP, AWS.
- Determine whether identified conditions on regular operations have been conducted in accordance with the approved FMP for important ecological features.
- Assess whether site preparation and regeneration treatments were consistent with the FOP; the FOP was consistent with the SGRs; the FOP was certified by an R.P.F., and actual operations were appropriate and effective for the actual site conditions encountered.
- Assess the effectiveness of implementation of the approved exception monitoring program for any exception prescriptions implemented.
- Consider whether there are any gaps between the planned and actual levels of each type of renewal activity seen in the field.

Background information and summary of evidence:

Renewal and tending efforts for successful white pine renewal are not being implemented at planned levels according to the FMP.

Post white pine uniform shelterwood regeneration harvest follow-up as directed by:

- Ontario Tree Marking Guide and Forest Management Guide to Silviculture in the Great Lakes-St Lawrence and Boreal Forests of Ontario Guide
    - Prepare seedbed
    - Early, aggressive and frequent vegetation management

- If regeneration is not stocked to FMP standards before harvest, supplemental treatments such as scarification, planting or tending must occur after the harvest operation.

Discussion:

Post-harvest renewal and tending direction is not included in FOPs. Post-harvest assessments are required only if there are significant compliance issues, it is therefore unclear where follow up silvicultural direction for individual blocks comes from.

The BMF field audits concluded that the sites are highly competitive with a tendency for stands to grow hardwood trees and shrubs such as poplar, sugar maple, pin cherry and raspberry due to the high levels of sunlight.

The most common treatment package found within the SGR for white pine management (PwU-PwU) is uniform shelterwood harvest, mechanical site preparation, tree planting, and stand improvement (mid canopy removal).

Multiple blocks were noted during the field audit to have not received mechanical site preparation, or tree plant. Some areas were tree planted in unprepared ground. Block 2009 was partially mechanically site prepared, partially chemically site prepared and fully planted. Significant amounts of advanced hardwood regeneration are present throughout the unprepared areas and with tending not included within the most common treatment package within the SGR, success is expected to be limited.

White pine stands with high levels of sunlight will promote significant levels of competition, will be impacted by white pine weevil and blister rust, and will have reduced seed trees available to provide natural regeneration.

FMP Tables identifying levels of planned renewal and tending do not identify activities by planned forest unit or by SGR. Annual Reports do not provide information on treatments by planned forest unit or SGR.

According to Forest Explorer, red pine clearcut and white pine shelterwood harvest areas were reviewed within the audit period. Although the stage of management is unknown, the FMP identifies the majority of shelterwood harvests to be at the regeneration stage of management. Follow up renewal treatments are well below planned amounts. Only 14% of all shelterwood hectares were treated with mechanical site preparation. Annual report information does not provide information on what forest unit is being site prepared so this number is potentially and under-estimate as some of this effort was completed on the red pine clear cut area. Mechanical site preparation occurred on 4 out of 7 years, chemical site preparation occurred twice in 7 years with a large amount being applied for beech bark disease projects. Tree plant was carried out 3 times over 7 years

Conclusion:

White pine renewal and tending treatment levels are not being implemented as directed by the forest management plan.
Finding #9: Renewal effort conducted in White Pine Shelterwood stands during the audit term underachieved planned levels.

Independent Forest Audit – Record of Finding
Finding #10

Regulatory Requirement: Planned versus actual

Audit Criterion: C.3: District compliance planning and associated monitoring

Procedure(s):

1. Review the MNR District Compliance Plans in place during the audit period to determine how forest management activities were to be monitored for compliance by MNR and assess whether the actual level of the overall monitoring program was in accordance with the FMP and whether it was appropriate based on evidence gathered through analysis of related audit criteria, including field audits.
2. Determine whether the MNR District submitted the MNR's compliance information into FOIP and whether they supplied the FOIP information to the FM in accordance with requirements, including timelines specified in MNR procedures and the Forest Compliance Handbook.

Background information and summary of evidence:

The Forest compliance handbook (FOR 07-02-04) outlines the following key elements for the development of the MNR District's annual compliance program:

- Compliance performance review
- Risk management strategies and decisions
- Timing and frequency of monitoring activities
- Sampling intensities
- Roles and responsibilities of District Staff
- Management of operational status notifications
- Integration with other compliance monitoring activities

The Bancroft District uses a risk based approached when identifying target blocks for their annual compliance program. This is done via a spreadsheet using a risk-based scoring system which evaluates a variety of factors (e.g. values, operator history & rating, operational complexity etc..,). Sampling intensity targets were only set during 2018-2019 and 2024-2025. A formal District wide compliance plan was not completed during the audit. The last formal District compliance plan was completed in 2014-2015.

The 2011-2017 IFA listed the following finding related to MNR's compliance program "*The number of MNRF compliance inspections fell below planned levels on a consistent basis throughout the term of the audit"*. The approved action plan listed the following

"*Ensure MNRF Bancroft District risk-based approach to forest compliance is consistent with the 2014 forest compliance handbook*."

It was determined that the District's annual compliance plans developed during the audit period fell short of the requirements outlined in Forest compliance handbook.

While annual inspection targets were only set for the 2018-2019 period it was determined that the number of inspections completed during the audit term was not sufficient to meet its forest compliance responsibilities. During the 2018-2019 period the District completed 22% of it's inspection targets (6/25) with a total of 37 (3 joint inspections) completed throughout the audit term. During the 2024-2025 period the District completed 63% of its inspection target. Compared to the SFL's total compliance inspections the District achieved an 8% sample throughout the audit term. It was also noted that several inspections were submitted well past the 20-working day deadline (Forest Compliance Handbook FOR 07 03 05) for reports without operational issues.

Discussion:

Through interviews with the SFL and the MNR it was assessed that a good working relationship exists at the operational level for harvest operations and compliance. Communications are largely informal however they have significantly improved since the last audit period. This can be largely attributed to relatively stable staffing for both the SFL and MNR compliance leads throughout the audit period.

Joint block walk-throughs are completed on a regular basis however formal joint inspections are rarely submitted (3 total during the audit period).

MNR cited staffing issues as a contributing factor to not meeting its compliance obligations. It was also noted that there was a high level of staffing turnover in several key MNR positions (District Forester, District Supervisor, District Manager, District Biologist) throughout the audit term.

Conclusion:

Overall, it was impressed on the audit team that forest management activities are being completed in a compliant manner however there is a lack of rigor being applied to completing formal District Annual Compliances Plans and inspection reports. While communication between the MNR and the SFL is currently deemed to be good there is a concern that this may be affected by future staffing changes. A robust District compliance plan is needed to ensure that the District is meeting its compliance monitoring duties, and that future staff have the direction required to complete their tasks.

Finding #10:
The District's compliance monitoring program lacked sufficient planning rigor and sampling intensity throughout the audit period.

Independent Forest Audit – Record of Finding
Finding #11

Regulatory Requirement: Planned versus actual

Audit Criterion: C.4: SFL holder compliance planning and monitoring

Procedure(s):

1. Review the Ten-Year Compliance Strategy (Plan) and the annual component. Determine whether:
   - Conformity with required conditions in the specific SFL
   - document for compliance planning and monitoring.
   - Approval dates for the ten year and annual plans were prior to the issuance dates of harvest approvals and/or forest resource licences as applicable.
   - These plans have addressed requirements of the FMPM and the Guideline for Forest Industry Compliance Planning and were appropriate and sufficient to assess program compliance and effectiveness.
   - The actual level of the implemented overall monitoring program is appropriate and effective, and whether it is in accordance with the approved FMP and AWS. Consider whether plans to monitor compliance are effective for monitoring forest operations.
2. Determine whether the compliance reports have been submitted electronically to FOIP in accordance with requirements, including timelines specified in MNR procedures and the Forest Compliance Handbook.
3. Examine whether the FM has continued to maintain their overall forest management oversight role related to development and maintenance of the compliance plan and its implementation while ensuring the sustainability of the MU in accordance with the approved FMP.

Background information and summary of evidence:

It was noted that several inspections were submitted well past the 20-working day deadline (Forest Compliance Handbook FOR 07 03 05) for reports without operational issues (Table 1.2).

Table 1.2: Annual inspections completed per year (2017-2024) sorted by submission time.

Days Inspection to Submit	Inspection Counts
0-20	113
21-50	76
51-100	91
101-200	144
201-300	20
300-365	3
365+	7
Total	**454**

In two of the blocks viewed during the field audit, numerous high stumps were noted and not included in the submitted FOIP report as an operational issue (blocks 1668 & 1711).

Discussion:
A good operational working relationship exists between BMFC and the MNR. The field audit did not find any significant compliance issues and the total number of operational issues reported during the audit term is rather low compared to adjacent MU's.

Conclusion:
The SFL's compliance monitoring program was found to be delinquent when having to meet the maximum reporting timelines as stipulated in the forest compliance handbook. Nearly 75% of the inspections completed during the audit terms were submitted past the 20-working day deadline.

Finding #11:
Bancroft-Minden Forest Management Company is not meeting the submission timelines for Forest Operations Information Program reports for most of its compliance inspections.

Independent Forest Audit – Record of Finding
Finding #12

Regulatory Requirement: Planned versus actual

Audit Criterion: C.6: Silviculture standards and assessment program

Procedure(s):

Assess whether the FM's management unit assessment program is sufficient and is being used to provide the required silviculture effectiveness monitoring information including whether it:

- Assesses overall effectiveness of treatments, including those that are exceptions to silvicultural guides, i.e., documented program, survey methodology such as survival, stocking, establishment (previously free-to-grow) surveys, records, use and evaluation of results (e.g., appropriateness of treatment for actual site conditions, regeneration status).
- Determines the need for and the type of remedial action required if an area is not successfully established (e.g., in fill plant, tending).
- Assesses reasons where eligible areas are not determined to be successfully established.
- Is appropriately used to update the FRI.
- Assesses progress towards achieving the management strategy.
- Compare MNR District silviculture monitoring results (where they may exist) with those of the SFL. Evaluate and explain any differences in results.

Background information and summary of evidence: The District MNR completed six SEM reports during the audit term. Most of the SEM work focused on completing FTG ground surveys on a sample of AR submitted data and tree marking audits in hardwood selection blocks.

Each of the reports wrapped up the collected data and provided a summary of the noted trends and a comparison with the SFL results. All the reports presented some level of data discrepancy between the MNR and SFL monitoring results. Tree marking audits showed a consistent trend of post-harvest BA's being below the SGR standard for hardwood selection stands.

Efforts were made to review the SFL and MNR SEM data in 2021 and 2022 with a presentation of MNR results to BMFC. No other joint meetings were conducted during the audit term to review MNR SEM data. No follow up actions were set to address FTG FU discrepancies or the low BA results from the tree marking audits.

There is currently no policy requiring the reconciliation of the SFL's reported SEM data when the MNR's SEM program identifies data gaps and/or concerns. These are often dealt with in a professional and collaborative manner leading to joint inspections, training sessions and improvements to survey methodology.

Discussion: Fully functioning SEM programs are essential in determining if the implemented silviculture program is meeting the prescription targets and the silvicultural objects of the FMP. SFL and MNR SEM programs should endeavour to work jointly to ensure data submissions are accurate and that corrective measures are implemented when variances in data are identified between both programs.

The MNR SEM program was focused on completing their surveys on the SFL's submitted AR data for FTG stands and doing sample tree marking audits on hardwood selection stands. Efforts to communicate data discrepancies to the SFL were deemed as unproductive by the District Forester at the time. The SFL cited a lack of information being provided by the MNR.

The MNR SEM reports highlight issues that should be addressed however there is currently no mandated mechanism to ensure they are reviewed and actioned by the SFL.

Conclusion: The MNR SEM program results are not being effectively used to improve forest management activities on the Bancroft Minden Forest.

Finding #12:
Discrepancies between the Bancroft-Minden Forest Company and the District Ministry of Natural Resources' Silvicultural Effectiveness Monitoring programs are not being adequately addressed.

Independent Forest Audit – Record of Finding
Best Practice #1

Regulatory Requirement: Compliance

Audit Criterion: A.1.1: First Nation and Métis communities' involvement and consultation

Procedure(s):

1. Review and assess whether efforts were made to engage each First Nation and Métis community in or adjacent to the management unit in forest management planning in accordance with the applicable FMPM. Assess the resulting involvement and consideration of their concerns in the FMP, amendments, AWS, contingency plans, or related forest management planning processes.

Background information and summary of evidence:

There are eight Indigenous communities plus the Algonquins of Ontario representing ten additional Algonquin communities. At eighteen communities this is a very large program of involvement and consultation to manage. Our review of the FMP materials and interviews indicates the MNR has done a good job of carrying out their engagement responsibilities along with sustained efforts to build trust, maintain communications and provide capacity funding. The planning team included a significant number of community members (ten) and alternates (five). The IFA interviews were primarily with community members (four) or collective representatives (Natural & Cultural Resource Strategist from the Algonquins of Ontario (AOO)) who all generally indicated that contact is being made, and the appropriate consultation steps are being taken. The AOO representative and a member from the Mississauga's of Scugog Island FN also attended the field portion of the IFA.

Our interviews with the AOO representative, Curve Lake FN representatives, BMFC, and MNR staff enlightened us about some exceptional work that BMFC is doing on top of the normal requirements for consultation and protecting indigenous values.

BMFC has developed an excellent program for sharing awareness exchanges and building capacity for company field staff to pre-identify of some of the indigenous values on the landscape. The staff have built a working relationship with the AOO's Natural & Cultural Resource Strategist. He has provided training, and the staff will often go with him on site visits during the Annual Work Schedule to increase the number of indigenous values identified and included in AOCs or being protected through conditions on regular operations.

BMFC has also been providing Curve Lake First Nation (CLFN) with annual field tours to help the community staff and members learn about how the forest management is conducted on the ground and to answer questions they have about operations and planning.

Discussion:

This work to build relationships and exchange knowledge is above and beyond what is required by the forest management process. It will however help with forest management planning and implementation since it increases awareness for all and allows for more advanced conversations. The work conducted to identify, GPS and record locations of values also helps to build content for First Nation and Métis Background Information Reports which are still lacking for the Bancroft-Minden Forest.

Our interviewees at AOO and CLFN both expressed deep appreciation for the friendly, professional approaches of BMFC staff and the willingness to engage with their communities. They trust the company is concerned about their interests and feel they are practicing good forestry. We heard statements like: “they are the best forest management company to deal with as compared to others” and “we feel we are developing relationships that [will] help both organizations succeed”.

Conclusion:
BMFC is going beyond what is required around building relationships and knowledge sharing with one of the William’s Treaties FNs and the Algonquins of Ontario.

Best practice #1:
The Bancroft-Minden Forest Management Company is going beyond their consultation, reporting and values protection requirements by reaching out to communities with mutual interests in the forest to conduct field knowledge sharing to help find, identify, record, and protect Indigenous values.

APPENDIX 2 – MANAGEMENT OBJECTIVES TABLE

Table 2.1. Management objectives summary of the status of the 2011-2021 FMP Objectives.

Objective	Auditor assessment	Auditor Comments
3.5.1- Conserving biological diversity in Ontario's Forests		
3.5.1.1 - To move towards a more natural landscape pattern and distribution.	Partially achieved	The current forest condition, underachievement of the planned harvest and the low proportion of planned harvests areas which allow for significant age class changes greatly contribute to many of these objective indicators not being met.
3.5.1.2 - To move towards a more natural forest landscape structure, composition and abundance.	Partially achieved	SRNV targets are not met for all the landscape classes however the majority are trending towards the target when modelled over the long-term horizon. Young forest targets are challenging to meet given conflicting mature forest objectives, the accuracy of the currently forest inventory and the low frequency of implementation of the clearcut silvicultural system.
3.5.1.3 - Contribute to the maintenance of red and white pine, including old growth stands, while permitting a sustainable harvest of red and white pine now and in the future.	Partially achieved	Red pine and White pine SNRV targets are not met however long-term modeling shows a move towards those levels. Red pine/White pine targets related to exceeding 1995 levels are met.
3.5.1.4 - 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.	Achieved	The majority of the mature forest targets are met by the end the planning 150-year modelling horizon.

3.5.1.5 - To move towards a more natural forest landscape condition that provides for forest-dependent provincially and locally featured species.	Partially achieved	Targets for pileated woodpecker are met. Moose (late winter) habitat targets are not met but move towards the target over time. Moose (foraging) habitat is not met having decreased since the plan start.
3.5.1.6 - To move towards a more natural forest landscape condition that provides for spatial wildlife habitat for species dependent on overmature forest conditions and forest-dependent provincially and locally featured species.	Partially achieved	Variable achievement of objective targets for all species. The 2021-2031 FMP's new planning inventory led to several changes in objective achievement when comparing assessment from plan start to plan end.
3.5.1.7 - Within the Moose Emphasis Areas (MEA) identified in the plan as management zones, maintain or create cover, where possible, according to provincial direction.	Partially achieved	Browse habitat targets are not being met within the three MEA. % MEA in mature conifer dominated forest is either largely met or moving in the targeted direction. % MEA with hwd or mwd is moving in the targeted directed for 2 of the 3 MEAs. The third MEA is moving in the opposite direction of the objective target.
3.5.1.8 - To manage forests and conduct operations to promote the protection of Species at Risk, and protection and enhancement of Species at Risk habitat.	Not achieved	A total of 5 non-compliances occurred within SAR AOCs throughout the period.
3.5.2 - Maintaining and enhancing Ontario's framework for sustainable forest management		
3.5.2.1 - Continually improve forest operation	Achieved	<5% non-compliances within the term

compliance within FMP operational direction.		
3.5.2.2 - To provide a forest access road system to support forest operations as set out in the FMP and implement planning and abandonment methods that protect water quality, fish and wildlife populations, aquatic habitat and public safety.	Achieved	Less than 2% increase in passable roads during the planning period.
3.5.3 - Maintaining and enhancing forest ecosystem condition and productivity		
3.5.3.1 - 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.	Achieved	80% target of meeting the intended forest unit achieved (82% reported). 75% of FTG declaration is completed via tree marking audits.
3.5.3.2 - Implement sustainable silvicultural practices in accordance with silvicultural ground rules.	Not Achieved	Year 10 AR states zero instances of non-compliance related to forest operation prescription. Several findings (e.g., Finding 4,5 and 6) address non-conformance to the prescribed SGR and FOP.
3.5.4 - Providing for a continuous and predictable flow of economic and social benefits from Ontario's forests		
3.5.4.1 - To protect natural resource features, land uses and values dependent on forest cover.	Achieved	<5% non-compliance target met.
3.5.4.2 - To protect cultural heritage values and aboriginal values	Achieved	No reported non-compliances related to the protection of cultural heritage and aboriginal values

3.5.4.3 - 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 nontimber values.	Achieved	No reported non-compliances related to resource-based tourism AOC prescription.
3.5.5 - CFSA Criterion: Protecting & Conserving Ontario's Forest Soil & Water Resources		
3.5.5.1 - To protect the productive capacity of the soil and water.	Achieved	No reported compliance issues related to site disturbance or rutting. No issues noted during the field audit
3.5.5.2 - To conserve water quality & fish habitat	Achieved	<5% non-compliances reported related to prescription for the protection of water quality & fish habitat.
3.5.5.3 - Provide a sustainable, continuous and predictable wood supply from the forest that will meet the current recognized industrial demand of the forest.	Partially Achieved	Actual harvest of 57% fell below the >85% utilisation target however there was no disruption in fiber supply to active processing facilities throughout the audit term.
3.5.6 - Accepting Social Responsibility for Sustainable Development		
3.5.6.1 - To minimize loss of Crown productive forest thereby maintaining harvest levels and related community well-being.	Not Achieved	Target of <2% conversion rate of production forest to roads and landings was marginally missed with calculated conversion rate of 2%
3.5.6.2 - Ensure that land-use direction as set out in the Crown Land Use Policy Atlas (CLUPA) is followed, including direction on Skyline Use Area, Enhanced Management Areas and park areas.	Achieved	There were zero instances of non-compliance related to CLUPA direction

3.5.6.3 - To provide opportunities for Aboriginal involvement in forest management planning.	Achieved	All Aboriginal communities interviewed noted BMFC provided opportunities for involvement in Forest Management Planning. BMFC annually provides communities with copies of the AWS for comment and feedback. Lack of involvement is generally a capacity issue within communities not a result lack of opportunity.
3.5.6.4 - Identify, protect and share information about values of interest with local First Nation communities.	Achieved	First Nations that were interviewed noted BMFC provides knowledge sharing opportunities for mapping and understanding values of interest.
3.5.6.5 - Work cooperatively with all users of Crown land to facilitate multiple use of the forest.	Partially achieved	Road classification uncertainty regarding the maintenance and continuation of use of roads within the Management Unit. This impacts all user groups.
3.5.6.6 -To encourage and support the participation of the Local Citizens Committee in the development of the Forest Management Plan.	Achieved	There was an LCC member on the planning team.

Table 2.2. Assessment of Objective Achievement of the 2021-2031 FMP Objectives.

Objective	Auditor assessment	Auditor Comments
Forest Diversity – Natural Landscape Pattern and Distribution		
To move towards a more natural landscape pattern and distribution.	Partially achieved	Variable achievement at the LTMD verification stage across all the indicators of this objective. Current forest composition and limited management options for shifting towards the SRNV make 100% achievement of all indicators difficult. To be assessed at Year 6 and Final Year 10 Annual Reports

To move towards a more natural forest landscape structure, composition and abundance.	Partially achieved	Variable achievement at the LTMD verification stage across all the indicators of this objective. Current forest composition and limited management options for shifting towards the SRNV make 100% achievement of all indicators difficult. To be assessed at Year 6 and Final Year 10 Annual Reports.
Within the identified Moose Emphasis Areas, manage the productive forest, according to provincial direction (Stand and Site Guide)	Partially achieved	Mature and older stage habitat targets are met. Mixed wood and Hardwood habitat target are achieved. Targets for browse habitat are underachieved at the LTMD assessment stage. To be assessed at Year 6 and Final Year 10 Annual Reports
Within the identified Deer Wintering Areas (deer yards stratum 1), maintain or create critical thermal cover (CTC), where possible, according to provincial direction (Stand and Site Guide).	Too early to assess	Critical thermal cover targets are not met at the LTMD assessment stage. To be assessed at Year 6 and Final Year 10 Annual Reports
Protect the habitat of forest dependent species at risk with known occurrences on the Bancroft-Minden Forest.	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports
Silviculture		
To ensure the successful renewal of harvested stands (naturally or artificially) to the most appropriate silviculture species and tended until establishment or management standards are met, using the most appropriate and cost-	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports Findings #5-9 address issues related to the planning and implementation of silvicultural activities on the BMF

effective methods to achieve.		
Social and Economic – Harvest Levels and Community Well-being		
Provide a sustainable, continuous and predictable wood supply from the forest that will meet, as closely as possible and for as long as possible, the current recognized industrial demand of the forest	Met	Short-, medium- and long-term wood supply targets are met. 57% of the planned harvest was achieved during the audit period
Harvest a sustainable and continuous wood supply from the forest that will meet the current recognized industrial demand of the forest	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports 57% of the planned harvest was achieved during the audit period
To minimize loss of Crown productive forest to infrastructure development thereby maintaining harvest levels and related community well-being.	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports 57% of the planned harvest was achieved during the audit period
Healthy Forest Ecosystems		
Continually improve forest management operations in the Bancroft-Minden Forest and increase knowledge of ecosystem processes and human interactions with forest ecosystems	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports
In a changing climate, maintain or improve the ability of forests to resists pests & pathogens.	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports
Social and Economic – Healthy Forest Ecosystems		
To protect the productive capacity of the soil and water in the management unit.	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports

Conserve the quality and quantity of interior waterways, wetlands and catchment areas within the Bancroft-Minden forest management areas.	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports
Maintain or restore hydrology through proper installation of water crossings.	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports
Social and Economic -Harvest Levels and Community Well-being		
To ensure that enough roads are in place to allow for effective and efficient forest operations while also limiting company and ministry liability for roads that are no longer required.	Too early to assess	To be assessed at Year 6 and Final Year 10 Annual Reports
To encourage and support the participation of the Local Citizens Committee in the development of the Forest Management Plan for the Bancroft-Minden Forest.	Not Achieved	The desirable level was not met as the LCC self-evaluated score was below the target score

APPENDIX 3 – COMPLIANCE WITH CONTRACTUAL OBLIGATIONS

The following table provides the contractual obligations of the Bancroft-Minden Forest. Each condition is provided on a separate row with comments by the audit team to report on the degree of attainment of the condition.

Table 3.1. Compliance with contractual obligations

Licence condition	Licence holder performance
Payment of Forestry Futures and Ontario Crown charges	Met. No current arrears for crown stumpage and FFT dues.
Wood supply commitments, sharing arrangements, special conditions	Met.
Preparation of FMP, AWS and reports; abiding by the FMP and all other requirements of the FMPM and CFSA	Met. FMP, AWS and AR submission are prepared in general accordance with the requirements of the FMPM and CFSA
Conduct inventories, surveys, tests and studies; provision and collection of information in accordance with the FIM and in the case of the Agreement in accordance with the Algonquin Forestry Authority Act	Met. FTG surveys are being conducted in accordance with FIM.
Wasteful practices not to be committed	Met. No wasteful practices were noted during the field audit. Contractors use container agreements to haul roadside slash and offcuts for firewood processing.
Natural disturbance and salvage SFL conditions must be followed	Met. Salvage operations were planned and operated in accordance with the FMPM.
Protection of the licence area from pest damage, participation in pest control programs	Met. BMFC actively implemented tending activities to address the proliferation of Beech Bark disease on the forest. No other pest outbreaks occurred during the audit term
Withdrawals from licence area	Met. No withdrawals from the license area during the audit term
Action plan and progress towards the completion of actions as reported in annual reports or status reports prepared under previous versions of the IFAPP	Met. Action plan and status reports were prepared in accordance with the IFAPP.

Payment of forest renewal charges to the FRT	Met. No current arrears for FRT dues.
FRT eligible silviculture work	Met. No issues were found with the blocks sampled from the special procedures report year. BMFC maintains all the necessary mapping and records for FRT eligible work.
FRT forest renewal charge analysis	Met. FRT renewal charge analysis was completed in accordance with the requirements
FRT account minimum balance	Met. The account is currently above minimum balance. A small dip did occur during the audit period.
Silviculture standards and assessment program	Partially Met. Gaps were noted in several aspects of the SEM work completed during the audit term. These are addressed in the audit findings.
First Nations and Métis opportunities	Met. A best practice is assigned recognizing the pro-active first Nation/Metis engagement conducted by the SFL
Preparation of compliance plan	Met. SFL compliance planning was done in accordance with the requirements of the FMPM and Forest Compliance handbook. A finding is directed towards some planning gaps of the MNR District ACOP
Internal compliance prevention/education program	Met.
Compliance inspections and reporting; compliance with compliance plan	Met. Some focused improvements are required to some aspects of compliance planning and implementation. Two findings highlight these issues. Overall, the level of compliance monitoring satisfies the requirements of the license
SFL forestry operations on mining claims	N/A

APPENDIX 4 – AUDIT PROCESS

The Crown Forest Sustainability Act, through Ontario Regulation requires that each management unit in Ontario be audited at a minimum once every ten to twelve years. The Independent Forest Audit Process and Protocol was developed by MNR to provide a comprehensive and consistent method of evaluating forest management activities on Crown land. The audit procedure serves as a framework to provide a structured approach to evaluating whether forest management activities meet the requirements governing forestry practices on Crown land in Ontario.

Risk Assessment

The audit team conducted a risk analysis of the management unit that included the reviews of trends analysis and the MNR District silvicultural effectiveness monitoring data. These documents were combined with the previous IFA (and related Action Plan and Status Report), current forest certification status, and summary data from preliminary interviews with the auditees and key stakeholders to complete the risk assessment. The assessment followed IFAPP protocols that were considered as "optional" and ranked based on their potential impact on forest sustainability and likelihood of occurrence.

Audit Plan

KBM prepared an audit plan that described the schedule of audit activities, audit team members and their qualifications, audit participants, and auditing methods. The audit plan was submitted to MNR, BMFC, FFTC, and the chair of the BMFLCC.

Summary of Consultation and Input to Audit

Public Response:

The public were notified that an audit was being conducted. Two notices were placed in *The Highlander* and *Bancroft This Week* respectively informing the public of the audit and inviting the public to participate via an online questionnaire. The questionnaire was also published and advertised prominently on KBM's website. Fourteen responses from the online questionnaire were received. Responses came from individuals with various interests in the Bancroft-Minden Forest, including.

Table 3.2. The number of respondents to the audit questionnaire based on their interest in the BMF.

Description of Interest in Bancroft-Minden Forest	Number of Respondents
Recreational User	1
Independent Forestry Expert (RPF, biologist, modeling expert, etc.)	1
Local forest sector employee	7
Local contractor	2
Forest manager (MNR or SFL)	1
Cottage Owner	1
Residential property owner	1

Concerns noted through the questionnaire included: blowdown/harvest and resulting fire hazard, road classification changes, and results of spraying activity. Several respondents requested follow-up with the audit team. Follow-ups are ongoing.

Local Citizens Committee:

All members of the Local Citizens Committee were contacted via email regarding the opportunity to provide feedback to the auditors. Two individuals were interviewed prior to the Field Audit. One member of the LCC participated in a portion of the Field Audit. Concerns around road classification were noted.

First Nation and Métis Communities:

A contact list of First Nations and Métis Communities was supplied to by the MNR District Resource Liaison Specialist. All communities were contacted via email regarding the opportunity to provide feedback to the auditors. Four First Nation Communities responded, and interviews were conducted with prior to the field audit. Representatives from two First Nations Communities attended applicable portions of the Field Audit.

Upon completion of the Field Audit, another First Nations Community which is represented by the Algonquins of Ontario, reached out to the audit team directly. An additional interview was conducted with members of this community.

Overlapping License Holders, Contractors and Commitment Holders:

FRL Licensee contact information was provided by the SFL. All members of the list were contacted via email informing them of the audit. A link to the online questionaries was provided. No FRL Licensees were interviewed throughout the duration of the audit.

Field Site Selection

The audit team conducted the preliminary site selection shortly after the pre-audit meeting. Annual Work Schedules and Annual Reports were used to ascertain the amount and type of forest operations carried out on the BMF during the audit period. A stratified random sample of sites was then selected to ensure that selected sites were representative of a cross section of all activities conducted on the BMF during the audit period. The auditees were informed of the site selections before the field audit. A plan for access was created in conjunction with the SFL.

Table 3.3. Operational Activities for BMF in 2017 – 2025 and their Selected Sample.

Activities	Total Hectares	Sample hectares	%	2023-24	Sample hectares	%
Harvest	16,076	3,488	22%	1,737	285	16%
Site preparation (Mech & Chem)	387	82	21%	131	38	29%
Tree planting	338	65	19%	0	0	-
Natural Regeneration	9,365	1,650	18%	1,362	479	35%
Tending	10,500	1,561.8	15%	1,026	197	19%
Regeneration Assessments (FTG)	8,115	843.23	10%	705	108	15%

Audit Report

The audit results are presented in this report, following a brief description of the audit process and the forest licence area under review. Within the report, the audit team has provided findings to address instances of a non-conformance to a law and/or policy, or an identified lack of effectiveness in forest management activities.

Findings from this audit must be addressed in an action plan developed by BMFC, and MNR Bancroft District, with input and review by MNR Regional and Divisional Support Branch representatives.

Suggestions and recommendations are no longer highlighted in audit reports, nor do they need to be addressed in action plans. Any suggestions of the audit team have been incorporated within the regular text of this report.

APPENDIX 5 – LIST OF ACRONYMS USED

ACOP Annual Compliance Operational Plan

AGS Acceptable Growing Stock

AOC Area of Concern

AOO Algonquins of Ontario

AR Annual Report

AWS Annual Work Schedule

BA Basal Area

BM Bancroft-Minden

BMF Bancroft-Minden Forest

BMFC Bancroft-Minden Forest Company

BM LCC Bancroft-Minden Local Citizens Committee

CeSH Cedar Shelterwood

CFSA Crown Forest Sustainability Act

CLFN Curve Lake First Nation

CLUPA Crown Land Use Policy Atlas

ERU Existing Roads Use

FFTC Forestry Futures Trust Committee

FIM Forest Information Manual

FMP Forest Management Plan

FMPM Forest Management Planning Manual

FOIP Forest Operations Information Program

FOP Forest Operations Prescription

FRI Forest Resource Inventory

FRT Forest Renewal Trust

FSC Forest Stewardship Council

FTG Free-To-Grow

FU Forest Unit

GLSL Great Lakes St. Lawerence

HDSEL Hardwood Selection

HDSH Hardwood Shelterwood

HDUS Hardwood Uniform Shelterwood

HeSH Hemlock Shelterwood

IFA Independent Forest Audit

IFAPP Independent Forest Audit Process and Protocol

INTCC Intolerant Hardwood Clear-cut

ISS Irregular Shelterwood System

KBM KBM Resources Group

LCC Local Citizens Committee

LiDAR Light Detection and Ranging

LTMD Long-term Management Direction

MEA Moose Emphasis Area

MNR Ministry of Natural Resources

MU Management Unit

MXCCC Mixed Conifer Clear-cut

MXHCC Mixed Hardwood Clear-cut

OrUS Red Oak Uniform Shelterwood

PrCC Red Pine Clear-cut

PwU White Pine Unit

PwUS White Pine Uniform Shelterwood

RPF Registered Professional Forester

SAR Species at Risk

SEM Silvicultural Effectiveness Monitoring

SFL Sustainable Forest Licence

SGR Silvicultural Ground Rules

SRNV Simulated Range of Natural Variation

SOI Site Occupancy Index

TOR Terms of Reference

UGS Unacceptable Growing Stock

WTFN Williams Treaties First Nations

APPENDIX 6 – AUDIT TEAM MEMBERS AND QUALIFICATIONS

Table 4.1. The Audit Team Members and their Qualifications.

Name	Role & Responsibility	Qualifications
Stéphane Audet R.P.F.	Lead auditor; Assessment of Objective Achievement, Areas of Concern, Access, Annual Reports, SFL holder Compliance Planning and Monitoring, Action Plan Development, Progress Reporting, Determination of Sustainability	B.Sc.F. 15+ years of audit experience. 25 years of forestry experience
Fraser Smith R.P.F.	Core team member; Plan Production Activities, Silviculture Standards and Assessment Program, Ontario Crown Timber Charges Payments, FRT Eligible Silviculture work	M.Sc.F. 10+ years of audit experience. 25 years of forestry experience.
Ken Elliot R.P.F.	Core team member; First Nation and Metis Communities Involvement and Consultation, Local Citizens Committee, Public Consultation, Issue Resolution, Tending & protection,	B.Sc.F., Ontario Advanced Forestry Program 1 year of audit experience, Member of Provincial Tree Marking Committee. 30+ years of forestry experience
Elizabeth Cobb R.P.F.	Core team member; Analysis of renewal and tending activities, Review of assumptions in modelling, White Pine Management,	Forestry Technician Diploma 1 year of audit experience. 30+ years of forestry experience.
Eric Bongelli	Team member; Secretary, Audit Team Support, Documentation and Reporting	M.E.S 2 years of audit experience. 5 years of forestry experience