

Pic Forest – Monitoring Summary

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Note: Boxed Items are excerpts from the Pic Forest Management Plan (FMP) or Annual Work Schedule (AWS) (example below)

1.1 The Pic Forest Management Unit

The Pic Forest is located in the Wawa District, Northeast Region of the Ontario Ministry of Natural Resources and Forestry (MNR) and the Nipigon District, Northwest Region of the Ontario MNR. The Pic Forest includes Crown land that is north of Lake Superior and south of Highway 11, and encompasses the communities of Caramat, Heron Bay, Hillsport, Manitouwadge, Marathon, and the Pic River First Nation (recently renamed 'Biigtigong Nishnaabeg'). The community of Longlac lies just outside the boundary of the Pic Forest. The Pic Forest shares a common boundary with Pukaskwa National Park on the southeast corner of the unit. The Pic Forest is located in the Boreal Forest Region and is dominated by black spruce leading conifer and mixedwood sites. Figure 2 provides a map of the location of the Pic Forest.

Forest Compliance Monitoring

The forest compliance monitoring program is carried out to ensure MNR and forest industry conduct forest operations according to legislation and approved plans and to prevent damage to Crown forests. Under this program, the MNR and forest industry inspect and report on access, harvest, renewal and maintenance activities. Forest compliance monitoring is integral to ensuring the sustainable management of Ontario's forests through continued improvement and adaptive management. The Forest Operations Information Program (FOIP) stores information collected through forest compliance monitoring for analysis and reporting to MNR, the forest industry and the public.

4.7.1 Forest Operations Inspection

The following text describes NFMC's compliance strategy, for the two-year Contingency Plan (CP) term, which has been developed in accordance with the requirements of the MNRF's Forest Compliance Handbook. The strategy will speak to the forest operations inspection process, the requirement for NFMC to produce inspection reports and the processes for managing operational issues that may be identified through compliance inspections. The two-year compliance strategy describes the methods, intensity and frequency of forest operations inspections, circumstances under which NFMC will conduct forest operations inspections (e.g. forest operations in, and adjacent to, areas of concern) on the Pic Forest, and the submission of inspection reports to MNRF. An annual compliance component will be submitted each year as part of the Annual Work Schedule. In addition, the strategy describes the MNRF district program for auditing forest operations and conducting forest operations inspections. Furthermore, the strategy describes how compliance performance on the forest will be communicated to the local citizens committee (Pic Forest Public Consultation Committee) for their review.

4.7.1.1 Compliance Goal

The NFMC and the contractors working on their behalf are committed to operating in an environmentally sensitive manner that maintains and, wherever feasible, enhances the long-term sustainability of the Pic Forest. The Company and contractors are committed to:

- Recognizing the needs of other forest users;
- Maintaining healthy lands, waters and forests;
- Applying sustainable forestry practices.

All activities planned and implemented by NFMC will be in accordance with the approved 2019-2021 CP and will meet or exceed all existing government regulations, policies and legislation. The NFMC is committed to the highest level of quality in every area of operations and everyone operating on the forest is responsible for monitoring and delivering on this commitment. The NFMC has a social responsibility to the communities in which they operate to carry out their daily operations in a responsible manner that will help contribute to the socio-economic base of these communities. Regular compliance inspections are conducted to monitor harvesting, water crossing installations, road construction and silviculture activities. The results of these inspections are reported to the MNRF. The Forest Operations Inspection Program (FOIP) will ensure that due diligence is practised across the Forest by "Trained and Capable" Company employees/contractors so that:

- Instances of non-compliance are reduced to the lowest possible number, while striving for zero;
- All instances of non-compliance are promptly noted, recorded and reported to the MNRF;
- Immediate corrective/preventative action is taken in the field;
- The effects of non-compliance are minimized and mitigated.
- Appropriate action is taken within the organization to prevent future occurrences similar in nature.

4.7.1.2 Background

The purpose of the compliance strategy within the CP and the overall context of the compliance program as it applies to the Pic Forest is as follows:

- The Compliance Plan will provide education, guidance, monitoring and reporting procedures in the implementation of the Pic Forest CP to all operators on the unit. It will guide and direct all company's and contractors. It will be delivered in a cost effective, efficient and adaptive manner that is consistent with current legislation and policy and is appropriate for the site and operating conditions. It is a document that will guide forest operators on compliance

requirements and the results will be used to track trends for future operations or planning adjustments and ongoing educational and training needs.

4.7.1.3 Compliance Goals

1. Sustainable forest management and resource protection:
 - a. To monitor operations ensuring standards are followed to minimize impacts to the environment.
 - b. Track non-compliances allowing for adjustments to operating procedures and/or methods to reduce re-occurrences.
 - c. To monitor and evaluate the ongoing forest operations for impacts to the environment and to ensure that operations take corrective actions when and where possible.
2. Continuous improvement:
 - a. By tracking results of operations, re-occurring issues can be addressed to reduce compliance problems.
 - b. Being certified to Forest Stewardship Council (FSC) standards, encourages striving for higher standards and results on a continuous basis.
3. Maximizing efficiency of compliance activities:
 - a. Joint MNRF/company inspections will be encouraged in order to ensure consistency of field observations and their reporting.
 - b. Looking at ways to minimize the time required for compliance by effective use of time and resources while achieving positive results. This could include the use of certified contractor inspectors to complete FOIP reports.
 - c. To conduct risk based planned compliance and monitoring activities in an effective and efficient manner with consideration of costs and techniques without compromising the environment or compliance with laws.
 - d. To ensure efficient use of MNRF staff and Operator resources by involving both in mutually beneficial compliance monitoring or reporting opportunities.
4. Increasing compliance with legislation:
 - a. Maintain contact with MNRF staff in order to stay current with any change to legislation, planning and policies.
 - b. Conduct all activities in a manner that will meet or exceed requirements and standards.
5. Addressing historical compliance problems:
 - a. Analyze and evaluate the past compliance problems and address the issues identified in an efficient corrective manner.
 - b. Encourage new approaches and innovations in resolving compliance issues.
 - c. Joint MNRF/company reviews will help identify and resolve issues.
6. Human resources and training:
 - a. Training will ensure that employees and contractors are adequately trained and fully informed of performance requirements including legislation, procedures, plans and policies.
 - b. To adjust and deliver a training and education program based on annual compliance assessments trends/analysis.
 - c. To ensure company/contractor forest compliance staff, inspecting and reporting on operations have Certified Forest Compliance Inspector status.

4.7.1.4 Strategies and Actions

NFMC has developed environmental and sustainable forest management policies. NFMC implements an Environmental Management System (EMS) designed and structured to meet the requirements of the ISO 14001 standards. As a component of the EMS, Standard Operating Procedures have been developed to minimize impacts to the environment. All contractors that operate on the Pic Forest are to operate using NFMC's adopted Standard Operating Procedures.

Prevention Measures:

1. The NFMC operations supervisor along with the Forester if available will meet the contractor for a pre-operations meeting. Reviewing the maps, Area of Concern prescriptions, and any special conditions for the block are discussed and identified. Before the contractor starts an operation, they are fully aware of all prescriptions.
2. Contractors and their employees are trained to NFMC's adopted Environmental Management System covering standard operating procedures for harvest, utilization, crossings, etc.

Approaches to Compliance Monitoring, Analysis, Reporting, and Documentation:

1. NFMC will monitor activities through field surveys which may include ocular or formal ground survey, aerial inspections, or the use of aerial photography. The majority of surveys will be done on the ground ocularly.
2. The NFMC will follow the FOIP program generated by the MNRF. Certified inspectors will complete the FOIP reports from information gathered by the inspector. There may be information gathered by others that may be used in the report and this will be noted in the report.
3. Inspections will be carried out on a regular basis as operations progress by contractor or company personnel. For operations that are short in duration i.e., crossing installation, the inspection will take place after the work has been completed.
4. Will follow the reporting schedule outlined in the Annual Compliance Plan as per the Forest Compliance Handbook (April 2010).

Corrective Action Practices:

1. If non-conformances are discovered, the operations will be halted immediately if still in the area. Mitigation will be carried out immediately to stop or reduce any environmental concerns if possible.
2. An incident will be reported to MNRF within 24 hours of discovery with a FOIP submitted within 5 working days.
3. The NFMC will appoint a person to investigate the incident and determine the root cause of the problem.
4. Recommendations to prevent re-occurrence are made.

Requirements for Follow Up:

1. The root cause analysis is reviewed, and an appropriate action plan is developed and implemented.

4.7.1.5 Roles and Responsibilities

The NFMC will oversee the two-year Compliance Plan and co-ordinate the compliance program. It is the responsibility of every forest worker on the Pic Forest to perform their job using proper harvesting, water crossing, renewal and tending and road construction techniques. In addition to this responsibility, forest workers are also required to promptly report any non-compliance situations that they become aware of. Forest management activities carried out by NFMC and silvicultural contractors on the Pic Forest will be subject to the same compliance objectives and strategies as outlined in this Compliance Plan. There are a number of specific functions related to the preparation

and implementation of the Compliance Plan. Following are the roles and responsibilities for those functions:

1. Compliance Plan Preparation:
 - a. The NFMC, Operations Manager will take the lead role and prepare the Compliance Plan.
 - b. The MNRF will provide advice and information to the NFMC as required.
2. Inspectors:
 - a. The Annual Compliance Plan submitted with the AWS, prepared by the NFMC Operations Manager, will identify individual compliance inspectors for compliance monitoring on the Pic Forest. All compliance inspectors will be certified (i.e. have successfully attended and passed the Compliance Inspector Competency Certification training course and certification is up to date).
3. Sign-off Responsibility on FOIP Reports:
 - a. The NFMC Operations Manager, will be the primary sign-off authority on FOIP Reports. However, this job may be delegated to a compliance technician.
4. Responsibility for Prevention, Monitoring, and Reporting:
 - a. The responsibility for these compliance functions will be assigned to the supervisor of the contracted company in charge of each operation or activity. However, the NFMC is ultimately responsible for prevention, monitoring, and reporting.
5. Responsibility for Corrective Action and Follow-up:
 - a. Corrective action and follow-up will be assigned by the NFMC, to be undertaken by the supervisor responsible for the activity involved.
6. Company Representative on Compliance Matters:
 - a. The NFMC Operations Manager or Forestry Operations Technical Specialist is the contact for compliance matters.
7. Responsibility for Training:
 - a. Contractors working on behalf of the NFMC are independent and are fully responsible to ensure that their employees are trained to the standards required to perform the forest operation being conducted. However, NFMC will support in any means possible the opportunities for contractor supervisors or workers to become compliance certified.

4.7.1.6 Notification of the Status of an Operation

For proper assessment and evaluation of compliance, MNRF must be made aware of the status of operations. Notification of operational status is an information item to advise MNRF of operational progress. For the Pic Forest, the MNRF supplied spread-sheet will be utilized for the notifications. The spreadsheet will be a copy of the NFMC web-based notification system. As stated above, MNRF will be given access to the web-based system.

The Pic Forest start up notification sheet will be sent to MNRF Technical Forestry Specialists weekly and will indicate all ongoing operations. It will also serve as a start-up notification for a new activity if submitted within the 5-day requirement. NFMC will contact the MNRF Technical Forestry Specialist by email if there is a FOIP report submitted with an operational issue.

The reporting timelines below are minimums and must be followed for all operations. In cases where blocks are being released to allow another activity such as site preparation, MNRF will be notified through the FOIP system.

- Start-Up: The NFMC must provide notification to the MNRF prior to or within 5 working days of the beginning of a new operation clearly stating the start up date.

- **Suspended:** The NFMC must provide notification (as per the compliance plan) to the MNRF prior to or within 20 working days of suspending an operation or activity. A suspended operation is one where the operational activities must be delayed and are not complete and therefore cannot be assessed for some aspects of compliance. That notification must clearly describe the operation being suspended, its location, and specify why the operation is being suspended and when it is proposed to be restarted. Operations may not be suspended for more than the balance of the period of the current AWS and one further AWS period.
- **Release:** A Release is where a Licensee wishes to provide MNRF a “Release to MNRF for compliance audit” for any part of an operation’s Compliance Reporting Area. This release must be in writing. A Release Notification is required no less than 10 working days prior to the commencement of any new operation. A Release Notification must be clear and specific about what is being released, the area being released and why the release is being provided. This may be done where the Licensee wishes to:
 - commence a new operation on that area such as Renewal (e.g. mechanical site preparation or slash pile burning);
 - to acknowledge harvest is finished but the wood has yet to be hauled;
 - To allow compliance to be assessed for that portion of the operation that is finished.

In this context, a “release” is a confirmation by the SFL holder that the activity(ies) being released are finished on that portion of the area identified for release, is without operational issues, and is available to MNRF for audit. It is possible to suspend a Harvest operation because it is not complete until the wood is hauled and at the same time provide MNRF a Release Notice for the harvesting activities so that site preparation can be undertaken.

The NFMC will notify MNRF by email if any operational issue is identified within a FOIP report or is identified to NFMC. Should NFMC or its contractors identify any new value (nest, stream, etc.) the NFMC will notify MNRF and work together to update the central values information system.

4.7.1.7 Prevention, Avoidance, and Mitigation

The NFMC will take action to prevent and avoid potential operational issues in a decisive, timely, and appropriate manner in an effort to mitigate any loss or damage, or correct the situation to ensure a compliant state.

The two-year forest compliance strategy provides direction to company officials on what processes and/or notifications are to be undertaken for various situations that might lead to non-compliance.

The following actions will be undertaken by the NFMC to prevent recurrence of the non-compliance:

- The NFMC will emphasize the prevention of potential undesirable activities or occurrences and the mitigation of loss or damage as a result of these. Root cause analysis of an undesirable activity or occurrence will be determined and an appropriate action will be assigned. Assigned actions will be appropriate to the level of the non-compliance and will have the ability to adapt to ensure the non-compliance will not become a recurring problem. Actions by NFMC staff will be positive and will center on a learning approach;
- The NFMC is responsible to ensure that actions occur. The MNRF will verify the identified operational issue; MNRF may then determine and assign a corrective action. In instances where the Industry inspector determines a situation to be clearly non-compliant, the direction will be that work will stop on that part of the operation and the inspector will submit a report of an Operational Issue;
- Where any NFMC or contractor personnel, during ongoing monitoring of operations, identify a situation they believe could be an Operational Issue(s), they will undertake one of the following actions:

- If they feel it is a violation of the approved plan or a threat to the environment, they will immediately stop the operation and take the necessary steps to stop further possible noncompliance and or harm.
- They will report the situation to the Company's Operations Manager who will conduct a formal compliance inspection or delegate to another Company official that is certified. The Certified Inspector will determine if the situation is a violation of an approved plan or a threat to the environment and what further action to take.
- If the situation cannot be immediately corrected, the Company's Certified Inspector will submit a report in FOIP that documents their findings and identifies an Operational Issue. They will also identify the issue to the MNRF and other regulatory agencies as appropriate.

4.7.1.8 Compliance Reporting Areas

Forest operations will be grouped into CRA for each operation type (access, harvest, renewal and maintenance), based on the characteristics of the operations and the operational complexities of the specific areas of the Forest that are involved. The simplest operational division for the Pic Forest is defined as a 'block'. For the purpose of forest compliance inspection reporting, the following categories will define the Compliance Reporting Areas:

Renewal - Operations compliance inspection reports for all renewal activities (excluding FTG or silvicultural effectiveness monitoring) e.g. Chemical and mechanical site preparation, slash piling and burning, aerial and direct seeding, planting, artificial regeneration will be grouped by activity type into a single CRA. All operations will be inspected on an ongoing basis (sampling while the tree plant is ongoing, not only at the end) to ensure compliance;

Harvest - Operational CRA's will generally be comprised of single harvest areas (i.e. a harvest block). Where the harvest block exceeds 500 hectares, the site will be subdivided into CRA's less than 500 hectares and reported upon separately. CRA's will be identified in AWS if the areas are grouped or subdivided;

Maintenance - Operations compliance inspection reports for all maintenance activities (e.g. Tending, thinning, and pesticide application) will each be grouped by activity type into a single CRA;

Access - Operations compliance inspection reports for activities related to:

- Primary and branch road construction will be reported under an Access report.
- Operational roads are not included and are inspected as part of harvest operations.
- Road maintenance will be reported in an access report.
- Where a water crossing is involved on a primary, branch or operational road, it will be recorded in an access report.
- Under the Access CRA's, water crossings should not be grouped into one report. Crossing should have a mutually exclusive FOIP report.

4.7.1.9 Monitoring Compliance of Forest Operations

The timing and frequency of monitoring activities conducted during actual forest operations is described within Section 4.7.1.6 Notification of the Status of an Operation to support the achievement of compliance objectives developed from the CP.

In addition to the timing and frequency of monitoring activities detailed above, the NFMC may opt to modify its reporting requirements for the following unique situations:

- Seasonal site conditions or market situations may not permit the completion of harvesting operations within a CRA or block. In this situation the Company may elect to release the harvested portion for MNRF audit. This will permit renewal operations to commence within the completed area. Further details will be laid out in the AWS so that they are clear to both the MNRF and industry inspectors;

- For CRAs classed as high productivity upland mixed wood, the Company may choose to reduce the CRA size so those areas blocks can be inspected and approved for renewal operations to minimize potential competition through immediate start-up of site preparation immediately after notification by MNRF. Further details will be laid out in the AWS so that they are clear to both the MNRF and industry inspectors.

The general functions related to the compliance inspecting and reporting processes are detailed in section 4.7.1.4 Strategies and Actions of the Compliance Plan. Detail concerning the identification of inspectors and approvers and any other special considerations related to monitoring compliance of forest operations is found in the annual Compliance Plan contained within the AWS.

Silvicultural Effectiveness Monitoring

Renewal activities are required to be reported annually. Renewal efforts are assessed at specific points in time to determine the success of establishing the new forest. These assessments involve a variety of techniques, including field measurements, aerial surveys, and remote sensing.

At a strategic level, the following regenerations of assessment mythology is implemented in the FMP.

4.7.3 Assessment of Regeneration

Monitoring and assessment of regeneration is carried out to determine the effectiveness of the chosen silvicultural treatment package in regenerating the forest to the regeneration standards defined in the associated SGR and to determine if those efforts will contribute to the achievement of the desired future forest condition outlined in the LTMD and captured in FMP-10. Assisted regeneration (i.e. plantations) is monitored for survival and stocking and then assessed for regeneration success at strategic stages (i.e. Establishment or Performance) as defined in the SGR (i.e. FMP-4). Natural regeneration such as Careful Logging Around Advanced Growth (CLAAG) treatments are monitored for survival, stocking and/or tending prior to carrying out the Establishment survey. Establishment surveys are conducted at a stage of regeneration that allows for additional treatment, if required, in order that the regeneration standards found in FMP-4 are met. FMP-20 forecasts a summary of Establishment surveys that will be carried out during this two-year plan period. The table is broken into current plan and past plans and categorized by harvest type, assigned SGR and SGR to be assessed. FMP-20 includes harvest area from the 2017-2019 Contingency Plans for the Big Pic and Pic River Forests as well as any area that has not regenerated from previous plans for the Big Pic or Pic River Forests. .

The monitoring carried out prior to the Establishment survey include plantation survival plots, established on artificial regeneration sites, and competition surveys to determine if tending of the plantation is required. Survival assessments are carried out in the first, second and third growing seasons post planting. Typically, competition surveys are done one-to-two years after planting to determine if the planted conifer trees require release from vegetative or propagative (i.e. poplar, birch, and cherry) competition.

The results of the formal regeneration assessments (i.e. Establishment) are used to update the forest resource inventory. The survey methodology being used on the Pic Forest is a combination of:

- Visual;
- aerial ocular;
- large-scale photo interpretation, and
- ground surveys.

Advances in new technology such as satellite imagery or supplementary LIDAR aerial photography plus artificial intelligence (i.e. Computer program) or drones may also be employed where feasible and economical to determine regeneration success.

Visual surveys are normally done on small homogenous regeneration areas (i.e. PODOM or SBDOM), less than 4 hectares in size, by an experienced regeneration surveyor or professional forester. Aerial ocular surveys involve conducting regeneration assessments from a helicopter by an experienced regeneration surveyor or professional forester. Large scale photo interpretation combines large scale aerial photography and photo interpretation by an expert to create stand descriptions for each regenerated area. Ground surveys utilize a plot-based system called the Modified Well-Spaced Free Growing Assessment Methodology. A detailed description of the Modified Well-Spaced Free Growing Assessment Methodology can be found in Section 5 of the Supplementary Documentation. Ground surveys are used where the level of regeneration success to the desired forest unit cannot be easily determined using one of the other methodologies. On the Pic Forest ground surveys are the preferred survey methodology that will be used during the period of the CP in conjunction with other survey methodologies. The mixedwood nature of the Pic Forest, Figure 65 below, lends itself well to the formal ground survey methodology. However, the use of the other regeneration survey techniques, because of new technology, may be employed where it is deemed the new technique is proven to be a viable option.

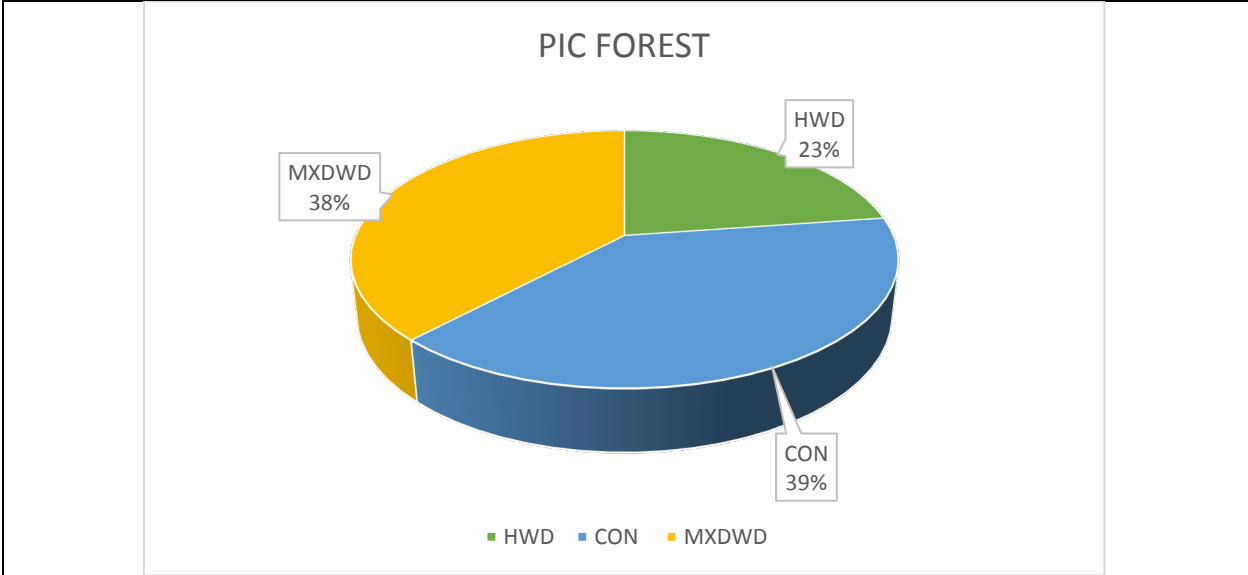


Figure 1: Proportional Composition of the Pic Forest

MNRF staff, local PFPC members and Indigenous community members may, upon request, wish to accompany NFMC staff or contractors involved in the regeneration monitoring and assessment program.

At an operational level the following programs are implemented annually through the AWS

3.2.7.9.2 SILVICULTURAL EFFECTIVENESS MONITORING

3.2.7.9.2.1 Establishment (formerly Free-To-Grow Assessment)

Areas are scheduled for assessment of regeneration success in the 2020-2021 AWS. Areas are selected for assessment based on the regeneration standards for each forest unit as presented in FMP-4. Recently, beginning in 2015, NFMC partnered with the District, Regional, and Corporate MNRF Silviculture Guides and Monitoring Section on a new pilot SEI survey program that is now standard. Training and surveying of regeneration is scheduled over the term.

3.2.7.9.2.2 Natural Regeneration Assessment

Areas of natural regeneration will be targeted for survey to determine whether the candidate areas are on pace to meet regeneration standards as outlined in the FMP and SGRs. The success of these areas will be determined from surveying, as described above, during the AWS period and through silviculture effectiveness monitoring (SEM) surveying carried out by MNRF.

3.2.7.9.2.3 Plantation Survival and Competition Assessment

Areas planted during the past three years will be targeted for survey to determine survival of the planted stock, and to determine if tending is required to ensure that the crop trees will meet the regeneration standards of the desired future forest unit.

3.2.7.9.2.4 Plant Quality Assessment

During the tree planting program, quality assessments will be carried out on a sample basis. These plots serve a dual purpose; determination of contract payment by means of measuring density and quality of the planting and to oversee contract implementation.

The timing of these assessments coincides with the tree plant operation and will be implemented at a density of one plot per hectare for planting contract staff and an additional one plot for every four hectares for an NFMC audit plot.

3.2.7.9.2.5 Post-Tending Assessment

As part of the regular monitoring program an informal post-tending assessment will be completed on areas tended in 2018. This review is intended to confirm the success of tending treatments. Further surveys may be required after the informal assessment (e.g. FTG, survival/competition) if deemed necessary.

Infrastructure (Roads, Culverts, & Bridges) Monitoring

Infrastructure monitoring takes place and is implemented through the FMP and AWS. at a strategic level, the infrastructure monitoring is implemented through the FMP as follows:

4.7.4 Roads and Water Crossings

Roads and water crossings associated with each road network that is the responsibility of the NFMC will be monitored consistent with the conditions described in FMP-18.

The annual monitoring program will commence after the spring runoff. The monitoring program will consist of a visual inspection of all primary and secondary roads contained within each network as well as visual inspections of operational roads, where feasible. The inspection findings will be retained internally and used to develop a workplan for remediation or removal, if required. The records may also include areas that may require further monitoring throughout the year.

The NFMC will actively maintain all roads only when forest management activities are being carried out. If an environmental and/or public safety risk is identified, the NFMC and the MNRF will jointly develop a mitigative plan to address the situation. There is no obligation for the Company to maintain and/or undertake any repair work that is not considered an environmental and/or safety risk. The Company is not committed to undertake any repair work on behalf of other users.

Operational summer roads are roads used for the extraction of wood and silvicultural activities over a short term. Annual Monitoring of these roads will be done during active operations only, inactive roads will be assessed at least once every three years until they are returned to the crown.

Operational winter roads do not have any planned monitoring activities planned as these areas will have likely been bladed/sheared or subgrade only roadbeds with temporary water crossing structures. There will be no requirement to monitor these roads if there is no infrastructure left in place and these roads will be renewed by natural means.

At a operational level the following monitoring takes place annually, implemented through the AWS.

3.2.7.9.2.6 Roads and Water Crossings

Roads monitoring will be done through travelling the road system while conducting planned operations and maintenance. Monitoring will consist of regular forest operations inspections and through information supplied by the public as well as through information gathered through regular maintenance activities.

Annual Reporting

Annual Report (every year)

Annual Report Text - a discussion of the progress to date in meeting the planned level of activity described in the Forest Management Plan, and a discussion of any significant events affecting the implementation of the plan. The text also includes a summary of monitoring and assessment activities; forest operations inspections and any instances of non-compliance.

Annual Report Tables - a summary of information supporting the annual report text; includes tables of wood utilization, renewal support, expenditures, pesticide use and forest operations inspections.

Information Products - the forest operations that were implemented during the year of the annual report will be provided in information products in accordance with the Forest Information Manual.

Annual Report Text Requirements

2.1.3 Discussion of Forest Operations

A discussion of the implementation of forest operations will address:

- (a) the progress towards harvest of the planned harvest area, and any related concerns that may have implications for wood supply;
- (b) the progress towards achievement of planned levels of renewal and tending, and any related concerns;
- (c) the progress towards achievement of planned levels of road construction and maintenance, and any related concerns; and
- (d) the progress towards utilization of the volume associated with the planned harvest area (AR-1) and achievement of the planned volume for each mill(AR-2), and any related concerns that may have implications for wood supply.

2.1.4 Monitoring and Assessment

The text will also include a discussion of:

- (a) any significant events (e.g. natural disturbances, markets, labour disruptions) that have affected the implementation of the forest management plan;
- (b) areas harvested under the clearcut silvicultural system, based on the standards in the applicable guide relating to the emulation of natural disturbance patterns;
- (c) the monitoring of roads and water crossings, including the effectiveness of access controls, and any related concerns;
- (d) instances of non-compliance (AR-6), including:
 - the type(s) of non-compliance which occurred;
 - the cause(s) of those occurrences;
 - the remedies applied; and
 - how the sustainable forest licensee will improve the conduct of forest operations to minimize instances of non-compliance.
- (e) the monitoring of exceptions (Part B, Section 4.7.2), if any, that was undertaken; and
- (f) the progress towards completing the planned assessments of regeneration success, and any related concerns.

Annual Report Table Requirements

AR-1: Annual Report of Wood Utilization by Licensee

This table summarizes the actual volumes utilized by licensee (or grouping), and by product. The source of this information is the provincial scaling and billing system.

AR-2: Annual Report of Wood Utilization by Mill

This table summarizes actual volume (harvest and salvage) utilized by mills which received wood from the management unit, by product and species. The source of this information is the provincial scaling and billing system.

AR-3: Annual Report of Renewal Support

This table summarizes renewal support, including volume of seeds and cones collected, the number of seeds used for direct seeding, and the number of trees planted. Seeds used and trees planted are recorded for renewal and retreatment/supplemental treatment.

AR-4: Annual Report of Expenditures

This table summarizes expenditures made by activity and funding source.

AR-5: Summary of Planned and Completed Pesticide Applications in Ontario Crown Forests

This table summarizes planned and completed pesticide applications, including spray period, site of application, pesticide used, exterminator, aircraft and incidents/complaints.

AR-6: Annual Report of Forest Compliance Inspection Reports, Non-Compliances and Remedies Applied
This table summarizes the forest operations inspection reports information collected by the SFL holder and MNR, and the Activities in which non-compliances occurred. It also summarizes the remedies applied during the fiscal year. The requirements for forest operations compliance inspections and reporting are described in the Forest Compliance Handbook. The inspections reported in this table are those which were conducted and submitted to FOIP during the period of the Annual Report regardless of the year in which the operation was conducted. The remedies reported in this table are those which were applied during the period of the Annual Report regardless of the year in which the non-compliance for which they were applied, occurred.

Annual Report Information Products

2.4.1 Harvest

Areas of harvest operations will be reported. Information products associated with areas of harvest will identify:

- (a) the forest unit;
- (b) the age class or stage of management;
- (c) the silvicultural ground rule, if applicable;
- (d) the silvicultural system;
- (e) the harvest category (e.g. regular, bridging, second-pass, salvage, redirected, accelerated, road right of way);
- (f) the harvest method; and
- (g) the logging method.

The areas of bridging operations planned to be harvested will be identified in the year-ten annual report, and will be associated with the available harvest area of that forest management plan. The area of bridging operations conducted during the first year of a forest management plan will be reported in the year one annual report, but will be counted against the available harvest area for the previous forest management plan.

Areas harvested in two passes will be reported in two annual reports. The first-pass harvest area will be reported as regular harvest area and will contribute to the achievement of available harvest area. The second-pass harvest area will be reported in a subsequent annual report and will not contribute to the achievement of the available harvest area.

2.4.2 Natural Disturbances

The report of natural disturbances will contain net natural disturbance areas. MNR will provide information on the gross natural disturbance area to the sustainable forest licensee, as per the requirements of the Forest Information Manual. The sustainable forest licensee will examine the gross natural disturbance area, and determine the net natural disturbance area. The information products associated with the net natural disturbance area will identify:

- (a) the forest unit;
- (b) the age class;
- (c) the estimated conifer and hardwood volume; and
- (d) the natural disturbance type (e.g. blowdown, disease, drought, fire, insects).

2.4.3 Renewal and Maintenance

Area of renewal, tending and protection operations will be reported.

Information products associated with areas of renewal, tending and protection will identify:

- (a) the disturbance group (i.e. harvest, natural disturbance);
- (b) the silvicultural system;
- (c) the regeneration treatment category (e.g. natural, artificial, artificial retreatment, artificial supplemental);
- (d) the regeneration treatment (e.g., planting, seeding, tending, protection);
- (e) the site preparation treatment (e.g., mechanical, chemical, prescribed burn);
- (f) the tending treatment (e.g. cleaning, spacing, pre-commercial thinning, improvement cutting); and
- (g) the protection treatment (e.g. harvest, manual, insecticide).

Areas harvested under the selection silvicultural system that are predominantly noncommercial improvement cuts will be identified as natural under regeneration treatment. The areas will also be identified as improvement cutting under tending. Areas planned for natural regeneration will normally be reported in the year in which the disturbance (harvest or natural) occurred. If salvage harvest is being considered in areas of natural disturbance, reporting of natural regeneration may be delayed for one or two years.

2.4.4 Roads and Water Crossings

Road construction and use management (i.e. maintenance, monitoring, access control and decommissioning) will be reported. Water crossings constructed, monitored and decommissioned will be reported.

Information products associated with road construction and use management, and water crossings will identify:

- (a) the road identifier;
- (b) the road class;
- (c) the road activity (e.g. construction, decommissioning, maintenance, monitoring, access control);
- (d) the water crossing identifier;
- (e) the water crossing type; and
- (f) the water crossing activity (e.g. construction, monitoring, removal).

2.4.5 Forestry Aggregate Pits

Forestry Aggregate Pits that had aggregate extracted or rehabilitation activities will be reported.

Information products associated with Forestry Aggregate Pits will identify:

- (a) the unique aggregate pit identifier;
- (b) number of hectares requiring rehabilitation (current disturbed area);
- (c) number of hectares rehabilitated and the date the pit was completely rehabilitated (latest date of complete rehabilitation as aggregate pit may be rehabilitated more than once); and
- (d) number of tonnes of aggregate removed from the pit.

2.4.6 Assessment of Regeneration Success

The assessments of regeneration success that were undertaken will be reported.

Information products associated with the assessments of regeneration success will identify:

- (a) the disturbance group (e.g. harvest, natural);
- (b) the year of disturbance;
- (c) the depleted forest unit;

- (d) the silvicultural ground rule;
- (e) the target forest unit;
- (f) the free to grow indicator (e.g. successfully regenerated, not successfully regenerated);
- (g) the free to grow forest unit;
- (h) the species composition;
- (i) height; and
- (j) stocking/density.

Enhanced Annual Reporting & Trends Analysis

The following describes monitoring that has taken place per requirements in the 2009 FMPM.

Year Three Annual Report

The year three management unit annual report will serve as the mid-plan review by describing progress on implementation of the forest management plan to date. In this report, the registered professional forester, who is normally the plan author, will report on his or her determination as to whether or not the long-term management direction remains valid for the second five-year term.

In addition to the requirements of each management unit annual report (FMPM Part E, Section 2.0), the year three annual report will include:

- a summary of the discussion of the implementation of forest operations
- a discussion of how the analysis of renewal and tending activities from the year 7 and 10 ARs for the previous forest management plans has been implemented
- a summary of the monitoring and assessment program including any implications on the achievement of the LTMD
- recommendation relating to the validity of the LTMD – still valid vs. substantially valid with minor adjustments vs. no longer valid)

If the plan author's recommendation is that the long-term management direction remains substantially valid, the required minor adjustments will be documented in the text of the annual report.

Year Seven and Ten Annual Report

The year seven annual report will include an assessment, analysis and review of the implementation of the first seven years of the forest management plan. The year seven annual report will identify any significant events (e.g. natural disturbances, markets, labour disruptions) that have affected the achievement of objectives in the forest management plan. The year seven annual report will be used in the development of the next forest management plan.

The year ten annual report will update the assessment, analysis and review in the year seven annual report to reflect the full implementation of the forest management plan. The year ten annual report will be used in the development of the planned operations for the second five year term in the next forest management plan. For additional information on the additional requirements of the year three, seven and ten AR, see part E section 3.0 and 4.0 of the 2009 FMPM.

In March of 2017 a new FMPM was implemented and abandoned the year 3 and 7 annual reports described above. As of the latest Pic management plan, the 2017 FMPM provides requirements for a year 5 and 10 Annual report. neither of which have been written. The 2026 AR created in fall 2027 will be the first 5 year AR for the Pic.

Independent Forest Audits

The Ministry of Natural Resources communicates information about the management of its forests through reports produced by the Independent Forest Audit (IFA) process. The purpose of these audits is to assess the compliance of forest management activities with the *Crown Forest Sustainability Act* and the Forest Management Planning process, compare planned versus actual forest management activities, and assess the effectiveness of forest management activities in achieving audit criteria and management objectives. Where applicable, a licensee's compliance with the terms and conditions of a sustainable forest licence is also assessed. These audits take place on a 5-year reoccurring cycle intended to encourage continual improvement.

The Audit Process and Protocol

An audit process and protocol document sets out the forest management principles, criteria, and procedures for undertaking independent forest audits. MNR's Independent Forest Audit Process & Protocol (2013) identifies eight guiding principles:

1 Commitment

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

2 Public Consultation and Aboriginal Involvement

The process of sustainable forest management planning, implementation and monitoring must be conducted in an open consultative fashion, with the involvement of the Local Citizens Committee, Aboriginal communities, and other parties with an interest in the operations of the forest management unit.

3 Forest Management Planning

The forest management planning process involves input from all members of the planning team as well as public consultation and Aboriginal involvement to describe the current forest condition, values and benefits to be obtained from the forest, the desired condition of the forest in the future, and the best methods to achieve that goal. Planning requirements have been established which must be followed by all forest management units.

4 Plan Assessment and Implementation

Verification of the actual results of operations in the field compared to the planned assumptions and planned operations is required to be able to assess planning as well as the effective achievement of plan objectives and compliance with laws and regulations.

5 System Support

System support concerns resources and activities needed to support plan development and implementation so as to achieve the desired objectives. The organization's human resources and information management systems must support sustainable forest management.

6 Monitoring

Monitoring programs must be developed and implemented to assess compliance and effectiveness of operations in relation to the FMP, laws and regulations. Operations must be reported regularly and reporting must examine the effectiveness of these operations in achieving management objectives.

7 Achievement of Management Objectives and Forest Sustainability

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

8 Contractual Obligations

The licensee must comply with the specific licence requirements. Specific requirements, when relevant to MNR, must be followed.

The result of an IFA is a series of recommendations to both or either the Crown and SFL Holder. Based on these recommendations an Action Plan is developed and approved that will respond to and correct any issues identified by the process. This Action Plan is followed up by an Action Plan Status Report which is an interim report on the progress of an Action Plan between 5 year audits.

Forest Health and Disturbance Monitoring

Ontario's Forest Health Monitoring Program is a partnership between the Ontario Ministry of Natural Resources (MNR) and the Canadian Forest Service (CFS). Through a systematic monitoring program including ground and aerial surveys, field staff record forest health status and disturbances across Ontario. Identification of forest health issues is assisted through insect and disease surveys. Insect and plant samples are collected in the field and submitted to the Canadian Forest Service, Great Lakes Forestry Centre for identification. Disturbance (insect, fire, blowdown, etc.) are mapped and provided to industry for inclusion in annual reports.

Forest health updates are provided throughout the field season to client groups including industry, government, public and other resource stakeholders to provide timely information on developing forest health issues. An annual report (Forest Health Conditions 20xx) is produced each year outlining any major findings or insect/disease/disturbance related issues.

The latest report (2011) can be found at: <https://www.ontario.ca/page/forestry-reports>

Growth and Yield Monitoring

Growth and yield is an empirical (i.e. based on data) branch of forest science that attempts to understand and predict the composition, growth and productivity of forest stands through time. This objective is accomplished through a consistent and continuous cycle of data collection, analysis and interpretation, and is most efficiently implemented through the use of long-term monitoring plots. An accurate and efficient method of determining growth and yield is with Permanent Sample Plots (PSPs) and Permanent Growth Plots (PGPs).

The Ontario Forest Growth and Yield Program establishes and monitors a network of PSPs and PGPs in managed and natural forests across the province. These plots have a broad ecosystem focus and serve as a benchmark network for provincial level information needs. Permanent plots serve a vital role in forest monitoring and modeling forests, as growth (including stand dynamics) can be estimated directly from repeated measurements of various ecosystem elements. To ensure the integrity of the permanent growth and yield plot network, the Forest Growth & Yield Program protects PSPs from vandalism, trespassing, logging and other types of human-caused damage.

Note: there are a number of PSP, PGP on the Pic Forest. They are identified on the operational maps and are protected by an Area of Concern (AOC) prescription. See FMP-11 or AOC supplementary documentation for more information.

Species at Risk Monitoring

On June 30th 2008 The *Endangered Species Act, 2007* came into effect, making Ontario a North American leader in the protection and recovery of species at risk and their habitat.

As soon as a species is listed as extirpated, endangered or threatened, it is automatically protected from harm. Also immediately upon listing, the general habitats of endangered and threatened species are automatically protected from damage or destruction. The government ensures the development of longer-term protection and recovery for all species on the list.

Recovery strategies identifying steps to protect and restore populations are developed within one year of being listed for endangered species and within two years of being listed for threatened species. Species-specific habitat regulations must be developed within two years of an endangered species of being listed, and within three years of being listed for threatened species. Management plans are also prepared for special concern species within five years of being listed, outlining ongoing population monitoring as well as future recovery and research goals.

To learn more about recovery projects and habitat regulation, please visit the MNR's Species At Risk Recovery Strategies page at: <https://www.ontario.ca/page/species-risk>

Invasive Species Monitoring

Invasive species are a growing environmental and economic threat to Ontario. Invasive species are defined as harmful alien species whose introduction or spread threatens the environment, the economy, or society, including human health. Once established, invasive species are extremely difficult and costly to control and eradicate, and their ecological effects are often irreversible.

The current threats posed by invasive species in Ontario are significant. In response to these threats, Ontario's Ministry of natural resources (lead), Ministry of agriculture, Food and rural affairs, Ministry of the environment, and Ministry of transportation developed the *Ontario Invasive Species Strategic Plan*. The objectives of this Strategic Plan are to prevent new invaders from arriving and surviving in Ontario, to slow and where possible reverse the spread of existing invasive species, and to reduce the harmful impacts of existing invasive species. This plan highlights work that has been undertaken, identifies gaps in current programs and policies, and outlines future actions necessary to meet the objectives of the Strategic Plan.

<https://www.ontario.ca/page/invasive-species-ontario>

Forest Resource Inventory

In recent years, the public and users of the FRI have expressed a need for an improved inventory in terms of its ability to provide more timely information, meet the increasing demands of forest management planning, provincial reporting, industry operations, and corporate data management. In response to these needs, the Ontario Ministry of Natural Resources (MNR) announced plans to redesign the FRI program on September 29, 2005. As part of the response, responsibility for the production of the FRI has shifted from forest industry to MNR.

The new FRI program will apply to approximately 555,000 km² of forest land which includes licensed areas, non-licensed areas within designated forest management units, provincial parks, federal parks, and protected areas (see Figure 1).

- Planned enhancements to the FRI program include:
 - a move to a ten year re-inventory cycle from a twenty year cycle
 - evolution to a continuous forest inventory from a periodic inventory
 - an improved field sampling component intended to create closer linkages with the Growth and Yield program,
 - provide additional, non-traditional information

The new forest inventory product is ecologically based and incorporates the use of new technologies, data sources, and processes in an effort to achieve higher quality information. The latest inventory has been delivered for the Big Pic Forest but has not yet been incorporated into the forest management planning cycle.

The Pic Forest current inventory is based on the 2007 Aerial imagery. Lidar data has been recently captured for portions of the Pic, but is too recent to have been used for planning.

<https://www.ontario.ca/page/forest-resources-inventory>