English River Forest

Independent Forest Audit

2015 – 2020

Arbex Forest Resource Consultants Ltd.

November 2020

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1.0 Executive Summary

This report presents the findings of an Independent Forest Audit of the English River Forest (Forest) conducted by Arbex Forest Resource Consultants Ltd. The audit utilized a risk-based approach based on the 2020 Independent Forest Audit Process and Protocol. The term of the Independent Forest Audit is April 1, 2015 to March 31, 2020. The audit scope covers the implementation of Phase II of the 2009-2019 Forest Management Plan (FMP) (years 7, 8,9,10), the preparation and development of Short-term Plan Extension, the preparation of the 2019-2029 FMP and the implementation (year 1) of the 2019-2029 FMP.

Procedures and criteria for the audit are specified in the 2020 Independent Forest Audit Process and Protocol. The audit field site investigations were completed in September 2020. Health and safety directives associated with the COVID-19 pandemic affected some aspects of the delivery of the audit.

The English River Forest is managed by Resolute FP Canada Inc. under Sustainable Forest License # 542454. The Forest lies within the Ministry of Natural Resources and Forestry Dryden District of the Northwest Region. Forest management records are maintained at Ministry offices in Ignace and Dryden and Resolute offices in Ignace and Thunder Bay.

Due to the late delivery of the Enhanced Forest Resource Inventory (and requirements to correct errors and inaccuracies in the product), the preparation of the 2019 Forest Management Plan was delayed, and the 2009 Forest Management Plan was extended until August 2019.

Harvest levels were below planned for much of the audit term but increased substantially in the final year of the audit period. Harvest level achievement was negatively affected by poor market conditions (for some products), the associated closure of some receiving mills and a lack of harvesting capacity over much of the audit term. The addition of new harvesting contractors in the first half of 2019 contributed significantly to harvest level achievement with approximately 8,000 ha (40% of the five-year harvest) being carried out in the last year of the audit term. Conifer utilization levels were higher than hardwood utilization levels. The poor market demand for hardwoods resulted in mixedwood utilization strategies being adopted to facilitate the harvest of mixedwood stands. The inability to achieve planned harvest levels over successive planning terms has negative implications with respect to achieving the desired future forest condition, plan objectives (e.g. supply of wildlife habitat for certain species, movement towards desired forest disturbance size class frequencies), and the Long-Term Management Direction.

The Ignace Local Citizens Advisory Committee is well-functioning and effective and meets the requirements and intent of the Forest Management Planning Manual.

On balance, we found the English River Forest to be well-managed. The forest management planning process and the implementation of the Forest Management Plans and Plan Extension met all legal and regulatory requirements.

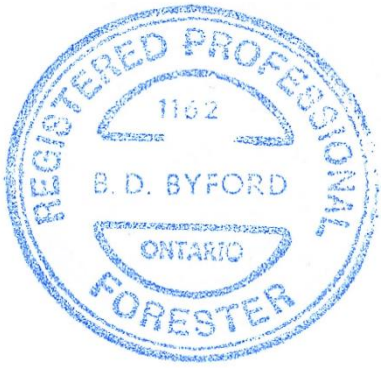
The accelerated harvest regime implemented in the final year of the audit term enabled substantial progress with respect to the achievement of caribou habitat objectives. An effective renewal program is being implemented.

We identified areas for improvement with respect to the delivery of the compliance program, silviculture monitoring, slash management and aggregate pit maintenance. Although a good record of operations compliance was achieved, a significant proportion of the Forest Operations Information Program reports were submitted late by both auditees. We are also concerned that Resolute FP and Ministry of Natural Resources and Forestry compliance staff did not follow the documentation requirements of the operational issue process identified in the 10-Year Compliance Strategy and the 10-Year Compliance Plan.

Despite the foregoing, the audit team concludes that the management of the English River Forest was generally in compliance with the legislation, regulations and policies that were in effect during term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Resolute FP # 542454. The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol

Bruce Byford

Bruce Byford R.P.F.
Lead Auditor



2.0 Table of Findings

Table 1 Findings

Concluding Statement:
The audit team concludes that the management of the English River Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence # 542454 held by Resolute FP Canada Inc. The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol.
Findings:
Finding # 1: The production process for the development of the Enhanced Forest Resource Inventory has systemic problems. **Finding # 2:** Slash pile burn program objectives were not consistently met. **Finding # 3:** The operational standards for forestry aggregate pits identified in the 2019 English River Forest Management Plan were not consistently met. **Finding # 4:** Inconsistent silviculture planning, delivery and monitoring resulted in the variable efficacy of the mechanical site preparation and aerial herbicide treatments across sites and operating years. **Finding # 5:** District Ministry of Natural Resources and Forestry and the Resolute FP Forest Operation Information Program reports were not submitted in accordance with the timelines identified in the English River Forest Management Plan and the Forest Compliance Handbook.

Finding # 6:

In some instances, the District Ministry of Natural Resources and Forestry and Resolute FP compliance staff did not follow the documentation requirements of the operational issue process identified in the 10 Year Compliance Strategy and the 10 Year Compliance Plan.

Best Practice # 1

The Local Citizens Advisory Committee provided a formal process for its membership to make other committee members aware of the interests and concerns of individual members and/or the interest group they represent vis a vis the management of the English River Forest.

3.0 Introduction

This report presents the findings of the Independent Forest Audit (IFA) of the English River Forest (ERF or the Forest) conducted by Arbex Forest Resource Consultants Ltd. for the period of April 1, 2015 to March 31, 2020. The audit utilized a risk-based approach based on the 2020 Independent Forest Audit Process and Protocol (IFAPP). The audit scope covers the implementation of Phase II of the 2009-2019 Forest Management Plan (FMP) (years 7, 8,9,10), the preparation and development of Short-term Plan Extension, the preparation of the 2019-2029 FMP and the implementation (year 1) of the 2019-2029 FMP.

The English River Forest (ERF) is managed by Resolute FP Canada Inc. (RFP or Resolute) under Sustainable Forest License # 542454. The ERF lies within the Ministry of Natural Resources and Forestry (MNRF) Dryden District of the Northwest Region. Forest management records are maintained in the MNRF offices in Ignace and Dryden and the Resolute offices in Ignace and Thunder Bay. One Local Citizens Committee (LCAC), based in Ignace, is associated with the Forest.

RFP has 14001 Environmental Management System Certification through the International Standards Organization (ISO). Since 2004, the Forest has been certified under the Sustainable Forest Initiative (SFI).

The 2015 IFA was conducted by a five-person team lead by Craig Howard R.P.F. The audit made ten recommendations to improve the forest management program. We found that most of the recommendations had been adequately addressed (see Section 4.8). The audit concluded that the ERF was sustainably managed and recommended that the SFL term be extended for an additional five years.

3.1 Audit Process

The Crown Forest Sustainability Act (CFSA) requires that all Sustainable Forest Licences (SFLs) and Crown Management Units (CMUs) be audited every five to seven years by an independent auditor. The 2020 Independent Forest Audit Process and Protocol (IFAPP) provides guidance in meeting the requirements of Ontario Regulation 160/04 made under the CFSA. The scope of the audit is determined by the MNRF in specifying mandatory audit criteria (Appendix A of the IFAPP). The audit scope is finalized by the auditors in conducting a management unit risk assessment by identifying optional audit criteria from Appendix A to be included in the audit. The final audit scope is accepted by the Forestry Futures Trust Committee (FFTC) with any subsequent changes to the audit scope requiring agreement between the FFTC, MNRF and the Lead Auditor.

The procedures and criteria for the delivery of the IFA are specified in the 2020 IFAPP. The audit generally assesses licence holder and MNRF (the auditees) compliance with the Forest Management Planning Manual (FMPM) and the CFSA in conducting forest management planning, operations, monitoring and reporting activities. The audit also

assesses the effectiveness of forest management activities in meeting the objectives set out in the Forest Management Plan (FMP). The audit further reviews whether actual results in the field are comparable with planned results and determines if the results were accurately reported. The results of each audit procedure are not reported on separately, but collectively provide the basis for reporting the outcome of the audit. The audit provides the opportunity to improve Crown forest management in Ontario through adaptive management. Findings of *"non-conformance*" are reported. A "*Best Practice*" is reported when the audit team finds the forest manager has implemented a highly effective and novel approach to forest management or when established forest management practices achieve remarkable success.

Details on the audit processes are provided in Appendix 4. Health and safety directives associated with the COVID-19 pandemic restricted the number of individuals involved in the field audit and limited some aspects of the delivery of the audit (e.g. in-person interviews, participation of some individuals).

Arbex Forest Resource Consultants Ltd. conducted the IFA in September 2020, utilizing a four-person team. Profiles of the audit team members, their qualifications and responsibilities are provided in Appendix 6.

3.2 Management Unit Description

The ERF is situated approximately 200 kilometers west of Thunder Bay. Ignace is situated at the south end of the unit. Savant Lake is located on the northern boundary and Sioux Lookout is located just outside the northwestern boundary (See Figure 1).

Several Indigenous communities have an interest in the ERF. These include the Wabigoon Lake Ojibway Nation, the Ojibway Nation of Saugeen, the Lac Seul First Nation (FN), the Migisi Sahgaigan FN, Wabauskang FN, Lac des Mille FN and the Mitaanjigaming FN. Métis organizations with an interest in forest management on the unit include: the Métis Nation of Ontario, the Atikokan and Area Métis Council, the Kenora Métis Council, the Northwest Métis Council and the Sunset Country Métis Council.

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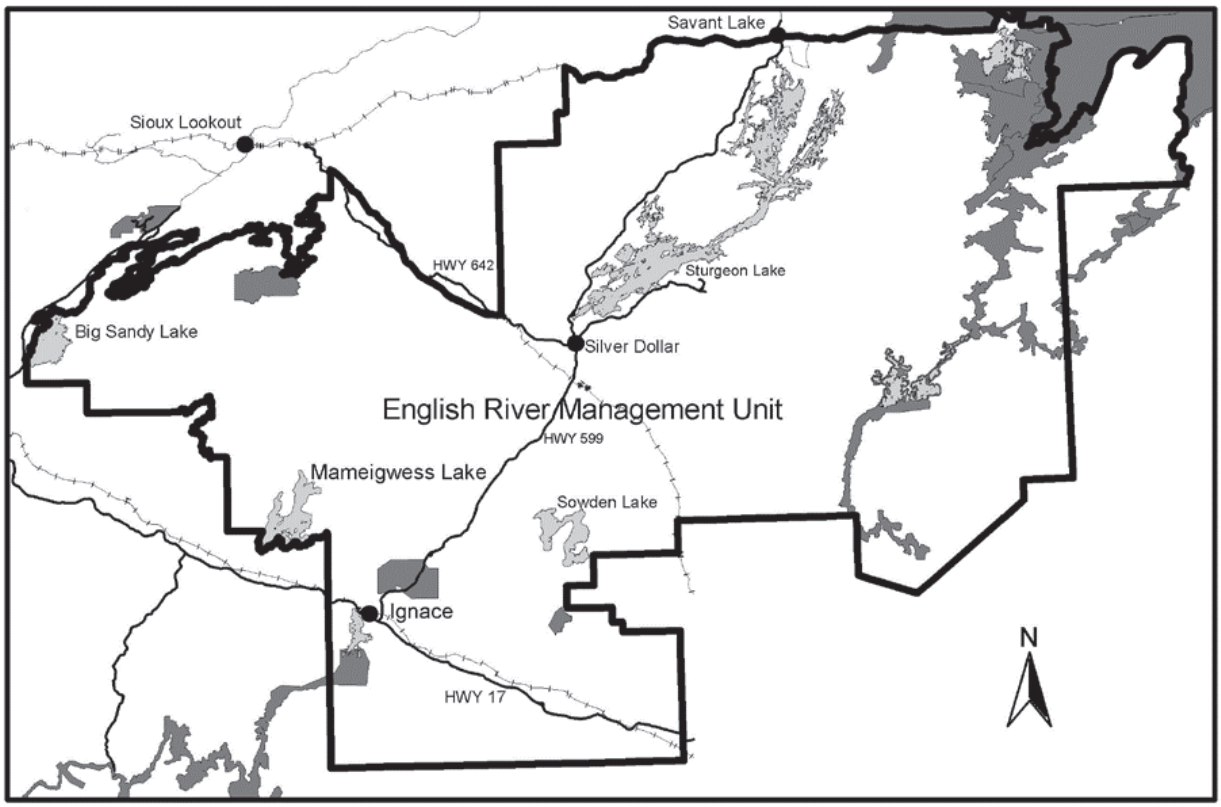

Figure 1 Location of the English River Forest.

The ERF encompasses an area of 1,114,254 hectares (ha). Despite its large size the Forest can be characterized as fragmented with private land, railway concession blocks and parks and protected areas all situated within the Forest's boundaries. The area classified as managed Crown land ownership encompasses an area of 1,013,853 ha of which 799,812 hectares are classified as Production Forest available for timber production (Table 2). Patent land makes up less than 7% of the land base.

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

Managed Crown Land Type	Area (Ha)
Non-Forested	165,908
Non-Productive Forest	48,133
Protection Forest[1]	26,191
Production Forest[2]	799,812
Forest Stands	664,146
Recent Disturbance	23,519
Below Regeneration Standards[3]	85,956
Total Productive Forest	799,812
Total Forested:	847,945
Total Crown Managed:	1,013,853

Source: FMP 1 2019 FMP

The ERF is situated largely within the Boreal Forest Region (a small portion of the Forest is within the transition zone between the Boreal and Great Lakes St. Lawrence Forest Regions). In general, forest cover is comprised of pure or mixed stands dominated by jack pine and black spruce. Figure 2 presents the proportional representation of forest units in the Crown managed forest.

The age class area distribution of the Crown Managed Forest is shown in Figure 3. Compared to the 1997 Forest Resource Inventory (FRI) there is an increase in the area occupied by younger age stands and a decrease in older mature forest. This skewed age class area structure may impact the ability of the forest manager to achieve the movement towards the desired frequency distribution of forest unit area classes and objectives related to the provision of late seral forest wildlife habitats.

[1] Protection forest land is land on which forest management activities cannot normally be practiced without incurring deleterious environmental effects because of obvious physical limitations such as steep slopes and shallow soils over bedrock.1

[2] Production forest is land at various stages of growth, with no obvious physical limitations on the ability to practice forest management.

[3] Below Regeneration Standards refers to the area where regeneration treatments have been applied but the new forest stands have yet to meet free-to-grow standards.

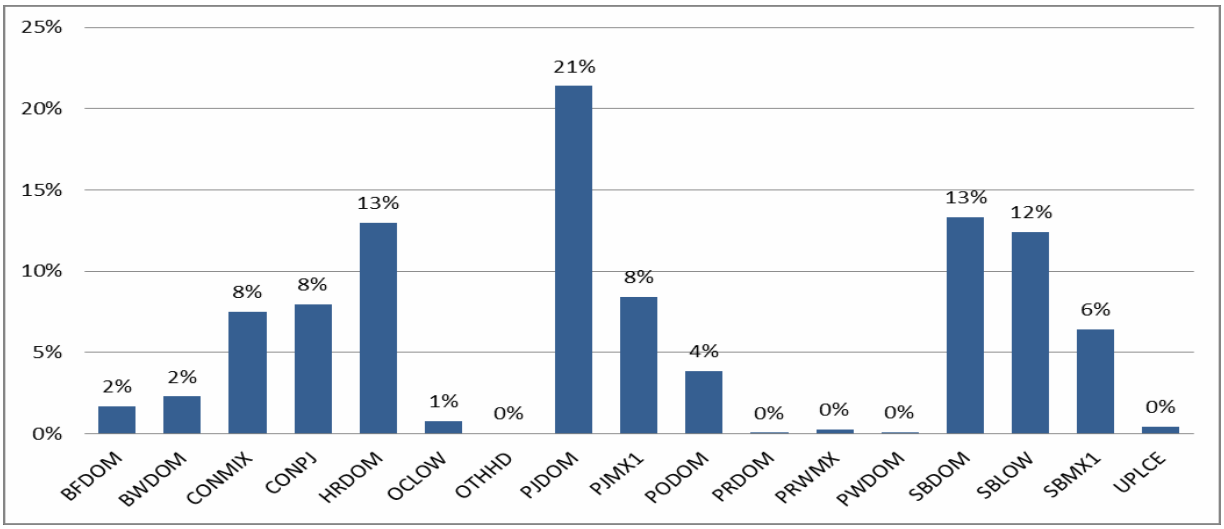

Figure 2 Forest Unit Distribution within the Available Crown Managed Forest[4]

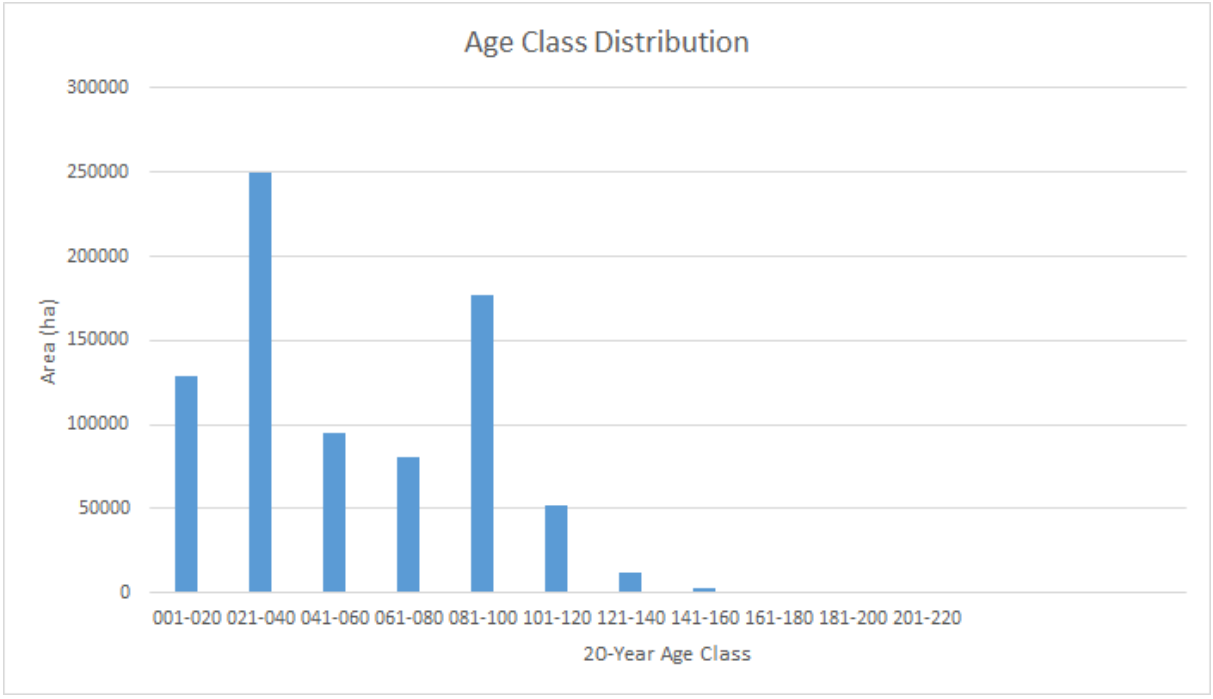

Figure 3 Managed Crown Forest Area (Ha) by Age Class

[4] Forest units are as follows BFDOM=Balsam Fir Dominated, BWDOM=White Birch Dominated CONMIX=Conifer Hardwood Mix CONPJ=Jack Pine Dominate Conifer Mix HRDOM=Hardwood Dominant OCLOW=Other Conifer Lowland PJDOM=Jack Pine Dominant PRDOM=Red Pine Dominant PRWMIX=Red and White Pine Mix PWDOM=White Pine Dominant SBDOM=Black Spruce Dominant SBLOW=Black Spruce Lowland SBMIX=Black Spruce Dominant Mix UPLCE=Upland Cedar

The ERF supports a diversity of wildlife species common to the Boreal Forest Region. Twenty-nine Species at Risk (SAR) occur or are thought to occur. The signature species is Woodland Caribou, which is classed as threatened.[5] Woodland Caribou habitat has been specifically managed on the Forest beginning with the 2000-2020 FMP. Application of the caribou mosaic and caribou conservation is the main determinant for forest operations on the eastern half of the Forest. Management for caribou habitat, through the development of a temporal and spatial block arrangement known as a Dynamic Caribou Habitat Schedule (DCHS) is the most significant and influential management consideration on the forest. Ontario's Woodland Caribou Conservation Plan (CCP) provides direction for the management and recovery of caribou in areas of continuous and discontinuous distribution in Ontario. The northern portion of the English River forest is located within the continuous caribou distribution range, and as such has been arranged into a DCHS (as required by the CCP and directed by the Boreal Landscape Guide (BLG)).

Large landscape patches were also identified and developed for moose habitat objectives.

The Forest is well accessed by provincial highways and forest access roads with approximately 60-70% of the unit accessible by primary road. There are eight provincial parks, four conservation reserves and one enhanced management area on or adjacent to the ERF. The Forest is heavily used for recreation by both local people and tourists. The ERF supports approximately 89 resource-based tourism operations. No Resource Stewardship Agreements are in place with resource-based tourism operators, but two Memorandums of Understanding have been signed. There are 53 traplines containing approximately 83 trap cabins on the Forest. Mink, marten and beaver are the main species trapped.

4.0 Audit Findings

4.1 Commitment

The Commitment Principle is deemed to be met since the ERF is certified under the Sustainable Forestry Initiative (SFI).

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

FMPM public consultation requirements for the development of the Plan Extension, the 2019 FMP, Annual Work Schedules (AWSs), and Plan Amendments for the audit period were met. Public input with respect to values protection was also documented, verified and where appropriate, added to values maps.

[5] By the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

Our interviews and review of records indicated that all stakeholders were made aware of the planning process. Opportunities were provided for input and engagement in the planning process for the short-term Extension (LCAC, FNs, Métis and the broader public). No requests for Issue Resolution were received and there were no comments from First Nations or Métis communities.

For the development of the 2019 FMP comments received from the public[6] were documented in the Supplementary Documentation and appropriately addressed. There was one District Manager resolved issue resolution and two Regional Director resolved issue resolutions[7]. There were no requests for an Individual Environmental Assessment. FMPM requirements for issue resolution were met.

First Nations and Métis Communities

There are no First Nation (FN) or Métis communities within the forest boundaries or closely adjacent to it. However, there are a number of overlapping traditional territories. Associated communities include seven First Nations (FN) and four Métis Councils. First Nations include the Lac des Mille Lacs FN, Lac Seul FN, Migisi Sahgaigan (Eagle Lake) FN, Ojibway Nation of Saugeen, Wabauskang FN, Mitaanjigamiing FN and the Wabigoon Lake Ojibway FN. Métis Councils include the Atikokan and Area Métis Council, Kenora Métis Council, Northwest Métis Council and Sunset Country Métis Council.

Our document review and interviews revealed that for the development of the 2019 - 2029 FMP the MNRF met all FMPM requirements for notices and invitations to the various communities to participate in the process. Offers were extended to develop a customized consultation approach (e.g. information sessions and community meetings) at each stage of the FMP planning process. The records indicate none of the communities opted to do so.

The 2015 IFA included a recommendation that the MNRF specifically determine the role of the Wabauskang FN on the Forest. MNRF did so, and the community indicated that its priority for involvement was focused on other Forests.

We had limited success engaging with the communities. Our discussions with four community representatives indicated that their primary focus was on Forests that are geographically closer to their communities. The Métis Nation of Ontario (MNO), (representing the four Métis councils associated with the Forest), indicated that their involvement was limited by a lack of economic and staff capacity. However, there was a desire to be kept informed about activities on the English River Forest.

[6] One hundred and sixteen parties provided comments on the FMP.
[7] Harvest blocks in proximity to tourism operations

Aboriginal Background information and updated values information were available for the planning process.

Our interviews and document review indicated that Resolute and MNRF implemented programs to meet their obligations to provide FN and Métis communities with forest management benefits. These included contracts for silviculture, nursery stock production and harvesting work.[8]

Local Citizens Advisory Committee

There is one Local Citizens Advisory Committee (LCAC) associated with the Forest. This is a standing committee with members appointed by the MNRF District Manager. The Committee membership represents a range of community interests. There are ongoing efforts to recruit new members and ensure broad community representation. While the committee is primarily focused on forestry (e.g. AWS, AR, amendments, FMP planning) other agenda topics such as fisheries and wildlife are routinely part of the agenda.

There are approximately nine meetings per year and our sample of minutes indicated there was usually a quorum in attendance at meetings. We note the District Manager attended a number of the LCAC meetings. Based on our experience on numerous audits we have found that when District Managers engage with the LCAC, the members feel their voluntary participation has increased value.

We note that the LCAC set up a process where the individual members prepared and delivered a presentation to the other members with respect to his/her area of interest. For example, a remote tourism representative or trapper had an opportunity to formally present and discuss the intricacies, issues, required knowledge/skills as well as economic realities linked to his/her business and/or area of interest. We had several members' comment that the learning experience created a level of understanding that paid significant dividends as the LCAC addressed issues and attempted to reach workable compromises. We commend the LCAC for this highly effective and innovative approach to opening the dialogue with respect to the impacts of forest management and identify it as a "best practice".

We were also informed that the requirements of the caribou policy to reduce access (decommissioning roads) and retention of large areas of conifer (chemical spraying to reduce completion) continue to be sources of discussion within the LCAC.

Interviews with seven members indicate there is a good working relationship with both the MNRF and Resolute. Members we interviewed complimented both the MNRF and Resolute for ongoing efforts to explain issues and provide relevant information. The Committee's Terms of Reference are regularly updated with the most recent being in September 2019.

[8] For example, the Wabigoon FN was offered a stock production contract of (1.5 million seedlings in 2019) and is an Overlapping Licencee on the ERF.

The LCAC was involved in the development of the 2019 FMP (e.g. attendance at approximately 60% of the Planning Team meetings and 22 joint LCAC/Planning team meetings). It was involved in the development of Values Maps and assisted the MNRF District Manager with three Issue Resolution requests.

With respect to the 2019 FMP the LCAC indicated that:

"The Committee was supportive of the Final Plan… however some members did have concerns regarding the impact of specific road management strategies …on other resource users that consider ease of access an asset to their interests."

A self-evaluation survey was completed by LCAC members during the development of the 2019 FMP. While some new members, decided not to participate in the self-evaluation because of their limited experience, those who did complete the evaluation provided an average effectiveness ranking of 7.6 out of 10.

Our record reviews indicate the LCAC adhered to its Terms of Reference and as required, actively participated in the implementation of Phase II of the 2009 FMP, the plan extension and the first-year implementation of the 2019 FMP. As required by the FMPM, the LCAC was consulted and provided input on AWSs and FMP amendments.

Our assessment is that this is a well-managed LCAC that fully meets the requirements and intent of the FMPM.

4.3 Forest Management Planning

An Enhanced Forest Resource Inventory (eFRI) required for the development of the 2019-2029 FMP was delivered late[9] and contained numerous errors (e.g. inconsistencies in crown closure estimates and stocking values, missing depletions etc.) (See Finding # 1). The late receipt of the inventory, the requirement to correct inaccuracies in the inventory combined with other changes in the planning cycle (i.e. new guidelines) resulted in a requirement for a 6-month plan extension[10]. All FMPM[11] requirements for the plan extension were met; an FMP Extension Proposal was prepared[12], and opportunities were provided to the LCAC, the general public and FN and Métis communities to review and comment on the proposal. There were no comments from First Nations or Métis communities. As required by the FMPM, the plan extension was approved by the MNRF Regional Director.

We note that the extension did provide an opportunity for RFP to continue working towards the completion of harvesting in DCHS "A" blocks which assisted in the achievement of 2009 FMP strategic objectives related to the protection of caribou and caribou habitat. The extension also facilitated an allocation of approximately 1,000 ha

[9] The eFRI was due for delivery by November 2015 but was not received until May 2016.
[10] 2009-2019 Short-term Plan Extension.
[11] 2017 Forest Management Planning Manual
[12] The Plan Extension "extended" operations planned in the 2009-2019 FMP that had not been harvested or treated. The existing plan was amended to re-allocate approximately 1,000 ha of suitable contingency spring blocks to the plan harvest area to address a deficiency in spring wood during the spring breakup.

of suitable contingency spring blocks (through an amendment to the FMP) to address a deficiency of spring wood during the 2019 spring break-up period. Other operations (e.g. harvest, primary/branch road corridors) and untreated renewal and tending areas were carried forward from the approved operations in the 2019 FMP.

We found the planning for the 2019-2029 FMP met FMPM requirements. Each FN and Métis organization was afforded an opportunity to participate on the Planning team but many communities were unable to allocate staff or resources to the planning process.[13] Progress updates were provided to communities throughout plan development by the MNRF District. The LCAC was engaged and provided input into the planning process. As required by the FMPM, all progress checkpoints (e.g. planning inventory, management objectives checkpoint, LTMD checkpoint) were confirmed and documented in the Analysis Package. Planning milestones and consultation requirements for the development of the plan were met.

The Long-Term Management Direction (LTMD) was prepared under the 2009 Forest Management Planning Manual (FMPM) as per the phase-in provisions of the 2017 FMPM. As required, the forest units aligned with regional standard forest unit classifications and analysis units and provided a capability to assess the requirements of forest biodiversity at the landscape level.

We note that, the FMP was not designated as a Section 18 *Overall Benefit Instrument under the Endangered Species Act* (ESA) and was prepared under the regulatory exemption for Crown forestry (O.Reg.242/08 s.22.2.). As such, a summary of monitoring for species at risk (SAR), and the Supplementary Documentation required by Part B, Section 4.7.5 of the 2017 FMPM, was not required. While forest operations are exempt from the permitting process under the ESA, there is still a requirement for SAR to be protected. Protection is provided through Area of Concern (AOC) prescriptions and ensuring implementation of those prescriptions during operations (as required in Ontario Regulation 242/08 Section 22.1.)[14]. For the plan term, there are no requirements or conditions related to SAR that required implementation of a monitoring program. SAR were appropriately considered during planning. Habitat descriptions, the application of guidelines and operational prescriptions are provided in the FMP text (e.g. Section 2.2.1, Section 4.2, FMP-11).

The management of woodland caribou is the most significant and influential management consideration on the forest; this is supported by the Boreal Landscape Guide (BLG) objectives, of which caribou habitat is the first order of application. For the development of the LTMD, the Forest was portioned into a strategic management

[13] The Metis Nation of Ontario attended planning team meetings early in the process but withdrew participation over an issue of the FMPM text describing communications with communities.

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

zone (DCHS) and several operational and economic zones[15]. Approximately 49% of the ERF (~585,000 ha) falls within the continuous distribution range for woodland caribou. Habitat maps were provided in the supplementary documentation.

Plan objectives, indicators, desirable levels and targets for harvest and wildlife were developed by the Planning Team[16] with input from the LCAC and MNRF advisors. Information sources for the development of the plan included previous FMPs, MNRF guides and planning directions, Annual Reports and the 2015 IFA. Operational prescriptions for AOCs were consistent with the *Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales* (Stand and Site Guide). Silviculture Ground Rules (SGRs) were developed by a Registered Professional Forester with support from the Planning Team, Plan Advisors and other experienced local resource personnel. We conclude that the LTMD appropriately achieved a satisfactory balance of all objectives and indicators, was consistent with legislation and policy, appropriately considered direction in the forest management guides and provides for forest sustainability.

New yield curves were developed for the 2019 FMP based on a combined dataset for the Caribou, Dog River Matawin and English River Forests. Planned volumes have historically been slightly higher than the actual volume/ha yields realized (135m^3/ha planned vs 126 m^3/ha realized). The 2019 FMP forecasts a planned yield of 111 m^3/ha. We concluded that this modeling assumption is likely more reflective of average stand conditions on the Forest.

Remsoft Woodstock[17] software was utilized as the primary modeling platform for forest management planning with additional analysis support provided by geographic information system analysis (e.g. assessment of landscape patterns). The model was developed in cooperation with the MNRF. Inputs and assumptions used to develop modeling inputs for forest dynamics, landscape targets and silvicultural options were reasonable and based on the best information available. Base assumptions and constraints for management are detailed in the FMP Analysis Package. Scoping investigations were conducted to gain insight and understanding on how the model was functioning, sensitivity to specific inputs/changes and the interplay between various model inputs.

We concluded that the adoption of a standardized modeling approach utilizing one base model (Woodstock Model) for all five of Resolute' s management units is a creative approach to planning. The adoption of a standardized base model assures consistency among Resolute's management plans, facilitates the ability to model inputs and

[15] Operational management zones represent areas with distinct operational considerations or constraints. Economic zones address economic considerations of harvest operations.
[16] Eight management objectives and 38 indicators were developed.
[17] Woodstock is a planning system developed by Remsoft used for decision support analyses and planning projects. It utilizes a spatial inventory database and associated data tables to project forest growth and development over time subject to management objectives and resource allocation constraints to produce an optimized activity schedule.

evaluate impacts at the range, forest, and landscape level. It also facilitates multi-management unit modeling of other management considerations such as transportation and wood supply. Importantly, forest specific inputs unique to each individual management unit could be incorporated in the model as required and appropriate.

Planned operations met the intent of the LTMD. Operational planning considered the most current values information, relevant guidelines (e.g. Ontario's Woodland Caribou Conservation Plan (CCP), Forest Management Guide for Conserving Biodiversity at the Stand and Site Scales) and public input.

Access planning and management requirements are largely dictated by the DCHS with some modification(s) to address stakeholder issues (e.g. tourism operations, trapline access) where feasible. The FMP (Supplementary Documentation 6.1.7) provides direction on Primary, Branch and Operational roads that includes an environmental analysis of alternate primary road corridors, use management strategies and access provision /restrictions. Road network identifiers and maps are included. Three economic haul zones were delineated, with the intent (where practical and feasible) to allocate the harvest proportionally across the zones (while ensuring harvest blocks are locally concentrated for operational efficiency) during Annual Work Schedule (AWS) planning. We conclude that access planning was well done and met FMPM, AWS and guideline requirements.

Values maps were updated during the planning process and MNRF staff indicated that there was adequate funding to collect values information. RFP participates in monitoring and reporting SAR by requiring all operations to report sightings of SAR and any associated habitat features (e.g. nests). Public input with respect to values protection was also documented, verified and where appropriate added to values maps. Area of Concern (AOC) prescriptions conformed to MNRF direction and prescription documentation included a section for an analysis of alternatives to protect the value should that be required.

Tourism values were protected through the application of the Management Guideline for Forestry and Resource-Based Tourism and the development and implementation of area of concern (AOC) prescriptions. Resource-based tourism operators were contacted by RFP to determine if there was an interest in negotiating a Resource Stewardship Agreement (RSA) but no agreements were in effect during the audit term. Two Memorandums of Understanding were signed.

We note that there was one formal issue resolution resolved by the District Manager and two resolved by the Regional Director[18]. There were no requests for an Individual Environmental Assessment (IEA).

Between 2014-2019 there were twenty-one administrative and two minor FMP amendments. Five administrative amendments have been approved during the implementation of the 2019 FMP. All amendments were prepared in accordance with

[18] Harvest blocks in proximity to tourism operations

the FMPM and the Forest Information Manual (FIM), are consistent with the FMP, and were appropriately documented.

The content of AWSs conformed to FMPM requirements and the proposed forest management activities were consistent with those outlined in the FMP.

We conclude that forest management planning was in accordance with the requirements of the FMPM and that the proposed FMP objectives and targets are consistent with the achievement of forest sustainability.

4.4 Plan Assessment and Implementation

Our field assessments confirmed that Silvicultural Ground Rules[14] (SGRs), Silvicultural Treatment Packages[15] (STPs) and Forest Operations Prescriptions (FOPs) were appropriate for the forest cover types and site conditions.

Harvest

All harvesting utilized the clearcut silvicultural system. Harvest level achievement was negatively affected by poor market conditions (for some products), the associated closure of some receiving mills and a lack of harvesting capacity. The location of the ERF contributes to the high cost of wood movement to wood processing mills which also directly affects wood utilization levels. The addition of new contractors in the first half of 2019 contributed significantly to harvest level achievement with approximately 8,000 ha cut between April 1, 2019 and March 31, 2020. During the audit period 18,935 ha of the planned 40,967 ha (46%) was harvested. Table 3 presents the planned vs actual harvest area during the audit term. In addition to the planned harvest 315 ha of salvage area[19] was harvested during the Plan Extension period. FMPM requirements for the salvage operations were met and our inspections found that the wood recovery (utilization) on the salvage blocks was very good.

The lower than planned harvest levels resulted in the underachievement of planned targets for post-harvest silvicultural treatments. Movement towards the desired frequency distribution of forest disturbances by size class may also be delayed due to the lower than forecast harvest.

[19] A suspected series of microbursts (localized downdrafts within a thunderstorm) occurred in July 2018 which resulted in patches of blowdown which were salvage harvested during the plan extension (approximately 315 ha).

Table 3 Actual vs. Planned Harvest Area (ha) by Forest Unit (2015-2020)[20]

Forest Unit[21]	Planned Harvest (Ha)	Actual Harvest (Ha)	Actual vs Planned %
BW1	92.5	2.0	2
MH1	4,474.3	1,053.9	24
PO1	365.3	53.3	15
BWDOM	85.5	65.8	77
HRDOM	1,635.0	1,056.4	65
PODOM	312.0	193.0	12
SUBTOTAL HARDWOODS	6,964.6	2,424.4	35
MC1	7,193.0	4,185.3	58
MC2	3,618.3	922.8	26
OC1	1,041.0	145.0	14
PJ1	4,897.3	3,274.1	67
SPL	3,509.0	676.1	19
SPU	8,841.5	3,554.6	40
BFDOM	254.3	166.9	66
CONMIX	352.5	315.0	89
CONPJ	368.3	275.5	75
OCLOW	16.2	11.0	68
PJDOM	952.5	878.6	92
PJMX1	520.5	380.4	73
SBDOM	921.8	856.9	93

[20] Note that in the first year of the new plan (2019-2020), and commencing August 1, 2020, the forest unit naming convention changed to describe species dominant. The change is reflected in Table 3.

SBLOW	1,184.3	517.0	44
SBMIX1	332.3	351.4	106
SUBTOTAL CONIFER	34,002.8	16,510.6	49
TOTAL	**40,967.4**	**18,935.0**	**46**

Source: 2015-2019 Annual Reports (2019-20 figures included are estimates).

The actual harvest area achieved approximately 46% of the planned target due to the forestry sector downturn. Conifer utilization was significantly higher than hardwood utilization levels. Conifer utilization achieved 52% of the planned volume (1.674 million m^3) while hardwood utilization achieved 30% of the planned volume forecast (0.2 million m^3). Although there is a wood supply commitment to Norbord Inc. (26,661 m^3 of poplar annually from the Caribou and English River Forests), less than 2,000 m^3 was delivered from the ERF. Distance to mill and poor market conditions were cited as the rationale for the shortfall.

Poor market demand for hardwoods resulted in mixedwood utilization strategies being adopted to facilitate the harvest of mixedwood stands. Availability of a limited hardwood market later in the audit term facilitated harvest operations within pure hardwood stands and less constraints for operations within mixedwood stands.

We visited 16% of the areas harvested during the audit term. All inspected sites were approved for operations in the AWSs. Harvest prescriptions were implemented in accordance with the Silvicultural Ground Rules (SGRs), and individual Forest Operations Prescriptions (FOPs) were prepared and appropriately implemented for each harvest block. On balance, there was little evidence of site or environmental damage arising from harvest operations. We did observe some incidences of localized rutting within lowland conifer blocks resulting from an early spring break-up and difficult weather conditions. Since the rutting was confined to relatively small areas, we do not provide a finding.

We were also initially concerned with the volume of wood remaining at roadside in the Ila Road Operating Area[22] (approximately 10,150 m^3 of conifer and 6,500 m^3 of hardwood). This wood had been harvested in October/November 2019. In discussion with Resolute staff we were informed that the wood had not been delivered to mills because of labour union collective agreement provisions for volumes being delivered to the mill by non-union contractors, a lack of capacity to haul, and poor weather conditions. An extension to measure and haul the wood is in place and we were advised that the wood is scheduled to be delivered to various processing facilities in November 2020.

[22] Blocks 25571, 25743, 25572 & 25941

AOC prescriptions were properly implemented. Harvest block configurations were designed to meet landscape level objectives to the extent possible given the existing forest structure. We also inspected a "*cut to shore*" prescription that was successfully implemented.

We concluded that, on balance, harvest operations were properly implemented.

Area of Concern Management

The 2009 FMP used a featured species approach to managing wildlife based on the expectation that managing habitat for a featured species would accommodate the habitat needs of most wildlife species. The 2019 FMP utilizes a different approach as outlined in the Boreal Landscape Guide whereby targets for various landscape classes create a diversity of ecosystem conditions through space and time that provide habitat for the majority of native species.

The requirements of the Endangered Species Act (ESA) are addressed through the coarse filter direction included in the Boreal Landscape Guide. FMP 11 and Supplementary Documentation in the Analysis package address habitat requirements with the retention of wildlife trees and patches of unharvested forest in harvested blocks as directed by the Stand and Site Guide. This direction is also supported by applying Conditions on Regulator Operations (CROs) and a variety of AOC prescriptions. We reviewed a sample of AOC prescriptions directed at protecting SAR habitat and confirmed that they reflected FMP direction and intent. We note that there was excellent cooperation between the Resolute and MNRF in developing appropriate and practical AOC prescriptions and Conditions on Regular Operations (CRO).

Our document reviews and interviews with MNRF staff revealed that public and LCAC input with respect to values protection was documented, verified and where appropriate, added to values maps.

Our review of FOIP reports related to AOCs, indicated there were eight not-in-compliance (NICs) infractions. Six of the infractions occurred in 2019 with the addition of new contractors and a significantly increased harvest level (discussed in Section 4.4, Harvest). The MNRF responded to the issues with a combination of written warnings and compliance orders. RFP responded to the problem with increased inspections and targeted contractor training. Our assessment is that both the MNRF and RFP responded appropriately and in a timely manner. Interviews with RFP staff indicated that the responsible contractors had received training and the parties were confident that past mistakes would not be repeated. We concluded the issue(s) had been appropriately addressed and that a finding was not warranted.

Our field investigations found that AOCs were established in accordance with the FMP and documented in the AWSs. We conclude that identified values were adequately protected, and that compliance issues associated with AOCs were appropriately addressed in a timely manner.

Site Preparation (SIP)

During the audit term, SIP treatments achieved 59% of the planned FMP targets principally due to the lower than planned harvest level (Table 4). Mechanical site preparation treatments comprised 85% of the SIP treatments but achieved only 54% of the planned FMP target. Chemical site preparation was carried out in the last two years of the audit period (2018 and 2019).

The almost exclusive dependence on passive disc trenching for mechanical site preparation resulted in poorer performance on sites with thicker duff layers, higher occurrences of logging slash or more difficult site conditions (i.e. stony soils). The use of a hydraulic trencher or other equipment choices may have been more effective on these sites (Finding # 4). Pre and/or post-harvest site evaluations would assist the forest manager to better tailor the selection of mechanical site preparation equipment to the prevailing site conditions and yield more uniform and widespread mineral soil exposure for renewal treatments. On appropriate sites, passive trenching did provide good mineral soil exposure. We did not observe any incidences of environmental damage associated with site preparation activities.

Chemical site preparation treatments are typically adopted to achieve early competition control prior to artificial renewal. The area treated with chemical site preparation exceeded the FMP forecast (1,427 ha planned vs. 1,599.3 ha actual). The overachievement of the plan target was attributed to a larger number of sites being favorable for chemical treatments than anticipated. Our site inspections found the treatments to be very effective in achieving early competition control.

Table 4 Area (Ha) of Actual vs. Planned Site Preparation (2015-2020)

Site Preparation Treatments	Planned 5 Year Ha	Actual Ha	Actual vs Planned %
Mechanical SIP	16,636.5	9,041.1	54
Chemical SIP	1,427.0	1,599.3	112
SIP Total	**18,063.5**	**10,640.4**	**59**

Source: 2015-2019 Annual Reports (2019-20 figures included are estimates).

RFP implements a debris management protocol as part of its Environmental Management System (EMS) to reduce roadside harvest debris accumulations. The Annual Reports (ARs) indicate that slash pile burning occurred on approximately 14,825 gross ha of land recovering an estimated 370 ha for regeneration. No burning occurred in 2019 due to unseasonably wet conditions.

Recommendation # 3 of the previous audit required that RFP take measures to improve its management of logging debris. It is our opinion that this recommendation was not fully addressed. Our site inspections found that the pile burn program results were

inconsistent. Some piles exhibited adequate combustion while others were not ignited, or the burn was incomplete. Due to the inconsistent delivery of the burn program productive forest land is being lost for renewal. We recognize that the ignition and completeness of pile burning is dependent on a number of factors such as species, the size of material, weather conditions, pile conditions (e.g. fluffiness, moisture content, presence of dirt in the pile) however, based on the number of incidences we observed where piles were left unburned within treated blocks and/or pile burning was incomplete, we concluded that the slash pile burn program objectives[23] were not being met (Finding # 2). We also observed instances of merchantable wood being left in slash piles (See Section 4.6, Finding # 6).

Renewal

Table 5 presents the planned vs actual area renewed for the audit term. The area renewed (artificial and natural) constitutes 70% of the reported harvest area. It is important to note that, with the improvement of market conditions 42% of the harvest occurred in the last year of the audit term. If only four years of data is compared, the area renewed is 95% of area harvested.

Table 5 Area (Ha) of Actual vs. Planned Renewal Treatments (2015-2020)

Renewal Treatments	Planned 10 Year (Ha)	Actual (Ha)	Actual vs Planned %
Natural Renewal	13,740	3,941	29
Artificial Renewal – Plant	13,760	4,687	34
Artificial Renewal – Seed	5,101	4,538	89
Total Renewal	32,601	**13,166**	**40**

Source: 2015-2019 Annual Reports (2019-20 figures included are estimates).

All renewal treatments observed in the field were consistent with the SGRs. Since the ERF is managed under the caribou strategy there is an emphasis on regenerating pure conifer stands.

Natural renewal treatments were implemented on approximately 21% of the harvest area and were typically prescribed for hardwood dominated forest or areas of lowland black spruce. Our inspections sites managed for natural renewal found the blocks were well-stocked to the desired tree species.

Artificial renewal (planting and seeding) was the most frequently utilized renewal method with seeding being the preferred renewal strategy. Treatments were implemented on conifer or conifer-dominated mixedwood harvest blocks. Artificial

[23] The Slash Pile Burn Plan targeted 80% of the piles burnt and 80% of the pile consumed as a successful program.

renewal treatments were generally effective with the treated areas showing acceptable stocking densities. Natural ingress typically augmented stocking levels of desired species on the renewed areas we inspected. We did encounter some sites where the spacing of planted trees relative to natural trees was poor, suggesting supervision and quality control of planting operations could be improved. We do not provide a finding as incidences of poor planting appeared to be limited to localized areas.

We concluded that an effective renewal program was implemented.

Renewal Support

Annual cone collection and other renewal support activities (i.e. planting stock production) were sufficient to meet the requirements of the renewal program. We note that, although several tree improvement installations are located within the ERF, cone collection activities are restricted to two seed orchards.

We were informed of issues with the supply and quality of certain planting stock. RFP staff are carefully monitoring the situation, so a finding is not provided.

Tending

Table 6 presents the planned vs actual area treated by tending during the audit term. Aerial tending treatments were implemented on 5,976.6 ha, with treatments directed to areas of conifer forest units principally within areas in the DCHS.

Table 6 Area (Ha) of Actual vs. Planned Tending Treatments (2015-2020)

Tending Treatments	Planned 5 Year (Ha)	Actual (Ha)	Actual vs Planned %
Aerial Herbicide Tending	14,624.6	5,976.6	41
Pre-Commercial Thinning	500	36.9	7
Total Tending	**15,124.6**	**6,013.46**	**40**

Source: 2015-2019 Annual Reports (2019-20 figures included are estimates).

Effective tending treatments are typically required to promote the establishment and growth of desired species. The effectiveness of the chemical tending program was uneven across ecosites and operating years. In most instances, the application of herbicide resulted in a short-term release of crop trees. There was an initial die-back of competing hardwoods, however subsequent re-sprouting limited long term competition control. The variable effectiveness of the treatments was attributed to several possible factors including weather conditions, varying concentrations of active ingredient and an issue with a particular brand of herbicide product. In instances where treatments are less effective, stocking levels and growth rates of desired crop trees can be negatively impacted. The effective control of hardwood competition is imperative for the successful implementation of the CCP.

Our interviews determined that a formalized program to monitor the effectiveness of the spray program was not in place over the audit term (Finding # 4). Resolute staff assessed the effectiveness of the spray program through informal visual inspections made during the delivery of other forest management duties. The utilization of a non-formalized approach can potentially result in information gaps (areas not being assessed) and/or challenges to the prioritization or re-scheduling of subsequent follow-up treatments, especially if other duties are not in the proximity of treated blocks. Post spray assessments under a formalized sampling procedure and protocol would address these issues. RFP staff are aware of the issues associated with the aerial spray program and are working to improve its effectiveness by utilizing a different brand of chemical and implementing a formalized survey program during the 2019 FMP term.

Pre-commercial tending (PCT) operations was undertaken through a First Nations Junior Ranger program on 36.9 hectares. The PCT program was inhibited by a lack of area available for treatment due to the reliance on artificial renewal and the lower than planned harvest for much of the audit term. Labour availability also constrained the delivery of the program. Since the low level of pre-commercial thinning activity is not anticipated to have any implications on the achievement of plan objectives, we do not provide a finding.

Protection

No major insect infestations or disease outbreaks occurred during the audit term, so no protection programs other than monitoring functions were implemented.

A jack pine budworm infestation has recently expanded in the northwestern region and includes portions of the ERF. A jack pine budworm infestation can significantly reduce forest benefits and increase wildfire risk. Forest managers are aware of the issue and appropriate pest management measures are being proposed and evaluated.

Access Management

Road construction and maintenance responsibilities are assigned to the harvest contractors. Between 2015 and 2019 approximately 269 kilometers (kms) of road were constructed across the entire forest. In general, primary access roads were well maintained. Surface conditions on branch roads were somewhat more variable reflecting the lack of operations in some of the inspected areas and/or a reduction in maintenance due to economic conditions.

Because the ERF is partially located within the Brightsand Caribou Range an active road decommissioning program is implemented on that portion of the forest. Between 2015 and 2019 decommissioning in the caribou zone occurred on 414 kms of primary, branch and operational roads. Road decommissioning and access restrictions have a long-term focus with an emphasis on vegetation growth eventually prohibiting truck access. Within several harvest blocks inspected, roads had been site prepared to promote seeding and natural regeneration. Barriers or gates had not been constructed.

We concluded that this longer-term approach of letting forest vegetation gradually impede truck access was a practical and economical alternative to the standard practices of constructing berms and gates. Our interviews with MNRF and RFP staff confirmed that while this approach requires time to fully decommission roads, the gradual restriction of vehicle traffic reduced public concerns with respect to restricted access to areas of the Forest. However, MNRF staff indicated opportunities to improve road decommissioning methods in both the caribou zone and non caribou zone exist. We note that, the 2019 FMP states "*decommissioning techniques will continue to be designed to assist with the establishment of regeneration and creating microsites for successful renewal*" and that the plan proposes a number of road decommissioning strategies which include strategies and methods to restrict vehicular traffic in a more timely manner.

We note that the previous IFA provided a recommendation that RFP provide additional documentation on progress in achieving road management strategies within the caribou zone. To address this recommendation, Resolute produced a "*Summary of Road Decommissioning/Rehabilitation*" which is included in the Annual Reports (since 2015).

The FMP identifies primary, branch and operational roads with potential to be transferred to the MNRF listed as "Potential for Transfer to the Crown". These are roads where vegetation is established, and the roads are no longer passable in a 4X4 vehicle. The ARs document the details and the transferred roads are recorded in the MNRF Land Information Ontario (LIO)[24] data base.

No issues with the road management program were observed. Our inspections of water crossings found that, in general, water crossings were well-constructed and maintained.

4.5 Systems Support

The 2020 IFAPP Human Resources Principle criterion were met through the SFI certification.

4.6 Monitoring

Resolute prepared Compliance Plans as required by the FMPM and in accordance with the Guidelines for Industry Compliance Planning. MNRF prepared annual compliance plans that identified priority areas, targets and assigned staff responsibilities.

The previous IFA encouraged joint compliance interaction and suggested more regular meetings and compliance interactions to discuss and address issues. We found that Resolute and MNRF staff worked proactively and cooperatively to identify issues and develop corrective remedies.

[24] LIO is a provincial initiative that provided centralized access to geographic data.

Resolute inspectors completed approximately 458 FOIP inspections and the District MNRF completed 59 FOIP inspections. The inspection activity generally reflected directions in both the company and MNRF Compliance Plans. Based on the compliance history of the ERF, we believe that an appropriate number of inspections were completed. Inspections appropriately sampled all forest management activities, harvest blocks and contractors. There were eight not-in-compliance reports resulting in a compliance rate of approximately 98%. The not-in- compliance reports were related to AOCs (See Section 4.4). These compliance issues were addressed appropriately by MNRF and RFP in a timely manner.

We do have some concerns with adherence to reporting schedules and with the delivery of the program. With respect to the MNRF compliance program, thirty of the 59 FOIP reports were approved and submitted within the required 20-day time limit. Twenty-nine reports (49%) were submitted late. One hundred and seventy-seven reports completed by RFP were submitted and approved within the required 20-day period, but two hundred and eighty-one reports (61%) were filed late (Finding # 5).

RFP compliance inspectors identified six operational issues over the audit term while MNRF inspectors identified 18. The identified issues were addressed by MNRF in a timely manner.

The Compliance Handbook provides a process and required timelines to deal with identified operational issues and inclusion into FOIP. There is an exception outlined in the Handbook (Section 07 03-05) for minor operational issues that can be quickly resolved (e.g. correction of a gravel pit slope). While FOIP still requires that an inspection report be filed it can then be identified as in-compliance.

We determined that Resolute, occasionally with MNRF knowledge, elected to initiate corrective actions on some identified operational issues that should have followed normal reporting criteria. In other situations, such as the presence of merchantable wood in slash piles, the findings were not reported in FOIP. MNRF staff although aware of the problem, did not report the issue. We were informed that the strategy was not to “ticket” all non-compliant activities but to work to bring issues into compliance. This was to be accomplished by discussions and other interactions between the organizations. While this approach may be conducive to the development of a collaborative and good working relationship, we found that, for example, the issue of merchantable wood in piles persisted throughout the audit term.

Our assessment is that there is a lack of understanding of the fundamental principles behind the FOIP program. The identification of operational issues is intended to keep both the MNRF and SFL holder aware of developing problems and provides both organizations with the opportunity to modify operations, develop appropriate training programs, and assess the performance/suitability of contractors, etc. We concluded that the failure to identify an operational issue, resolve it, and then submit an approved report as a non-operational issue undermines the fundamental purpose of FOIP and MNRF’s environmental assessment approval/direction (Finding # 6).

Our assessment is that, with the exceptions noted above, Resolute and MNRF delivered a compliance program that was generally consistent with their compliance plans.

Monitoring of Silvicultural Activities

Silviculture assessments and other monitoring functions are summarized in the FMPs. Monitoring activities included Forest Operations Inspections, Assessments of Regeneration Success (Free to Grow (FTG), planting quality), post-tending assessments and monitoring programs for roads and water crossings. It is noteworthy that several significant changes (e.g. forest unit definitions, FMPM reporting formats, land base and forest classifications etc.) have influenced the accumulated silviculture data and its interpretation over time.

RFP adopts a formal and informal approach to silviculture monitoring. Informal monitoring occurs when the effectiveness of a treatment(s) is assessed by staff during the delivery of other forest management duties. This non-formalized approach has resulted in information gaps (i.e. areas not being assessed) and/or challenges to the prioritization or re-scheduling of subsequent follow-up treatments, especially if other duties are not in the proximity of treated blocks. Our field assessments revealed some problems with the use of passive trenchers on some sites and the effectiveness of the some tending treatments (Finding # 4).

Free to Grow Survey (FTG)

Over the period between 2009-2019, 34,131 ha were surveyed for FTG and 30,789 ha (90%) met the required standards. The area not meeting standards may require surveying and reporting, additional silviculture intervention, and/or more time to reach height requirements.

In the audit term 10,826 ha were surveyed[25] with only forty-one ha not meeting the FTG standard. Although FTG surveys did not occur every year, we concluded that the level of effort for FTG assessments was appropriate to the annual rate of harvest. A backlog in the area requiring assessment does not exist.

Our aerial reconnaissance substantiated the reported stand descriptions and the forest unit designations.

Assessment of Past Silviculture Performance

Direction in the 2017 Forest Operations and Silviculture Manual (FOSM) requires that two assessments of regeneration be undertaken. These include the assessment of establishment and the assessment of regeneration performance. Fulfilling the requirements of the 2017 FMPM, with regards to silviculture reporting, is currently challenging because the structure of RFP's current and historic data does not fully transcribe into the required reporting format. Tables AR-12, AR-13 and AR-14 were

[25] Surveys occurred in 2016, 2018 and 2019.

completed to the extent possible. A "Summary of Assessment Performance" was not completed as the 2009-2019 FMP SGR regeneration standards were developed under former direction where assessment was not a requirement.

The Trends Analysis Report Author indicates that "*meaningful table analysis is unavailable…it is not reasonable to expect that the data would have been used to support silviculture planning decisions for the 2009-2029 planning period". Future iterations of the tables may lead to meaningful analysis as area treated under the current FMP becomes reported*". We concur with this assessment.

Silviculture Effectiveness Monitoring

A key principle of Ontario's forest sustainability framework is to ensure that regeneration efforts are achieving the standards in the FMP. The effectiveness of forest operation prescriptions in achieving the desired forest unit must be understood to facilitate reporting on forest sustainability and to provide reliable information for forest management planning. MNRF implemented an effective Silviculture Effectiveness Monitoring (SEM) during all years of the audit term. The reporting format appropriately described field task results, sampling procedures and summarized the field findings.

Exceptions Monitoring

Exceptions monitoring is carried out to determine the effectiveness of prescriptions in forest management plans that are "*not recommended*" in the MNRF forest management guides. There are no exceptions to the approved forest management guides in the 2019 FMP, therefore; exceptions monitoring is not required.

The 2009-2019 FMP included an exception for the implementation of full tree harvesting on shallow soils in accordance with the "Full Tree Harvesting of Ecosites 11 and 12 in Northwestern Ontario: Monitoring Procedures and Best Management Practices" protocol. Recent studies suggest that past restrictions on full-tree harvesting on sites with very shallow or coarse textured, sandy soils were unwarranted and further support the revised silviculture guide now recommending that full-tree logging on very shallow soils has a high probability of meeting future stand objectives provided rotation length exceeds 80 years[26]. As a result of these findings the MNRF has revised its management direction for logging on shallow sites[27].

[26] Morris, D.M. et al.," *Effects of Biomass Removal Levels on Soil Carbon and Nutrient Reserves in Conifer-Dominated, Course-Textured Sites in Northern Ontario:20 Year Results*." MNRF 2019.

[27] These recent studies suggest that past restrictions on full-tree harvesting on sites with very shallow or coarse textured, sandy soils were unwarranted and further support the revised silviculture guide now recommending that full-tree logging on very shallow soils has a high probability of meeting future stand objectives provided rotation length exceeds 80 years. SGRs in the 2019 FMP reflect this direction.

Forest Renewal Trust Specified Procedures Report

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

Monitoring of Roads and Water Crossings

Roads and water crossings are monitored by both RFP and MNRF with inspections documented in FOIP and RFP's EMS. All roads with harvesting operations received active road maintenance and all other road networks were monitored on a rotation basis. Both parties conduct additional inspections as part of their respective compliance planning targets. Informal checks of roads and water crossings are conducted on an ongoing basis as part of the delivery of the forest management program. The AWSs (Table 6) provide summaries of access road construction and maintenance.

Annual MNRF compliance plans included water crossing inspections which included assigning a trained staff member primary responsibility for working with Resolute in the planning and implementation of water crossings. RFP's annual contractor training included a focus on water crossings.

The FMP Supplementary Documentation provides direction on primary, branch and operational roads that includes an environmental analysis of alternate corridors, use management strategies and access provision /restrictions. Road network identifiers and maps are included.

Water crossing calculations, installations and replacements are documented in the applicable AWS as outlined in the 2009 FMPM. The MNRF utilized the AWSs to confirm, approve and monitor water crossings. MNRF inspections of water-crossing installations, repairs and removals ensure adherence with the 2017 water crossing protocol[28].

All roads with harvesting operations received active road maintenance and all other road networks were monitored on a rotation basis. The MNRF and Resolute regularly conducted inspections of roads and water crossings as a component of their compliance programs and informally during normal operations.

Our sampling of the invoices submitted to the Forest Roads and Maintenance Agreement (FRMA) indicated that they were complete and accurate.

[28] MNRF and Forestry/Fisheries and Oceans Canada Protocol for the Review and Approval of Forestry Water Crossings, 2017.)

Aggregate Pits

Our field sampling of Forestry Aggregate Pits (FAPs) found that FMP operational standards for pit construction and maintenance were not consistently met. Issues observed at non-conforming pits included steep slopes, the undercutting of the working face and/or trees within 5 metres of the excavation face (Finding # 3). Pit rehabilitation work was well done with areas conforming to operational standards.

Annual Reports (ARs)

ARs were available for each year in the audit scope except for the 2019-2020 AR, which is not required until November 15, 2020. Schedules for the submission, review and revision of the ARs were generally met. The ARs were presented to the LCAC as directed by the FMPM. The content of the reports generally met the requirements of the 2009 and 2017 FMPMs.

4.7 Achievement of Management Objectives & Forest Sustainability

FMP objectives are monitored annually and formally reported on in Annual Reports and/or the Trends Analysis Report. The lower than forecast level of harvest negatively affected the achievement of FMP objectives related to forest cover, forest diversity and those related to the economic benefits derived from forest management. Appendix 2 provides more details on our assessment of plan objective achievement.

The following trends identified in the Trends Analysis Report are significant:

- Planned harvest levels (area and volume) have not been achieved resulting in the underachievement of plan targets for silviculture activities and economic benefits.
- No significant silviculture back-log exists or is potentially accumulating.
- FMP objectives are largely met or there is movement towards FMP desirable levels.
- Plan assumptions and projections are generally consistent with operations.
- Conifer utilization was significantly higher than hardwood utilization.
- A successful renewal program has been implemented.
- There is no significant backlog with respect to the area requiring FTG survey.

The Trends Analysis Report concludes that forest sustainability is not at risk and that planning objectives are meeting or are within an acceptable tolerance of desired levels to maintain progress towards sustainability.

We examined factors such as the achievement of plan objectives, progress towards the desired future forest condition, and the level of benefits derived from the implementation of the Forest Management Plan in our assessment of forest sustainability. Our field site visits, document and record reviews and interviews also informed our sustainability conclusion. We concluded that the achievement of long-term forest sustainability as assessed by the IFAPP, is not at risk.

This conclusion is premised on the following:

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

- Forest management modeling demonstrated that the planned operations met the intent of the LTMD.

- Despite the harvest area being lower than planned, the majority of FMP objectives and targets are being achieved or progress is being made towards their achievement. The area harvested significantly improved during the final year of the audit period.

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

- Regeneration efforts are aligned with the level of harvest and an effective renewal program is being implemented.

- RFP and MNRF compliance programs have been responsive to the activities on the ERF with respect to compliance targets, problem identification, and cooperative training initiatives. Compliance monitoring indicates that operations are highly compliant.

- Recommendations and actions resulting from past IFAs were mostly addressed.

4.8 Contractual Obligations

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

The IFAPP requires auditors to assess the effectiveness of the actions developed to address the recommendations of the previous audit. We found that the majority of recommendations had been adequately addressed, with the exception of Recommendation # 3 which required more *"…consistent results…*" with respect to

debris management. During our field investigations we noted instances where burning reported as completed never occurred and areas where there were inconsistent results (partially burned or unburned piles were frequently in close proximity to successfully burned piles). We issue Finding # 3 to address these concerns.

The 2015 Provincial Action Plan indicates that all corporate recommendations had been actioned and are either complete or on-going. At the time of writing of this report we unable to verify if this was correct.

4.9 Concluding Statement

On balance we found the ERF to be well-managed. The forest management planning process and the implementation of the FMPs and Plan Extension met all legal and regulatory requirements.

An effective silviculture program is being implemented and the ERF is being renewed. The forest management planning process and the implementation of the forest management plan(s) and the Plan Extension met all legal and regulatory requirements. With the exceptions of requirements to increase its surveillance of tending and site preparation operations, an effective silviculture program was delivered. The enhanced harvest regime implemented in the final year of the audit term enabled substantial progress with respect to the achievement of caribou habitat objectives

We did identify some areas for improvement with respect to the delivery of the compliance program, silviculture monitoring, slash management and forestry aggregate pit construction and maintenance.

Although a good record of operations compliance was achieved, a significant proportion of the FOIP reports were submitted late by both auditees. We are also concerned that Resolute and MNRF compliance staff did not follow the documentation requirements of the operational issue process identified in the 10 Year Compliance Strategy and the 10 Year Compliance Plan.

Notwithstanding the foregoing, the audit team concludes that the management of the English River Forest was generally in compliance with the legislation, regulations and policies that were in effect during the term covered by the audit, and the Forest was managed in compliance with the terms and conditions of the Sustainable Forest Licence held by Resolute FP # 542454. The forest is being managed consistently with the principles of sustainable forest management, as assessed through the Independent Forest Audit Process and Protocol.

Appendix 1

Findings

Independent Forest Audit – Record of Finding

Finding # 1

Principle: 3 Forest Management Planning

Purpose of 3.3.

To review the assembly of background information, appropriateness and completeness of the FMP management unit description, and how it was used in plan preparation.

Procedure(s):

3.3.2. Assess whether the FRI has been updated, reviewed and approved to:

- Accurately describe the current forest cover that will be used in the development of the FMP.
- Assess whether MNRF provided inventory base feature data and FRI for managed Crown and non-licensed Crown areas to the SFL.

Background Information and Summary of Evidence:

The FIM states "*In cases of MNR providing the newer polygon forest, it must be provided no later than nine months prior to the invitation to participate*." The licensee is responsible for checking the eFRI for completeness within 3 months of delivery and responsible for maintaining and updating the forest resource inventory hereafter (2009 FMPM). The EFR was due for delivery by November 2015 and was received in May 2016. There were numerous errors including inconsistent and unreliable interpretation. Issues identified during the initial SFL review of the inventory included but were not limited to the following:

- Missing year of depletion or depletion types,
- Information supplied to interpreters was not used,
- Forested islands were not identified,
- Ecosites were inconsistent with species compositions,
- Crown closure and stocking levels within the same stand were highly variable,
- Delineation of forested polygons was incomplete or inaccurate, and
- Larger polygons encompassed different depletion years and renewal types.

The correction phase of the process required 3 months. The FRI was delineated and interpreted by four different contractors and based on the number of errors associated with the product there appears to have been limited or poor-quality checks/controls.

Discussion:

The late delivery of the forest inventory coupled with requirements to correct erroneous information delayed the preparation of the Planning Composite Inventory and Base Model Inventory and resulted in the requirement for a Plan Extension. We were informed that RFP was not compensated for the time and costs associated with correcting and verifying the inventory information.

The planning inventory for the management unit provides information required for forest management planning, including forest modeling, habitat modeling and forest diversity analysis. Systemic issues related to the production process of the eFRI have persisted for a significant time period. The continuing difficulties with the production of timely and accurate forest inventories is a major bottleneck for the achievement of forest management planning schedules.

We were informed that Ontario is improving the forest inventory by investing in the acquisition of Light Detection and Ranging (LiDAR) data, an advanced remote sensing technology. This new forest inventory information will inform forest management planning and decision-making by providing quantitative information on key forest structural attributes, including tree height and wood volume. The program also continues to explore targeted opportunities to improve species composition mapping using cost-effective, quantitative approaches. The program's delivery approach is supported by the Provincial Forest Inventory Advisory Committee, which includes representatives from forest industry, academia, and the Provincial government.

Finding # 1:

The production process for the development of the Enhanced Forest Resource Inventory has systemic problems which result in additional time and expense in the forest management planning process.

Independent Forest Audit – Record of Finding

Finding # 2

Principle: 4 Plan Assessment and Implementation

Purpose of 4.4.

Review and assess in the field the implementation of approved renewal operations. Both low complexity (normally associated with slash pile burning) and high complexity prescribed burns are included.

Procedure(s):

- assess the effectiveness of operations to reduce areas of slash piles and chipping debris and treatments to regenerate areas.

Background Information and Summary of Evidence:

Slash management is addressed in the 2019 FMP (Section 6.1.6) as an integral part of the Companies Environmental Management System (EMS) to *"…reduce roadside debris accumulation".* The Trends Report indicates slash pile burning has been addressed through implementation of a Low Complexity Prescribed Burn Plan. The Annual Work Schedules Appendix VII includes a Low Complexity Slash Pile Burn Plan and the Annual Reports (Appendix F) provide details on the burn (e.g. identifying name, location, area, species, burn date). During the audit term and estimated 370.5 ha of productive land as recovered by slash pile burning.

Recommendation # 3 of the 2015 IFA required more *"…consistent results…*" with respect to debris management. The current debris management program, in addition to enhanced training was to address the recommendation. During our field investigations we noted instances where burning reported as completed never occurred. For example, our inspection of Site 18926 reported the slash piles were burned in 2016 but they were still in place. Our interviews with Resolute staff revealed that, to some degree, monitoring and reporting of slash management operations was lacking.

Discussion:

We found that inconsistent results in the burn program still exist. For example, partially burned or unburned piles were frequently found in close proximity to successfully burned piles. The 2015 IFA recommendation addressed the issue of *"…effectiveness of operations…"* The background information to support that recommendation indicated *"…slash pile burning was inconsistent…"* RFP's response was to include text in slash burn

Request for Quotations for suppliers to *"…achieve a degree of slash incineration as outlined in the associated burn plans desired results"*.

We note that the Request for Quotations for slash pile burning include specifications with respect to expected deliverables and performance standards. Despite these requirements, field results were inconsistent with some slash piles either not being completely burned or not ignited within the contracted/designated blocks. We concluded that the contracted obligations for pile burning need to be more stringently enforced and that RFP needs to improve its monitoring and tracking of contractor performance.

Our site inspections found that the burn program results were inconsistent with some piles not being ignited or the burn being incomplete. As a result of the inconsistent delivery of the burn program productive forest land is being lost for renewal. We recognize that the ignition and completeness of pile burning is dependent on a number of factors such as species, the size of material, weather conditions, pile conditions (e.g. fluffiness, moisture content, presence of dirt in the pile).Based on the number of incidences we observed where piles were left unburned within treated blocks and/or pile burning was incomplete, we concluded that monitoring and reporting associated with the program requires improvement.

Finding # 2:

Slash pile burn program objectives were not consistently met.

Independent Forest Audit – Record of Finding

Finding # 3

Principle: 4 Plan Assessment and Implementation

Criterion: 4.7 Access

Road construction, various types of water crossings including crossing structures, road monitoring, maintenance, aggregates and other access activities must be conducted in compliance with all laws and regulations, including the CFSA and approved activities in the FMP and AWS.

Procedure(s):

1. Review and assess in the field the implementation of approved access activities. Include the following:

- select a representative sample of each type of access activity (road construction, various types of water crossings - winter, culverts, bridges, road maintenance, decommissioning, and reclamation) from primary, secondary/branch and tertiary/operational roads constructed during the five-year period of the audit; include category 14/forestry aggregate pits for new roads and existing roads.

Background Information and Summary of Evidence:

Appendix V of the FMPM (2017) and the FMPs (Operational Standards for Forestry Aggregate Pits pg. 225) detail the operational standards that apply for the extraction of aggregate resources for Forestry Aggregate Pits. Included in the standards are requirements that:

- topsoil and overburden, where present must be stripped and stored on site,
- undercutting of the working face is not permitted and; the working face must be sloped at the angle of repose,
- all trees within 5 metres of the excavation face must be removed,
- when the pit is inactive, all pit faces must be sloped at the angle of repose, and
- progressive rehabilitation of the site must be on-going during the 10-year period, starting from the commencement of the forestry aggregate pit.

Discussion:

Site investigations revealed that operational standards for forestry aggregate pits were not consistently met. Issues observed at non-conforming pits included steep slopes, the undercutting of the working face or trees within 5 metres of the excavation face.

Finding # 3:

The operational standards for forestry aggregate pits identified in the 2019 English River Forest Management Plan were not consistently met.

Independent Forest Audit – Record of Finding

Finding # 4

Principle: 4 Plan Assessment and Implementation

Criterion: 4.4. Renewal, 4.5 Tending and protection

Review and assess in the field the implementation of approved renewal operations.

Review and assess in the field the implementation of approved tending and protection activities

Procedure(s):

Assess whether site preparation and regeneration treatments were appropriate and effective for actual site conditions.

Assess whether actual (tending and protection) activities were appropriate and effective for the actual site conditions.

Background Information and Summary of Evidence:

Mechanical site preparation was predominately by passive disc trencher. Our site investigations indicated that the effectiveness of the passive trencher treatments varied considerably depending on the prevailing conditions at the site (e.g. duff layer thickness, accumulation of logging slash and debris and other site attributes such as the prevalence of rocks)

The effectiveness of the chemical tending program was uneven across ecosites and operating years. In most instances, the application of herbicide resulted in a short-term release of crop trees as there was a die-back of competing hardwoods, however subsequent re-sprouting limited the degree of competition control. The variable effectiveness of the treatments was attributed to several possible factors including weather conditions, varying concentrations of active ingredient and an issue with a particular brand of herbicide product. Our interviews determined that a formalized program to monitor the effectiveness of the spray program was not in place over the audit term.

Discussion:

The almost exclusive dependence on passive disc trenching for mechanical site preparation resulted in poorer performance on sites with thicker duff layers, higher occurrences of logging

slash or more difficult site conditions (i.e. stony soils). The use of a hydraulic trencher or other equipment choices may have been more effective on these sites. Mechanical site preparation alternatives should be included with any pre- or post-harvest site evaluations in order to provide the forest manager with the ability to better tailor equipment selection to the prevailing site conditions and yield more uniform and widespread mineral soil exposure for renewal treatments.

Effective tending treatments are typically required to promote the establishment and growth of desired species. Our field investigations revealed that in most instances the application of herbicide resulted in a short-term release of crop trees and that subsequent re-sprouting limited the degree of competition control. The sporadic effectiveness of the program can be attributed to several factors such as weather, varying concentrations of active ingredient and an issue with a particular herbicide product. Our interviews determined that a formalized program to monitor the effectiveness of the spray program was not in place over the audit term. In instances where treatments are less effective stocking levels and growth rates of desired crop trees can be negatively impacted. Effective control of hardwood competition is imperative for the successful implementation of the Caribou Conservation Plan. During the audit term, Resolute staff assessed the effectiveness of the spray program through informal visual inspections during the delivery of other forest management duties. The utilization of a non-formalized approach can potentially result in information gaps (areas not being assessed) and/or challenges to the prioritization or re-scheduling of subsequent follow-up treatments, especially if other duties are not in the proximity of treated blocks. Post spray assessments under a formalized sampling procedure and protocol would address these issues. Resolute staff are aware of the issues associated with aerial spray treatments and are working to improve the effectiveness of the program including utilizing a different brand of chemical and implementing a more formalized survey program in the 2019 FMP term.

Finding # 4:

Inconsistent silviculture planning, delivery and monitoring resulted in the variable efficacy of the mechanical site preparation and aerial herbicide treatments across sites and operating years.

Independent Forest Audit – Record of Finding

Finding # 5

Principle: 6 Monitoring

Criterion: 6.1. District compliance planning and associated monitoring

6.2.1. SFL Compliance planning and monitoring

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

Review and assess whether an SFL compliance plan has been developed and implemented to effectively monitor program compliance and the effectiveness in accordance with the conditions of the SFL, the FMPM and FIM, including standards established by the Minister

Procedure(s):

Determine whether the MNRF District electronically submitted in MNRFs compliance information system to the MNRF database and … in accordance with requirements and timelines specified in MNRF procedures and the FIM.

Determine whether the FOIP reports have been submitted electronically to the MNRF database in accordance with requirements including timelines specified in MNRF procedures and the FIM.

Background Information and Summary of Evidence:

The Forest Compliance Handbook requires the forest industry to monitor all forest management activities through the Forest Operations Information Program (FOIP). It requires that compliance inspections and reports are to be completed, recorded and submitted in the FOIP system in accordance with supporting procedures contained in directive FOR 07 03 05.

That directive requires completed inspection reports to be approved by the MNRF and SFL designated approver. MNRF and forest industry reports, with no associated operational issues, are to be approved and submitted in the FOIP system no more than 20 working days after the inspection is completed.

Discussion

District MNRF inspectors completed 59 FOIP inspections during the audit term. Thirty inspections were approved and submitted within the required 20-day time limit. Twenty-nine inspection reports (49%) were submitted late.

Resolute inspectors completed approximately 458 FOIP inspections during the audit term. One hundred and seventy-seven inspections were approved and submitted within the required 20-day time limit requirement. Two hundred and eighty-one inspection reports (61%) were late.

Finding # 5:

District Ministry of Natural Resources and Forestry and the Resolute FP Forest Operation Information Program reports were not submitted in accordance with the timelines identified in the English River Forest Management Plan and the Forest Compliance Handbook.

Independent Forest Audit – Record of Finding

Finding # 6

Principle: 6 Monitoring

Criterion: 6.1. District compliance planning and associated monitoring

6.2.1. SFL Compliance planning and monitoring

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

Review and assess whether an SFL compliance plan has been developed and implemented to effectively monitor program compliance and the effectiveness in accordance with the conditions of the SFL, the FMPM and FIM, including standards established by the Minister.

Procedure(s):

Determine whether the MNRF District electronically submitted in MNRFs compliance information system to the MNRF database and … in accordance with requirements and timelines specified in MNRF procedures and the FIM.

Determine whether the FOIP reports have been submitted electronically to the MNRF database in accordance with requirements including timelines specified in MNRF procedures and the FIM.

Background Information and Summary of Evidence:

Direction provided in the Forest Compliance Handbook requires that compliance inspections and reports are to be completed, recorded and submitted into the FOIP system in accordance with supporting procedures contained in directive FOR 07 03 05. That directive requires completed FOIP inspection reports to be approved by a SFL or MNRF designated approver. FOIP inspection reports inform the MNRF and SFL managers with respect to ongoing operations, priorities related to training and compliance planning, contractor performance etc.

In instances where an operational issue is not identified FOIP automatically assigns an in-compliance status to the submitted report. However, when an inspection reveals a potential problem there is a requirement to designate it as an operational issue.

When an operational issue is identified FOIP assigns a pending compliance status. MNRF is required to review all operational issues to confirm the designation and then assign a remedial action or a not-in-compliance designation. Timelines to notify the MNRF of an

operational issue range from 24 hours to 10 working days depending in the seriousness of the issue.

An operational issue designation is intended to inform and involve MNRF in current and ongoing issues on the Forest.

Discussion:

The Compliance Handbook provides a process and required timelines to deal with identified operational issues and inclusion into FOIP. There is an exception in the Handbook (Section 07 03-05) for minor operational issues that can be quickly resolved (e.g. correction of a gravel pit slope). An inspection is still required to be entered into the FOIP program however it can then be identified as an in-compliance.

On occasion, Resolute staff elected to take corrective measures and submit an in-compliance finding for some operational issues that were not appropriate exceptions. Reasons provided for not reporting operational issues included that it was easier and faster to remedy the problem rather than initiate the formal reporting process, engage the MNRF, or concerns that the identification of an operational issue was an indicator of poor performance on the part of RFP contractors.

We note that FOIP inspections were submitted in all instances where there was an environmental or safety concern.

We found that in some instances the inspection findings were not reported in FOIP submissions by either organization. We were informed that on the part of the MNRF, that the strategy was not to “ticket” all non-compliant activities but to work to bring issues into compliance. This was to be accomplished by discussions or other interactions between the two organizations. While this approach may be conducive to the development of a collaborative and good working relationship, we found that in some instances, the identified problem was not resolved. For example, the issue of merchantable wood left in slash piles persisted throughout the audit term.

In our assessment there is a lack of understanding of the fundamental principles behind the FOIP program. The identification of operational issues is intended to keep both the MNRF and SFL holder aware of developing problems and provides both organizations with the opportunity to modify operations, develop appropriate training programs, assess the performance/suitability of contractors, etc. We concluded that the failure to identify an operational issue, resolve it, and then submit an approved report as a non-operational issue can undermine the fundamental purpose of FOIP and MNRF’s environmental assessment approval/direction.

Conclusion:

Although well-intended, decisions by both MNRF and Resolute staff to address identified operational issues outside of the FOIP program undermines a fundamental requirement of the FOIP.

Finding # 6:

In some instances, the District Ministry of Natural Resources and Forestry and Resolute FP compliance staff did not follow the documentation requirements of the operational issue process identified in the 10 Year Compliance Strategy and the 10 Year Compliance Plan.

Independent Forest Audit –Record of Finding Best Practice # 1
Principle: 2 Public Consultation First Nation and Metis community involvement. **Criterion** 2.1 …Whether (the LCC) conducted its activities in an open and inclusive manner reflective of the range and balance of interests on the committee.
Background Information and Summary of Evidence: There is one Local Citizens Advisory Committee (LCAC) with members representing a range of community interests. There are ongoing efforts to recruit new members and ensure broad community representation. The LCAC set up a process where individual members prepared and delivered a presentation to the other members with respect to his/her area of business or interest. For example, a remote tourism representative or trapper had an opportunity to formally present and discuss the intricacies, issues, required knowledge/skills as well as economic realities linked to his/her area of business or interest with respect forest management on the ERF. Several members indicated to the auditors that this was an excellent learning experience that paid significant dividends as the LCAC addressed issues and attempted to reach consensus decisions.
Discussion: Providing a forum for LCAC members to help other members better understand the intricacies, issues, required knowledge/skills as well as economic realities linked to a specific area of community interest is somewhat unique in that we have not encountered it in a number of previous audits. Having Committee members go through a process where they can understand other's perspectives and be understood by other Committee members assists in having open dialogue at future meetings when discussing forest management on the Forest.
Best Practice # 1: The Local Citizens Advisory Committee provided a formal process for its membership to make other committee members aware of the interests and concerns of individual members and/or the interest group they represent vis a vis the management of the English River Forest.

Appendix 2

Management Objectives Table

2009- 2019 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET)	AUDITORS COMMENTS
A. Landscape pattern		
A1. Through harvesting, augment/create disturbances on the English River Forest of the frequency and size that is predicted to occur in the Forest naturally.	PARTIALLY MET	Only 50% of the planned harvest area was cut, therefore not enough area was cut to achieve the objective.
A2. Species Composition - To manage forest cover towards a desired future forest condition. This includes minimizing hardwoods and maintaining/increasing conifer composition and maintaining/enhancing minor forest types.	PARTIALLY MET	FTG data reflects different objectives prior to managing for wood land caribou. Now the objective is to minimize hardwoods and maintaining/increasing conifer composition. White and red pine have been planted to maintain the presence of these species.
A3. Age Class - To move towards forest age-class distributions that are more consistent with modelled natural conditions. Age class groupings are defined as young (0-49 years), mature (50 to old growth onset age).	NOT MET	Only 50% of the planned harvest area was cut, therefore not enough area was cut to have a significant impact on the age class structure of the forest.
A4. Old Growth - To maintain adequate amounts of well distributed old growth forest ecosystems on through time.	MET	Old Growth forest has been maintained.
B. Social and Economic Matters		
B1. To provide the maximum available supply of wood products on a continuous basis.	MET	With only 50% of planned harvest achieved, and several mills that did not operate, this objective was achieved to the extent possible based on prevailing market conditions.

2009- 2019 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET)	AUDITORS COMMENTS
B2. Increase the ratio of actual area and volume harvested to planned/ forecast (area by forest unit, volume by species group).	NOT MET	The harvest area achieved was 50% of planned.
B3. Maintain the managed crown forest available for timber production.	MET	The 2019 FMP based on new inventory has 799,812 ha of managed productive forest available.
B4. To make available incidental trees for end uses such as fuelwood, building logs, fence post material and lumber.	MET	Over the 10-year period ending March 31, 2019, 8,335 m3 of wood was used for Personal Use and Fuelwood (64%).
B5. Ensure that forest management activities do not threaten the viability of the resource-based tourism industry.	MET	AOCs are in place to protect resource-based tourism. Although there were compliance issues related to AOCs, none threatened the viability of any segment of the tourism industry.
B6. To provide opportunities for Aboriginal communities to be involved in plan development through Aboriginal consultation, planning team participation and incorporation of Aboriginal values.	MET	All communities were invited to participate in the development of the 2019 FMP and the Plan Extension. Aboriginal values were recognized and protected through the AOC process. Consultations related to AWSs are on-going. Programs were implemented to provide FN and Métis communities with forest management benefits. These included contracts for silviculture, nursery stock production and harvesting work.

2009- 2019 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET)	AUDITORS COMMENTS
B7. To conduct forestry operations in a manner that considers and respects the other businesses located on or utilizing resources from the English River Forest.	MET	AOC prescriptions were implemented to protect/maintain non-timber values and other resource uses. Stakeholders were consulted during the forest management planning process. The compliance rate for forest operations was approximately 98 percent.
B8. To provide timely opportunities for the LCC to review draft components of the FMP and provide comment.	MET	The LCAC reviewed and provided comments on the FMP and the Plan Extension.
B9. To manage road density as appropriate considering traditional public use, remote tourism concerns and wildlife habitat requirements.	MET	The ARs document and track the achievement of road use strategies implemented in the caribou zone. Road management was consistent with the FMP.
B10. To protect forest soil and water resources through preventing, minimizing or mitigating site damage within areas of operation.	MET	On balance, there were only a few instances of soil damage observed during the field audit (i.e. localized rutting at some winter harvest locations).
B11. To maintain healthy forest ecosystems through preventing, minimizing or mitigating negative effects of forest management activities.	MET	No significant instances of negative environmental impacts arising from forest operations were observed during the field audit.
C. Provision of Forest Cover		
C1. To ensure that forest management activities do not threaten the area of habitat available for forest-associated	MET	Habitats are protected by AOC prescriptions. MNRF and Resolute collects and updates wildlife habitat

2009- 2019 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET)	AUDITORS COMMENTS
provincially and locally featured wildlife species.		information on an on-going basis.
C2. To ensure that forest management activities do not threaten habitat for forest-dependant species at risk.	MET	There have been no reported instances of non-compliance directly related to SAR.
C3. To ensure that forest management activities do not threaten the critical breeding habitat for forest-associated eagles, osprey and other forest raptors and herons.	MET	There were not any non-compliances related to eagles, osprey, other forest raptors and herons.
C4. To maintain water quality and protect fish habitat within areas of operation.	MET	There were no recorded non-compliances related to water quality or fish habitat.
D. Silviculture		
D1. To ensure harvested areas are successfully regenerated and free growing in a timely manner.	MET	FTG surveys demonstrate that the forest is being regenerated. Our field audit found that an effective renewal program was implemented.
D2. To increase the presence of infrequently occurring tree species (i.e. Pr, Pw, Sw) on the Forest.	MET	No stands of Pw, Pr or Sw have been harvested. Approximately 156,00 Pw, 604,000 Pr and 572,000 Sw have been planted to meet this objective.
D3. To implement an efficient silviculture program including the use of natural regeneration methods where appropriate site conditions exist.	MET	Our field investigations found that in general an effective silviculture program had been implemented. Areas renewed by artificial and natural regeneration on balance demonstrated moderate to high stocking levels of desired species. The slash pile burning program and the monitoring

2009- 2019 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET)	AUDITORS COMMENTS
		of some silviculture operations require improvement.
D4. To ensure harvested areas within the caribou zone are successfully regenerated such that hardwood is minimized and conifer maintained or increased.	MET	Conifer composition and conifer-dominated forest units have been maintained. Our site visits indicated that hardwood competition was being controlled to ensure the continuance of conifer dominated forest units.

Appendix 3

Compliance with Contractual Obligations

Licence Condition	SFL Holder Performance
Payment of Forestry Futures and Ontario Crown charges.	Payments of Forestry Futures and Crown Charges were made in full.
Wood supply commitments, MOAs, sharing arrangements, special conditions.	All wood supply commitments and MOAs have been met to the extent possible. We note that Norbord did not fully utilize its allocation due to economic considerations.
Preparation of FMP, AWS and reports; abiding by the FMP, and all other requirements of the FMPM and CFSA.	The 2019 FMP was completed and approved in time for operations to commence, after the short-term extension of the 2009 Plan. The plan was completed in accordance with the FMPM and met the requirements of the CFSA. The AWSs and ARs met reporting and format requirements.
Conduct inventories, surveys, tests and studies; provision and collection of information in accordance with FIM.	All required surveys and data collection were completed as required and in accordance with FIM requirements. We note that a more formalized monitoring program for aerial herbicide spray is being implemented in the 2019 FMP term (Finding # 4).
Wasteful practices not to be committed.	There were no recorded instances of wasteful practices in FOIP. During the field audit we observed some instances of merchantable wood in slash piles (Finding # 6).
Natural disturbance and salvage SFL conditions must be followed.	Conditions for salvage operations were met.
Protection of the licence area from pest damage, participation in pest control programs.	Protection management activities from pests were not carried out during the audit term.
Withdrawals from licence area.	There were no withdrawals from the license area.
Audit Action Plan and Action Plan Status Report prepared.	An Audit Action Plan and Action Plan Status Report were prepared.

Payment of forest renewal charges to Forest Renewal Trust (FRT).	There were no outstanding FRT charges (as of April, 2020).
Forest Renewal Trust eligible silviculture work.	Our field investigations verified that payments were for eligible silviculture work.
Forest Renewal Trust forest renewal charge analysis.	Forest Renewal Trust renewal charge analysis work was completed annually and approved by the MNRF.
Forest Renewal Trust account minimum balance.	The Minimum Balance of $ 3,377,849 was exceeded in every year of the audit period. On August 20, 2020 the FRT balance was $5,671,861.
Silviculture standards and assessment program.	Silviculture assessment work was completed annually.
First Nations and Métis opportunities.	Opportunities were made available to FNs, including seedling production, construction, silviculture and harvesting work.
Preparation of a compliance plan.	Compliance plans were prepared as required.
Internal compliance prevention/education program.	There were active internal compliance/education programs.
Compliance inspections and reporting; compliance with compliance plan.	The compliance program conformed to priorities and directions in the Compliance Plan. We did find that District and RFP FOIP reports were not submitted in accordance with the timelines identified in the English River Forest Management Plan and the Forest Compliance Handbook (Finding # 5). There were also some instances where MNRF and RFP compliance staff did not fully implement FMP direction with respect to the application of the Forest Compliance Handbook (Finding # 6).
SFL forestry operations on mining claims.	There were no SFL forestry operations on mining claims.

Appendix 4

Audit Process

The IFA consisted of the following elements:

Risk Assessment: A risk assessment was completed in April 2020 to determine which IFAPP optional procedures would be audited. The risk assessment report was submitted to the Forestry Futures Trust Committee and the MNRF Integration Branch for endorsement and approval on April 24, 2020.

Audit Plan: An audit plan describing the schedule of audit activities, audit team members, audit participants and the auditing methods was prepared and submitted to the RFP, MNRF Dryden District, Northwest Region MNRF Office, Forestry Futures Trust Committee and the LCAC Chair in June 2020.

Public Notices: Public participation in the audit was solicited through a notice in the Thunder Bay "Source" newspaper. An attempt was made to contact an additional sample of resource-based tourism businesses. However, the Covid-19 pandemic resulted in a large percentage of those businesses not operating and it was difficult to locate individuals in that sector.

All Indigenous communities with an interest in the Forest were contacted by mail and invited to participate and/or express their views. Indigenous community leaders/forestry staff received several follow-up calls and/or e-mails.

All LCAC members received an email explaining the audit process with an invitation to participate in the audit process. A sample of LCAC members received follow-up telephone calls and interviews. Harvest contractors were invited by email to participate in the field audit and/or provide comments to the audit firm.

Field Site Selection: Field sample sites were selected randomly by the Lead Auditor in May 2020. Sites were selected in accordance with the guidance provided in the IFAPP (e.g. operating year, contractor, geography, forest management activity, species treated or renewed, and access) using GIS shapefiles provided by the RFP. The sample site selections were reviewed by RFP and MNRF District staff during a Zoom Meeting on June 19, 2020.

Site Audit: Two audit teams spent 3 days each conducting the road reconnaissance field work and one day was spend doing reconnaissance work by helicopter in September. The field audit achieved a minimum 10% sample of the forest management activities that occurred during the audit term (see the IFA Field Sampling Intensity on the ERF below). A sample of the areas invoiced in the "*Forest Renewal Trust Specified*

Procedures Report" (SPR) was also inspected to verify conformity between invoiced and actual activities[29].

The field inspection included site-specific (intensive) and landscape-scale (extensive helicopter) examinations. The Closing Meeting was held on September 25th, 2020.

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

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

Procedures Audited by Risk Category

Principle	Optional – Applicable (#)	Optional – Selected (#)	Optional - % Audited	Mandatory Audited (#) (100% Audited)	Comments
1. Commitment	N/A	N/A	N/A	N/A	The SFI certification met IFAPP Principle 1 criterion.
2. Public Consultation and FN/Métis Community Involvement& Consultation	5	1	20	3	Three issue resolution requests were associated with the development of the 2019 FMP.
3. Forest Management Planning	40	3	8	40	A plan extension was required.
4. Plan Assessment & Implementation	2	1	50	9	A significant amount of roads funding was received. The audit was to verify that roads work was performed.

[29] Fiscal year 2018-2019.

5. System Support	N/A	N/A	N/A	N/A	The SFI certification met IFAPP Principle 5 criterion.
6. Monitoring	9	1	10	12	Findings would support the auditor conclusion on sustainability.
7. Achievement of Management Objectives and Forest Sustainability	0	0	0	13	
8. Contractual Obligations	7	3	40	22	

IFA Field Sampling Intensity on the English River Forest

Activity	Total Area (Ha) / Number	Planned Sample Area (Ha)[30]	Actual Area (Ha) Sampled	Number of Sites Visited	Percent Sampled
Harvest	23,893	2,390	3,835	39	16
Renewal (Artificial and Natural)	12,563	1,256	2,179	41	17
Site Preparation (Mechanical and Chemical)	8,758	875	3,035	27	35
Tending	7,089	710	2,014	16	28
FTG	6,277	630	640	29	10
Water Crossings (# of Crossings)	54	6	6	6	10
Aggregate Pits (# of Pits)	42	4	7	7	17
SPA Activities	7,057	705	705	17	10

Source: RFP Forestry Shapefiles

Summary of Consultation and Input to the Audit

Public Stakeholders

Public participation in the audit was solicited through a notice placed in the Thunder Bay "Source" newspaper. No responses were received.

[30] Primary planned sample. Does not include area where the activity occurred as a secondary sample on an individual site.

An additional sample of three resource-based tourism operators were contacted directly by telephone. All respondents indicated that they had been made aware of FMP processes and opportunities to engage in the planning process. Some specific concerns/comments expressed to the audit team included:

- Concerns with the visual impacts of logging slash.
- Concern that chipper pads were too thick to allow for regeneration.
- Travel into past harvest areas indicated Resolute was doing a good job of regenerating the Forest.
- While there was notification prior to spray operations, a concern was expressed that Resolute could do a better job.
- It is difficult for some tourism operators to attend Information sessions due to timing conflicts with their operating season.
- Concern about wood and potential jobs from the area being transferred to other communities for milling.
- Concern about perceived declining moose populations and potential connection to harvesting.
- Concern that public access was being negatively affected by road decommissioning.
- Concerns about the safety and impact of herbicide spraying on the Forest.

MNRF

MNRF District staff who attended the field audit and/or had responsibilities on the ERF were interviewed. General comments and concerns expressed by staff to the auditors were:

- Concern with the idling of the Ignace sawmill.
- Concern that MNRF Ignace Office became a focal point for the public to input into the planning process.
- Staff indicated that opportunities to improve road management strategies, within the caribou zone and non caribou zone exist.
- MNRF staff expressed a desire that Resolute share more information on road decommissioning.
- Concern with merchantable wood in slash piles.
- General satisfaction with the working relationship with RFP.

RFP

RFP staff were interviewed and participated in the field audit. General comments made to the audit team included:

- A concern with weak forest products markets.

- Concern that the FOIP program was not effectively addressing issues on the Forest due to excessive reporting requirements with associated delays and costs.
- General satisfaction the delivery of the compliance program and communications with MNRF compliance staff.
- Satisfaction with the communications and involvement with the LCAC in the forest management planning process.
- Major issue with the lateness and accuracy of the eFRI.

LCAC Members

Individual members of LCAC received a letter inviting their participation in the audit. Nine LCAC members were interviewed. Due to the COVID 19 pandemic members of the LCAC did not participate in the field audit. General comments made during interviews with members included:

- Satisfaction with the relationship between the LCAC, Resolute and the MNRF. The relationship was characterized as respectful and productive.
- Satisfaction with the overall management of the ERF.
- A concern that the public did not fully comprehend the complexities of forest management.
- Satisfaction with the operations of the LCAC. Members were respectful of one another and everyone was able to express their views. Compromises and decisions were generally found.

First Nations and Metis Communities

All Indigenous and Métis communities with an identified interest in the Forest were contacted by mail, telephone and/or email and asked to express their views on forest management during the audit term. There was limited response due to the COVID-19 pandemic and associated office closures and the focus of the communities on Forests other than the ERF. Comments expressed to the audit team included:

- A Métis spokesperson indicated that a lack of financial and staffing capacity had prevented their full involvement in the forest management process.
- Difficulty understanding the various audit processes (IFA, SFI, and FSC). Not sure how to address the various auditors contacting them and seeking input.
- Community input requires the involvement of community leaders and staff experts. Audit notification and response times do not respect or understand the time involved.

Harvest Contractors

Contractors were sent an email inviting their participation in the audit and inviting comment on forest management activities during the audit term. No responses were received.

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Appendix 5

List of Acronyms Used

List of Acronyms Used

AHA	Available Harvest Area
AOC	Area of Concern
AR	Annual Report
AWS	Annual Work Schedule
BLG	Boreal Landscape Guide
B.Sc.F.	Bachelor of Science in Forestry
CCP	Caribou Conservation Plan
CFSA	Crown Forest Sustainability Act
CRAs	Compliance Reporting Areas
CRO	Conditions on Regular Operations
DCHS	Dynamic Caribou Habitat Schedule
eFRI	Enhanced Forest Resource Inventory
ERF	English River Forest
ESA	Endangered Species Act
EMS	Environmental Management System
FAP	Forestry Aggregate Pit
FFTC	Forestry Futures Trust Committee
FIM	Forest Information Manual
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FN	First Nation
FOIP	Forest Operations Information Program
FOP	Forest Operations Prescription
FOSM	Forest Operations and Silviculture Manual

FRT	Forest Renewal Trust
FRMA	Forest Roads and Maintenance Agreement
FTG	Free-to-Grow
FU	Forest Unit
Ha	Hectares
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
ISO	International Standards Organization
KM	Kilometer
LCAC	Local Citizens Advisory Committee
LCC	Local Citizens Committee
LiDAR	Light Detection and Ranging
LTMD	Long-Term Management Direction
m^3	Cubic Metres
MEA	Moose Emphasis Area
MOU	Memorandum of Understanding
MNRF	Ministry of Natural Resources and Forestry
NIC	Not-in-Compliance
PCT	Pre-commercial Thinning
RFP	Resolute FP Canada Inc.
R.P.F.	Registered Professional Forester
RSA	Resource Stewardship Agreement
SAR	Species at Risk
SEM	Silviculture Effectiveness Monitoring
SFI	Sustainable Forestry Initiative
SFL	Sustainable Forestry Licence

SGR	Silvicultural Ground Rule
SIP	Site Preparation
SPR	Specified Procedures Report
VS	Versus

Appendix 6

Audit Team Members and Qualifications

Appendix 6

Audit Team Members and Qualifications

Name	Role	Responsibilities	Credentials
Mr. Bruce Byford R.P.F. President Arbex Forest Resource Consultants Ltd.	Lead Auditor Forest Management Planning Harvest & Silviculture Auditor	Audit Management & coordination Liaison with MNRF and FFTC Review documentation related to forest management planning and review and inspect silviculture practices Determination of the sustainability component.	B.Sc.F. ISO 14001 Lead Auditor Training. FSC Assessor Training. 39 years of consulting experience in Ontario in forest management planning, operations and resource inventory. Previous work on 41 IFA audits with lead auditor responsibility on all IFAs. 27 FSC certification assessments with lead audit responsibilities on seven.
Mr. Al Stewart Arbex Senior Associate	Public Participation including First Nations & LCC Participation in Forest Management Process Forest Compliance Road Construction and Maintenance Forestry Aggregate Pits	Review documentation and practices related to forest management planning & public participation/consultation processes. Review & inspect AOC documentation & practices. Review of operational compliance. Determination of the sustainability component.	B.Sc. (Agr) ISO 14001 Lead Auditor Training. FSC assessor training. 48 years of experience in natural resource management planning, field operations, policy development, auditing and working with First Nation communities. Previous work experience on 41 IFA audits.
Riet Verheggen R.P.F. Senior Arbex Associate	Harvest and Silviculture Contractual Compliance Assessment of Achievement of Forest Management Objectives	Determination of the sustainability component. Review and inspect silvicultural practices and related documentation. Review and inspect documents related to contractual compliance.	B.Sc.F. 26 years of experience in natural resource management, policy development and auditing. Previous work experience on 4 IFA audits.

		Review & inspect AOC documentation & practices.	
Jon Peroff Arbex Associate	Forest Compliance Contractual Obligations	Review of operational compliance.	Forest Technologist Certified FOIP Compliance Inspector. 28 years of experience working in forest industry in various capacities such as field operations and management planning. SFL representative on 6 IFAs. Auditor on 1 IFA.