

Caribou Forest
Independent Forest Audit
2014 – 2019

Arbex Forest Resource Consultants Ltd.

September, 2019

TABLE OF CONTENTS

1.0	Executive Summary.....	i
2.0	Table of Findings.....	iv
3.0	Introduction	1
3.1	Audit Process.....	1
3.2	Management Unit Description.....	2
4.0	Audit Findings.....	7
4.1	Commitment	7
4.2	Public Consultation and First Nations and Métis Community Involvement and Consultation.....	7
4.3	Forest Management Planning.....	9
4.4	Plan Assessment and Implementation.....	12
4.5	System Support	20
4.6	Monitoring.....	20
4.7	Achievement of Management Objectives & Forest Sustainability	26
4.8	Contractual Obligations	27
4.9	Concluding Statement	27

List of Tables

Table 1	Findings.....	iv
Table 2	Area Summary of Managed Crown Land by Land Type.....	3
Table 3	Status of 2008-2020 Open Caribou Blocks	13
Table 4	Actual vs. Planned Harvest Area by Forest Unit (2014-2019).....	16
Table 5	Area (Ha) of Actual vs. Planned Site Preparation (2014-2019).....	18
Table 6	Area (Ha) of Actual vs. Planned Renewal Treatments (2014-2019).....	19
Table 7	Procedures Audited by Risk Category.....	51
Table 8	IFA Field Sampling Intensity on the CF	52

List of Figures

Figure 1	Location of the Caribou Forest.....	4
Figure 2	Proportional Representation of Forest Units	5
Figure 3	Age Class Area Distribution - Crown Managed Production Forest.....	6

List of Appendices

Appendix 1 - Findings

Appendix 2 - Management Objectives Table

Appendix 3 - Compliance with Contractual Obligations

Appendix 4 - Audit Process

Appendix 5 - List of Acronyms Used

Appendix 6 - Audit Team Members and Qualifications

1.0 Executive Summary

This report presents the findings of an Independent Forest Audit of the Caribou Forest (CF or Forest) conducted by Arbex Forest Resource Consultants Ltd. The audit utilized a risk-based approach based on the 2019 Independent Forest Audit Process and Protocol (IFAPP). The audit term is April 1, 2014 to March 31, 2019. The audit scope covers the implementation of Phase II of the 2008-2018 Forest Management Plan (years 7,8,9 and 10), the development and Year I implementation of the 2018-2020 Forest Management Plan Extension, and the development of the 2020-2030 Forest Management Plan up to and including Stage 3 (Review of Proposed Operations). The development of the 2020 Forest Management Plan is behind schedule and a Plan Extension was required due to issues associated with the delivery and product quality of the Forest Resource Inventory. As a result of the planning delays the planning process was completed to Checkpoint # 4 (Support for Management Objectives) of Stage 2 during the audit term.

The Caribou Forest is managed by Resolute FP Canada Inc. under Sustainable Forest License # 542481. The Forest lies within the Ministry of Natural Resources and Forestry Sioux Lookout District in the northern portion of the Northwest Region. Forest management records are maintained in the Ministry of Natural Resources and Forestry District office in Sioux Lookout and the Resolute FP Canada Inc. office in Thunder Bay. One Local Citizens Committee, based in Sioux Lookout, is associated with the Forest. Resolute FP has 14001 Environmental Management System Certification through the International Standards Organization. The Forest is certified as sustainably managed under the Sustainable Forest Initiative certification system. It was also certified by Forest Stewardship Council up to 2014.

The previous Independent Forest Audit (2014) was conducted by ArborVitae Environmental Services Ltd. The audit resulted in fourteen recommendations. The previous auditors found that the Resolute was in compliance with the terms and conditions of the licence and recommended that the licence be extended.

The implementation of the Caribou Conservation Plan dominates all aspects of the Caribou Forest's planning, operations and long-term direction. The economic downturn in the forest industry and the idling or closures of receiving mills, the location of the Forest relative to processing mills and currency exchange rates contributed to the Resolute's inability to achieve planned harvest levels. Resolute also experienced difficulty retaining harvest contractors to operate on the unit. Over the past four management terms, harvest area achievement levels were 56% (1997-2002 term), 56% (2002-2007) and 43% (2007-2008) with the 2008-2018 term being the lowest at 14%. Harvest operations continue to be largely confined to "A" blocks with many of the blocks (9) remaining "open" for an extended period of time. In the last two management periods, only two "A" blocks have been completed and "closed". The Dynamic Caribou Habitat Schedule relies on harvest to create large contiguous conifer stands. Factors which have affected the ability to achieve the planned harvest area include the age

class area structure of the Forest, its distance from wood processing facilities and difficulties securing and retaining harvest contractors. The underachievement of the planned harvest, if continued, will have serious negative implications for the achievement of long-term management objectives related to the provision of caribou habitat.

The audit team had concerns with the delivery of the Silviculture Effectiveness Monitoring program and its capacity as implemented to meet program objectives. The Northwest Regional Office direction to the Sioux Lookout District Office with respect to Silviculture Effectiveness Monitoring was that some of the Core Tasks did not need to be completed, and the process of District/Regional priority setting resulted in other Core tasks not being completed. As a result, no Silviculture Effectiveness Monitoring occurred in 2017. Reporting on Silviculture Effectiveness Monitoring was in the opinion of the audit team deficient. No formal reports were completed for Core Task # 4 initiatives and the reporting on Free to Grow survey results did not include any information with respect to findings and trends, the rationale for findings and areas requiring further investigation etc. We note that the Ministry of Natural Resources and Forestry currently does not provide a format, or content guidelines, with respect to reporting of results. The shortcomings in reporting are concerning. Effective learning, continuous improvement and improved decision-making requires the documentation and sharing of outcomes in order that new knowledge can be transmitted to others. We concluded that the program, as implemented by the Northwest Regional Office and the Sioux Lookout District was inadequate.

It is our assessment that Resolute FP Canada Inc. delivered an effective silviculture program. The audit did identify a number of shortcomings with respect to the delivery of the Compliance Program which included delays in reporting of Forest Operations Information Program inspections and/or the failure to complete inspections. Instances of wasteful practices were not reported as was the by-pass of merchantable stands of timber. Approximately, 21% of inspections completed by the licensee were done using aerial photography. The use of aerial photography for some forest management activities is problematic as on-site details such as the presence or absence of posted notices for aerial herbicide treatments would not be visible. Late in the audit term (2018) Resolute FP Canada Inc. was actively addressing issues associated with the delivery of its compliance program.

Our review of initial submissions of Annual Work Schedules and Annual Reports to the Ministry of Natural Resources and Forestry indicated that most reports required a second submission due to inaccuracies and/or omissions. Resolute FP Canada Inc.'s quality control procedures require improvement.

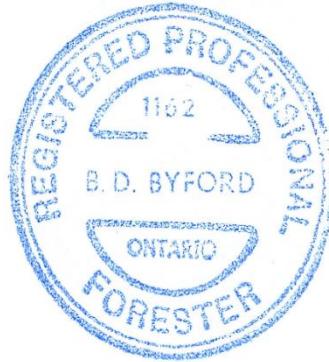
With the exception of these identified shortcomings the audit team concluded that, on balance, Resolute FP Canada Inc. met its management obligations.

The audit team concludes that management of the Caribou 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 Canada Inc. Licence # 542481.

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:
<p>The audit team concludes that management of the Caribou 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 Canada Inc. Licence # 542481. The Forest is being managed consistently with the principles of sustainable forest management as assessed through the Independent Forest Audit Process and Protocol.</p>
Findings
<p>Finding # 1:</p> <p>The Ministry of Natural Resources and Forestry District and Regional Office did not implement a satisfactory Silviculture Effectiveness Monitoring program on the Caribou Forest.</p>
<p>Finding # 2:</p> <p>Resolute FP Canada Inc's initial submissions of Annual Work Schedules and Annual Reports to the Ministry of Natural Resources and Forestry required revision and resubmission.</p>
<p>Finding # 3:</p> <p>Resolute FP Canada Inc's implementation of its compliance program did not meet its Compliance Plan direction and did not adhere to the directions in the Forest Management Plan or Annual Work Schedules.</p>
<p>Finding # 4:</p> <p>The underachievement of planned harvest, if continued, will have serious negative implications for the achievement of long-term management objectives related to caribou habitat.</p>

3.0 Introduction

This report presents the findings of an Independent Forest Audit of the Caribou Forest (CF or Forest) conducted by Arbex Forest Resource Consultants Ltd. The audit utilized a risk-based approach based on the 2019 Independent Forest Audit Process and Protocol (IFAPP). The audit term is April 1, 2014 to March 31, 2019. The audit scope covers the implementation of Phase II of the 2008-2018 Forest Management Plan (FMP) (years 7,8,9 and 10), the development and Year I implementation of the 2018-2020 FMP Extension, and the development of the 2020-2030 FMP up to and including Stage 3 (Review of Proposed Operations). As a result of planning delays, the audit assessed progress up to Stage 2, Checkpoint # 4 – Support for Management Objectives.

The Caribou Forest is managed by Resolute FP Canada Inc. (RFP or Resolute) under Sustainable Forest License # 542481. The CF lies within the MNRF Sioux Lookout District in the northern portion of the Northwest Region where its boundary coincides with the Area of Undertaking¹. Forest management records are maintained in the MNRF office in Sioux Lookout and the Resolute offices in Ignace and Thunder Bay. One Local Citizens Committee (LCC), based in Sioux Lookout, is associated with the Forest.

RFP has 14001 Environmental Management System Certification through International Standards Organization (ISO). The CF is certified as sustainably managed under the Sustainable Forest Initiative (SFI) certification system. The Caribou Forest was also Forest Stewardship Council (FSC) certified from 2009-2014.

The previous IFA (2014) was conducted by ArborVitae Environmental Services Ltd. The previous audit resulted in fourteen recommendations/findings. The auditors found that the SFL holder was in compliance with the terms and conditions of the SFL and recommended that the SFL be extended. This audit confirmed that the 2014 IFA recommendations have been appropriately addressed.

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 2019 Independent Forest Audit Process and Protocol (IFAPP) provides guidance in meeting the requirements of Ontario Regulation 160/04 made under the CFSA and further required in MNRF's Environmental Assessment Requirements for Forest Management on Crown Lands in Ontario (MNR-75). The scope of the audit is determined by the MNRF in specifying mandatory audit

¹ The MNRF has approvals under the Environmental Assessment Act to conduct forest management on Crown lands within central and northern Ontario. This area is known as the Area of Undertaking.

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 2019 IFAPP. The audit generally assesses licence holder and MNRF 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. 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.

Arbex Forest Resource Consultants Ltd. conducted the IFA in August 2019, utilizing a three-person team. Profiles of the audit team members, their qualifications and responsibilities are provided in Appendix 6. Details on the audit processes implemented are provided in Appendix 4.

3.2 Management Unit Description

The area of the CF is 7,180 km², which includes 1,326 km² of water. Fourteen percent of the total area (11% of the land area) is classed as unmanaged Crown land, most of which consists of the St. Raphael Provincial Park. Approximately 75% of the Managed

Crown Land² is comprised of production forest³. There is a very little patented or other land. Most of the federal land is in two First Nation Reserves. Table 2 shows the area of managed Crown land by land type.

Table 2 Area Summary of Managed Crown Land by Land Type

Managed Crown Land Type	Area (Ha)
Non-Forested	105,501 ⁴
Non-Productive Forest	31,841
Protection Forest ⁵	13,712
Production Forest ⁶	470,280
<i>Forest Stands</i>	399,938
<i>Recent Disturbance</i>	64,149
<i>Below Regeneration Standards⁷</i>	6,193
Total Forested:	515,833
Total Crown Managed:	621,334

Source: FMP-1 Table: Management Unit Land Summary in Hectares (2008 FMP)

The CF is located within the northern portion of the MNRF Northwest Region. It lies north of the Canadian National (CN) railway line and south of Lake St. Joseph. The Lac Seul Forest borders the unit to the west and Wabakimi Provincial Park is on the east side. The northern border coincides with the edge of the Area of Undertaking. The community of Savant Lake is situated on the southern border 380 km northwest of Thunder Bay. The town of Sioux Lookout lies approximately 70 km southwest of the unit. The Ojibway Nation of Saugeen Indian Reserve is located in the south-central part of the Forest, while the Mishkeegogamang First Nation is located on the northeast border. Other FNs with an interest in the CF are Slate Falls, Lac Seul and Cat Lake.

² Managed Crown Land includes forested land where forest management activities are permitted, as well as, non-forested areas and protected areas such as islands (Protection Forest) where forestry is not permitted.

³ Production forest is capable of supporting forest management.

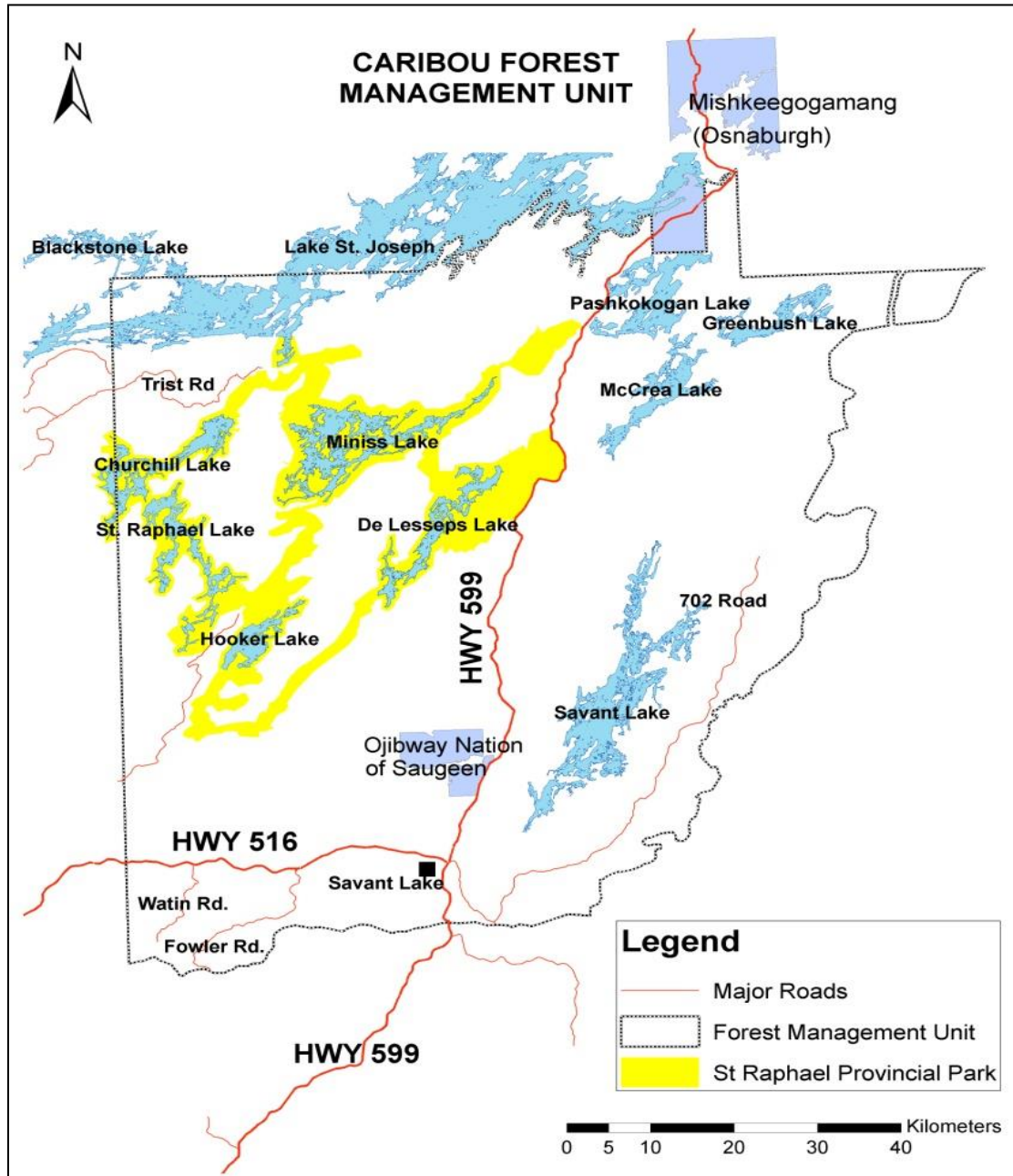
⁴ Includes 102,848 ha of water.

⁵ 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.

⁶ Production forest is land at various stages of growth, with no obvious physical limitations on the ability to practice forest management.

⁷ This area is deemed to have low stocking due to site limitations, natural disturbance or past forest operations.

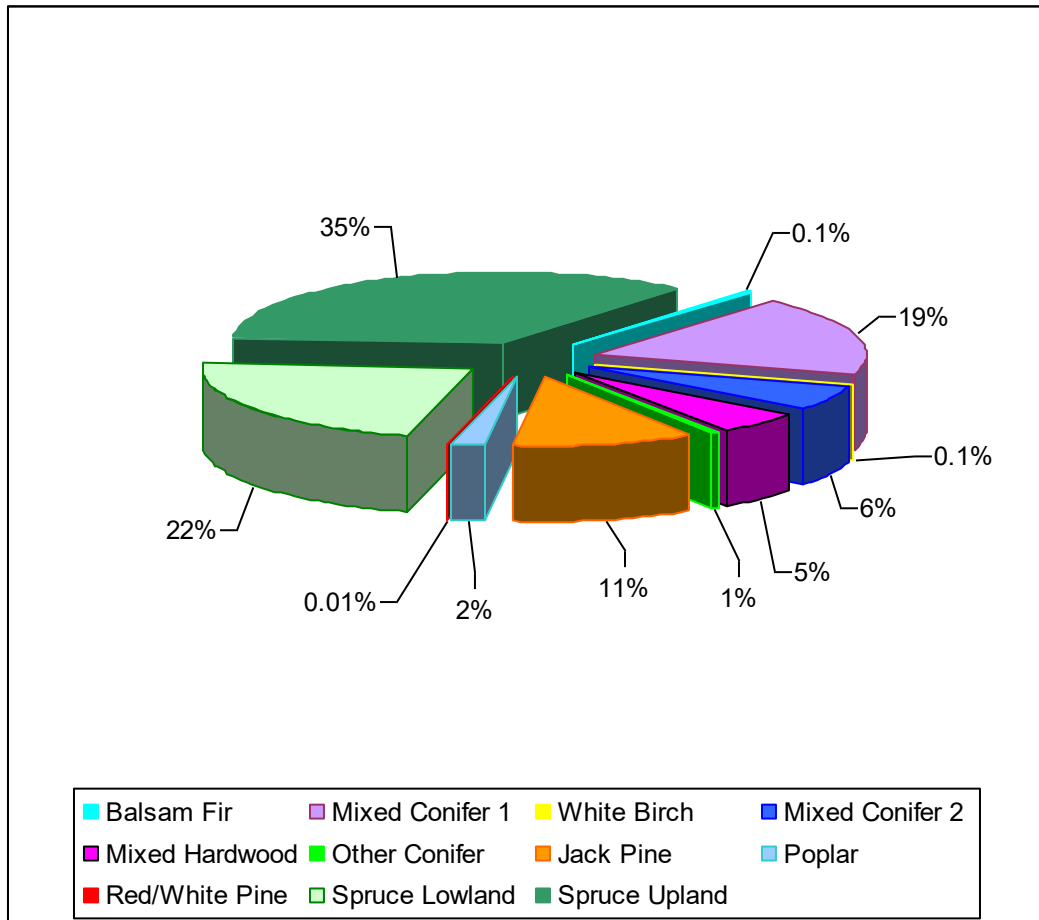
Figure 1 Location of the Caribou Forest



Forest cover is dominated by boreal conifer species such as spruce, jack pine and balsam fir. Intolerant hardwoods (poplar and white birch) are also common. White pine and red pine occur in localized areas. Periodic wildfires have led to the establishment of jack pine on the well-drained uplands and black spruce on the poorly drained lowlands, with most deciduous species occurring near lakeshores and watershed drainages. Upland spruce sites and lowland spruce forest units occupy 35% and 22% of the productive forest area respectively. Mixed conifer forest units occur on

approximately 25% of the productive forest land base. Stands dominated by jack pine occupy approximately 11% of the forested area. Red and white pine forest types occur infrequently occupying less than 1% of the landscape. Hardwood dominated stands occur less frequently with mixed hardwoods and poplar stands occupying 5% and 2% of the Forest respectively. Figure 2 shows the distribution of forest units by area.

Figure 2 Proportional Representation of Forest Units⁸



Source: 2008 FMP

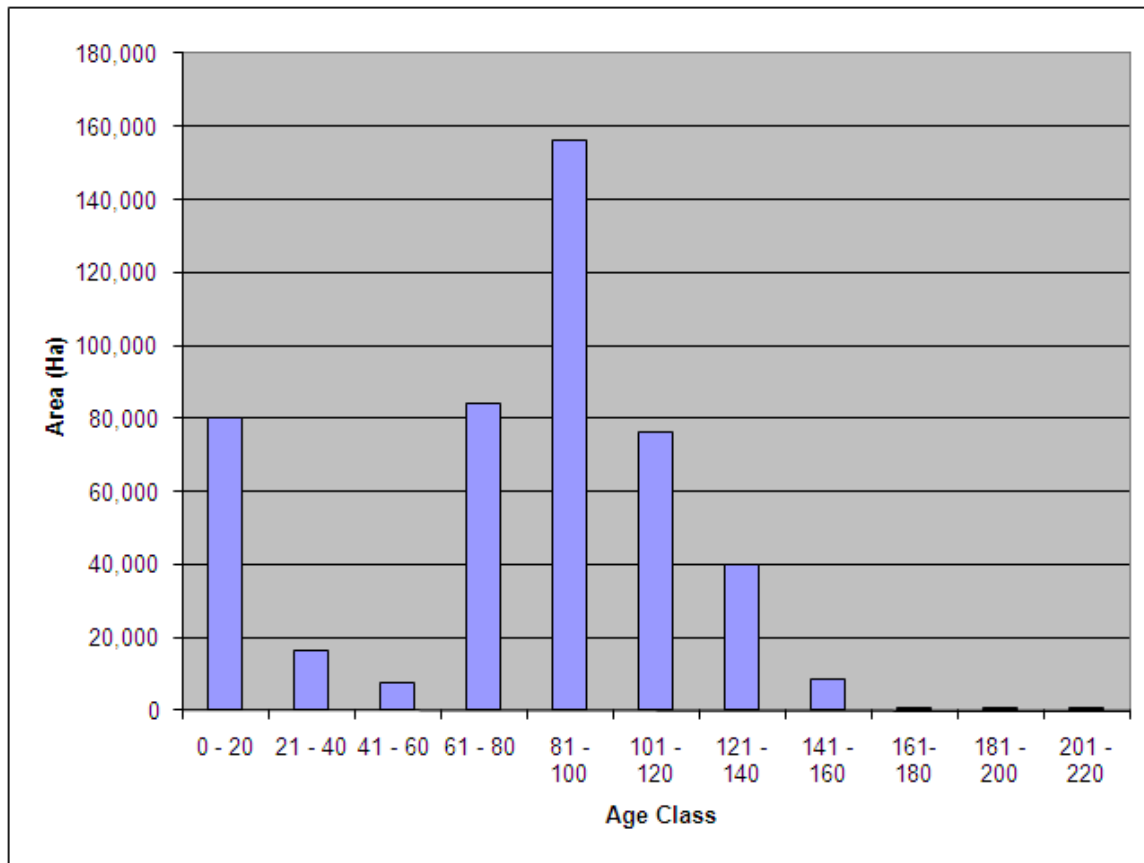
Figure 3 shows the broad age class area distribution on the Forest. The area structure is skewed toward mature and old forest reflecting a history of fire suppression and the lack of industrial harvesting prior to the 1970's. A considerable area was burned in 1918 which accounts for the significant area in the 61-100 year classification. Age class area imbalances exist for stands older than 80 years (particularly SPU, MC1, SPL, and PJ1

⁸ Forest Units are as follows: BF1= Balsam Fir Dominated, BW1=White Birch Dominated, MC1= Black Spruce/Cedar/Larch MW1=Jack Pine/Birch/Aspen MW2= Black Spruce/Aspen PJ1= Jack Pine, PJ2= Jack Pine/Black Spruce PO1=Poplar SP1=Black Spruce Lowland, SF1= Spruce/Fir/Cedar SP1=Spruce/Jack Pine.

forest units) and in stands with ages between 21 and 60 and older than 140 years. This age class area structure has significant forest management implications including;

- A reduced allowable harvest for a 40-year period between 2028 and 2068,
- The potential for declining stand yields and increased fuel loading as stands age and breakup,
- A decline in wildlife habitat associated with older forest cover (e.g. caribou).

Figure 3 Age Class Area Distribution - Crown Managed Production Forest



Source: 2008 FMP

The Forest supports a diversity of boreal wildlife species. The signature species is Woodland Caribou, which is classed as threatened.⁹ In addition to woodland caribou, the Forest provides habitat for other species of concern such as the wolverine, great grey owl and bald eagle. There are populations of moose and black bear that support a large tourism and recreational hunting industry.

⁹ By the Committee on the Status of Endangered Wildlife in Canada (COSEWIC).

The CF is situated within the Brightsand and Churchill caribou ranges¹⁰. Integrated Range Assessments completed by the MNRF indicate that it is “*uncertain if conditions within these ranges is sufficient to sustain caribou*”¹¹. The application of the Dynamic Caribou Habitat Schedule (DCHS) and caribou conservation is the main determinant for forest operations. The broad objective of the DCHS is to maintain a continuous supply of suitable, year-round habitat distributed both geographically and temporally across the landscape.

Key tourism areas include Savant Lake, Lake St. Joseph, St. Raphael Provincial Park, and the Miniss Enhanced Management Area (EMA). Designated tourism lakes include: Armit, Doran, Jabez, Kashawegogama, Lake St. Joseph, Marchington, McCrea, Medcalf, Pashkokogan, Raggedwood, Savant and Little Savant Lakes.

Other commercial opportunities include trapping, baitfish harvesting, wild rice harvesting and a commercial walleye fishery in Lake St. Joseph. Local residents use the Forest extensively for hunting, fishing, snowmobiling, camping, berry-picking and other recreational pursuits.

4.0 Audit Findings

4.1 Commitment

The Forest is certified under the Sustainable Forestry Initiative. In spite of the certification, we do have a concern. Our experience on a number of audits has revealed the difficulties associated with managing a Forest when offices and staff are located a considerable distance from it (i.e. Ignace is situated some 200 kilometers from the CF southern boundary). Routine oversight of operations, supervision and problem identification becomes difficult. While we do not have a Finding specific to the IFAPP commitment principle, we do provide a Finding (# 3) that indicates an increased level of oversight and attention to detail is required.

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

First Nation Communities

There are five Aboriginal communities in or adjacent to the Caribou Forest. The Mishkeegogamang First Nation (FN) and the Ojibway Nation of Saugeen FN are located

¹⁰ Caribou travel widely within the area of Continuous Distribution, and may be expected to occur anywhere within it over time, usually in association with larger areas of older conifer-dominated forest, peatlands or large lakes with islands (MNRF, Species at Risk Branch: State of the Woodland Caribou Resource Report: Part 1. (2014).

¹¹ MNRF, Species at Risk Branch. State of the Woodland Caribou Resource Report: Part 1. (2014)

within the Forest while Slate Falls FN, Lac Seul FN and Cat Lake FN have identified the CF as a traditional use area¹².

All FMPM notice requirements to the FN communities for the development of the 2018-2020 FMP Extension and the 2020 FMP were met. The MNRF maintains a logbook to record contact efforts with the various communities. Offers were extended to set up information sessions and/or community meetings as the planning process developed.

The Mishkeegogamang First Nation had some initial involvement in the forest management planning process but elected not to participate on the Planning Team. Saugeen FN representatives periodically participated in Stage 1 and 2 of the planning processes.

Aboriginal Background information and updated values information was produced and/or updated and was available for the planning process.

There were efforts by Resolute to develop and/or enhance existing communications and working relationships with all the FN communities. Most communities elected not to engage with the SFL holder. We note that the Saugeen FN and Resolute have developed a productive relationship which includes an Overlapping License Agreement. Employment opportunities in silviculture work (e.g. tree planting) were also provided to the FN and Resolute also provided support to assist the community access funding under the Natural Resources Canada Indigenous Forestry Initiative¹³.

The 2014 IFA provided a recommendation (Recommendation # 1) that the MNRF improve communications and increase meetings with the Mishkeegogamang FN. In response, the MNRF made an effort to increase communications with the FN and the community has expressed its interest in accessing more benefits from forest management activities. Recommendation # 2 of the 2014 IFA required that Resolute discuss training opportunities with the Mishkeegogamang FN. Resolute now has a staff member in Ignace with the responsibility to reach out to the FNs and explore forest management opportunities. In 2017, Mishkeegogamang FN was added to Resolute's list of potential suppliers for forestry contracting work within their Traditional Territory.

Our assessment is that both the MNRF and Resolute made reasonable efforts to respond to the 2014 IFA recommendations. The onus rests on the involved FN and Métis communities to respond to the offers to discuss potential benefits and employment. Our experience investigating FN and Métis involvement on numerous IFAs has revealed ongoing frustration by all the parties (i.e. MNRF, SFL holders and FNs). The MNRF usually does a good job of communicating information/invitations and the SFL holders have ongoing efforts to engage communities in various aspects of forest management (e.g. agreements, work arrangements). Throughout FMP development and implementation, the MNRF and SFL holder demonstrate sensitivity to FN and Métis cultural concerns and a desire for increased engagement. However, the FN response is

¹² No Métis communities were listed as having an interest in the CF.

¹³ The program provides funding to support Indigenous-led economic development in the forestry sector.

often limited. Interviews indicate that the lack of engagement by some communities is usually due to a combination of a lack of capacity (staffing, training and/or finances), a reluctance to move/work outside the community, a focus on broader governance issues versus local engagement, and a lack of continuity in participation based on changing leadership. We do note that, over time, there has been a gradual increase in the number of FN companies engaged in forest sector activities.

Our assessment is that the MNR met its FMP obligations and Resolute met its FMP and licence contractual obligations with respect to the involvement of FN communities in forest management planning, implementation and benefits.

Local Citizens Advisory Committee

There is one Local Citizens Committee (LCC) associated with the Forest (Sioux Lookout Local Citizens Committee). This committee was established in 1990 and is one of the longest functioning committees in Ontario. Members are appointed by the MNR District Manager. The Committee has responsibility for both the Caribou and the Lac Seul Forests. The membership represents a range of community interests and there are ongoing efforts to recruit new members as required. Several members expressed their concern that the committee has had limited success attracting younger members. There is a FN member on the membership list.

Meetings are held monthly with a break during the summer months. Our sample of meeting minutes indicated there was always a quorum in attendance. While the committee is primarily focused on forestry (e.g. Annual Work Schedules, Annual Reports, amendments, FMP planning) other agenda topics such as fisheries and wildlife are routinely part of the agenda. There has been ongoing participation of a LCC member on the FMP Planning team. The LCC minutes show the Committee had regular updates on the planning process.

Interviews with LCC members indicate there is a good working relationship with both the MNR and Resolute. Interviewed committee members made a point of expressing their appreciation with the routine attendance, involvement and direction of the MNR District Manager.

Our assessment is that the LCC is experienced, well-functioning and fully meets the requirements and intent of the Forest Management Planning Manual.

4.3 Forest Management Planning

The production of a 2018 FMP began in 2015 and was originally scheduled for implementation on April 1, 2018. As a result of the late delivery of the Enhanced Forest Resource Inventory (eFRI), the 2008-2018 Forest Management Plan (FMP) was extended for two years and was scheduled for implementation on April 1, 2020 (the plan extension is in force until March 31st, 2020). The FMP extension was also intended to provide Resolute with an opportunity to complete harvesting operations in currently

approved “A” blocks¹⁴. The completion of timber extraction and road decommissioning and rehabilitation of these blocks was intended to minimize the amount of harvest area to be rolled over into the 2020-2030 Caribou Forest FMP in order to optimize the 2020 FMP Dynamic Caribou Habitat Schedule (DCHS). Resolute was unable to complete harvesting in the “A” blocks due to market conditions and other factors (Table 3).

All FMPM requirements for the plan extension were met. An FMP Extension Proposal was prepared, and opportunities were provided to the LCC and FN and Métis communities to review and comment on the proposal. No official written comments were received during the development of the plan extension from either the general public or First Nation or Métis communities. The MNR did receive some verbal comments. These comments were appropriately addressed. There were no requests for an Individual Environmental Assessment (IEA) during Phase II Extension Planning. As required by the FMPM, the plan extension was approved by the MNR Regional Director.

The 2020 FMP is being developed in accordance with the phase-in requirements of the 2017 FMPM. The FMP Terms of Reference sets the schedule for plan preparation as follows:

- Stage One: Invitation to Participate October 2016
- Stage Two: Review of Proposed Long-term Management Direction August 2018
- Stage Three: Review of Proposed Operations January 2019
- Stage Four: Review of Draft Forest Management Plan – July 2019
- Stage Five: Inspection of MNR-Approved FMP – November 2019
- Final Plan Approval – February 2020
- Final Plan Implementation – April 1, 2020

As a result of delays in planning, work up to Stage Two, Checkpoint #4 was completed within the audit scope (August 2018)¹⁵. Delays in plan production are attributed to:

- New planning requirements for species at risk,
- Application of the Woodstock Model in the planning process,
- Requirements to determine and assess harvest areas available in DCHS A blocks and determine the suitability for harvest in the 2020 FMP, and

¹⁴ Operations in the FMP Extension are previously reviewed and approved in the 2008-2018 FMP.

¹⁵ Our interviews with RFP staff confirmed the following dates for checkpoint achievement in the IFA term:

- Checkpoint #2: Support for the Forest Classification and Current Forest Condition for the development of the LTMD - received January 3, 2019.
- Checkpoint #3: Support for Base Model Inventory and Base Model for the development of the Long-Term Management Direction - received January 21, 2019.
- Checkpoint #4: Support for Management Objectives - received March 17, 2019.

- A requirement to assess the implications of a new policy direction regarding caribou calving and nursing areas and conduct a habitat supply analysis of these areas.

A summary of the Long-Term Management Direction Planning was prepared which detailed the desired future forest condition, plan objectives (e.g. indicators and desirable levels), the selection process for preferred and optional areas etc. A preliminary determination of sustainability was included in the summary as required by the FMPM. Information sources for the development of the plan objectives and indicators included the FMPM, the Forest Management Guide for Boreal Landscapes (BLG) and Ontario's Woodland Caribou Conservation Plan (CCP). Eight management objectives and thirty-three associated indicators have been developed. A Woodstock model¹⁶ was utilized as the decision support tool during the development of the LTMD. The LTMD was endorsed by the Planning Team and presented to the LCC for review and comment. At the time of this audit the LTMD had yet to be reviewed by the general public. FMPM requirements for risk analysis were performed.

The 2014 IFA included a recommendation (# 3) that the 2019 FMP Planning Team provide documentation on the rationale for assumptions and decisions made during the development of the LTMD. This recommendation was appropriately actioned. Preferred and Optional harvest areas were selected as directed by the DCHS utilizing the Woodstock Model and are to be refined and balanced during Stage 3 of the planning process. Progress checkpoints and endorsements for work up to Stage 3 (e.g. planning inventory, management objectives checkpoint) were confirmed and are to be documented in the Analysis Package when it is prepared.

Elements of the LTMD include; objectives to create large landscape patches of similar ages within the DCHS in an attempt to ensure that all operable areas are allocated, the revision of the DCHS to a 120-year cycle (to address caribou habitat management), and lower planned harvest areas and volumes than forecast in previous management plans.¹⁷ Caribou habitat levels (refuge and winter) remained stable or increased over the long-term. The audit team concluded that a satisfactory balance of objectives was achieved.

Access planning and management requirements are dictated by the DCHS with some modification(s) to address stakeholder issues (e.g. trapline access) where feasible. Access planning was designed to:

¹⁶ 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. This tool will be the modelling tool used to develop the base model, preferred management strategy and identify draft operational blocks/operating areas.

¹⁷ The projected 10-year merchantable volume is 3,329,158 m³ of which 293,534 m³/year is SPF. The SPF volume is lower than the 2008 FMP forecast reflecting a more achievable harvest target.

- Minimize predation of caribou resulting from predators using roads as travel corridors,
- Minimize human disturbance in caribou areas,
- Protect caribou calving sites,
- Minimize operational costs and constraints,
- Recover productive forest land base, and
- To closer emulate natural disturbances.

Access planning was well done and met FMPM, AWS and guideline requirements.

We conclude that forest management planning (that occurred within the audit scope) was planned in accordance with the requirements of the Phase-in provisions for the 2017 FMPM and that the proposed FMP targets are consistent with the achievement of plan objectives and forest sustainability.

4.4 Plan Assessment and Implementation

Harvest

Harvest targets were not achieved during the audit term reflecting poor market and economic conditions¹⁸ for forest products in the northwest region. This resulted in the curtailment and closure of several mills receiving wood from the Forest. A number of the remaining mills regularly prioritize wood deliveries from other Forests with lower wood costs. As a result, Resolute has experienced difficulties securing and retaining harvest contractors.

The implementation of the CCP dominates all aspects of the Caribou Forest's planning, operations and long-term direction. All harvest operations were confined to "A" blocks. The harvest has not achieved planned levels over the past four planning cycles with the harvest area being the lowest during the 2008-2018 period where only 14% of planned harvest (annualized) was achieved (Figure 4). In the last two management periods only two "A" blocks have been completed and "closed" (Normandy and Kiwi). We note that a large portion of the available harvest of the DCHS was originally allocated to Buchanan Forest Products Ltd. (BFPL), through a third-party license, to provide sawlogs to the McKenzie Forest Products sawmill. The BFPL operations harvested only sawlogs in multiple (8) DCHS blocks. These blocks remained unfinished when Buchanan Forest Products declared bankruptcy. Following the BFPL bankruptcy, Resolute did initiate efforts to complete and close 'A' harvest blocks in which BFPL sawlog harvest operations had occurred. The predominance of primarily pulp materials within these partially harvested blocks presents significant challenges for additional harvests due to the lack of economical market locations. The status of the 2008-2020 open caribou blocks is provided in Table 3.

¹⁸ Currency exchange rates, increasing fixed costs resulting from mill closures etc.

Table 3 Status of 2008-2020 Open Caribou Blocks

Block Name	Harvest Contractor	Status/Comments
Trist	Buchanan Forest Products Ltd.	Additional areas are scheduled for harvest after changes are made to the Caribou Calving AOC and Tourism AOC. There may be some harvest before the Plan end. There are ongoing discussions with other companies to chip before the end of the Plan.
Kiwi	Buchanan Forest Products Ltd./Resolute	The harvest is completed, and the block is closed.
Normandy	Buchanan Forest Products Ltd.	Harvest is completed and the Block is closed. All roads have been removed and/or closed by Resolute.
Watin	Resolute	Harvests in the southern portion of the block is completed. Renewal and tending obligations in this portion of the block have been met, Road decommission in the sector is planned. The northern portion of the block is scheduled for harvest before the end of the plan term (Resolute is under discussions with other companies to conduct chipping operations). Harvest in some segments of the block are deferred to accommodate First Nation interests.
Island Lake	Resolute	There has been significant harvest over the past two years with block completion expected by April 30, 2020.
Pintail	Resolute Forest Products & Buchanan Forest Products Ltd.	There has been significant harvest over the past two years with block completion expected by April 30, 2020.
Open	Resolute	Harvesting was conducted over the past two years. There is a large unharvested area which is primarily hardwood. Conifer harvest is expected to be completed prior to end of plan term.
Jutten	Resolute	The majority of harvest is completed. The remaining area is expected to be completed by April 30, 2020.
Copperhead	Resolute	The majority of the harvest is completed. Remaining areas of marketable wood are scheduled to be cut by April 30, 2020.

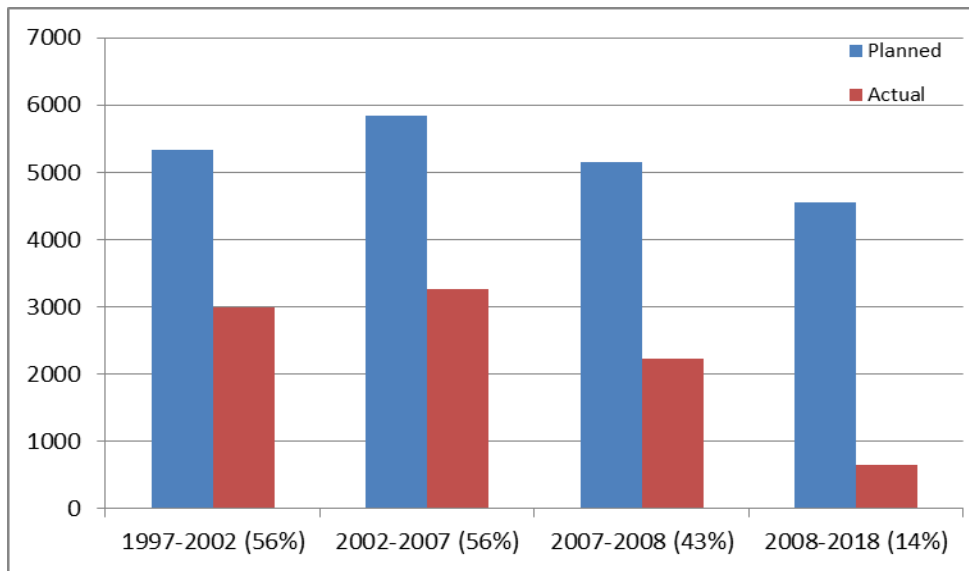
Block Name	Harvest Contractor	Status/Comments
702 Fire	Resolute Forest Products & Buchanan Forest Products Ltd.	Areas of marketable wood are scheduled to be harvested by April 30, 2020.
Hillside	Buchanan Forest Products Ltd.	Portions of block reallocated to B, C & D harvest periods. Harvesting is currently underway. Uncut areas will be re-allocated in the 2020-2030 FMP.

Source: Resolute Forest Products

The continuing inability to achieve planned harvest levels over four planning terms (Figure 4) and other harvest related objectives (i.e. large aggregate areas of clearcut) is resulting in the partial achievement or non-achievement of FMP objectives associated with harvest activities (e.g. planned silviculture, creation of caribou habitat, decommissioning of access etc.). The chronic under-harvest is significant in that it will impact the achievement of the Caribou Conservation Plan (Finding # 4), is a lost economic opportunity, and will present future problems for forest management as stands break up and transition to a younger age cohort. The opportunity to control stand composition for caribou habitat may also be lost should stands be by-passed due to operability constraints.

The 2020 FMP will attempt to address the issues of low harvest levels and the completion of harvest blocks by deferring unharvested blocks for future harvest. Uncut areas within partially harvested blocks have been modified and re-designated within the DCHS. These adjustments are intended to maintain the overall integrity of the DCHS and facilitate the harvest in open DCHS mosaic blocks until the end of the current term. Active operations remaining at plan end are to be bridged into the next FMP as required by the FMPM.

Figure 4: Planned vs. Annualized Actual Harvest Area over Four FMP Terms.



Source: 2019 Trends Analysis Report

Table 4 presents the level of harvest area achievement for the 2014-2019 management term. Conifer utilization exceeded hardwood utilization with pure conifer forest units (PJ1, SPL, SPU, BF1, OC1) comprising 65% of the area harvested.

All harvest operations utilized the clearcut silvicultural system. No salvage harvests or harvest for biofibre occurred during the audit term.

The audit inspected 16% of the area harvested during the audit term. The inspected harvest blocks were approved for operations in the Annual Work Schedules (AWS). Area of Concern prescriptions in or adjacent to harvest blocks were properly implemented. Residual tree retention within blocks was generally in accordance with the applicable guideline (e.g. Natural Disturbance Pattern Emulation Guide (NDPEG), Stand and Site Guide (SSG)). The audit team did not observe any instances of significant environmental damage related to harvesting on the inspected sites.

Table 4 Actual vs. Planned Harvest Area by Forest Unit (2014-2019)

Forest Unit	5 Year Planned Harvest (Ha)	Actual 5 Year Harvest (Ha)	Actual vs Planned %
BF1	20	0	0
Bw1	15	0	0
MC1	3464	514	15
MC2	860	195	23
MH1	1597	349	22
OC1	106	2	2
PJ1	1759	340	19
PO1	317	130	41
SBL	4990	606	12
SPU	9670	1242	13
Total	22,798	3,378	15

Source: 2019 Trends Analysis Report

We did identify some concerns with the delivery of the harvest program. We were informed by MNR and SFL staff that on some sites (702 Fire Block), harvested wood was left at roadside and merchantable wood had been by-passed. A number of FOIP inspection reports were still outstanding for this site and other blocks harvested in 2014-2015 appear to have been simply overlooked (i.e. Watin Block-see discussion in Finding # 3). We were also informed by the SFL holder staff that the wood left at roadside is no longer merchantable and that it will, or has been, scaled for the payment of Crown dues and will be burned to recover productive land.

Slash Management

The 2014 IFA issued a “Best Practice” for the “*adoption of creative ways of minimizing the loss of productive area due to roadside slash and chipper debris*”. This audit found that an effective slash and chipper debris management program had been implemented.

During the audit period several slash and debris management strategies were implemented. Strategies for the management of logging slash included “beehive” piling and/or slash pile burning. The implementation of cut-to-length harvest systems also distributes debris within the cutover rather than at roadside.

Debris from chipping operations were distributed within the cutover, utilized in road construction or for erosion abatement. In some instances, mineral soil was mixed with debris in chipper pads to augment planted seedling survival. On one site visited, the harvest contractor had distributed chip debris on skid trails to reduce potential site damage by logging equipment.

The MNRF conducted high complexity prescribed burns to recover areas occupied by linear slash piles left by Buchanan Forest Products Ltd. following its bankruptcy.

Area of Concern Management

AOC prescriptions to protect identified values were completed and implemented as required in the 2008 FMP and carried through into the 2018 FMP Extension. Our interviews indicated there was appropriate information to meet planning requirements and the MNRF indicated there was adequate funding to collect values information. Prescriptions are included in the AWSs and reviewed for approval by the MNRF. AOC documentation included a section for an analysis of alternatives to protect the value should that be required. Public input with respect to values was documented, verified and incorporated on values maps (as appropriate). We randomly sampled three of 15 AOC prescriptions in each AWS, assessed them against the applicable guidelines and confirmed that they were in accordance with MNRF direction. During our field inspections we assessed AOC implementation both visually (e.g. residual trees) and with aerial photography (e.g. buffers).

During the audit term, the MNRF and Resolute completed 22 Forest Operations Information Program (FOIP) inspections related to Access. There was one Not in Compliance related to trespass on a reserve around a Goshawk nest. We reviewed the Resolute's training process and determined that it has a training program for contractors that includes detailed information on wildlife guidelines, including a field booklet with information/instructions related to AOC protection and species at risk.

Our assessment is that values identification and the development and implementation of AOC prescriptions met all FMPM requirements.

Renewal, Tending and Protection

Site Preparation (SIP)

During the audit term there was a shortfall in the achievement of planned site preparation targets (11% of planned) due to the lower than anticipated harvest (Table 5) and field assessments that indicated site preparation was not required on some areas.

Areas designated for site preparation (SIP) have historically been treated using passive disc trenchers and our site inspections indicated that on much of the area the treatment was effective in exposing mineral soil. We did observe a limited number of sites where the presence of heavy slash/rock outcrops or thick duff limited the effectiveness of the

passive trenchers (passive trenchers can bounce after striking debris and may not penetrate areas of thick duff). On these sites hydraulic SIP equipment would result in more mineral soil exposure. We provide an observation rather than a finding with respect to matching equipment to site conditions since, based on our sample, the number of sites at issue was low. We did not observe any significant site damage associated with site preparation operations.

No chemical site preparation treatments were implemented during the audit term due to the lack of sites suitable for treatment.

Table 5 Area (Ha) of Actual vs. Planned Site Preparation (2014-2019)

Site Preparation Treatments	Planned 5 Year (Ha)	Actual 5 Year Achievement (Ha)	Actual vs Planned %
Mechanical SIP	13,960	1,602	11
Chemical SIP	0	0	0
SIP Total	13,960	1,602	11

Source: Annual Reports

Renewal

During the term of the audit there was an underachievement of planned renewal activities (Table 6) as a result of the low harvest levels, however; the level of renewal was generally in balance with the area harvested. In 2015/16, there were no renewal activities or natural regeneration activities reported in the Annual Reports (ARs). No artificial renewal occurred in 2016/17.

All observed renewal treatments were consistent with the Silviculture Ground Rules (SGR), and the mix of treatments was proportional to the FMP renewal strategies. Natural renewal is typically prescribed for hardwood dominated forest or conifer in lowland areas. Our inspections of harvest blocks managed for natural renewal found the blocks were well stocked to the desired tree species.

Artificial renewal treatments were implemented on upland sites targeted for conifer renewal. Our inspections found that that most of the sites were well stocked to the desired crop species. We did encounter a few sites where stocking densities were low. Resolute monitors renewal sites and implements an infill planting program to achieve desired stocking levels to crop species in instances where the desired stocking density is not achieved following tree planting.

Table 6 Area (Ha) of Actual vs. Planned Renewal Treatments (2014-2019)

Renewal Treatments	Planned 5 Year (Ha)	Actual 5 Year Achievement (Ha)	Actual vs Planned %
Natural Renewal	10,515	781*	7
Artificial Renewal – Plant	9,885	517	5
Artificial Renewal – Seed	5,340	833	16
Total Renewal	25,740	2,131	8

Source: Annual Reports.

*2018-19 natural renewal estimates are included in this number as it is not available and not required until November 2019.

Renewal Support

Renewal support activities were sufficient to meet the projected renewal program requirements during the audit term.

Tending

Aerial herbicide tending treatments were implemented on 24% of the planned area during the audit term. No manual tending was completed. Our site inspections indicated that the tending program was effective in controlling competing vegetation.

Protection

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

Access Management

Approximately 12 km of primary road and 26 kilometres of secondary roads were constructed. Thirteen water crossings were installed. The field audit confirmed that road construction, water crossing installations, and road maintenance activities conformed to the FMP, AWS and guidelines.

The construction and persistence of roads in caribou habitat is problematic for caribou management as roads provide travel routes for predators and increase browse for alternate species such as moose¹⁹. Road decommissioning and reclaiming was

¹⁹ The influence of roads on caribou is complex; resource access roads are associated with higher risk of predation by wolves, but the dominant impacts associated with roads with high volumes of vehicle traffic may be more related to caribou avoidance of traffic. Efforts to mitigate the effect on caribou of roads might benefit from selecting approaches that address the dominant impacts associated with different road types. (MNRF, Species at Risk Branch. State of the Woodland Caribou Resource Report: Part 1. (2014)).

identified as an issue in the 2014 IFA. Recommendation # 8 required that “*Regional MNRF staff provide clear criteria and expected outcomes for decommissioning and reclaiming of roads to remove linear features and increase productive forest.*”

Audit term road decommissioning initiatives included water crossing removal, constructing berms, site preparation and seeding of decommissioned roads. Road decommissioning and reclamation strategies are an on-going topic of debate between MNRF staff and the SFL holder. MNRF staff expressed general dissatisfaction with the site preparation and seeding strategies and advocated for more aggressive treatments to de-compact roadbeds and re-vegetate decommissioned roads. During the field audit we viewed a road that had been decommissioned and then scarified and seeded. The treatment had established seedlings on the roadbed, but it is too early to gauge the potential effectiveness of the strategy in reducing the use of the roads as travel corridors by predators or restricting vehicular traffic. Since longer term monitoring and/or research is required to determine the effectiveness of the reclamation strategies we do not provide a finding.

4.5 System Support

Resolute has SFI certification that indicates the IFAPP Human Resources requirements have been met.

We did determine that some of the Resolute’s tracking and quality assurance programs were not effective. Some initial ARs and AWSs required resubmission due to errors and omissions. We also found instances where tracking/monitoring systems were ineffective (e.g. recording of harvest in the Watin Block) and there were irregularities associated with the delivery of the compliance program (Findings # 2 and 3).

4.6 Monitoring

Compliance Monitoring

Compliance monitoring of forest management activities is shared by Resolute and the MNRF. Resolute is responsible for field inspections for compliance and non-compliance, reporting to the MNRF, implementing corrective or preventive measures, and providing training and education to contractors and staff. The MNRF audits industry compliance inspections, assesses the significance of instances of non-compliance and determines corrective and/or enforcement actions.

Roads with low levels of vehicle traffic likely present more of a predation risk to caribou; however, caribou also avoid busier roads, likely due to the risk of traffic-related disturbances (MNRF, Species at Risk Branch. State of the Woodland Caribou Resource Report: Part 1. (2014)).

Resolute prepared a Compliance Plan as required by the FMPM and in accordance with the Guidelines for Industry Compliance Planning (2008 FMP). Compliance objectives and targets were provided in each of the AWSs. The Plan and AWS submissions met FMPM content and format requirements. The MNRF completed Annual Compliance Operation Plans (ACOP) that provided targets, assigned responsibilities and reported year end results.

A summary of submissions to the Forest Operations Information Program (FOIP) shows that during the audit term the SFL holder and MNRF completed a total of 85 inspections. The SFL holder completed 67% of the inspections and MNRF completed 33%. An in-compliance rate of 98 percent was achieved.

The 2014 IFA provided a recommendation (# 12) that both the Company and MNRF District ensure that FOIP reporting timelines were met. In response the MNRF initiated a quarterly tracking system to ensure FOIP submissions met timing deadlines. We reviewed a sample of 10 MNRF submitted FOIPs and determined that they generally adhered to the required timelines.

The SFL holder response to the recommendation was to commit to identifying FOIP reporting deadlines as a priority in the AWS, and to develop and implement a tracking system for activity on harvest blocks. We sampled 29 Company FOIPs and determined that approximately 45 percent did not meet timing deadlines (Finding # 3). We also determined that harvesting activities were not effectively tracked resulting in instances of late reporting and/or no reporting. In addition to the partial failure of the Company's tracking system, we note that it also did not respond to repeated notifications and written warnings, from the MNRF to complete FOIP reports on harvesting activities (Findings # 2 & 3).

Our sample of FOIPs submitted by Resolute indicated approximately 20% (12) of the inspections were completed using aerial photography. All of these inspections were for renewal activities (i.e. slash pile burning and aerial spray). We acknowledge that *The Compliance Handbook* indicates that aerial photography may be used as an inspection tool but does not provide examples of where photography is most appropriate or effective. Our assessment, supported by interviews with MNRF staff, concludes that it is most appropriate for specific observations (e.g. presence and size of an AOC buffer) but not to inspect an entire activity (e.g. spray program) as for example, posted spray notices would not be visible on aerial photography (Finding # 3).

Over the audit term there was an in-compliance rate of 98%. Our review of inspection reports indicated that the SFL holder only identified one Operational Issue in its fifty-seven inspections filed. The MNRF completed 28 inspections and identified 23 Operational Issues. The discrepancy in reporting of Operational Issues lead us to concluded that the SFL holder was taking corrective action(s) to resolve the identified issue(s) and reporting the inspection as an in-compliance finding (Finding # 3).

We concluded that the MNR completed an appropriate number of inspections based on the harvest levels and the history of the contractors. The inspection activity reflected directions in the annual ACOP and met required submission schedules.

Resolute, while producing the required Compliance Plan and AWS compliance submissions, failed to follow through with the implementation of its commitments. There were shortfalls with respect to submission timelines, failure to report activities on the Forest, irregularities with respect to inspection practices and the partial failure of tracking systems (Finding # 2 & 3).

We do note a focused effort on the part of the SFL holder to upgrade its files and correct past shortfalls. FOIP Inspections for past activities (e.g. 2013, 2014) were being completed and posted during the audit term and at the time of the field audit. Resolute is actively moving forward to identify past problems, complete required inspections and post required inspection reports. Various remedies for identified issues are being implemented (e.g. scaling of wood left in the bush, payment of outstanding dues on abandoned wood and burning piles of unmerchantable wood).

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, Planting Quality), and post-tending assessments. We reviewed evidence that monitoring programs were implemented.

Free to Grow Survey (FTG)

During 2008-2018 FMP term, 6,547 ha was harvested, and 13,900 ha was surveyed for free to grow status. Ninety-one percent (12,650 ha) were declared as successfully regenerated and FTG. On the area declared not regenerated trees had not reached the FTG height standard, were insufficiently stocked to crop trees, or required additional silvicultural intervention (i.e. tending).

We concluded that a backlog in the area requiring FTG survey is not accumulating²⁰ based on the number of years post treatment when surveys are scheduled (10-15 years) and the average annual rate of harvest (approximately 1,630 ha) achieved in the past twenty years.

Our field sampling generally substantiated the reported stand descriptions and forest unit designations.

Assessment of Past Silviculture Performance

The Trend Analysis offers some insights as to past silviculture performance through the assessment of silviculture and regeneration success. As noted in the section above,

²⁰ The Trend Analysis reports that 19,844 ha are pending assessment for FTG status.

91% of the area surveyed in the 2008 FMP term was declared successfully regenerated and FTG.

An objective of the FMP (Objective 9b) was to ensure that regeneration efforts in harvested stands minimize the hardwood component and the conifer component is maintained or increased. FTG data indicates that there is a 93% silviculture success rate for conifer dominated forest types²¹. The area occupied hardwood dominated forest types (comprised of amalgamated hardwood dominated forest units) remained virtually unchanged (0.4% increase). Tending and release operations are implemented (on an as required basis), to control hardwood competition and promote the ingress and survival of conifer species.

It is also noteworthy that area occupied by the MC1 forest unit (mixed conifer) is increasing due to the natural ingress of jack pine on harvested areas where jack pine was present in the original stand. The high level of natural ingress of jack pine has been facilitated by site preparation treatments and the predominance of course dry soils associated with mixed conifer sites.

Silviculture Effectiveness Monitoring (SEM)

In reference to the SEM program Recommendation # 4 of the 2012 IFA, the Auditor General Report of Ontario stated *“To ensure the SEM program adequately assesses the effectiveness of industry reported renewal efforts in regenerating Crown Forests, the MNR district offices should complete all core tasks²² as outlined in the program and follow-up with forest management companies on sites found not to have met the free-to-grow criteria to ensure that companies subsequently took appropriate remedial regeneration measures.”* In response to the Auditor General recommendation, MNR Regional Operations Division committed to *“take steps to improve the completion rate of the core tasks prescribed under the SEM program.”*

The audit team had concerns with the delivery of the SEM program and its capacity as implemented to meet program objectives. The implementation of the SEM program was not consistent over the audit term due to other District priorities, Regional Office direction and the lack of FTG surveys conducted by the SFL holder. Core Task # 1 was completed (2014, 2015, & 2018), Core Task # 3 in 2014 and Core Task # 4 (road decommissioning assessments, fertilization trial and assessment of spruce renewal pathway for FMP planning) in 2015, 2016 and 2018. No SEM program work was undertaken in 2017 because Resolute did not submit FTG data.

²¹ Amalgamated conifer dominated forest units.

²² Core Tasks are as follows Core Task #1: Verify the free-to-grow results reported in a recent SFL Annual Report, Core Task #2: Conduct field surveys to determine if stand composition has changed since the FTG declaration and confirm blocks are tracking towards the expected future forest condition. Core Task #3: To improve core competencies and understanding of silviculture systems and treatment packages, conduct field visits to view current or recent silviculture activities and Core Task #4: Participate in a project to assess a forest unit or silviculture activity requiring attention or investigation.

SEM Core Task # 1 sampling protocol provides direction on sampling intensity (10%). Strict adherence to the protocol by the District resulted in a small sample size which, in the opinion of the audit team, has limited value in the extrapolation of sample data for the assessment of the renewal program or use in the development of forest modelling inputs and silviculture ground rules.

We were informed by MNR District and Regional staff that the SEM program had been and continues to be under review²³. As a result, there were directions from the Regional Office indicating that some of the Core tasks did not need to be completed, and the process of District/Regional priority setting resulted in other Core tasks not being completed. No formal reports were completed for Core Task # 4 initiatives and the reporting on FTG survey results did not include any information with respect to findings and trends, the rationale for findings and areas requiring further investigation etc. The shortcomings in reporting are concerning. We note that the MNR currently does not provide a format, or content guidelines, with respect to reporting of SEM results. Effective learning, continuous improvement and improved decision-making requires the documentation and sharing of outcomes in order that new knowledge can be transmitted to others.

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 operations prescriptions in achieving the desired forest unit must be reported and understood to facilitate reporting on forest sustainability and to provide reliable information for forest management planning²⁴. We provide Finding # 1 to address our concerns with the scope and delivery of the SEM program.

Exceptions Monitoring

Exceptions monitoring is carried out to determine the effectiveness of prescriptions included in forest management plans that are not recommended in the MNR forest management guides²⁵. Full tree logging is listed as a "*not recommended*" practice on shallow sites²⁶ (ecosite12) in northwestern Ontario. The Trend Analysis reports that the requirements of the Full Tree Harvesting of Ecosites 11 and 12 in Northwestern Ontario: Monitoring Procedures and Best Management Practices protocol were implemented,

²³ Ontario's SEM program is in a state of transition. Provincially, the program is being revised as part of the Silviculture Enhancement Initiative (SEI), the intent of which is to improve the policies guiding Ontario's silviculture program. (A risk-based approach to regional silvicultural effectiveness monitoring analyses. MNR. Information Report IR-06, 2016).

²⁴ Information collected during silviculture effectiveness monitoring assists in the determination/assessment of the extent to which regeneration efforts meet the regeneration standard. The information also aids in the assessment (over time) of the effectiveness of the SFL holder silviculture program, conformance of silviculture activities with the FMP, and forest sustainability.

²⁵ Silviculture Guide to Managing for Black Spruce, Jack Pine and Aspen on Boreal Forest Ecosites in Ontario (1997)

²⁶ Total soil depth is less than 20 cm.

and no issues were reported. We did not observe any significant incidences of environmental damage arising from harvest operations during the field audit.

Forest Renewal Trust Specified Procedures Report

The Forest Renewal Trust (FRT) provides dedicated funding (i.e. reimbursement of silviculture expenses) to renew the forest according to the standards specified in the FMP. Our site inspections of areas 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 through industry and MNRF FOIP inspections, the course of normal operations²⁷ and in accordance with the FMP direction. Monitoring results are evaluated for follow-up action on a priority basis in consideration of the risk to public safety, environmental concerns and available resources.

The FMP provides direction on primary, operational and existing roads that includes road identifiers, information on alternate corridors, an environmental analysis, use management strategies and monitoring. Supplementary Documentation 8.5.1 provides detailed explanations, strategies and operational details with respect to road access provisions and transfer of decommissioned roads to the Crown. Monitoring provisions:

- While the road is in use for forest management purposes (e.g. harvest, renewal, tending and hauling activities), it will be monitored on an ongoing basis with bridges inspected at least once a year. When the road is not in use for forest management purposes, monitoring will be based on a schedule of specific roads to be inspected. This yearly schedule will be based upon a risk assessment approach with emphasis on the potential values that could be impacted (fish habitat) and the potential for public safety concerns.
- Monitoring may occur as part of aerial assessments of reforestation success (i.e. FTG surveys). In addition, all staff and contractors report any existing or potential concerns while traveling on roads throughout the forest.

A review of FOIPs related to Access during the audit term indicated one Not in Compliance (NIC) for an incursion into an AOC. During the audit period there were no NICs associated with maintenance activities.

Both Resolute inspections and MNRF compliance planning and monitoring had a focus on water crossings. MNRF reviewed water crossing installations, repairs and removals in accordance with the most recent water crossing protocol (2017). In situations where culverts are plugged by beavers the company has an agreement with local trappers for

²⁷ All staff and contractors are required to report any issues regarding roads and water crossings encountered while travelling in the Forest.

removal. Conditions on culvert replacements includes a review of values, AOC application and mitigation measures associated with the construction.

Forest Aggregate Pits (FAP)

Resolute tracks the status of forestry aggregate pits in its Geographic Information System (GIS). The audit team was provided with evidence of Resolute contractor training on pit management.

During the field audit we inspected both operational and rehabilitated forestry aggregate pits (Table 8). The inspected operational pits met FMP standards and the decommissioned pit had been properly rehabilitated.

Annual Reports (AR)

Annual Reports were available for each year in the audit scope except for the 2018-2019 AR, which is not required until November 15, 2019. As per IFAPP requirements a Trends Analysis was prepared for the audit in accordance with the requirements of the 2017 FMPM.

The content of the initial reports did not consistently meet FMPM requirements and based on MNR review a second submissions of the reports were required (Finding # 2). The ARs were presented to the LCC as directed by the FMPM.

4.7 Achievement of Management Objectives & Forest Sustainability

FMP objectives are monitored annually and formally reported on in the Year Ten Annual Report. Appendix 2 provides more details on our assessment of plan objective achievement.

The following trends identified in the 2019 Trend Analysis Report are significant:

- Planned harvest levels (area and volume) have not been achieved resulting in plan targets for silviculture linked with the harvest to be underachieved.
- The chronic under harvest (15% of planned) has negative implications for the provision of caribou habitat and will delay the achievement of diversity objectives.
- The low harvest levels have negative implications to support community stability and economic activity due to the reduced level of road construction and silvicultural opportunities.

The Report Author concludes that *“in general, objective achievement to date is within an acceptable range, on track, or moving toward desirable levels for the associated indicators”* and that *“the implementation of planned operations to date are moving towards the achievement of plan objectives identified in the Forest Management Plan for the Caribou Forest 2008-2020. FMP implementation is supporting the sustainability of the Crown Forest.”*

In our assessment of forest 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. Our field site visits, document and record reviews and interviews also informed our sustainability conclusion. We conclude that the achievement of long-term forest sustainability as assessed by the IFAPP, is not at risk although we have a concern that continued low levels of harvest activity will negatively affect the achievement of CCP habitat objectives (Finding # 4).

The sustainability 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 was sophisticated and demonstrated that the planned operations met the intent of the LTMD.
- FMP objectives and targets are being achieved or progress is being made towards their achievement.
- 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 were aligned with the level of harvest and an effective program is being implemented as observed during the field audit.
- Recommendations and actions from past IFAs have been satisfactorily addressed.

4.8 Contractual Obligations

We concluded that Resolute FP Canada Inc. is substantially in compliance with the terms and conditions of the licence agreement (See Appendix 3).

The IFAPP requires auditors to assess the effectiveness of the actions developed to address the recommendations of the previous audit. The previous IFA resulted in fourteen recommendations with five directed jointly to the SFL holder and MNRF District, four directed to the Regional Office and five to Corporate MNRF. Two recommendations were carried over from the 2009 IFA. Three Best Practices were noted. The Action Plan Status Report indicates that most of the recommendations directed at the SFL holder and the District Office have been addressed. In instances where the action is on-going or partially complete progress reflects the fact that the

2019 FMP plan has not been completed. Recommendations directed to Corporate MNRF were all appropriately actioned.

4.9 Concluding Statement

The implementation of the Caribou Conservation Plan dominates all aspects of the Caribou Forest's planning, operations and long-term direction. The economic downturn in the forest industry, the idling or closures of receiving mills, the location of the Forest relative to processing mills, currency exchange rates, and the legacy of BFPL partial harvesting in multiple blocks have contributed to the Resolute's inability to achieve planned harvest levels. The continuing inability to achieve planned harvest levels and other harvest related objectives (i.e. large aggregate areas of cut blocks) is resulting in the partial-achievement or non-achievement of FMP objectives associated with harvest activities (e.g. achievement of planned silviculture, creation of caribou habitat, decommissioning of access etc.). The chronic under-harvest is significant in that it will impact the achievement of the Caribou Conservation Plan and is a lost economic opportunity.

It is our assessment that Resolute FP Canada Inc. delivered an effective silviculture program. However, the audit did identify a number of shortcomings with respect to the delivery of the Compliance Program which included delays in reporting of Forest Operations Information Program inspections and/or the failure to complete inspections. Instances of wasteful practices and the by-pass of merchantable stands of timber were not fully reported. We note that Resolute FP Canada Inc. is actively addressing issues associated with the delivery of its compliance program.

Our review of development process for the production of Annual Reports and Annual Work Schedules identified issues associated with initial report submissions which suggest that a quality control process was lacking or ineffective.

The audit team had concerns with the delivery of the SEM program and its capacity, as implemented, to meet program objectives. The implementation of the SEM program was not consistent over the audit term due to other District priorities, Regional Office direction and the lack of FTG surveys conducted by the SFL holder. District reporting on SEM was, in the opinion of the team, deficient. We concluded that the implementation of the MNRF SEM program was unsatisfactory.

With the exception of the shortcomings identified and, with consideration of the challenges which affect the delivery of the forest management program on the unit (e.g. proximity to wood markets, recruitment and retainment of harvest contractors, forest stand attributes, silviculture and access requirements of the Caribou Conservation Plan etc.) associated with the Caribou Forest the audit team concluded that on balance, Resolute FP Canada Inc. met its management obligations.

The audit team concludes that management of the Caribou 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 Canada Inc. Licence # 542481.

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 6: Monitoring

Criterion: 6.3 Silvicultural Standards Assessment Program

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

Background Information and Summary of Evidence:

The implementation of the SEM program during the audit term was variable due to other District priorities, Regional Office direction and the lack of FTG surveys conducted by the SFL holder. Core Task # 1 was completed (2014, 2015, & 2018), Core Task # 3 in 2014 and Core Task # 4 (road decommissioning assessments, fertilization trial and assessment of spruce renewal pathway for FMP planning) in 2015, 2016 and 2018. No SEM program work was undertaken in 2017.

We were informed by MNRF District and Regional staff that the SEM program had been and continues to be under review. As a result, there were directions from the Region Office indicating that some of the Core tasks did not need to be completed, and the process of District/Regional priority setting resulted in other Core tasks not being completed. In 2014, 2015, and 2018, the SEM sample size requirements (e.g. 10% of the area declared FTG in the AR) for Core Task # 1 were exceeded or met. No Core Task # 1 sampling was completed in 2016 or 2017 because FTG assessments were not submitted by the SFL holder.

SEM report specifications are not articulated by the MNRF. Reporting on Core Task # 1 results did not include any information with respect to the rationale for findings, emerging trends, or areas requiring further investigation. No formal reports were completed for Core Task 4 initiatives.

Discussion:

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

Between 2014 and 2018, \$ 1.25 million was invested in silviculture. Monitoring is required to ensure that the investments in silviculture treatments are achieving the LTMD and forest sustainability.

The strict adherence to the sampling protocol and the resultant small sample area associated with Core Task # 1 data collection targets raises concerns with respect to SEM survey conclusions regarding the effectiveness and quality of regeneration. The interpretation of FTG data and survey results has significant implications for forest modelling inputs and the development of silviculture ground rules (SGRs).

Formal reporting on SEM activities was deficient. The shortcomings in reporting are concerning. Effective learning, continuous improvement and improved decision-making requires the documentation of outcomes in order that knowledge gained can be transmitted to others.

Finding # 1:

The Ministry of Natural Resources and Forestry District and Regional Office did not implement a satisfactory Silviculture Effectiveness Monitoring program on the Caribou Forest.

Independent Forest Audit – Record of Finding

Finding # 2

Principle 5: System Support

Criterion: 5.2 Document and record quality control

Procedure(s): Assess the organization's information management system processes.

Background Information and Summary of Evidence:

Standards for AWS and AR content are established by the FMPM, and the Forest Information Manual (FIM). The Plan Author is responsible for the preparation of the AR and AWS, with the MNRF having responsibility for approving the AWS and reviewing the AR.

Our review of MNRF reviewer comments on initial report submissions (ARs and AWSs) noted that the reviewers documented multiple instances of incorrect information and missing data. There were 149 required alterations for AWS initial submissions and 75 required alterations for AR initial submissions during the audit term. The 2014 AR initial submission (Year 7 Enhanced AR) had 48 required alterations. There was a general improvement in report quality over the audit term.

The poor quality of the initial reports often necessitated that the SFL make a second submission to the Forest Information Portal.

Discussion:

Our interviews with MNRF reviewer(s) indicated a frustration with initial submission report content and accuracy. As a result of the identified shortcomings, MNRF required a second submission of the reports. We concluded that Resolute's initial submissions could be improved with the implementation of better-quality control procedures.

Finding # 2:

Resolute FP Canada Inc's initial submissions of Annual Work Schedules and Annual Reports to the Ministry of Natural Resources and Forestry required revision and resubmission.

Independent Forest Audit – Record of Finding

Finding # 3

Principle 6: Monitoring... resources and activities needed to support plan development and implementation so as to achieve the desired objectives.

Criterion 6.2.1: To determine whether the monitoring program ... met the requirements of manuals, policies, procedures and the SFL.

Procedure(s): SFL holder compliance planning and monitoring

To review and assess whether an SFL compliance plan has been developed and implemented ... in accordance with the conditions of the SFL, the FMPM and FIM, and

...the actual level of the implemented overall monitoring program is appropriate and effective, and ...in accordance with the approved FMP and AWS.

Background Information and Summary of Evidence:

The CFSA, Part IV, Forest Operations, Section 42 states:

- (1) A person shall not conduct forest operations in a Crown forest except in accordance with,
- (a) an applicable forest management plan;
 - (a.1) any forest operations prescriptions that apply to the forest operations; and
 - (b) an applicable work schedule approved by the Minister.

Resolute's forest compliance goals are described in Section 8.7 of the Phase II Planned Operations. They include adherence "*...to the CFSA and associated manuals, regulations and guidelines*" and "*conformance with the approved FMP and AWS*". The commitment to the stated goals are repeated in each of the Annual Work Schedules prepared over the audit term.

Our review of the implementation of the compliance program over the term of the audit revealed the following:

- The SFL holder completed 57 inspections and reported one Operational Issue. In contrast, 13 of the 28 FOIP reports submitted by the MNRF during the same period resulted in the identification of 23 Operational Issues related to harvest, access and renewal.

Independent Forest Audit – Record of Finding

Finding # 3

- The FOIP program (FOR 07 03 05) requires in-compliance inspections to be completed and approved “...no more than 20 working days after completion of the operation...”. The audit team sampled 29 of the 57 inspections submitted by the SFL. This sample revealed that approximately 45% of the submissions did not meet the submission timing requirement. For example, Inspection 679695 was carried out July, 2017 and approved in January 2018, inspection 671175 was carried out in March 2015 and approved in July, 2015).
- The FOIP instructions (FOR 07 03 05) lists “aerial photography” as a possible inspection method. Over the audit term 12 FOIP inspections were submitted and approved as Office inspections by the Company. The inspections included aerial herbicide spraying and slash pile burning. The information contained in the approved FOIPs was limited to the location and time period. Ancillary information on signage, effectiveness, site cleanliness, etc. was not reported.
- The SFL did not submit any harvest FOIP reports from December, 2015 to July 2018. A MNRF letter (December 21, 2018) reminded the Company that “...the Forest Compliance Handbook requires that forest industry submit a completed FOIP report no later than two years after the date of the start-up notice.” and that, “Resolute is not meeting that requirement”. This was a follow-up to a similar letter sent in November, 2017.
- The Company had not conducted inspections and/or submitted required FOIP reports for a number of activities including wood left in the bush, and bypass of merchantable wood (e.g. blocks 363, 374, 305, and 196). A number of blocks operated in the winter of 2013-2014 were suspended in 2014 with the intent to conduct snow free inspections in 2015. That did not happen. As part of a Company cleanup operation the blocks were identified in 2018-2019 and FOIP inspections were completed and submitted in 2019 (e.g. 688599, 688600). A number of other blocks from 2014-2015 appear to have been simply overlooked (i.e. Watin Operating Unit). These were identified (e.g. block 48, 59) and FOIPs submitted in 2019 (e.g. 688595, 688594). At the time of our field audit a number of FOIP submissions were still required for blocks in the 702 Block area.
- Over the 2018 and 2019 period Company staff initiated a process to identify outstanding compliance issues and were systematically making the required submissions to FOIP.

Discussion:

Independent Forest Audit – Record of Finding

Finding # 3

The Company Compliance Plan in the FMP was well done and met all required format and content requirements. The compliance discussion/direction in the Annual Work Schedules was complete and informative.

However, the implementation of the Compliance Plan did not reflect the planning direction or intent and contravenes some requirements of the FMP and AWS.

Company inspectors were on the sites and conducted inspections, however, 45% of the submitted FOIPs did not meet submission deadlines. Our experience on a number of audits suggests that the submission of the FOIP is delayed until corrective action is taken, and then the FOIP is submitted and approved at a later date as an In-Compliance Inspection. This theory is supported by our additional finding that 57 company inspections only resulted in the identification of one Operational Issue while the MNRF completed 50% less inspections and reported 23 Issues.

Approximately 20% of the Company inspections were Office inspections. The Compliance Handbook does not provide a specific direction as to what inspections could appropriately be completed from an Office. Our assessment (supported by discussions with MNRF District and Regional staff) is that specific items such as observation/measurement of an AOC would apply. However, delivery of programs such as aerial spraying and slash pile burning are problematic. Aerial photography would not pick up required posting of signs, the impact on adjacent trees, oil spills, garbage, etc.

The company did not respond to MNRF's verbal and written notices to submit required FOIPs related to harvest (e.g. wood left in the bush) in a timely manner. During 2018 and up to the time of the audit field inspections the Company was actively "*cleaning up*" FOIP reporting from past activities.

The Company is actively working on updating material, putting monitoring processes in place and bringing past activities into compliance. However, the company failed to take the required actions to ensure adherence to their compliance plan. During this period there were repeated notices from the MNRF that problems existed and need to be addressed.

Finding # 3:

Resolute FP Canada Inc's implementation of its compliance program did not meet its Compliance Plan direction and did not adhere to the directions stated in the Forest Management Plan or Annual Work Schedules.

Independent Forest Audit – Record of Finding

Finding # 4

Principle 7. Achievement of management objectives and forest sustainability

Periodic assessments of forest management unit operations must be made in order to determine whether management objectives, including forest sustainability objectives, are being achieved.

Criterion 7.1: Year seven and year ten ARs (2009 FMPM); year five- and final-year AR;(2017 FMPM) and/or trend analysis report

...review and assess...including the implementation of forest operations, analysis of forest disturbances, analysis of renewal and tending activities, and review of modelling assumptions.

Background Information and Summary of Evidence:

The implementation of the Caribou Conservation Plan (CCP) dominates all aspects of the forest management program implemented on the Caribou Forest. The Dynamic Caribou Habitat Schedule (DCHS) is envisioned to provide sustainable year-round caribou habitat in very large interconnected habitat tracts that are implemented through the forest management planning process. The application of the DCHS, more than any other factor, determines whether the desired forest and benefits can be achieved over time. Caribou conservation is a major element of the FMP and defers timber harvests beyond the rotation age that might otherwise be utilized if timber production was the sole objective. The other key component of the caribou strategy is the organization of harvest areas into large contiguous blocks. The 2008 FMP caribou mosaic was a re-design of the 2002 caribou mosaic in an attempt to achieve a more effective caribou habitat configuration.

Over the past four management terms harvest area achievement levels were 56% (1997-2002 term), 56% (2002-2007) and 43% (2007-2008) with the 2008-2018 term being the lowest where only 14% of the planned harvest area achieved. Harvest operations have to date been largely confined to “A” blocks with many of the blocks (9) remaining “open” for an extended period of time. In the last two management periods, only two “A” blocks have been completed and “closed”. These are the Normandy (1998- 2012) and Kiwi (2004-2019) blocks. We note that, a large portion of the available harvest of the DCHS was originally allocated to Buchanan Forest Products Ltd. (BFPL), through a third-party license, to provide sawlogs to the McKenzie Forest Products sawmill. The Buchanan operations harvested only sawlogs in multiple (8) DCHS blocks. These blocks remained unfinished when Buchanan Forest Products declared bankruptcy. Following the Buchanan bankruptcy, Resolute did initiate efforts

to complete and close 'A' harvest blocks in which these Buchanan sawlog harvest operations had occurred. The predominance of primarily pulp materials has presented difficulties for the completion of partially cut blocks (due to the lack of economical market locations and the downturn in the forest sector).

The “open blocks” have had to varying intensities of harvest and renewal over successive management terms. The continuing inability to achieve planned harvest levels and other harvest related objectives (i.e. clearcut block aggregate area) is resulting in the on-going partial-achievement or non-achievement of FMP objectives associated with harvest activities (e.g. achievement of planned silviculture, creation of caribou habitat, decommissioning of access etc.) in successive management terms.

Discussion:

The chronic under-harvest is significant in that it directly impacts the achievement of the Caribou Conservation Plan. It is a potential economic loss as older stands break up and transition to a younger age cohort. The opportunity to control stand composition for caribou habitat may also be lost should stands be by-passed due to operability constraints. Other factors such as a historic decline in harvest block sizes and transitions from pure conifer forest units to conifer-dominated mixed forest units also has implications for caribou habitat.

It is expected that the DCHS will continue to be revised to address issues related to economic wood supply, the under-utilization of the available harvest area (and volumes), land use designations associated with the protection of First Nations and tourism values, and emerging requirements related to caribou range management (i.e. Endangered Species Act). We understand that the 2020 FMP will address issues of low harvest levels and the lack of completion of harvest blocks by deferring unharvested blocks for future harvest. The Trend Analysis states that “*several caribou mosaic blocks have been deferred or modified and regrouped into future mosaic blocks*” and “*a large harvest is scheduled in for the upcoming 2019-2020 Caribou Forest Annual Work Schedule*”. These adjustments are intended to maintain the overall integrity of the DCHS and facilitate the completion and closure of open blocks. Active operations remaining at plan end are to be bridged into the next FMP.

The current extent, and number of open blocks during the audit term is, in our view problematic considering the concern for caribou which are sensitive to access. We recognize that the forest industry must be able to balance wood costs over its operations to remain viable.

The capacity of the age class area structure to support the DCHS strategy in the absence of higher levels of wood utilization (nor stand replacing natural disturbances) is also a concern. Age class area imbalances exist within conifer dominated forest units with many units exhibiting higher concentrations of area in stands that are mature to over-mature. In the absence of stand replacing events (harvest depletions or natural

disturbance events) there is the potential for declining stand yields and increased fuel loading. The break-up of older stands has implications for the economic viability of future harvest and the provision of adequate caribou habitat (for example, the caribou guidelines consider stand ages of greater than 60 years as old. Caribou are dependent on lichen as a food source and moss can begin to replace lichen on some sites after 100 years).

The chronic under-harvest has negative implications for the achievement of management objectives related to the provision of caribou habitat and the provision of economic benefits. Harvest area projections used in the forest management planning process have proven to be overly optimistic.

Given the reliance of the DCHS on harvest to create large contiguous stands and other influencing factors which may impede the full implementation of harvest, such as the age class area structure, the location of the Forest relative to wood markets, the difficulties in securing and retaining harvest contractors, and the tepid outlook for the forest products sector we are concerned that the underachievement of planned harvest, if continued, will have serious negative implications for the achievement of long-term management objectives related to the provision of caribou habitat.

Finding # 4:

The underachievement of the planned harvest, if continued, will have serious negative implications for the achievement of long-term management objectives related to the provision of caribou habitat.

Appendix 2
Management Objectives Table

2008 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET,)	AUDITORS COMMENTS
Frequency distribution of forest disturbances by size class should show move towards the natural template.	NOT MET	Planned harvest levels have not been achieved.
To maintain 10-20% of the forest which has the capability to produce marten, in suitable conditions as described in the Forest Management Guidelines for the Provision of Marten Habitat, 1996 (i.e. in core areas 3000-5000 ha in size).	MET	There have been few natural disturbances and limited harvesting. In the absence of disturbance marten habitat has been maintained.
To maintain a continuous supply of suitable, mature, year-round habitat distributed both geographically and temporally across the landscape in such a manner as to ensure permanent range occupancy for the Conservation of Woodland Caribou.	NOT MET	The inability to achieve planned harvest levels has delayed the achievement of the DCHS.
To provide for a forest composition within the bounds of natural variation (BNV), while minimizing hardwood and maintaining/increasing the conifer composition.	MET	The composition of forest units as per the Natural Benchmark SFMM run have been maintained as a result of low level of forest management activity. The area harvested and renewed are generally in balance and an effective tending program to reduce hardwood competition was implemented.
To provide for a forest composition in the near and long term that maintains the distinctive dominance of conifer forest types	MET	The composition of forest units has been maintained over the past seven years. An intensive conifer renewal program and an effective tending program to minimize hardwood competition was implemented.

2008 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET,)	AUDITORS COMMENTS
while minimizing post-harvest hardwood ingrowth within conifer dominated forest units within the bounds of natural variation.		
To increase the presence of rare (infrequently occurring) tree species (e.g. red pine, white spruce) on the forest.	PARTIALLY MET	White spruce, red pine and white pine have been planted as suitable sites when suitable sites are identified. The low level of harvest has negatively affected the achievement of the objective.
To maintain genetic diversity through the use of natural regeneration methods where appropriate site conditions exist.	MET	Natural renewal is implemented as appropriate. During the audit term 781 ha were renewed.
To provide for old growth forest ecosystems (as defined in the Old Growth Policy for Ontario's Crown Forests and the Old Growth Forest Definitions for Ontario) within the bounds of natural variation (BNV).	MET	The lack of harvest contributes to achieving targets for maintaining the old growth forest condition on the landscape.
To maintain the amount of old growth red and white pine forests relative to amount on the management unit identified by the 1995 red and white pine conservation strategy.	MET	The lack of harvest contributes to achieving the desired levels and targets for maintaining the old growth forest condition.
To ensure that forest management activities	MET	The lack of harvesting contributes to maintaining habitat for forest dependent wildlife species.

2008 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET,)	AUDITORS COMMENTS
do not threaten the area of habitat for forest dependant species.		
To ensure that forest management activities do not threaten the critical breeding habitat for forest-dependant species (i.e. eagles, osprey, heron, and other forest raptors).	MET	Values are protected by AOC prescriptions. There were no incidences of not-in-compliance associated with critical breeding habitat.
To ensure that forest management activities do not threaten habitat for forest-dependant species at risk.	MET	SAR species are protected by AOC prescriptions in the FMP. There were no reported incidences of habitat damage during the audit term.
To minimize significant increases in road density on the management unit.	MET	The lack of harvesting has limited the construction of roads. Road decommissioning also contributes to the achievement of this objective.
To provide recreational opportunities to access the forest by maintaining road access on the management unit.	MET	Roads were maintained and monitored.
To ensure harvested areas are successfully regenerated and free-growing in a timely manner.	MET	13,900 ha were surveyed for FTG status. 91% of the surveyed areas were declared as successfully regenerated.
To ensure harvested areas are successfully regenerated such that the hardwood component of stands is minimized and conifer composition maintained or increased.	MET	An effective renewal and tending program were implemented. The area occupied by hardwood dominated forest types has remained virtually unchanged (0.4% increase in area).
To ensure that forest operations maintain compliance with prescriptions for the	MET	Values were protected by AOC prescriptions. Forest operations maintained the integrity of values.

2008 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET,)	AUDITORS COMMENTS
protection of natural resource features, land uses or values dependant on forest cover.		
To ensure that forest operations maintain compliance with prescriptions for the protection of resource-based tourism values.	MET	AOC prescriptions were developed to protect resource-based tourism values. No non-compliances were associated with tourism values.
To provide a continuous supply of available harvest area (ha/year) over the long-term (and short term) (next 100 years)."	MET	This objective was achieved in the forest management plan modelling exercise.
To provide a continuous supply of available harvest volume (m3/year) over the long term (and short term) (next 100 years) for the major species groups as identified in the regional wood supply strategies."	MET	Volume targets were achieved in the 2008 FMP LTMD.
To increase the actual area harvested in comparison to the planned/forecast (hectares by forest unit).	NOT MET	Actual harvested areas are significantly lower than planned.
To increase the actual volume harvested in comparison to the planned/forecast (volume by species group).	NOT MET	To date 14% of the ten-year FMP harvest volume has been achieved.

2008 FMP OBJECTIVES	ASSESSMENT OF OBJECTIVE ACHIEVEMENT (MET, PARTIALLY MET, NOT MET,)	AUDITORS COMMENTS
To better utilize the forecast harvest volume by mill.	NOT MET	Planned harvest volumes have not been achieved as a result of the downturn in the forest sector.
To ensure that forest operations maintain compliance with management practices that prevent, minimize or mitigate site damage.	MET	There were no not in compliances reported in FOIP with respect to site damage. We did not observe any significant site damage during the field audit.
To ensure that forest operations maintain compliance with prescriptions for the protection of water quality and fish habitat.	MET	There were no not-in-compliances reported in FOIP. Our field observations confirmed that water quality and fish habitat were protected by the implementation of appropriate AOC prescriptions.
To maintain the managed Crown forest available for timber production.	MET	The area of Crown forest available for timber production has remained stable. Harvested areas are being effectively renewed.
To provide opportunities for Aboriginal communities to be involved in plan development through Aboriginal consultation, planning team participation and incorporation of Aboriginal values.	MET	FMPM requirements for consultations with the Aboriginal communities were met and Aboriginal Background and Values Maps were prepared.
To provide opportunities for the Local Citizen's Committee (LCC) to be effective in plan development	MET	The LCC is an effective committee that is actively engaged in the development of the FMP.
To minimize non-compliance in forest operations.	MET	The Forest has a good compliance record (98 percent in compliance rate).

Appendix 3

Compliance with Contractual Obligations

Payment of Forestry Futures and Ontario Crown charges.	Full payment of Forestry Futures and Ontario Crown Charges were made.
Wood supply commitments, MOAs, sharing arrangements, special conditions.	Licence commitments were generally met. There were two wood supply commitments. MOAs were not negotiated as wood was not required from the Caribou Forest to meet the Crown's commitment.
Preparation of FMP, AWS and reports; abiding by the FMP, and all other requirements of the FMPM and CFSA.	All reports were completed. The quality of initial submissions of AWSs and ARs was poor. Final reports met FMPM requirements (Finding # 2)
Conduct inventories, surveys, tests and studies; provision and collection of information in accordance with FIM.	Inventories and surveys were conducted. Information was submitted in accordance with the FIM (as required).
Wasteful practices not to be committed.	There were instances where merchantable wood was left at roadside. We were informed by SFL holder staff that the wood left at roadside is, in most instances, no longer merchantable and has/or will be scaled for the payment of Crown dues. The SFL holder plans to burn this wood to recover productive land (See Finding # 3).
Natural disturbance and salvage SFL conditions must be followed.	No salvage operations were conducted during the audit term.
Protection of the licence area from pest damage, participation in pest control programs.	No protection activities were required during the audit term.
Withdrawals from licence area.	There were no licence area withdrawals during the audit term.
Audit Action Plan and Action Plan Status Report prepared.	An Audit Action Plan and Action Plan Status Report were completed.
Payment of forest renewal charges to Forest Renewal Trust (FRT).	There are no outstanding Forest Renewal Charges.
Forest Renewal Trust eligible silviculture work.	Field investigations verified that payments out of the Trust were for eligible silviculture work.

Forest Renewal Trust forest renewal charge analysis.	Forest Renewal Trust renewal charge analysis work was completed annually.
Forest Renewal Trust account minimum balance.	The minimum balance of \$652,600 was met every year of the audit term. On April 2, 2019 there was a surplus of \$554,362.79.
Silviculture standards and assessment program.	Silviculture assessments were conducted.
First Nations and Métis opportunities.	Opportunities were offered. Aboriginal businesses are included as prospective suppliers for silviculture work. The Saugeen FN and Resolute have developed an Overlapping Licence Agreement.
Preparation of a compliance plan.	Compliance Plans were completed.
Internal compliance prevention/education program.	Education programs and internal compliance prevention training are in place and implemented.
Compliance inspections and reporting; compliance with compliance plan.	There were significant shortcomings with the delivery of the compliance plan activities and related FOIP reporting (Finding # 3)
SFL forestry operations on mining claims.	There were no SFL forestry operations on mining claims.

Appendix 4

Audit Process

Audit Process

The IFA consisted of the following elements:

Risk Assessment: A risk assessment was completed in April 2019 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 acceptance on April 9, 2019.

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 RFP, MNRF Sioux Lookout District, Northwestern Region MNRF Office, MNRF Integration Branch, Forestry Futures Trust Committee and the LCC Chair in April 2019.

Public Notices: Public participation in the audit was solicited through the placement of a notice in the Sioux Lookout Bulletin (August 7, 2019). A random mailing to 100 individuals/organizations listed on the 2008 FMP mailing list was also undertaken. All Indigenous communities with an interest in the Forest were contacted by mail to participate and/or express their views. Indigenous community leaders received several follow-up calls and/or e-mails.

All LCC members' received emails and follow-up telephone calls with an invitation to participate in the audit process. Harvest contractors were invited by letter to participate in the field audit or provide comments to the audit firm.

Field Site Selection: Field sample sites were selected randomly by the Lead Auditor in July. 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 teleconference call (Zoom Meeting) on July 12, 2019.

Site Audit: The audit team spent five days on the CF in August conducting the field audit, document and record reviews and interviews. The field audit was designed to achieve a minimum 10% of the forest management activities that occurred during the audit term (see the IFA Field Sampling Intensity on the CF 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 activities²⁸. The field inspection included site-specific (intensive) and landscape-scale (extensive helicopter) examinations. The Closing Meeting was held on August 29, 2019 via a teleconference call.

²⁸ Fiscal year 2017-2018.

Not every hectare of the area sampled is surveyed, as this is not feasible. Individual sites are initially 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. 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.

Table 7 Procedures Audited by Risk Category

Principle	Optional – Applicable (#)	Optional Selected (#)	Optional % Audited	Mandatory 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	0	0	2	
3. Forest Management Planning	27	8	30	14	Due to delays in the planning process IFAPP components up to and including 3.4.5. and 3.12., 3.14 and 3.15 were assessed. 3.12. A plan extension was required.
4. Plan Assessment & Implementation	4	0	0	8	
5. System Support	N/A	N/A	N/A	N/A	The SFI certification met IFAPP Principle 5 criterion.
6. Monitoring	10	1	10	9	6.4 Findings support auditor conclusion.
7. Achievement of Management Objectives and Forest Sustainability	0	0	0	12	
8. Contractual Obligations	5	0	0	23	

Table 8 IFA Field Sampling Intensity on the CF

Activity	Total Area (Ha) / Number	Planned Sample Area (Ha)	Actual Area (Ha) Sampled	Number of Sites Visited	Percent Sampled
Harvest	3,378	378	533	10	16
Artificial Renewal - Planting	517	52	141	4	27
Artificial Renewal - Seeding	833	83	150	3	18
Natural Renewal	781	78	80	4	10
Tending	1,387	138	179	5	13
Site Preparation - Mechanical	1,598	160	205	7	13
FTG	1,003	100	144	7	14
Water Crossings (# of Crossings)	13	1	3	3	23
Aggregate Pits (# of Pits)	7	1	3	3	43
SPA Activities	789	78	313	10	40

Source: RFP Forestry Shapefiles

Summary of Consultation and Input to the Audit

Public Stakeholders

Public participation was solicited through a public notice in the Sioux Lookout Bulletin and its associated internet site. The notice directed interested individuals to contact the audit firm with comments or complete a survey questionnaire on forest management during the audit term on the Arbex website.

One hundred individuals/organizations on the FMP mailing list received a letter or an email inviting them to provide comments on the management of the Forest during the audit term. Two responses were received.

An additional sample of stakeholders (6) were contacted directly by telephone. Comments were received from resource-based tourism operators and anglers and hunters. All respondents indicated that they had been made aware of the FMP processes and opportunities to engage in the planning process were provided. Some specific concerns/comments expressed to the audit team included:

- All respondents indicated that they had been made aware of the FMP
- Opposition to priority management for caribou over moose
- Possible impact of harvesting on a tourist operation.
- Opposition to closure of taxpayer funded roads.
- Concern with slash.

- Concern that harvesting is contributing to climate change.
- Opposition to the use of herbicides in forest management.

MNRF

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

- Concern about the effectiveness of SFL holder road decommissioning and reclamation efforts
- Concern with the progress in harvesting DCHS blocks and the number of blocks open.
- Concern with AR and AWS report quality.
- Concern with delivery of the SFL compliance program.
- Concern that wood had been left in the bush.
- General concern that the SFL holder was not fully meeting its forest management obligations on the Forest and that the CF lacked priority with Resolute.

RFP

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

- Concern with poor woods markets.
- Concern with legacy issues in blocks harvested by Buchanan Forest Products Ltd.
- Disagreement with MNRF staff as to the effectiveness of the road rehabilitation strategy.

LCC Members

Individual members of LCC received a letter inviting their participation in the audit and several LCC members were interviewed. One LCC member attended the field audit. General comments/concerns made to the audit team included:

- Opposition to access closures on taxpayer funded roads.
- Opposition to the caribou policy.
- Concern that wood from the CF is being delivered to Dryden while the Hudson mill remains closed.
- Concern that more wood is not being cut.
- Concern that southern Ontario and international environmental groups are dictating policies for the Caribou Forest.

First Nations

All Indigenous 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 and/or participate in the field audit. Comments/concerns expressed to the audit team included:

- Opposition to priority management for caribou over moose.
- Opposition to the use of herbicide in forest management.

Overlapping Licencees (OLs)

OLs 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.

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
BFPL	Buchanan Forest Products Ltd.
BLG	Boreal Landscape Guide
B.Sc.F.	Bachelor of Science in Forestry
CCP	Caribou Conservation Plan
CFSA	Crown Forest Sustainability Act
DCHS	Dynamic Caribou Habitat Schedule
eFRI	Enhanced Forest Resource Inventory
ESA	Endangered Species Act
FAP	Forestry Aggregate Pit
FFTC	Forestry Futures Trust Committee
FN	First Nation
FOIP	Forest Operations Information Program
FOP	Forest Operations Prescription
FOSM	Forest Operations and Silviculture Manual
FSC	Forest Stewardship Council
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual
FRT	Forest Renewal Trust
FRMA	Forest Roads and Maintenance Agreement
FTG	Free-to-Grow

FU	Forest Unit
GIS	Geographic Information System
Ha	Hectares
IFA	Independent Forest Audit
IFAPP	Independent Forest Audit Process and Protocol
ISO	International Standards Organization
KM	Kilometer
LCC	Local Citizens Committee
LTMD	Long Term Management Direction
m ³	Cubic Metres
MNRFB	Ministry of Natural Resources and Forestry
NIC	Not in Compliance
OL	Overlapping Licensee
R.P.F.	Registered Professional Forester
RFP	Resolute FP Canada Inc.
RSA	Resource Stewardship Agreement
SAR	Species at Risk
SFI	Sustainable Forestry Initiative
SEM	Silviculture Effectiveness Monitoring
SFL	Sustainable Forestry Licence
SFMM	Strategic Forest Management Model
SGR	Silvicultural Ground Rule
SIP	Site Preparation
SPR	Specified Procedures Report
SSG	Stand and Site Guide
VS	Versus

Appendix 6
Audit Team Members and Qualifications

Appendix 6

Audit Team Members and Qualifications

Name	Role	Responsibilities	Credentials
<p>Bruce Byford R.P.F. President Arbex Forest Resource Consultants Ltd.</p>	<p>Lead Auditor Forest Management Planning & Silviculture Auditor</p>	<p>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.</p>	<p>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 44 IFA audits with lead auditor responsibility on all IFAs. 27 FSC certification assessments with lead audit responsibilities on 7.</p>
<p>Al Stewart Arbex Senior Associate</p>	<p>Public Participation including First Nations & LCC Participation in Forest Management Process Forest Compliance</p>	<p>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.</p>	<p>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 44 IFA audits.</p>
<p>Riet Verheggen R.P.F. Arbex Associate</p>	<p>Silviculture and Contractual Compliance</p>	<p>Determination of the sustainability component. Review and inspect silvicultural practices and related documentation. Review and inspect documents related to contractual compliance.</p>	<p>B.Sc.F. 25 years of experience in natural resource management, policy development, and auditing. Previous work on 2 IFAs.</p>