

**Summary of the Long-Term Management Direction  
for the  
Dryden Forest  
2021-2031 Forest Management Plan**

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## **1.0 INTRODUCTION**

The Long-Term Management Direction (LTMD) for the Dryden Forest (DF) provides direction for the levels of access, harvest, renewal and tending activities required to achieve the desired forest and benefits. In the development of the long-term management direction, management objectives were identified, and analytical models and tools regarding forest regulation, social and economic assessment, wildlife habitat supply and landscape management, were used. A long-term management direction was developed that balances the achievement of all management objectives over time, resulting in the planned level of forest harvest for the 10-year period of this forest management plan (FMP).

The long-term management direction provides a means of assessing forest sustainability through the measurement and monitoring of indicators that have been developed for each management objective. It is expected that a balanced achievement of the quantitative and qualitative biological, social and economic objectives, will result in the desired long-term future forest condition and benefits.

This document summarizes the proposed Long-term Management Direction (LTMD) for the Dryden Forest 2021-2031 Forest Management Plan. The desired forest and benefits, management objectives, indicators of objective achievement, and associated desirable levels are also summarized in this document. The extent to which management objectives have been met and a preliminary determination of sustainability, including the preliminary spatial analysis and socio-economic impact assessment, are also summarized in this document.

New primary road corridors proposed for the 2021-2041 period are also referenced in this report.

## **2.0 DESIRED FOREST AND BENEFITS**

The Planning Team, the Dryden Local Citizens' Advisory Committee (LCAC) and participating local First Nation communities were involved in the development of the desired forest and benefits for the 2021-2031 Dryden Forest FMP. The desired forest and benefits are the forest structure and composition and goods and services, which are desired from the forest to achieve a balance of social, economic, and environmental needs from the forest over time.

Multiple meetings were held from November 2018 to February 2019, with representatives from the Dryden Local Citizens' Advisory Committee, participating local First Nation communities and the Planning Team. These meetings were held to provide participants with background information on the forest, an overview of landscape level guidelines, and to develop a list of desired forest and benefits and associated target levels. Desired Forest and Benefits included sustainable wood supply, water quality, forest access, protection of identified values, and consideration for tourism and mining sectors.

### 3.0 PLAN OBJECTIVES, INDICATORS AND DESIRABLE LEVELS

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Input from these meetings was considered by the Plan Author and Planning Team during development of the management objectives and indicators. The subsequent levels to which suggested desired forest and benefits were included in the plan LTMD were also reported back to the LCAC committee and participating local First Nation communities at meetings in March to May 2019. Indicator desirable levels were rationalized in the context of overall objective achievement and forest sustainability.

### 3.0 PLAN OBJECTIVES, INDICATORS AND DESIRABLE LEVELS

The list of desired forest and benefits, past management plans for the Dryden Forest, Ministry of Natural Resources and Forestry (MNR) sources of direction (including Figure A-3 from the *Forest Management Planning Manual, 2017*) and forest management guides were used to develop plan objectives, indicators of objective achievement, desirable levels and target levels for the 2021 Dryden Forest FMP. A total of 10 management objectives, with 26 indicators of objective achievement, were developed for the Proposed Long-term Management Direction (LTMD) for this plan.

A management objective was developed for each desired forest and benefit indicator (or group of related indicators) identified for the plan. A desirable level and the timeframe for achievement were also developed for each indicator. Only indicators that could be quantified were selected for the management plan. The establishment of a target for each management objective reflects the necessity to balance conflicting management objectives, and targets may be the same as the desirable level, or differ from desirable levels due to management challenges.

In accordance with management objectives, it is desirable that the FMP project forest management activities that will create a future forest landscape with a composition, structure and pattern that is similar to those created by natural processes. These management objectives for natural forest diversity also serve to provide a sustainable range of wildlife habitat types through time, necessary for a majority of wildlife species on the Dryden Forest.

The science package developed by MNR to support the *Forest Management Guide for Boreal Landscapes* (Boreal Landscape Guide) is considered the best available science, and included information for many of the natural landscape related indicators. The Planning Team also relied on the Ontario's Landscape Tool (OLT) that was developed by MNR to support the Boreal Landscape Guide for the calculation of desirable levels for many management indicators.

The planning of a future forest condition that is comparable to OLT projections was the primary consideration for development of the LTMD. Additional social and economic management objectives and associated indicators were included in the FMP for the protection of forest values, forest road access, wood supply, forest renewal, and the effective engagement of First Nation communities and the Dryden Local Citizens' Advisory Committee during plan development.

Management objectives, indicators, and the timing of assessment for each indicator are documented in Table FMP-10 (Appendix A).

#### 4.0 PROPOSED LONG-TERM MANAGEMENT DIRECTION (LTMD)

The Proposed Long-term Management Direction represents a balance in the achievement of management objectives. A process of repetitive analyses was conducted to balance the achievement of management objectives while developing a Proposed LTMD for the Dryden Forest. Results or findings of strategic investigative analyses were used to guide the balancing of indicator achievement. The desirable levels for indicators were included in strategic planning investigations and were used in the development of the Long-term Management Direction, to balance biological, social and economic objectives over the long-term.

Patchworks (PW) was used as the primary analysis tool for the strategic analysis. PW was used to track the entire Dryden Forest land base through time, and to produce projections of changes to the forest structure and composition for 160 years into the future. PW was used for the evaluation of forested areas and their contribution to forest diversity, socio-economic benefits including timber production, old growth and wildlife habitat through time.

The Proposed Long-term Management Direction is named “LTMD\_10”. Modelling inputs and key results summaries are documented in FMP Supplementary Documentation B – Analysis Package. Modelling outputs from the Proposed LTMD, showing how the forest is expected to develop over time in terms of forest composition and structure, and the projected types and levels of activities required to achieve management objectives are provided in forest management plan tables in Appendix A. These outputs include:

- (a) Projected available harvest area by forest unit (Table FMP-8);
- (b) Projected available harvest volume by species group and broad size group (Table FMP-9); and
- (c) Assessment of objective achievement (Table FMP-10).

The Proposed LTMD was reviewed by the Planning Team and presented to the Local Citizens’ Advisory Committee (LCAC). The Planning Team agrees that the LTMD is sustainable in the long-term and provides a balance of objective achievement. The Proposed Long-term Management Direction was presented to the Dryden Local Citizens’ Committee in September and October 2019 for discussion and comment. A summary of the proposed harvest allocations and primary road corridors were also presented to the LCAC.

#### 4.1 *Selection of Preferred and Optional Harvest Areas*

A set of criteria was developed in order to identify the areas that could reasonably be harvested during the 2021-2031 FMP period on the Dryden Forest. The Available Harvest Area (AHA) by forest unit (which was derived from the Patchworks outputs for the proposed LTMD) was the primary criterion for the selection of “preferred harvest areas”. The Patchworks projected available harvest area was limited to blocks that were eligible for harvest activities during this 10-year plan period. The Ministry of Natural Resources and Forestry’s *Forest Management*

*Guide for Conserving Biodiversity at the Stand and Site Scales (MNR, 2010)* and the *Forest Management Guide for Boreal Landscapes (MNR, 2014)* provided additional direction.

All other harvest areas eligible for harvest in the 2021-2031 period, that were not classified as “preferred harvest areas”, were classified as “optional harvest areas”.

The Projected Available Harvest Area by forest unit (total of 14,769 ha for this 10-year period) is documented in Appendix A – Table FMP-8 (projected available harvest area over a 100-year planning horizon). Since Patchworks was used for spatial strategic modelling, the available harvest area is also geographically identified as the preferred harvest area for this 10-year plan period. The preferred harvest area was based on eligibility and selection criteria.

Planned allocations by forest unit will be refined and balanced prior to the Public Consultation Stage Three: First Information Centre, after reserves associated with the Area of Concern (AOC) planning process are confirmed. As well, it is possible that some “optional harvest areas” will become “planned” in an attempt to balance operational harvest areas with the LTMD Available Harvest Area and objective achievement. After the reserve areas have been confirmed, planned harvest allocations will be refined and adjusted so that no forest units exceed their 10-year Available Harvest Area levels.

The preferred areas for harvest for the 10-year plan period have been portrayed on a summary map (Appendix C). The summary map also includes optional harvest areas during the 10-year plan period.

## 4.2 Available Harvest Volume

The projected Available Harvest Area by Forest Unit for the 10-year period from 2021-2031 is projected to yield an Available Harvest Volume total of 1,681,176 cubic metres.

The projected Available Harvest Volume by species group for 2021-2031 is comprised of:

1,168,411	cubic metres of Spruce-Pine-Fir (SPF);
384,531	cubic metres of Poplar (PO);
93,022	cubic metres of White Birch (BW);
30,212	cubic metres of other incidental species (Cedar, Larch, Other Conifer, Other Hardwood, Red Pine, White Pine);
<u>1,681,176</u>	<u>cubic metres TOTAL volume.</u>

The projected Available Harvest Volume By Species Group and Broad Size Group is documented in Appendix A – Table FMP-9 (projected available harvest volumes over a 100-year planning horizon).

## 5.0 PRELIMINARY DETERMINATION OF SUSTAINABILITY

The overall determination of sustainability is based on the collective assessment of objective achievement, the spatial assessment, the social and economic assessment and prescriptions for the protection of values. A favourable determination of sustainability allows for the conclusion of forest sustainability and documents how the forest management plan has regard for plant life, animal life, water, soil, air, and social and economic values, including recreational values and heritage values. A summary of the components considered during the determination of sustainability are described in the following subsections.

### 5.1 *Assessment of Management Objective Achievement*

The FMP objectives, indicators, desirable levels and targets were established to address the *Crown Forest Sustainability Act* objective categories. The Assessment of Objective Achievement is documented in Table FMP-10 for each indicator that can be assessed at this time through strategic modelling or preliminary operational planning (during spatial component of strategic planning). The assessment of objective achievement was based on the extent to which the established desirable levels for each indicator were satisfied within the 10-year plan period. Plan objectives that have been addressed in the Long-term Management Direction for this plan are summarized as:

**Assessed During Plan Preparation (12 indicators):** (listed by plan management objective number, and number of indicators assessed for objective achievement)

1. Forest Composition (5 indicators);
2. Landscape Pattern (2 indicators);
3. Wildlife Habitat (2 indicators); and
5. Wood Supply (3 indicators).

**Assessed at Draft Plan Stage (3 indicators):**

6. First Nation and Métis Engagement in Planning Process (2 indicators);
7. Local Citizens' Committee Engagement in Plan Development (1 indicator).

**Assessed After Plan Implementation (11 indicators):**

4. Forest Access (2 indicators);
5. Wood Supply (3 indicators);
8. Forest Renewal (3 indicators);
9. Forest Values (1 indicator); and
10. Healthy Ecosystems (2 indicators).

Of the 26 indicators included in Table FMP-10, 12 of the indicators can be assessed up to this stage of plan development (Proposed Long-Term Management Direction). Two management objectives, with a total of 3 indicators, will be assessed prior to the submission of the Draft Forest Management Plan. The remaining 11 indicators (and reassessment of some of the original 12 indicators) will be assessed in the future after plan implementation as appropriate (specific indicator timing of assessment is noted in Table FMP-10).

## 5.0 PRELIMINARY DETERMINATION OF SUSTAINABILITY

### Assessment of Management Objective Achievement

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#### Of the 26 plan indicators:

- 7 indicators ACHIEVE desirable levels;
  - 4 indicators PARTIALLY ACHIEVE with achievement of or movement towards target levels;
  - 2 indicators do NOT ACHIEVE desirable or target levels; and
  - 14 indicators will be assessed in the FUTURE at draft plan or after plan implementation.
- 26

All of the plan objective indicators measured at this stage are achieving or progressing towards desirable levels during this plan period (Table FMP-10), except two (2) indicators as noted below:

#### Objective 2: Landscape Pattern - (Indicator 2a) Texture of Mature and Old Forest:

In this 2021-2031 plan, Mature and Old Forest texture is below desirable level at Plan Start, and is projected to decrease during this 10-year plan period. A large proportion of the old forest that currently stands is very old, starting to fall down, and succeed to balsam fir. The length of time that these patches could maintain old forest into the future was carefully considered in the strategy. A strategy is being implemented on the FMP to defragment the Dryden Forest and generate large patches of even-aged young forest, to later age into Mature and Old large landscape patches (acceptable short-term result).

Strategies are being implemented on the Dryden Forest to defragment past harvest areas, and also to provide for future large patches of even-aged young forest by retaining/avoiding harvest in specific larger patches of currently mature/old forest, as well as avoiding areas that will become mature/old in the next 20 years (acceptable short-term result). Results of the defragmentation strategy are evident in the short-term with the reduction of the proportion of the 41-60% concentration class on the Dryden Forest.

This short-term deviation from the desirable landscape pattern is accepted based on the balance of other objective achievement. This deviation in objective achievement was reviewed and considered acceptable by the Planning Team in the context of overall objective achievement. Achievement of this indicator will likely improve in the next plan period.

#### Objective 3: Wildlife Habitat - (Indicator 3b) Frequency of Young Forest by Size Class in Rumac Moose Emphasis Area:

Through implementation of LTMD preferred harvest areas, young forest patches less than 500 ha is projected to move from 98% to 93% (away from the desirable level of 100%).

The harvest strategy in the Rumac is to maintain a high proportion of small, young forest patches to maximize edge. This strategy and young forest patch size projected achievement may be improved through operational planning and harvest block layout during 2021 FMP development.

## 5.2 Preliminary Spatial Assessment

A number of preliminary spatial assessments were conducted to analyze achievement of management objectives that are influenced by the location of planned harvest areas. Documentation of these spatial analyses is included in FMP Supplementary Documentation B – Analysis Package. Brief summaries for each analysis follow.

**Harvest Areas** - Preferred harvest areas for the 2021-2031 plan period adhere to the spatial outputs from the Patchworks modelling. The spatial distribution of harvest over the first four FMP periods (i.e. for 40 years from 2021-2061) was projected in the LTMD. The 40-year projection of harvest was considered by the Planning Team to be generally operationally feasible and economically feasible. Additional strategic and operational planning for the Dryden Forest will be conducted prior to forest management plan approvals for the future FMP periods 2031-2061.

**Landscape Pattern** - Landscape pattern objectives were built on the 2011 FMP objectives, and have been refined for this FMP in accordance with the *Forest Management Planning Manual (2017)* and the *Forest Management Guide for Boreal Landscapes (2014)*. Landscape pattern objectives include indicators for maintaining or enhancing natural landscape structure, composition and patterns that provide for the long-term health of forest ecosystems in an efficient and effective manner. The Planning Team relied on MNRF Ontario's Landscape Tool (OLT) projections of the simulated natural forest condition when determining appropriate desirable levels for landscape pattern indicators. The spatial distribution of landscape pattern was measured in OLT for Plan End 2031 with preferred harvest allocations simulated to be depleted.

**Conclusion** – The overall spatial distribution of landscape pattern (measured by Ontario's Landscape Tool) is improved through implementation of the preferred harvest allocations in the LTMD.

## 5.3 Social and Economic Assessment

The Forest Management Planning Manual (2017) requires that a Social and Economic Assessment (SEA) be prepared to identify the expected social and economic impacts of implementing the management strategy proposed in the Long-Term Management Direction (LTMD) for the development of this FMP. The assessment examines how the quantity of timber supplied in the wood processing facilities, and the silvicultural investment requirements for the proposed management strategy may affect the communities identified in the Social & Economic Description.

The Social and Economic Assessment of timber volumes and silvicultural expenditures was completed by the MNRF and is based on the qualitative comparison of the annual planned levels for the 2011 FMP and the levels shown in LTMD for the 2021-2031 FMP. The proposed

Long-Term Management Direction endorsed by the planning team, projected a slight increase in available wood supply of the primary species groups currently utilized by industry in the Dryden Forest. The annual harvest volume approved in the 2011-2021 Dryden FMP was 150,000 m<sup>3</sup> and the projected annual available harvest volume in this FMP 2021-2031 is 160,553 m<sup>3</sup>. The projected increase in volume could potentially have positive direct and indirect socio-economic benefits to the Province of Ontario. Increased harvest volumes generally result in higher industry output, person years of employment and gross domestic product.

The social and economic assessment for the plan suggests there is a potential for an improvement in social and/or economic benefits for the 2021 FMP compared to the 2011 plan.

## 5.4 Risk Assessment

This section of the FMP summarizes the risk to plan implementation, if certain decisions made during development of the Long-Term Management Direction do not come to pass. The following bullet points describe certain assumptions and associated potential barriers to successful implementation of the FMP Long-Term Management Directions:

- Lack of markets or mill labour disputes could reduce the demand for wood from the Dryden Forest. This could reduce the available harvest area cut, renewed, resulting in a risk to planned socio-economic objectives achievements.  
Very Low Risk: While market fluctuations may occur, this is not influenced by the FMP Planning Team. The Dryden Forest is well situated to enable harvest volume to be utilized in a variety of regional mills.
- Failure of approval or construction of proposed new primary roads is a risk to accessing planned harvest blocks during this 2021-2031 period and the next 10-year period (2031-2041).  
Low Risk: Primary roads are approved in this FMP, and planned for construction. The Dryden Forest is very well-accessed at Plan Start. Any delay in primary road construction would be mitigated through the reselection of approved harvest areas, accessible by existing roads or other branch roads approved for construction.
- Failure to achieve results from projected intensive forest renewal treatments is a risk to achieving long-term forest structure and composition objectives.  
Moderate Risk: In order to achieve certain Boreal Landscape Guide indicators including an increase in pure conifer content stands, the Patchworks model has indicated a need to reduce mixedwood stands on the Dryden Forest through intensive forest renewal. The 2013 Dryden Forest Independent Forest Audit action plan held a recommendation that DFMC should consider multiple vegetation control interventions on competitive sites schedule for renewal by seeding. In response the company has implemented procedural considerations with respect to forest renewal prescriptions, in particular for nutrient rich sites, wherein a series of conditions are considered by the Operational Forester to

ensure effective renewal prescriptions. Those considerations include potential competing vegetation A loss of herbicide use as a forest management tool, a reduction in tree planting, or insufficient expenditure on forest renewal and maintenance could negatively impact silvicultural success of the renewal program required for projected objective achievements.

Risk Assessment Conclusion - Natural disturbances or significant public concern with specific forest operations could impact the location of planned forest operations during this plan period. However, the overall risk to achievement of LTMD objective achievement remains minimal as re-selection of planned harvest areas would be utilized.

## **5.5 Conclusion on the Sustainability of the FMP**

Overall, based on the quantitative and qualitative objectives (Table FMP-10) that can be assessed during preparation of the forest management plan, there has been achievement in meeting or exceeding the desirable levels and associated targets for most indicators (forest condition, and goods and services). From a spatial perspective, the objectives related to landscape pattern has been achieved or movement towards achievement has been demonstrated through projected implementation of the LTMD.

The social and economic assessment for this FMP indicates that current levels of social or economic benefits are projected to be slightly increased for the 2021-2031 plan period, in comparison with the 2011-2021 FMP.

Overall, the assessment of objective achievement, the social and economic assessment and the Long-term Management Direction have all demonstrated that the 2021-2031 Forest Management Plan for the Dryden Forest has regard for plant life, animal life, water, soil, air, social and economic values, including recreational and heritage values. As a result, it can be concluded that this forest management plan provides for the sustainability of Ontario's Crown forest.

## 6.0 PRIMARY ROAD CORRIDORS

The harvest areas for the next 20-years on Dryden Forest are generally well-accessed at Plan Start, with minimal construction of primary access roads required in the next twenty-year period (2021-2041).

There are 27 proposed primary roads planned for construction or extension during 2021-2041 (approx. 103 km total):

Angie Road	Horseshoe Lake Road	Sunday Lake Road
Basen Road	Kimber Lake Road	Tay Lake Road North
Boudreau Road	Liz Road	Todd's Road
Buddy Road	McDonald Lake Road	Weber Road
Clay Road	Narrow Lake Road	West Road
East Lewis Road	Rasin Lake Road	Whitney Road
Film Lake Road	Riley Road	Williams Lake Road
Flambeau South Road	Stewart East Road	Williams West Road
Harvey Road	Stewart West Road	Yellow Road

During the 2021-2041 period, no roads are planned for construction that involve the crossing of a Provincial Park.

The locations of primary road corridors, and alternative road corridors, are portrayed on the summary map (File: MU535\_2021\_LTMD\_MAP\_Sum.pdf). Primary road planning, including the consideration and environmental analysis of a reasonable range of alternate practical one kilometre wide corridors, is documented in the Primary Road Planning Supplementary Documentation prepared for this stage of plan development.

## **APPENDICES**

**Appendix A      Forest Management Plan Tables**

**Appendix B      Comment Sheet**

### **Summary Map of Harvest Allocations and Primary Road Corridors**

Located in file: MU535\_2021\_LTMD\_MAP\_Sum.pdf

# APPENDIX A

## Forest Management Plan Tables

**FMP-8** Projected Available Harvest Area by Forest Unit

**FMP-9** Projected Available Harvest Volume by Species Group and Broad Size Group

**FMP-10** Assessment of Objective Achievement

MANAGEMENT UNIT NAME: Dryden Forest (MU 535)  
 PLAN PERIOD: April 1, 2021 to March 31, 2031

**FMP-8 PROJECTED AVAILABLE HARVEST AREA BY FOREST UNIT**

Forest Unit	Total Available Harvest Area (ha) for First 10-Year Period of Each 20-Year Period					
	2021	2041	2061	2081	2101	2121
BFDOM	152	329	463	118	183	111
BWDOM	88	218	230	202	171	33
CONMX	1,856	2,348	2,475	324	484	370
HRDMW	1,235	1,641	2,008	957	463	655
HRDOM	1,164	1,080	638	874	504	505
PJDOM	2,184	2,429	3,178	3,801	6,169	5,033
PJMX1	1,849	1,183	1,019	2,132	2,361	2,557
PODOM	1,408	964	1,401	1,664	2,193	1,813
PRWMX	34	27	26	83	109	197
SBDOM	1,762	1,080	448	479	527	111
SBLOW	1,493	1,354	1,261	1,087	248	835
SBMX1	1,544	875	280	696	1,468	1,064
<b>Total</b>	14,769	13,528	13,428	12,416	14,881	13,285

**NOTE:**

Data derived from results of Patchworks LTMD\_10.

MANAGEMENT UNIT NAME: Dryden Forest (MU 535)

PLAN PERIOD: April 1, 2021 to March 31, 2031

**FMP-9 PROJECTED AVAILABLE HARVEST VOLUME BY SPECIES GROUP AND BROAD SIZE GROUP**

Species Group	Available Harvest Volume (cubic metres) Total for First 10-year Period of Each 20-Year Period					
	2021	2041	2061	2081	2101	2121
<b>Net Merchantable Volume (NMV):</b>						
Spruce-Pine-Fir Small	1,165,086	998,017	994,182	1,092,658	1,450,490	1,258,580
Spruce-Pine-Fir Large	3,326	15,837	20,224	9,003	5,370	3,515
Spruce-Pine-Fir Subtotal	1,168,411	1,013,854	1,014,405	1,101,660	1,455,861	1,262,095
Poplar Small	376,126	327,269	340,335	357,776	389,284	323,107
Poplar Large	8,404	18,436	23,585	15,466	13,762	3,310
Poplar Subtotal	384,531	345,704	363,921	373,243	403,045	326,417
White Birch Small	92,133	89,361	75,679	54,214	49,141	35,913
White Birch Large	889	3,646	4,026	3,373	1,100	382
White Birch Subtotal	93,022	93,007	79,705	57,587	50,241	36,296
<b>NMV TOTAL All Species Small</b>	1,667,585	1,444,919	1,436,319	1,532,177	1,906,131	1,643,210
<b>NMV TOTAL All Species Large</b>	13,592	38,773	48,800	31,798	23,654	11,266
<b>NMV TOTAL All Species</b>	1,681,176	1,483,691	1,485,119	1,563,975	1,929,785	1,654,478
<b>Defect (Branches, Twigs, Leaves, Bark):</b>						
Spruce-Pine-Fir	374,405	312,681	277,740	277,273	342,731	295,295
Poplar	290,438	264,913	289,398	303,585	320,388	234,215
White Birch	55,054	56,077	51,755	38,882	27,141	20,174
<b>DEFECT TOTAL All Species</b>	733,568	646,615	630,689	628,530	692,124	554,204
<b>Undersized (Top Wood)</b>						
Spruce-Pine-Fir	193,621	177,341	158,701	162,121	203,590	190,144
Poplar	98,885	81,966	87,265	105,708	115,738	99,875
White Birch	13,013	12,824	11,242	9,407	6,748	5,327
<b>UNDERSIZED TOTAL All Species</b>	309,587	276,034	260,757	279,880	326,659	296,703
<b>TOTAL AVAILABLE HARVEST VOLUME</b>	2,724,331	2,406,340	2,376,565	2,472,385	2,948,568	2,505,385

**NOTE:**

Data derived from results of Patchworks LTMD\_10. Volume broad size group is applied to net merchantable volumes only (not defect or undersize volumes).

White Pine-Red Pine, Other Conifer, and Other Hardwood are incidental on the Dryden Forest, and are not considered major harvest volume Species Groups.

Volumes associated with these incidental species are included in the TOTAL All Species and GRAND TOTAL volumes.

MANAGEMENT UNIT NAME: Dryden Forest (MU 535)

PLAN PERIOD: April 1, 2021 to March 31, 2031

**FMP-10: Assessment of Objective Achievement**

Strategic modelling projections based on: **LTMD\_10**

Management Objective	Indicator	Plan Start Level	Desirable Level	Timing of Assessment	Target (short-term)	LTMD - Projections			Assessment				
						Short (10 yrs)	Medium (20 yrs)	Long (100 yrs)					
<b>1. Forest Composition:</b>  To emulate natural forest composition and age classes which includes old growth forest.	<b>(1a) Landscape Class Area:</b>	(ha)	(ha)	(1) Proposed LTMD (2) Completion of operational planning (4) Annual Reports for Year 5 and final year of plan implementation					<b>PARTIALLY ACHIEVED:</b> 3 of 4 classes meet desirable levels aligned with BLG milestones. ML Balsam achieves the desirable level in the medium-term. ML Lowland Conifer consistently moves towards the desirable level through the long-term (is above desirable level all periods) as a result of inventory classification. ML Upland Conifer maintains the desirable level all periods. ML Hardwood decreases towards then maintains desirable level in 80 years onwards.				
	Mature and late balsam fir	1,765	2,108 - 3,426							increase	1,973	2,190	2,129
	Mature and late lowland conifer	12,727	5,238 - 7,016							decrease	11,725	10,498	7,959
	Mature and late upland conifer	31,496	20,088 - 40,910							maintain	25,300	21,490	23,246
	Mature and late hardwood	19,101	8,472 - 12,731	decrease	18,835	19,347	12,140						
	<b>(1b) Old Growth Forest Area:</b>	(ha)	(ha)	(1) Proposed LTMD (2) Completion of operational planning (4) Annual Reports for Year 5 and final year of plan implementation					<b>ACHIEVED:</b> OGUpl_Con, OG Mix_Hwd and OG Pr_Pw increase then maintain desirable levels from 2031 onwards. OG Low_Con moves towards and achieves desirable level in 60 years (result of inventory classification, minor decrease within 1% in 70-80 years). Overall indicator is achieved.				
	Lowland Conifer	509	3,498 - 4,916							increase	873	1,764	3,540
	Upland Conifer	5,956	6,765 - 14,652							increase	9,260	9,403	7,086
	Mixedwood and Hardwood	3,464	9,913 - 17,843							increase	9,817	13,252	10,381
	White Pine and Red Pine	12	increase	increase	12	25	234						
<b>(1c) All ages red pine and white pine forest unit area (ha)</b>	742	increase towards 7,900 ha, while not falling below the 1995 level of 578 ha.	(1) Proposed LTMD (2) Completion of operational planning (4) Annual Reports for Year 5 and final year of plan implementation	increase	842	912	1,483	<b>ACHIEVED:</b> Area increases for next 100 years, desirable level met. Achievement of estimated 7,900 ha is not possible for approx. 300+ years. Operational strategies will continue 100+ years to ensure continued increase.					
<b>(1d) Upland Jack Pine and Spruce:</b> <b>(ha) PJDOM+PJMx1+SBDOM+SBMx1</b>	54,554	68,831 - 74,915 ha	(1) Proposed LTMD (2) Completion of operational planning (4) Annual Reports for Year 5 and final year of plan implementation	increase	56,609	59,259	69,350	<b>ACHIEVED:</b> Target level is achieved with steady movement toward achieving desirable level in 50 years.					
<b>(1e) Young Forest Area: (ha)</b> All Plan Forest Units <36 years	36,525	31,801 - 64,374 ha	(1) Proposed LTMD (2) Completion of operational planning	maintain	43,599	45,636	50,990	<b>ACHIEVED:</b> Desirable level is achieved at Plan Start and maintained through the planning horizon.					

MANAGEMENT UNIT NAME: Dryden Forest (MU 535)

PLAN PERIOD: April 1, 2021 to March 31, 2031

**FMP-10: Assessment of Objective Achievement**

Strategic modelling projections based on: LTMD\_10

Management Objective	Indicator	Plan Start Level	Desirable Level	Timing of Assessment	Target (short-term)	LTMD - Projections			Assessment			
						Short (10 yrs)	Medium (20 yrs)	Long (100 yrs)				
<b>2. Landscape Pattern:</b>  To emulate natural disturbance and landscape patterns characteristic of the Dryden Forest.	<b>(2a) Texture of mature and old forest (hexagon frequency distribution by mean proportion):</b> 500 ha Hexagon Scale:		Move towards mean, with a focus on the two concentration classes > 60%. Mean:	(1) Proposed LTMD (2) Completion of operational planning (4) Annual Reports for Year 5 and final year of plan implementation	Same as desirable level		N/A	N/A	<b>NOT ACHIEVED:</b> Mature and Old Forest texture is below desirable level at Plan Start, and is projected to decrease during this plan period. A large proportion of the old forest that currently stands is very old, starting to fall down, and succeed to balsam fir. The length of time that these patches could maintain old forest into the future was carefully considered in the strategy. Strategies are being implemented on the Dryden Forest to defragment and also to retain/avoid harvest in specific larger patches of currently mature/old forest, as well as avoiding areas that will become mature/old in the next 20 years to generate future large patches of even-aged young forest (acceptable short-term result). Results of the defragmentation strategy are evident in the short-term with the reduction of the proportion of the 40-60% concentration class on the Dryden Forest. Achievement in future FMPs is expected to improve.			
	1 - 20% concentration	11%	47%			15%						
	21 - 40% concentration	25%	14%			35%						
	41 - 60% concentration	37%	9%			31%						
	61 - 80% concentration	19%	8%			15%						
	81 - 100% concentration	8%	22%			4%						
	5,000 ha Hexagon Scale:											
	1 - 20% concentration	11%	35%			13%						
	21 - 40% concentration	12%	22%			28%						
	41 - 60% concentration	65%	18%			56%						
	61 - 80% concentration	12%	16%			3%						
	81 - 100% concentration	0%	9%			0%						
	<b>(2b) Young forest patch size: (frequency by size class ha)</b>	< 100	67%			Move towards mean: 65%				(1) Proposed LTMD (2) Completion of operational planning (4) Annual Reports for Year 5 and final year of plan implementation	Same as desirable level	62%
101-250		22%	13%	21%								
251-500		8%	8%	10%								
501-1,000		2%	5%	3%								
1,001-2,500		1%	5%	3%								
2,501-5,000		1%	2%	1%								
5001-10,000		0%	1%	0%								
10,001-20,000		0%	0%	0%								
>20,000		0%	0%	0%								
<b>3. Wildlife Habitat:</b>  To maintain forest function for wildlife habitat in the Dryden Forest.	<b>(3a) Habitat Proportion by Moose Emphasis Area:</b> <b>Rumac MEA:</b>			(1) Proposed LTMD (2) Completion of operational planning					<b>PARTIALLY ACHIEVED:</b> Browse exceeds desirable range at Plan Start. Browse target level was relaxed to allow movement toward desirable level over 40 years. Mature conifer and mixedwood habitats acceptable (generally with desirable ranges throughout planning horizon).			
	Browse Producing Forest	38%	5-30%			decrease				44%	45%	N/A
	Hardwood/Mixedwood Forest	38%	20-55%			maintain				34%	35%	N/A
	Mature Conifer Forest	25%	15-35%			maintain				23%	20%	N/A

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PLAN PERIOD: April 1, 2021 to March 31, 2031

**FMP-10: Assessment of Objective Achievement**

Strategic modelling projections based on: **LTMD\_10**

Management Objective	Indicator	Plan Start Level	Desirable Level	Timing of Assessment	Target (short-term)	LTMD - Projections			Assessment
						Short (10 yrs)	Medium (20 yrs)	Long (100 yrs)	
	<b>(3b) Frequency of Young Forest Patch Size for Rumac MEA</b>		100% of young forest patches in the <100, 101-250, and 251-500 ha size classes	(1) Proposed LTMD (2) Completion of operational planning	Move towards or maintain the young forest patch size frequency for the smallest three size classes.				<b>NOT ACHIEVED:</b> Through implementation of LTMD preferred harvest areas, young forest patches less than 500 ha is projected to move from 98% to 93% (away from the desirable level of 100%). The harvest strategy in the Rumac is to maintain a high proportion of small, young forest patches to maximize edge. This strategy and young forest patch size projected achievement may be improved through operational planning and harvest block layout during 2021 FMP development.
	< 100 ha	69%				61%	N/A	N/A	
	101-250 ha	20%				23%	N/A	N/A	
	251-500 ha	9%				9%	N/A	N/A	
	501-1,000 ha	2%				4%	N/A	N/A	
	1,001-2,500 ha	0%				2%	N/A	N/A	
	2,501-5,000 ha	0%				0%	N/A	N/A	
	5001-10,000 ha	0%				0%	N/A	N/A	
	10,001-20,000 ha	0%				0%	N/A	N/A	
>20,000 ha	0%	0%	N/A	N/A					
<b>4. Forest Access:</b>	<b>(4a) Kilometres of primary and branch road per square kilometre of Crown productive forest.</b>	0.35 km primary and branch SFL roads per km2 Crown productive forest	0.35 - 0.48 km primary and branch SFL roads per km2 Crown productive forest	(4) Annual Reports for Year 5 and final year of plan implementation	maintain within desirable level	TBD Stage 3	N/A	N/A	(future assessment after plan implementation)
To provide road-based access, land use and recreational opportunities through road maintenance and development of access to areas planned for harvest within the plan period.	<b>(4b) Kilometres of operational road per square kilometre of Crown productive forest.</b>	0.31 km operational SFL roads per km2 Crown productive forest	0.25 - 0.46 km operational roads per km2 Crown productive forest	(4) Annual Reports for Year 5 and final year of plan implementation	maintain within desirable level	TBD Stage 3	N/A	N/A	(future assessment after plan implementation)
<b>5. Wood Supply:</b>	<b>(5a) Area of Managed Crown forest available for timber production (ha)</b>	111,784	Maintain a minimum of 111,000 ha	(4) Annual Reports for Year 5 and final year of plan implementation		111,646	111,515	111,132	(future assessment after plan implementation, but estimated projections are good.)
To provide a predictable and continuous supply of wood to the forest products industry from the Dryden Forest.	<b>(5b) Long-term projected available harvest area (ha) (all Forest Units combined)</b>	14,766	Highest long-term AHA while balancing other plan objectives	(1) Proposed LTMD	Same as desirable level.	14,193	13,507	14,555	<b>ACHIEVED:</b> Harvest area projected through time to achieve harvest volumes and balanced objective achievement.
	<b>(5c) Long-term projected available harvest volume by major species group (m<sup>3</sup> / year).</b>	Annual Harvest Volume:	Highest long-term harvest volumes while balancing other plan objectives (reported by species group).	(1) Proposed LTMD	Same as desirable level.				<b>ACHIEVED:</b> Harvest volume projected through time to achieve harvest volumes, manage harvest volume variation between FMPs, and balanced objective achievement through the planning horizon.
	SPF	116,841				105,147	101,385	140,235	
	PO	38,453				37,991	34,570	36,273	
	BW	9,302				9,302	9,301	4,270	
TOTAL	168,118	155,402	148,369	165,448					
<b>(5d) Long-term projected available harvest volume by broad size (m<sup>3</sup>/year).</b>	Annual Harvest Volume:	Maintain similar size distribution as 2021 Plan Start	(1) Proposed LTMD	Same as desirable level.				<b>ACHIEVED:</b> The proportion of harvest volume by broad size groups is calculated to be similar (same or greater proportion of "large" sized volume) throughout planning horizon, as compared to Plan Start.	
Small	166,759				151,363	144,492	164,321		
Large	1,359				4,039	3,877	1,127		
TOTAL	168,118	155,402	148,369	165,448					

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**FMP-10: Assessment of Objective Achievement**

Strategic modelling projections based on: LTMD\_10

Management Objective	Indicator	Plan Start Level	Desirable Level	Timing of Assessment	Target (short-term)	LTMD - Projections			Assessment
						Short (10 yrs)	Medium (20 yrs)	Long (100 yrs)	
	<b>(5e) Actual Harvest Area as Percentage of Planned, by forest unit.</b>	Annual Harvest Area (ha):	Percentage of Planned Harvest Area Actually Harvested:	(4) Annual Reports for Year 5 and final year of plan implementation		N/A	N/A	N/A	(future assessment after plan implementation)
	BFDOM	152	100%		min. 90%				
	BWDOM	88	100%		min. 95%				
	CONMX	1,856	100%		min. 95%				
	HRDMW	1,235	100%		min. 95%				
	HRDOM	1,164	100%		min. 95%				
	PJDOM	2,184	100%		min. 95%				
	PJMX1	1,849	100%		min. 95%				
	PODOM	1,408	100%		min. 95%				
	PRWMX	34	N/A		N/A				
	SBDOM	1,762	100%		min. 95%				
	SBLow	1,493	100%		min. 85%				
	SBMX1	1,544	100%		min. 95%				
	TOTAL	14,769							
	<b>(5f) Actual Harvest Volume as Percentage of Planned, by major species group.</b>	Annual Harvest Volume:	Major species groups:	(4) Annual Reports for Year 5 and final year of plan implementation		N/A	N/A	N/A	(future assessment after plan implementation)
	SPF	116,841	100%		min. 90%				
	PO	38,453	100%		min. 90%				
	BW	9,302	100%		min. 90%				
	TOTAL	168,118							
<b>6. First Nation Engagement:</b>  To engage during plan development First Nation and Métis communities in or adjacent to the Dryden Forest, as well as individual Indigenous peoples who live off the reserve but continue to have traditional ties to the Dryden Forest.	<b>(6a) Feedback on effectiveness of engagement from First Nation and Métis communities that participated in FMP development</b>		100% of First Nation and Métis communities that participated during plan production to provide feedback on the effectiveness of their engagement.	(3) Draft Plan	Same as desirable level	N/A	N/A	N/A	(future assessment at Draft Plan stage)
	<b>(6b) Opportunities for involvement of First Nation and Métis communities in plan development, background information and values identification</b>		100% of First Nation and Métis communities provided opportunities for involvement in plan development, background information and values identification	(3) Draft Plan	Same as desirable level	N/A	N/A	N/A	(future assessment at Draft Plan stage)
<b>7. LCAC Engagement:</b>  To have the Local Citizens' Advisory Committee (LCAC) effectively participate in the development of the management plan.	<b>(7a) Local Citizens' Advisory Committee's self-evaluation of its effectiveness in plan development.</b>		LCAC Effectiveness survey results indicate at least 80% effectiveness in the development of the FMP.	(3) Draft Plan	LCAC Effectiveness survey results indicate at least 70% effectiveness in the development of the FMP.	N/A	N/A	N/A	(future assessment at Draft Plan stage)

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**FMP-10: Assessment of Objective Achievement**

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Management Objective	Indicator	Plan Start Level	Desirable Level	Timing of Assessment	Target (short-term)	LTMD - Projections			Assessment
						Short (10 yrs)	Medium (20 yrs)	Long (100 yrs)	
<b>8. Forest Renewal:</b>  To effectively regenerate harvest areas consistent with the regeneration standards outlined in the Silvicultural Ground Rules.	<b>(8a) Percent of harvested forest area assessed as successfully established, by forest unit</b>	N/A	100% of harvested area, eligible for establishment assessment, successfully meeting SGR establishment standards (by forest unit)	(4) Annual Reports for Year 5 and final year of plan implementation	Minimum of 95% of harvested area, successfully meeting SGR establishment standards (by forest unit)	N/A	N/A	N/A	(future assessment after plan implementation)
	<b>(8b) Planned and actual percent of harvest area treated by broad treatment type.</b>	Planned Renewal Area as a Percentage of Harvest Area, by Broad Treatment Type	Actual Renewal Area as a Percentage of Planned Harvest, by broad treatment type	(4) Annual Reports for Year 5 and final year of plan implementation	Minimum of 80% of the actual harvest area treated by the planned broad treatment type	N/A	N/A	N/A	(future assessment after plan implementation)
	Natural	25%	Min. 90%						
	Plant	47%	Min. 90%						
Seed	28%	Min. 90%							
<b>(8c) Planned and actual percent of area successfully regenerated to the target forest unit, by forest unit.</b>	N/A	Minimum of 90% of the actual harvested area successfully regenerated to the target forest unit, by forest unit.	(4) Annual Reports for Year 5 and final year of plan implementation	Minimum of 70% of the actual harvested area successfully regenerated to the target forest unit, by forest unit.	N/A	N/A	N/A	(future assessment after plan implementation)	
<b>9. Forest Values:</b>  To implement forestry operations in a manner that minimizes negative impacts on all identified resource users, and protects all identified values.	<b>(9a) Percent of forest operation inspections in non-compliance, by activity and remedy type.</b>	N/A	0% of FOIP inspections reported as non-compliant by activity and remedy type.	(4) Annual Reports for Year 5 and final year of plan implementation	Maximum 5% of FOIP inspections reported as non-compliant by activity and remedy type.	N/A	N/A	N/A	(future assessment after plan implementation)
<b>10. Healthy Ecosystems:</b>  To maintain productivity of soil function, and to protect water quality and fisheries habitat where forest management activities occur in the Dryden Forest.	<b>(10a) Compliance with management practices that prevent, minimize or mitigate site damage (% of inspections in non-compliance, by remedy type).</b>	N/A	0% of FOIP inspections reported as non-compliant with management practices that prevent, mitigate, or minimize site damage (by activity and remedy type).	(4) Annual Reports for Year 5 and final year of plan implementation	Maximum 5% of FOIP inspections reported as non-compliant with management practices that prevent, mitigate, or minimize site damage (by activity and remedy type).	N/A	N/A	N/A	(future assessment after plan implementation)

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Management Objective	Indicator	Plan Start Level	Desirable Level	Timing of Assessment	Target (short-term)	LTMD - Projections			Assessment
						Short (10 yrs)	Medium (20 yrs)	Long (100 yrs)	
	(10b) Compliance with management practices that protect water quality and fish habitat (% of inspections in non-compliance, by remedy type).	N/A	0% of FOIP inspections reported as non-compliant with management practices that protect water quality and fish habitat (by activity and remedy type).	(4) Annual Reports for Year 5 and final year of plan implementation	Maximum 5% of FOIP inspections reported as non-compliant with management practices that protect water quality and fish habitat (by activity and remedy type).	N/A	N/A	N/A	(future assessment after plan implementation)



