

Department of Energy, Mines and Resources

Dawson Forest Resources Management Plan - Annual Allowable Cut

Written Reasons for Determination

October 2021



Government of Yukon
Department of Energy, Mines and Resources
Forest Management Branch
Mile 918 Alaska Highway
Box 2703 (K-918)
Whitehorse, YT Y1A 2C6
Phone: 867-456-3999
Toll Free: 1-800-661-0408 ext. 3999
Email: forestry@yukon.ca
Yukon.ca

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Acknowledgements

This work was made possible by the members of the Dawson Timber Supply Analysis Technical Committee including Tr'ondëk Hwëch'in staff, the Dawson District Renewable Resources Council, and staff from the Government of Yukon, Department of Energy, Mines and Resources, Forest Management Branch and Department of Environment. Forsite Consultants Ltd. provided the data analysis and technical expertise for the Timber Supply Analysis. The public, industry representatives, non-government organizations and First Nations citizens provided input in various stages throughout the process. The Steering Committee worked collaboratively to arrive at an Annual Allowable Cut determination, and includes Directors and representatives from Tr'ondëk Hwëch'in, Department of Natural Resources, Land and Resources Branch and the Government of Yukon, Department of Energy, Mines and Resources, Forest Management Branch.

Executive Summary

This is the first annual allowable cut determination in the Dawson Forest Resources Management Plan area under sections 16(1) to (3) of the *Forest Resources Act* and Part 3 of the *Forest Resources Regulation*. This will replace the annual limit for Dawson region as per section 31(1) of the *Forest Resources Regulation*.

The Director, Forest Management Branch has determined an annual allowable cut of 28,000 cubic metres per year of green timber on public land. Included within the 28,000 cubic metre annual allowable cut is 500 cubic metres per year apportioned to First Nations communities as per Chapter 17 of Umbrella Final Agreement.

This determination was supported through collaborative work between the governments of Tr'ondëk Hwëch'in and Yukon and the Dawson District Renewable Resources Council. The Steering Committee, who oversees and provides direction for Dawson Forest Resources Management Plan implementation activities, agreed that a 28,000 cubic metre annual allowable cut meets and accommodates objectives for forest resources for the next 10 years. This decision reflects current management practices as well as the socio-economic objectives of the Dawson Forest Resources Management Plan.

The reasons considered by the Director, Forest Management Branch in making the annual allowable cut determination are described in this document for public land in the Dawson Forest Resources Management Plan area. Section 16 of the *Forest Resources Act* and Part 3 of the *Forest Resources Regulation* provide the factors to guide the annual allowable cut determination.

1. Introduction

An annual allowable cut is the maximum amount of timber that may be sustainably harvested from a particular area as prescribed by regulation and is expressed in cubic metres (m³) of timber per year. This is the first annual allowable cut determination for the Dawson Forest Resources Management Plan area and will replace the annual limit for Dawson as per section 31(1) of the *Forest Resources Regulation*.

In 2013, the governments of Tr'ondëk Hwëch'in and Yukon committed to undertaking a timber supply analysis to support an annual allowable cut determination under the Dawson Forest Resources Management Plan Implementation Memorandum of Understanding.

The completion of a timber supply analysis is the first step towards determining the annual allowable cut. In 2016, a Timber Supply Analysis Technical Committee ("the Committee") was formed to lead the timber supply analysis process. Members of the Committee included representatives from the Government of Tr'ondëk Hwëch'in, Dawson District Renewable Resources Council and Government of Yukon, Department of Environment and Department of Energy, Mines and Resources, Forest Management Branch.

The Director, Forest Management Branch, considered the information provided in the Timber Supply Analysis Final Report and Data Package; which included data analyses, recommendations and a record of engagement led by the Committee during the technical phase. The culmination of this work by the Committee was presented to the Steering Committee during the determination phase for review. The Steering Committee is composed of the Directors and representatives from the Government of Tr'ondëk Hwëch'in, Department of Natural Resources and the Government of Yukon, Forest Management Branch.

The determination does not direct how timber harvest planning, site plans or silvicultural activities proceed. Although considered and integrated into the annual allowable cut determination, other forest management planning decisions and activities have separate decision making and regulatory requirements.

1.1. Socio-economic context

The Dawson Forest Resources Management Plan area is located in north-central Yukon and includes the municipality of Dawson City. The population of Dawson City and surrounding areas is approximately 2,270 people (Yukon Bureau of Statistics, 2021). Citizens of Tr'ondëk Hwëch'in comprise almost a third of the population in Dawson City.

The demand for lumber during the Klondike Gold Rush created a period of significant timber harvesting in the Dawson area. Cabin logs were cut and sold to prospectors arriving in Dawson City. Timber was also harvested for steamer fuel wood, mining, construction of houses and boats and home heating.

Currently, the largest forestry operator in the Dawson area is Arctic Inland Resources Inc. Arctic Inland provides locally manufactured forest products and building materials to Dawson area residents through its retail outlet and distributes timber products throughout northern Canada and Alaska. There are several fuel wood suppliers in the Dawson area. Harvesting and processing of non-timber forest products, such as birch syrup, also contribute to the forest-based economy. Personal fuel wood harvest is a common non-commercial use of the forested land base.

2. Principles for annual allowable cut determination

Annual allowable cut determinations occur periodically or when circumstances provide a reason for a determination as per *Forest Resources Regulation*, section 25. When a determination is required, it is based on varying circumstances and context that considers regional socio-economic changes, land-use decisions, significant land base alterations or changes in forest management objectives that address sustainable forest management for a region. The annual allowable cut determination for the Dawson area is for 10 years; however, a new determination can be made earlier than 10 years if conditions change to ensure sustainability.

When making a determination, the Director incorporated principles to provide context and rationale to further guide the decision. These are based on the *Forest Resources Act* preamble to include:

- recognizing the long term health of Yukon forests to be maintained and protected for current and future generations;
- recognizing that the use for forest resources have an important role in the economy of the Yukon;
- recognizing that Yukon forests play an important role in the social and cultural lives of Yukon residents, and that First Nations have a special relationship with these environments; and
- recognizing that the use of forest resources must be planned and undertaken to enhance beneficial socio-economic change while not undermining the ecological and social systems upon which Yukon communities and societies depend.

The Tr'ondëk Hwëch'in Final Agreement and the Dawson Forest Resources Management Plan provide further context to the above principles to guide the annual allowable cut determination.

2.1. Legislative context

The authority and responsibility for forest planning and management on public lands rests with the Forest Management Branch of the Yukon government under the *Forest Resources Act*, and is pursuant to Section 17.5.1 of the Tr'ondëk Hwëch'in Final Agreement. Under the Tr'ondëk Hwëch'in Final Agreement (Section 17.4.0), the Dawson District Renewable Resources Council (DDRRC) is also assigned responsibilities for forest resources management in the traditional territory (Dawson Forest Resources Management Plan, 2013).

The Act includes requirements for forest planning, tenures, and compliance and enforcement that conserve diverse forest values for supporting the forest sector. Section 16 of the *Forest Resources Act* gives the Director the authority to make an annual allowable cut determination and to apportion the annual allowable cut.

Sections 24 to 30 of the *Forest Resources Regulation* provides the requirements the Director must consider. There are 18 factors that the Director must consider before making the annual allowable cut determination. These factors include data, analysis and information that are important to ensure sustainability of forest values. In addition, strategic guidance is provided from higher-level plans such as forest resources management plans or regional land use plans, public and First Nations consultation, and technical work from a timber supply analysis.

The 18 factors are summarized in Appendix A and reference where they appear in the Timber Supply Analysis Final Report and Data Package.

3. First Nations and public consultation

Chapter 17 of the Umbrella Final Agreement and the *Forest Resources Act* set out the requirements for sustainable management of forests in Yukon. The establishment of the Dawson Forest Resources Management Plan in 2013 and the Implementation Memorandum of Understanding in 2014 provided a commitment for collaborative forest planning in the region. One of the agreed priorities of implementation involves the completion of an annual allowable cut determination.

The annual allowable cut determination process involves public, stakeholder and First Nations input. Under section 28 of the *Forest Resources Regulation*, the Director must;

(d) provide a copy of all information relevant to the determination, new determination or apportionment of any first nation whose traditional territory overlaps wholly or partially with the area to which the annual allowable cut will apply and invite representations on this information during a period of not less than 30 days;

(e) make the information referred to in paragraph (d) available to the public and invite representations on it during a period of not less than 30 days; and

(f) consider any comments received under paragraphs (d) or (e).

First Nations and public consultation occurred between January and February 2020, and results were published through the What We Heard document in April 2020.

Forest Management Branch invited Tr'ondëk Hwëch'in and First Nation of Na-Cho Nyäk Dun to make representations on the information and any other interests or concerns to be considered during the annual allowable cut determination. The results of the First Nations consultation is listed in Section 5 below.

4. Timber supply analysis

A timber supply analysis was completed in 2018 to provide analysis and information for the Director to consider the 18 factors of the *Forest Resources Regulation* (Appendix A). The timber supply analysis is a technical report that provides estimates of timber supply based on the best available data and management assumptions. The primary sources of information for the timber supply analysis were the Yukon vegetation inventory, spatial land base data, timber growth and yield information, and current management practices. The Dawson Forest Resources Management Plan provided the forest management direction. The Timber Supply Analysis Report and Data Package were prepared by Forsite Consultants Ltd. using Patchworks modelling software for modelling and analysis. The report and data package were made available to the public and First Nations as required under the *Forest Resources Act*.

A 'base case' scenario was generated to best represent the current strategic direction provided from the Dawson Forest Resources Management Plan. The base case reflects current management practices and is used as a base in which to compare other timber supply projections, analyze sensitivities and to evaluate uncertainties.

4.1. Land base

Estimating as accurately as possible the forest land base for which harvesting can be considered is essential for making an annual allowable cut determination. The land base for the timber supply analysis is categorized as (1)

the gross land base, (2) the contributing forest land base and (3) the timber harvesting land base. Refer to the map in Appendix B for a description of the Dawson Forest Management Plan land base.

The gross land base is the total area encompassed within the Dawson Forest Resources Management Plan boundary. The gross land base is 4.89 million hectares. Areas that are not considered for harvesting are then “netted down” to a contributing forest land base.

The contributing forest land base is comprised of productive forest that may contribute to forest harvesting, landscape level objectives for biodiversity and other non-timber resources. The contributing forest land base excludes “non-contributing” areas such as municipalities, land dispositions and licenses, and any areas where forest management activities may not take place. The contributing forest land base also excludes “non-productive” areas such as water, rock, non-forested areas, and non-productive forest types. The contributing land base is 1.68 million hectares, or 34% of the total area of the Dawson Forest Resources Management Plan area. The remaining 66% is considered non-contributing or non-productive.

The timber harvesting land base is the portion of the contributing forest land base where timber harvesting may occur. The timber harvest land base lies within the Forest Resource Management Zone as described in the Dawson Forest Resources Management Plan. The timber harvesting land base excludes areas that are not available for timber harvesting such as “no-go” areas that are permanently set aside for other resources, parks and reserves, and areas otherwise off-limits to timber harvesting. Standards and Guidelines established under Section 23 of the *Forest Resources Regulation* prescribe where harvesting may or may not occur.

The timber harvesting land base is 370,654 hectares, which is 7.6% of the gross land base. The 370,654 hectares of the timber harvest land base is further reduced by “no harvest” and within-block retention areas. The effective timber harvest land base becomes 281,697 hectares, which is 5.76% of the gross land base or 16.76% of the productive, contributing forest area. Forested stands within the effective timber harvest land base are forecast over time to provide a sustainable level of harvest. The timber supply analysis is focused on timber stands within the timber harvesting land base for the purposes of modelling scenarios.

Table 1: Dawson Forest Resources Management Plan land base description

Land base	Description	Area (hectares)	Percent of total area
Gross land base	Total area within forest resources management plan, no land base removals	4.89 million hectares	100%
Contributing forest land base	Land base net downs, or removals of non-contributing and non-productive areas. Remaining area is contributing, productive forest land base.	1.68 million hectares	34%
Timber harvest land base	Further land base removals of parks, reserves, non-harvest areas.	370,654 hectares	7.6%

4.2. Base case

The base case scenario completed in the timber supply analysis best reflects current forest management practices within the Dawson Forest Resources Management Plan area. It presents an even-flow harvest that meets or exceeds management objectives for forest resources reflected in the Dawson Forest Resources Management Plan.

To provide for the long-term sustainability of the area’s forests and the needs of future generations, the planning timeline for some values, such as timber resources, is two stand rotations (200 to 300 years).

(Dawson Forest Resources Management Plan, 2013)

A number of alternate harvest scenarios were examined in the timber supply analysis, including non-declining even flow, non-declining increasing flow, increased initial starting harvest level and decreased initial starting harvest level. These analyses provided insight to the Committee into the trade-offs that are inherent in developing the recommended base case harvest flow.

The base case scenario projects an even flow of timber harvesting over a minimum ten-year period, with a harvest level of 68,000 cubic metres per year on public land. The base case represents the potential timber supply available and takes into consideration the biological capacity of the land base in combination with the objectives for the non-forest resources. The Director accepts that the base case as presented best represents the factors and management direction. It is important to note that the base case does not translate directly into the annual allowable cut determination. Uncertainty with data, information and assumptions need to be considered from the sensitivity analysis.

4.3. Sensitivity analysis

The data and assumptions used in any timber supply analysis are subject to uncertainty. To provide perspective on uncertainties in data and changes over time, a sensitivity analysis was conducted on the base case harvest flow of 68,000 cubic metres. The sensitivity analysis depicts how individual factors affect the base case independently of one another. They also provide an understanding of the magnitude of impact on potential timber supply on the base case given the uncertainty around data limitations and future conditions.

The factors chosen for the sensitivity analysis were based on an evaluation of the significance of specific uncertainties associated with the current information as presented, and potential future effects related to socio-economic and environmental conditions. These factors are consistent with current forest management practices and assumptions, and were selected using the judgement and expertise of the Committee. Table 2 presents the

results of the sensitivity analysis, and a description of the various sensitivity runs are described further below the table.

Table 2: Sensitivity analysis

Sensitivity analysis	Run	Description	Result to harvest flow	Public land harvest volume (m ³)
Base case	-	No variation	-	68,000
Minimum harvest threshold changed from 75 m ³ /ha.	1	Minimum harvest threshold at 60 m ³ /ha	70% increase	115,600
		Minimum harvest threshold at 100 m ³ /ha	38% decrease	42,160
Regeneration delay	2	Regeneration period increased by 15 years	7% decrease	63,240
In-block retention changed from 20%		Increase to 30%	12% decrease	59,840
Volume yield	3	Increased by 10%	12% increase	76,160
		Decreased by 10%	39% decrease	41,480
Decrease stand break-up by 30 years	4	To simulate increased wildfire (climate change)	26% decrease	50,320
Limit harvest in stands to within a specified distance from main access roads	5	7.5 km from main access roads	66% decrease	23,120
		12.5 km from main access roads	54% decrease	31,280

Sensitivity run one accounts for effects on timber supply given data gaps in the vegetation inventory or uncertainties in timber growth and yield projections in the base case. Sensitivity run two assessed the change to the timber supply base case should the silvicultural regeneration delay vary by more than 15 years from the base case. Sensitivity run three looked at the resulting timber supply if the management practice of in-block retention is changed from 20 to 30 percent.

The fourth sensitivity run assessed uncertainty for fire events that replace stands by modelling a decrease in stand break-up by 30 years. It is expected that fire frequency will increase with climate change. Decreasing stand break-up was modelled in this manner to help understand the potential impact of younger forests on timber supply.

The final sensitivity run examines the socio-economic reality in the Dawson Forest Resources Management planning area and that only a portion of the timber harvest land base is economically accessible from existing primary road networks, thus influencing potential sustainable timber supply.

The sensitivity analysis provided insight into the potential impacts of various uncertainties implicit in resource management. This is an important component that the Director considered when making annual allowable cut determination.

4.4. Recommendations from the Timber Supply Analysis Technical Committee

The Timber Supply Analysis Report provided recommendations from the Committee for improvements in information and data for the next timber supply analysis. Their recommendations were as follows:

- That a Permanent Sample Plot program be initiated within the Dawson Forest Resources Management Plan area to inform growth and yield projections used in forest resource analysis. Following these recommendations, eleven permanent sample plots were established between 2018 and 2019 in the Dawson Forest Resources Management Plan area.
- That the current Yukon vegetation inventory be updated before the next annual allowable cut determination. This project has been initiated, aerial photography acquisition is in the process of being tendered by the Forest Management Branch.

Two timber supply analyses were embedded within the report; one for the public land, and one for Tr'ondëk Hwëch'in Settlement Land. Tr'ondëk Hwëch'in Settlement Lands are not considered in this annual allowable cut determination. In the future, the analyses could be separated allowing a finer scale of Tr'ondëk Hwëch'in Settlement Land, such as customizing the management objectives and adopting Settlement Land specific volume correlations. This work will be considered at a future date by Tr'ondëk Hwëch'in.

5. First Nations and public input results

First Nation, public and stakeholder consultation occurred between January 15, 2020 and February 13, 2020. An information package was provided and included the Timber Supply Analysis Report, Data Package and a summary document. Engagement results are summarized in "What We Heard: Feedback on the Dawson Forest Resources Management Plan Annual Allowable Cut Determination" document. Five clear themes emerged:

- The base case of 68,000 cubic metres of timber harvest per year should be moderated and informed by the sensitivity analyses performed. The sensitivity analysis reflects the socio-economic and conservation realities from network infrastructure influencing timber haul distances due to climate change.
- Allow for future timber supply to meet the potential for industry growth while balancing conservation of intact forest ecosystems, cultural and social benefits.
- Future timber supply analyses should continually improve and evolve, ensuring sound forest management practices and that principles of regional land use planning are incorporated.
- Look for ways to incorporate incidental salvage of timber from industrial uses into the timber supply analysis modelling process.
- Ensure a broad range of public, stakeholder and First Nations interests continue to be represented and accounted for in the timber supply analysis and annual allowable cut determination process.

A portion of the planning area lies within First Nation of Na-Cho Nyäk Dun's Traditional Territory. The overlap area was included in the Dawson Forest Resources Management Plan and the timber supply analysis. It is acknowledged that the overlap area was applied in accordance with the Contiguous Boundary in the Sharing Accord between the First Nation of Na-Cho Nyäk Dun and the Tr'ondëk Hwëch'in. While the First Nation of Na-Cho Nyäk Dun was not part of the Committee, they received regular updates and opportunities to provide comments during the engagement period and were notified at major milestones during the process.

The Director is satisfied that the timber supply analysis conducted and the resulting base case scenario are representative of the realities of forest management in the Dawson Forest Resources Management Plan area. It identifies limitations in the data analysis, including the Yukon vegetation inventory, growth and yield data, and management assumptions. It also identifies uncertainties in timber supply base case as modelled and in the sensitivity analysis. Furthermore, it involves the technical expertise and recommendations of the Technical Committee, and as such the timber supply analysis as presented is suitable for reference in consideration of this determination. Input from consultation was also duly considered and incorporated into this determination.

6. Annual Allowable Cut Determination

The timber supply analysis report and data package, First Nation and public review results, sensitivity analysis and discussions with Tr'ondëk Hwëch'in were all considered when making the annual allowable cut determination. The Director has determined an annual allowable cut of 28,000 cubic metres per year of green timber on public land. All of the factors outlined in Part 3 of the *Forest Resource Regulation* were deemed adequate and considered in making the annual allowable cut decision.

The Director noted the sensitivity analysis had four significant uncertainties that have potential to impact the sustainable supply of timber and management of forest values. These included minimum harvest thresholds, volume yields, stand break-up and distance from main access roads. Each of these sensitivities resulted in a lower timber supply projection for the annual allowable cut from the base case volume of 68,000, or a decrease of 59%. The most significant was distance from existing main access roads.

In considering these uncertainties together, an Annual Allowable Cut of 28,000 cubic metres per year is determined for the Dawson Forest Resources Management Plan area for the next 10 years. This determination was discussed and reached consensus by the Steering Committee members. It reflects current management practices as well as the socio-economic objectives of the Dawson Forest Resources Management Plan.

The Director also recommends improvements in data and information for the next Annual Allowable Cut determination as follows.

- Improve data and information regarding minimum harvest thresholds, volume yields and utilization standards to reflect current harvesting operations. This can be supported through monitoring harvest areas and monitoring forest growth through Forest Management Branch's growth and yield program.
- Improved data and information regarding forest area loss due to mining and other land-use activity. The Committee, Tr'ondëk Hwëch'in and public all provided input regarding forest loss and forest utilization from these activities. There is a need to better estimate forest loss and need for improved utilization of loss of timber from mining activities.
- Monitoring and information on distance from main access should be further examined in the next Annual Allowable Cut determination. The sensitivity analysis clearly illustrated a significant downward impact on sustainable harvest level if industry is unable to access forest lands.
- To help subsequent forest resource planning to have a predictable supply of timber, the economics, social and environmental components should be further explored for consideration in the next determination.

- The Dawson Land Use Planning process was ongoing throughout this process. The Dawson Forest Resources Management Plan provides direction to ensure consistency between the two plans. The Dawson Land Use Plan, when approved, will need to be incorporated in the next determination.
- Improved data and information in relation to climate change should also be considered in the next determination in regards to forest fires and forest health.

The above improvements will help reduce uncertainty and further identify further improvements.

6.1. Apportionment

The Annual Allowable Cut can be divided through an Apportionment decision. Apportionment allows the Director to make a decision on the distribution of the annual allowable cut. In the case of the Dawson Annual Allowable Cut decision, 500 cubic metres is apportioned to Tr'ondëk Hwëch'in. Ensuring that this volume is continually available to Tr'ondëk Hwëch'in recognizes their rights under their final agreement, and is consistent with the sustainable forest management framework set out in the Dawson Forest Resources Management Plan.


Section 17.3.1.2 of Tr'ondëk Hwëch'in Final Agreement states:

Each Yukon First Nation shall have the right, during all seasons of the year, to harvest Trees on Crown Land to a maximum of 500 cubic metres per calendar year to provide for non-commercial community purposes.

6.2 Conclusion

The annual allowable cut is not an explicit calculation but rather a combination of quantitative (i.e. measurable) and qualitative (i.e. value-driven) data considered in a determination process, where considerable judgement is exercised according to the information as presented. The final determination considered the reductions in timber supply generated by the variables in the sensitivity analysis. It is further inferred from the engagement period, expert judgement, and recommendations from both the Timber Supply Analysis Technical Committee and the Steering Committee that a reduction of 59% in the base case to 28,000 cubic metres per year meets overall management goals and objectives from Dawson District Forest Resources Management Plan.

If additional significant new information or major changes occur in the management assumptions upon which this decision is based, then the determination may be reviewed sooner than the 10 year period as required by legislation.


Signature, Director - Forest Management Branch.
Date: <i>October 8, 2021</i>

Appendix A: Legislated factors considered

Table 3: Factors considered during the annual allowable cut determination for the Dawson Forest Resources Management Plan area as required under section 24 of the Forest Resources Regulation.

Forest Resources Regulation, section 24 requirement	Factors the Director has considered and accepted. Data package (DP) or analysis report (AR)
24 (a) if there is an applicable approved plan, the management objectives related to forest resources identified in that plan	(DP) 1.1 Background (Dawson Forest Resources Management Plan) (DP) 4.4 Parks and Protected Areas (Hinterland Forest Zone) (AR) 3.2 Management Practices (Biodiversity; Wildlife Habitat; Recreation; Riparian Habitat)
24 (b) land use objectives identified in any applicable land use plans referred to in subsection 13(1) of the Forest Resources Act	(DP) 4.4 Parks and Protected Areas (Hinterland Forest Zone) (DP) 10.0 Non-Timber Forest Resource Management (Hinterland Forest Zone) (AR) 3.2 Management Practices (Biodiversity; Wildlife Habitat; Recreation; Riparian Habitat)
24 (c) an analysis of the supply of timber resources based upon consideration of the type, productivity and accessibility of timber resources	(DP) 3.1 Forest Inventory (DP) 5.0 Description of the Land Base (age class, species distribution, site index, seral stage distribution) (DP) 6.0 Inventory Aggregation (stand breakup, species group, site class) (DP) 7.0 Growth and Yield (site index, site curves, utilization level, decay, waste and breakage; volume reductions; Yield Table Development – Pre-First Harvest Stands and Post-Harvested Stands; Silviculture Management Regime; Regeneration Delay (DP) 11.1 Minimum harvesting age / merchantability standards (AR) 3.1 Land Base Definition
24 (d) the amount of timber harvesting that may be conducted under another enactment	(DP) 4.2. land dispositions, agricultural dispositions, private land parcels, municipal boundaries
24 (e) the composition and expected rate of growth of forest resources before and following timber harvesting	(DP) 6.0 Inventory Aggregation (DP) 7.0 Growth and Yield (DP) Appendix A. Development of the Yield Tables (Live Volume; Dead Volume; Regen Delays; etc.) (AR) 3.3 Forest Dynamics (Growth and Yield Strata; Stand Breakup / Succession; Natural Disturbances)
24 (f) any silviculture treatments to be applied following timber harvesting	(DP) 6.0 Inventory Aggregation (silviculture system) (DP) 7.0 Growth and Yield (Yield Table Development – Pre-First Harvest Stands and Post-Harvested Stands; Silviculture Management Regime (DP) 11.6 Silviculture Systems (AR) 3.2 Management Practices (Harvesting; Silviculture Systems)
24 (g) the anticipated regenerative capacity of forest resources	(DP) 7.0 Growth and Yield; (DP) 7.7.2. Regeneration Delay (DP) 11.6 Silviculture Systems (AR) 3.3 Forest Dynamics (Growth and Yield Strata)
24 (h) any geographic features that may limit or prevent safe and sustainable timber harvesting	(DP) 4.5 Inoperable (steep slopes)

Forest Resources Regulation, section 24 requirement	Factors the Director has considered and accepted. Data package (DP) or analysis report (AR)
24 (i) the rate of utilization of timber resources to be harvested, including any allowance for damage and waste during harvesting	(DP) 7.0 Growth and Yield (Utilization Level; Decay, Waste and Breakage; Volume Reductions) AR 3.2 Management Practices (Harvesting)
24 (j) forest resources health	(DP) 9.0 Unsalvaged Losses (Stand Breakup)
24 (k) other uses of the land for which the annual allowable cut is to be determined which may reduce the amount of timber resources available for harvesting	(DP) Sec 4. Exclusions from the Timber Harvesting Land Base; (DP) 4.2. land dispositions, agricultural dispositions, private land parcels, municipal boundaries; (DP) 4.6 Highway Management Zone (for visuals and firewood cutting) (DP) 4.8 Riparian Reserves and Management Zones (around streams, lakes and wetlands) (DP) 4.4. Parks and Protected Areas (DP) 4.9 Future Land Base Reductions (within-block retention; roads, trails and landings)
24 (l) any other factors related to the capability of the area to produce forest resources that may affect the rate or level of timber	(DP) 4.1. Non-productive Areas (DP) 4.7 Non-Merchantable Stands (DP) 4.3. Roads Trails and Landings (AR) 3.1 Land Base Definition
24 (m) the environmental and socio-economic conditions	Results of consultation and review of the information as presented in the What We Heard report (2019)
24 (n) the effect of alternative rates of timber harvesting on the long term timber supply for Yukon	(DP) 11.7 Harvest Flow Objectives (DP) 12.3 Alternate Harvest Flows (DP) 12.4 Sensitivity Analysis (AR) 4.1 Alternative Base Case Harvest Flows (AR) 5.0 Base Case Sensitivity Analysis (Wildfire; Merchantability; Regeneration Delay; Within-block Retention; Stand Yields)
24 (o) the effect of varying timber harvest rates on the socio-economic conditions of Yukon residents within and adjacent to the area	(AR) 5.0 Base Case Sensitivity Analysis (Wildfire; Merchantability; Regeneration Delay; Within-block Retention; Stand Yields) Results of consultation and review of the information as presented in the What We Heard report (2019)
24 (p) the short and long term environmental implications on ecosystems of alternative rates of timber harvesting	(AR) 4.3 Base Case Attributes (Growing Stock Prior to Harvesting; Growing Stock for the Base Case; Age Class Distribution; Stand Origin; Harvest Area) (AR) 4.4 Constraints Analysis (Modeling of Non-timber Objectives: Hinterland Zone) (AR) 5.0 Base Case Sensitivity Analysis (Wildfire; Merchantability; Regeneration Delay; Within-block Retention; Stand Yields)
24 (q) the short and long term socio-economic implications for Yukon residents and First Nations residing in the area of alternative rates of timber harvesting	(AR) 5.0 Base Case Sensitivity Analysis (Wildfire; Merchantability; Regeneration Delay; Within-block Retention; Stand Yields) Results of consultation and review of the information as presented in the What We Heard report (2019)
24 (r) potential changes to forest resources health due to fire, insects or disease and actions taken in response to such factors	(AR) 5.0 Base Case Sensitivity Analysis (Wildfire; merchantability)

Appendix B: Dawson Forest Resources Management Plan: Land Base Map

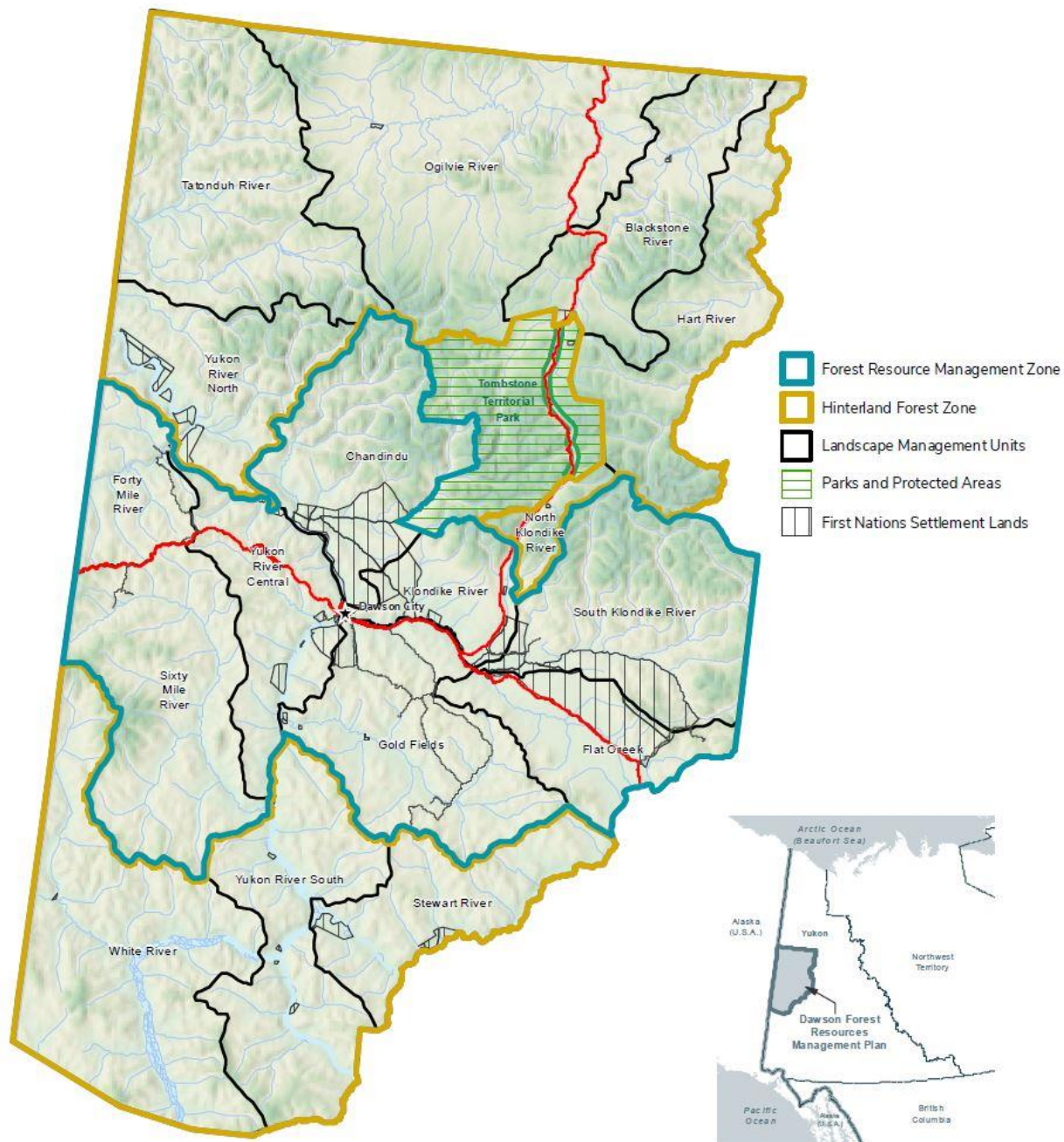


Figure 1: The area in blue outline includes the productive land base for forest resource harvesting. The annual allowable cut determination will apply to harvesting on public land within the Dawson Forest Resources Management Plan area. This annual allowable cut determination does not include Settlement Land

