Government of Yukon – Energy, Mines and Resources

Forest Management Branch

20 Pup Timber Harvest Plan

Dawson Forest Resource Management Plan Region

Date Prepared:

11/24/2021

Approved by
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Date

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Date

1 EXECUTIVE SUMMARY

The 20 Pup Timber Harvest Plan encompasses a 400 hectare area of green (live) white spruce and white birch with a total estimated volume of 42,986 cubic metres (m3). This timber harvest plan is suitable for commercial fuelwood and sawlog harvesting within the Yukon River Central landscape unit of the Dawson Forest Resources Management Plan. Its proximity guarantees a source of timber to residents of West Dawson during seasonal break/freeze-up of the Yukon River as well as supports the supply of sawlogs and firewood to the City of Dawson.

The objective of this timber harvest plan is to provide opportunities for commercial fuelwood and sawlog harvesting that is accessible during dry summer and frozen (winter) conditions. Winter harvesting is limited in the Dawson Forest Resources Management Plan area due to access constraints such as seasonal glacier formation and large distances from maintained access making it economically unfeasible to snow plough.

Options for green (live) fuelwood and sawlog harvest are limited in the region. The timber harvest plan is beneficial in providing sawlogs for dimensional lumber and contingency planning for fuelwood, as green coniferous timber takes 2-3 years to dry.

The 20 Pup Timber Harvest Plan sets operational goals and objectives for the issuance of harvesting rights within the planning area. The *Forest Resources Act* requires that commercial timber harvesting licences only be issued where a timber harvest plan is in place. Timber harvest plans provide mitigations and objectives for management of identified forest values.

All timber harvest applications will be required to meet the submission requirements of the *Forest Resources Act* Section 19(1). Applications require notification to the affected First Nation and public who reside within proximity of the application. The First Nation and public may make representations to the Director of the Forest Management Branch for a period of no less than 30 days (*Forest Resources Act*, Section 18).

In addition, a Yukon Environmental and Socio-economic Assessment may be required prior to issuance of permits when a project falls within the requirements of the Assessable Activities, Exemptions and Executive Committee Projects Regulations.

CONTENTS

2 INTRODUCTION

The 20 Pup Timber Harvest Plan area is located approximately 15 kilometers west of City of Dawson on the Top of the World Highway, within the Yukon River Central landscape unit of the Dawson Forest Resources Management Plan. It consists of an area of approximately 400 hectares of green timber (Map – Section 5.2). Opportunities to develop commercial harvest areas close to City of Dawson and surrounding residential areas are limited due to historical use, natural disturbance patterns (e.g fire) and other land use activities. This timber harvest plan will meet the objective of providing green fuelwood and sawlog opportunities to the City of Dawson.

This timber harvest plan is located on public land within the Traditional Territory of the Tr'ondëk Hwëch'in First Nation, and is consistent with the direction provided in the Dawson Forest Resources Management Plan. It has been developed to meet the requirements of the *Forest Resources Act* and *Regulation*.

The Tr'ondëk Hwëch'in First Nation and the public may make representations to the Director of the Forest Management Branch on harvest licence applications for a period of no less than 30 days (*Forest Resources Act*, Section 18). All harvesting licence applications require notification to the affected First Nation and the public in the area of the application, and all cutting authorities issued must be consistent with this timber harvest plan, the *Forest Resources Act*, *Forest Resources Regulation* and approved standards.

In addition, a Yukon Environmental and Socio-economic Assessment may be required prior to issuance of permits where a project falls within the requirements of the Assessable Activities, Exemptions and Executive Committee Projects Regulations.

3 BACKGROUND AND PURPOSE

3.1 SOCIO-ECONOMIC CONSIDERATIONS

City of Dawson has a population of approximately 1,400 people. The predominant industry is mining related activities with forestry, tourism, recreation, hunting, and trapping values also present.

The forests in the City of Dawson region provide significant ecological and aesthetic values, cultural and heritage values, recreational values and other non-timber forest resources values. City of Dawson's forests can sustain a vibrant, small to medium scale forest industry that provides timber for local markets, energy, economic opportunity, and employment for the region's residents (Dawson Forest Resources Management Planning Team, 2013). Many of the residents of City of Dawson rely on fuelwood as a heating source throughout the winter. Additionally, sawlogs are cut and sold locally as dimensional lumber.

The intention of 20 Pup Timber Harvest Plan is to provide wood products to City of Dawson. This would include smaller diameter timber for fuelwood as well as larger diameter spruce and birch for dimensional timber products such as beams/lumber.

3.2 ECOREGION AND DRAINAGES

This timber harvest plan lies in the Boreal Cordillera eco-zone within the Klondike Plateau eco-region. Characteristic terrain features include smooth, rolling plateau topography with moderate valleys and large structural basins composed of level to undulating terrain that were not glaciated during the last ice age. Elevations range from 740 to 1,060 metres.

Leading tree species within the region consist of black spruce, white spruce, trembling aspen and white birch characteristic of the Boreal Low Klondike Plateau subzone of west central Yukon. The understory is generally comprised of suckering species such as willow and aspen regeneration. The most common natural disturbance is fire, with a return interval of approximately 170 years; therefore early seral communities are most common.

Loamy moraine and sandy fluvial-glacial parent soil materials are dominant in the ecoregion. Much of the ecoregion is covered by a veneer of volcanic ash between 2 and

15 centimetres thick. Permafrost is discontinuous to sporadic with high ice content associated with fine-textured valley deposits. Characteristic wildlife includes barren ground caribou, grizzly and black bear, moose, beaver, red fox, grey wolf, snowshoe hare, raven, rock and willow ptarmigan, and golden eagle.

3.3 WILDLIFE

All site plans and operational development within the timber harvest plan will be consistent with the approved Wildlife Features Standards and Guidelines available from the Forest Management Branch and Yukon.ca.

Moose: The timber harvest planning area overlaps late winter range for moose based on local knowledge.

Fortymile caribou: Modeling shows that the Fortymile caribou does not utilize this area in the summer but there is likely good winter habitat within the area at higher elevation (i.e. the north eastern portion of the timber harvest plan). The timber harvest plan area is low elevation and it is unlikely to impede any migratory pathways for caribou.

The Fortymile caribou herd relies on lichen. The Department of Environment are conducting lichen modelling to predict high quality habitat for Forty mile caribou. Unfortunately there is no detailed information on lichen abundance for this area to predict the quality of caribou habitat.

Mitigations:

Moose: A temporary closure for moose is not recommended as Yukon Government – Department of Environment sees no concerns for moose.

Fortymile caribou: If significant abundance of lichen is found in harvest blocks, the block may only be harvested when the ground is adequately frozen and/or protected by snow cover to maintain lichen.

Upon initial reconnaissance of the area, Forest Management Branch found the area was dominated by feather moss, bunchberry and Labrador tea and appears to lack a significant abundance of lichen.

If caribou are encountered within the boundary of the timber harvest plan, the operators shall halt operations until the caribou have moved out of the area, and report sightings to the Natural Resource Officer.

3.4 BIODIVERSITY

Goal A of the Dawson Forest Resource Management Plan (section 7.1) is to conserve biological diversity. There are 3 objectives under this goal:

1) Conserve ecosystem diversity
2) Conservespecies diversity
3) Conserve genetic diversity

Each of the objectives that support the conservation of biological diversity have associated indicators that will be reported on to support monitoring and conservation efforts.

This area is dominated by a white spruce and white birch mixed forest type on variable aspects. The natural disturbance regime for this forest area is wildfire, creating a mosaic of forest cover landscape. This situation has created even-aged early seral stands with diverse pockets of discontinuous late seral, and non-forested openings. Mature, productive early and late seral stands are discontinuous creating a high degree of edge effect and diversity.

The retention strategy in each block will ensure that structure and function is maintained within these stands. These retention strategies will be defined in the site plan for each block before the time of harvest. These strategies will depend on existing structure and wind firmness. See Section 4.3.3 Harvesting Operations for more detail.

3.5 SOILS, RIPARIAN AND WATER RESOURCES

The moisture regime is mesic to moist depending on the aspect. Well-drained silt loam soils are present. Harvesting activities will be determined in the site plan using the Soil Conservation Standards and Guidelines to identify the maximum allowable percentage

of soil disturbance (no greater than 5%) and associated hazards. Utilizing existing access in the area will help minimize soil compaction in the harvest areas.

The timber harvest planning area is bound by 20 Pup to the west and Discovery Pup to the east. Swede Creek is 1.7 km to the south and downslope of the timber harvest planning area.

There are no tributaries or drainages within the planned area. The boundaries of the harvest area buffer nearby 20 Pup and Discovery Pup as per Forest Management Branch's Riparian Management on Streams and Lakes Standards and Guidelines. If any unmapped riparian features are discovered, protective reserves (i.e buffers) will be established as per the stated standard and guidelines.

3.6 Recreation and Visual Impacts

The timber harvest plan is located 15km west from City of Dawson and slighty closer to residential areas in West Dawson and Sunnydale. The planning area falls 2.5 km west from the boundary of the West Dawson and Sunnydale Local Area Plan.

3.6.1 Recreation

Local residents of West Dawson and Sunnydale use road networks off of the Top of the World Highway for winter recreation as traffic is minimal due to winter road closures. Such activities include snowmobiling, dog mushing, snowshoeing, and hiking. If snow ploughing is required to access the timber harvest plan, only one lane of the Top of the World Highway will be ploughed to maintain use for recreational activities. Summer activities include berry picking but this is anticipated at higher elevations and is not known within the timber harvest plan boundaries.

3.6.2 Visual Impacts

The Dawson Forest Resources Management Plan identifies the Yukon River Central landscape unit which the planning area falls into as having key values to protect visual quality and slopes that are highly visible from the City of Dawson. It also identifies the area as having high value visitor use for the Top of the World Highway's scenic views.

The timber harvest plan's northern boundary is located 1 km south and downslope of the Top of the World Highway, providing a visual buffer from travellers of the highway.The planning area is on a south facing slope on the north side of the Swede

Creek valley. The planning area may be visible from boaters on the Yukon River; however, does not face any developed areas such as residential housing or roadways. The area is not visible from the City of Dawson. Mitigation of visual effects will be achieved through irregular boundaries, small openings, high amounts of in-block retention, and selective harvesting.

3.7 Archaeological and Cultural Values

A Heritage Resource Overview Assessment was conducted to identify areas with elevated potential for heritage resources within the 20 Pup Timber Harvest Plan.

Harvest activities that could impact the ground surface in areas with elevated potential for heritage resources will require a heritage impact assessment. Types of harvest activities that could impact ground surface include road building, graded trail building, heavy equipment use, skidding, stream crossings, scarification, and graded landings.

It will be incumbent upon all commercial harvest permittees to report any heritage resources, if discovered during harvesting to a Natural Resource Officer. The Natural Resource Officer will immediately contact both the Tr'ondëk Hwëch'in Heritage Department and the Government of Yukon Heritage Resources Unit.

All permittees should familiarize themselves with the following Heritage Handbook and Best Management Practices before working in the 20 Pup Timber Harvest Plan:

http://www.tc.gov.yk.ca/pdf/Heritage_Handbook_2007.pdf

http://www.tc.gov.yk.ca/pdf/Land_Use_and_Land_Application_BMP.pdf

3.8 Disturbance

Swede Ceek, situated downslope of the timber harvest plan, has active mineral tenures. The existing access roads in the timber harvest planning area are used to access the mineral tenures. There is an overlap with a pending placer prospecting lease.

There is evidence in the timber harvest plan of small-scale historical logging that occurred during the 1940's-50's. Stumps can been seen throughout the timber harvest plan area. Forest Management Branch has had interest in the past for fuelwood and sawlog harvesting in the area; which has encouraged development of this plan.

In 1952, a fire affected parts of the timber harvest plan. While completeing field reconnaissance, Forest Management Branch identified an area that appears to be affected by the fire and has entered advanced stages of succession (see Map - Section 5.2). The identified area is represented by green (live) birch (aged at 65 years), which came in first after the fire, and green (live) spruce (aged at 60 years), which came shortly after. The identified area hosts timber around 10-12 cm diameter; however, there is potential for future harvest or small diameter fuelwood harvest.

3.8.1 Mining Overlap

Section 5.4 of the Dawson Forest Resources Management Plan supports the use of commercial timber on mining claims that are present within a timber harvest plan. Under the *Quartz* and *Placer Mining Acts*, a claim holder may only cut timber where timber rights have not otherwise been granted prior to the staking of a claim, and use the timber for mining-related purposes on their claim. The claim holder does not have the exclusive rights to the timber on that claim.

Prior to the Forest Management Branch issuing commercial harvesting permits or forest resources permits, the mining claim holder will be sent a notification by the Dawson mining recorder's office outlining timber harvesting interests that overlap with the claims. If there is timber on site that the mining claim holder requires for mining purposes, the claim holder has to respond to the notification within a 2 week period and give details of the volume and species required prior to the Forest Management Branch issuing a commercial timber permit or forest resources permit. The Forest Management Branch will then facilitate communication between the timber permittee and the claim holder to coordinate activities on the land base.

3.9 Other Land Users

Registered trapping concession 24 overlaps the timber harvest plan area. The concession holder was notified on December 24, 2021 and invited to make representation regarding the 20 Pup Timber Harvest Plan.

3.10 Forest Health

The forest stands consist of mature even aged birch leading stands and and uneven age of white spruce leading stands. There is a healthy understory of mixed deciduous and white spruce throughout the area. The stands shows no forest health concerns.

Natural populations of forest insects and diseases exist within the planning area, and play an important role in the function of a healthy ecosystem. Both systematic and general observations and reporting of insects and/or diseases continue throughout the region on a regular basis, and an aerial survey of Dawson Forest Management Region was completed in summer of 2021. For a more complete list of common pests and diseases that are present in the area, refer to the 2021 Forest Health Report. This report can be made available by contacting the Forest Management Branch or Yukon.ca.

4 Access Management and Harvesting Operations

4.1 Access Management

The Forest Management Branch regulates the construction, maintenance and decommissioning of forest resources roads according to the specifications outlined in the *Forest Resources Act* and Forest Resources Road Standards and Guidelines.

There are existing access roads in 20 Pup Timber Harvest Plan, previously developed to access mineral tenures downslope. The existing roads are at varied levels of maintenance and development. Section 5.2: Map showing existing access for the timber harvest plan and whether the access is currently usable or requiring upgrades prior to use. The existing access is considered an unmaintained public highway and may not be gated to restrict access.

Currently no new road access or upgrades of existing access are planned for the harvest area. If upgrades or construction of new roads is required in the future, it will require a Yukon Environmental and Socio-Economic Assessement. Low stump (skid) trails may be developed within the operating units and may be gated for the protection of resources and public safety. Low stump (skid) trails do not require a Yukon Environmental and Socio-Economic Assessement and disturbance will be limited according to Forest Management Branch's standards and guidelines. To minimize the new construction of low stump (skid) trails within the the area, all existing trails must be utilized before new skid trails are considered. New low stump (skid) trails must be pre-authorized by a Natural Resource Officer before they are constructed.

All forest resources roads that are constructed will be decommissioned following the completion of harvesting and silviculture activities to manage for erosion concerns and to limit access following the completion of harvest and silviculture operations, unless otherwise stated.

4.2 Operating Unit Areas and Volume Summaries

Operating Units in the 20 Pup Timber Harvest Plan were identified based on leading species (white spruce or white birch). While one species leads in each identified operating unit, white spruce and white birch can be found in all operating units.

Table 1 provides a summary of areas and estimated merchantable timber volumes in the operating units identified. Merchantable timber is defined as a minimum of 12.5 cm diameter at breast height, at a height of 1.3 m from the base of the tree, 8 cm in diameter at the top, and contains 50% sound wood. This includes standing dead timber.

Table 1: Summary of volumes by species in each operating unit

Operating Unit	Merchantable Area (ha)	White Spruce Volume (m^3)		White Birch Volume (m^3)	
		m^3/ha	Total[1]	m^3/ha	Total[1]
OU 1	124	72	8,928	52	6,448
OU 2	85	182	15,470	20	1,700
OU 3	87	100	8,700	20	1,740
		Total:	33,098	Total:	9,888

[1] Gross volumes are based on the average volume estimate m3/ha multiplied by the net area.

As the initial operating units are harvested in a progressive manner, current operating units could be altered within the timber harvest plan boundary. Forest Management Branch will ensure total permitted volume removed from the timber harvest plan does not exceed 19,000m^3 for a total minimum retention of 44%

33,908 (white spruce) + 9,888 (white birch) = 42,986m3 (total volume)
19,000 (total harvest) / 42,986m3 (total volume) = 44% retention

4.2.1 Operating Unit 1

This operating unit is characteristic of a long, even east facing slope of approximately 20% grade in the northeast corner of the timber harvest plan. The southwestern

portion of the operating unit has a more gradual 15% slope with a south – southwest facing aspect.

The operating unit has white birch as the leading species; however, also includes white spruce with diameters ranging from 24-38 cm, ideal for both fuelwood and sawlogs. The white spruce is aged up to 164 years old. The 15 cm diameter average white birch is ideal for fuelwood and sawlog and is aged up to 80 years old.

The ground cover is dominated by feather moss, bunchberry and Labrador tea with young spruce and alder regeneration understory; indicating a productive site. This is also represented by a site class of medium. The site class is an estimate of site productivity for tree growth and ranges from poor, low, medium to good.

4.2.2 Operating Unit 2

The operating unit is east to south facing and is defined by white spruce leading species. This operating unit represents a site class of medium; therefore, is a productive site.

Mature white spruce in operating unit 2 is approximately 115 years old, characteristic of diameters greater than 30 cm and is ideal for sawlogs. There is an intermediate regeneration of white spruce (15 cm and greater) that are ideal for fuelwood or smaller sawlogs (20cm- 25cm).

This operating unit is 121 hectares in size; however, 36 hectares of the operating unit is non-merchantable with potential for some individual merchantable trees. Therefore, the total merchantable area is 85 hectares.

The non-merchantable timber in operating unit 2 is representative of an overlapping fire from 1952. This was confirmed through tree age cores where the white spruce was 60 years old and white birch was 65 years old. The 1952 fire is regenerating with diameters approximately 10-12 cm, indicating limited potential for merchantable fuelwood. See Section 5.2 for a map indicating the fire boundary.

4.2.3 Operating Unit 3

Operating unit 3 is southwest facing with slopes of 5-15%. There is an understory of tall (8-10 m) alder. The merchantable timber is less uniform than in operating units 1 and 2 and shows trees with broken tops, dead and down, forked and sweeped (i.e curved from base to top). This operating unit hosts a site class of ‘poor;’ therefore, is

semi-productive for tree growth. The area is ideal for fuelwood with some sawlog potential with some spruce aged at 170 years old.

Existing access runs through the southern portion of the operating unit and shows significant historic harvesting within close proximity of the access.

4.3 HARVESTING

4.3.1 Harvest Schedule

All proposed harvesting will require site plans approved by Forest Management Branch, which contain harvest schedules indicating the season of year for harvesting, standards for soil conservation and maximum disturbance levels within the harvest block. At the time of development, the anticipated season for 20 Pup Timber Harvest Plan is January to March but may extend to other seasons based on interest.

Preliminary field work indicated soil conditions are suitable for both dry summer and frozen winter seasons for harvesting. Soil conditions and the season of harvesting will be confirmed during site plan development.

20 Pup Timber Harvest Plan scopes in all season harvesting opportunity. Winter access harvesting is limited in the Dawson Forest Resources Management Plan area due to access constraints such as seasonal glacier formation and the large distance from maintained accesses making it economically unfeasible to snow plough.

If an abundance of lichen is found in operating units then the site plan will approve the area for winter (frozen ground) conditions only.

It is anticipated that the time to complete harvest activities is 10 years from the commencement of harvesting activities; however the duration of commercial harvest activities will be dictated by commercial interest and volume harvested per year in developing the area.

4.3.2 Silviculture System

The silviculture system used will be a retention system where stand structure, complexity and diversity will be maintained. Details of the retention will be outlined in the site plan and tailored for each block. Forest Management Branch will ensure total permitted volume removed from the timber harvest plan does not exceed 19,000 m^3.

4.3.3 Harvest Operations

It is anticipated that all operating units will be producing products for green fuelwood and green sawlogs. Green fuelwood will be small diameter (<20 cm) with the majority being birch and to a lesser degree white spruce. Green sawlogs will be larger diameter (>20 cm dbh) white spruce and birch.

Operating units may be split into harvest blocks as identified by the Forest Management Branch. Size and volume of blocks will be determined based on the operators allocation as per the Forest Management Branch's Commercial Timber Harvest Allocation Procedure. Forest Management Branch expects interest from operators of where the average harvest volume per year will be between 170m^3 and 1000m^3.

All proposed commercial harvesting operations will be subject to the site plan as approved by the Forest Management Branch. The site plan will contain the operational details of harvesting as defined in the Forest Resources Regulation, Section 22. This includes soil descriptions, season of operability, slopes and special concerns (constraints), stand and site conditions, roads and landings descriptions, riparian buffers, management objectives, site prescription, and the reforestation plan.

4.4 Reforestation

After harvesting operations are complete, the harvest areas will be assessed to determine regeneration options. The results of this assessment(s), the Silviculture Regulation and the silviculture standards will guide the decision-making towards regenerating these harvest blocks. Natural regeneration is the preferred option with artificial regeneration (planting) used to supplement natural regeneration when directed by Forest Management Branch.

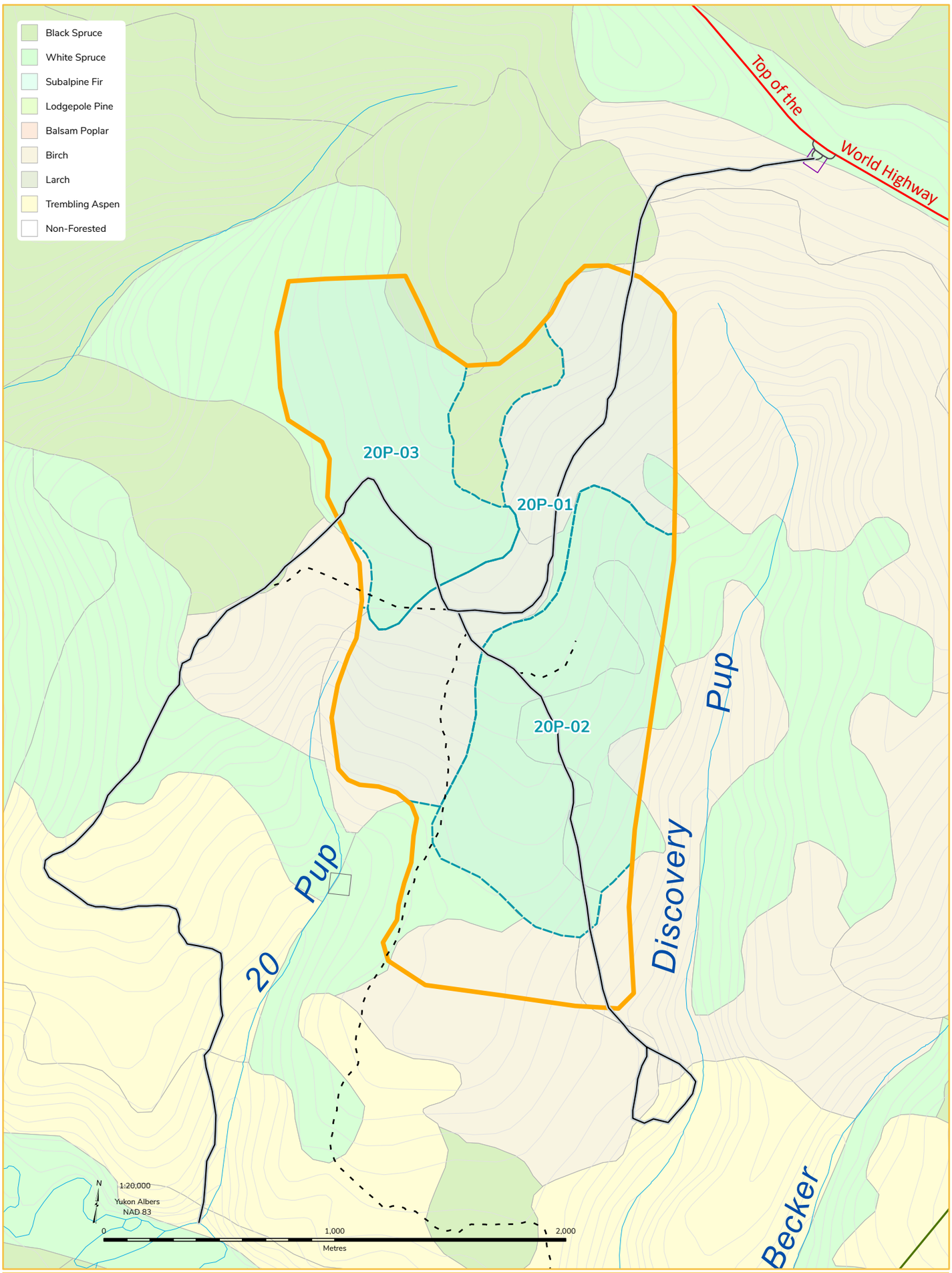
Newly bladed trails, roads and landings used during frost free conditions (summer/fall) may require scarification to reduce compaction and aid in the re-establishment of vegetation within the harvest area following harvesting. Scarification will require a Yukon Environmental and Socio-Economic Assessement .

5 APPENDICES

5.1 REPRESENTATIONS

Completed after draft notification period.

5.2 MAPS



Yukon

20 Pup Timber Harvest Plan Area

FRMP: Dawson Forest Management Plan

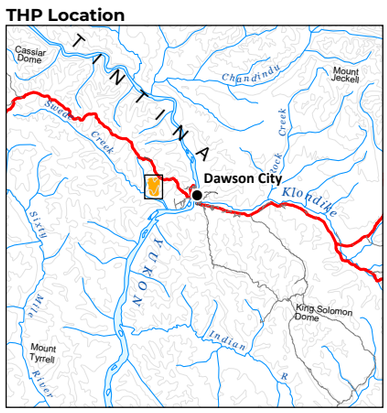
THP STATS
Dawson NRO District
THP Area: 399 ha ±

Date: November 17, 2021

For more timber harvest information, visit our website:
www.yukon.ca

Forestry spatial data managed and maintained by the Forest Management Branch, Yukon Government. All other spatial data provided by Geomatics Yukon.

THP Location



Project Specific Features

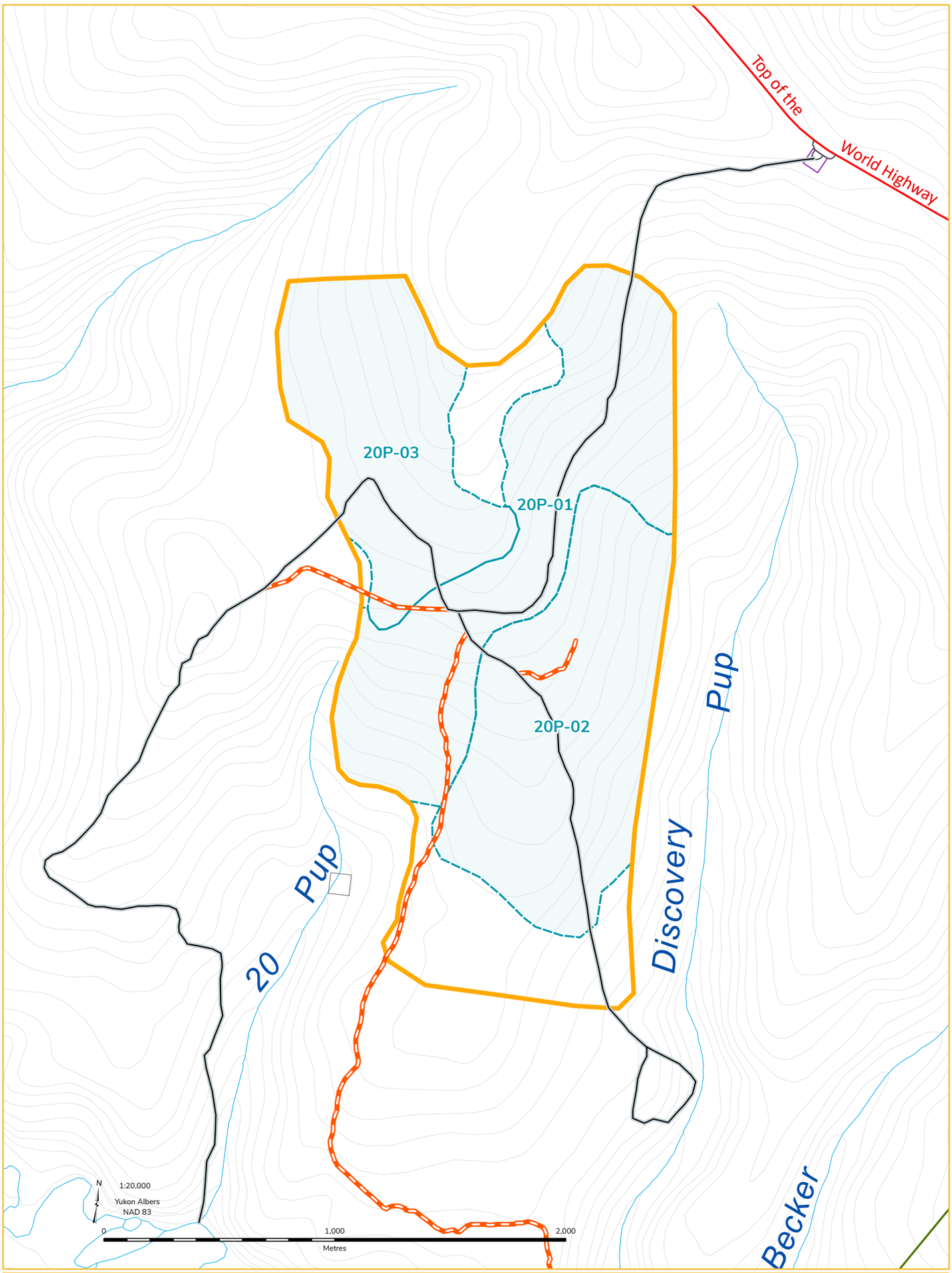
- 20 Pup THP Boundary
- Proposed Operating Units
- Existing Access/Trails
- Old Roads - Require Upgrades

Land Administration

- Land Dispositions
- Land Notations
- Surveyed Land Parcels

First Nation Administration

- Surveyed Settlement Lands
- Unsurveyed Settlement Lands
- Interim Protected Lands



20 Pup THP - Access Plan

FRMP: Dawson Forest Management Plan

THP STATS
Dawson NRO District
THP Area: 399 ha ±

Date: November 17, 2021

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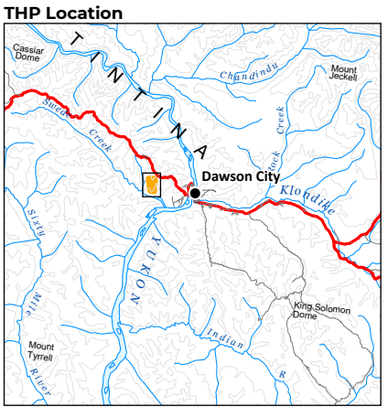

Project Specific Features
- 20 Pup THP Boundary
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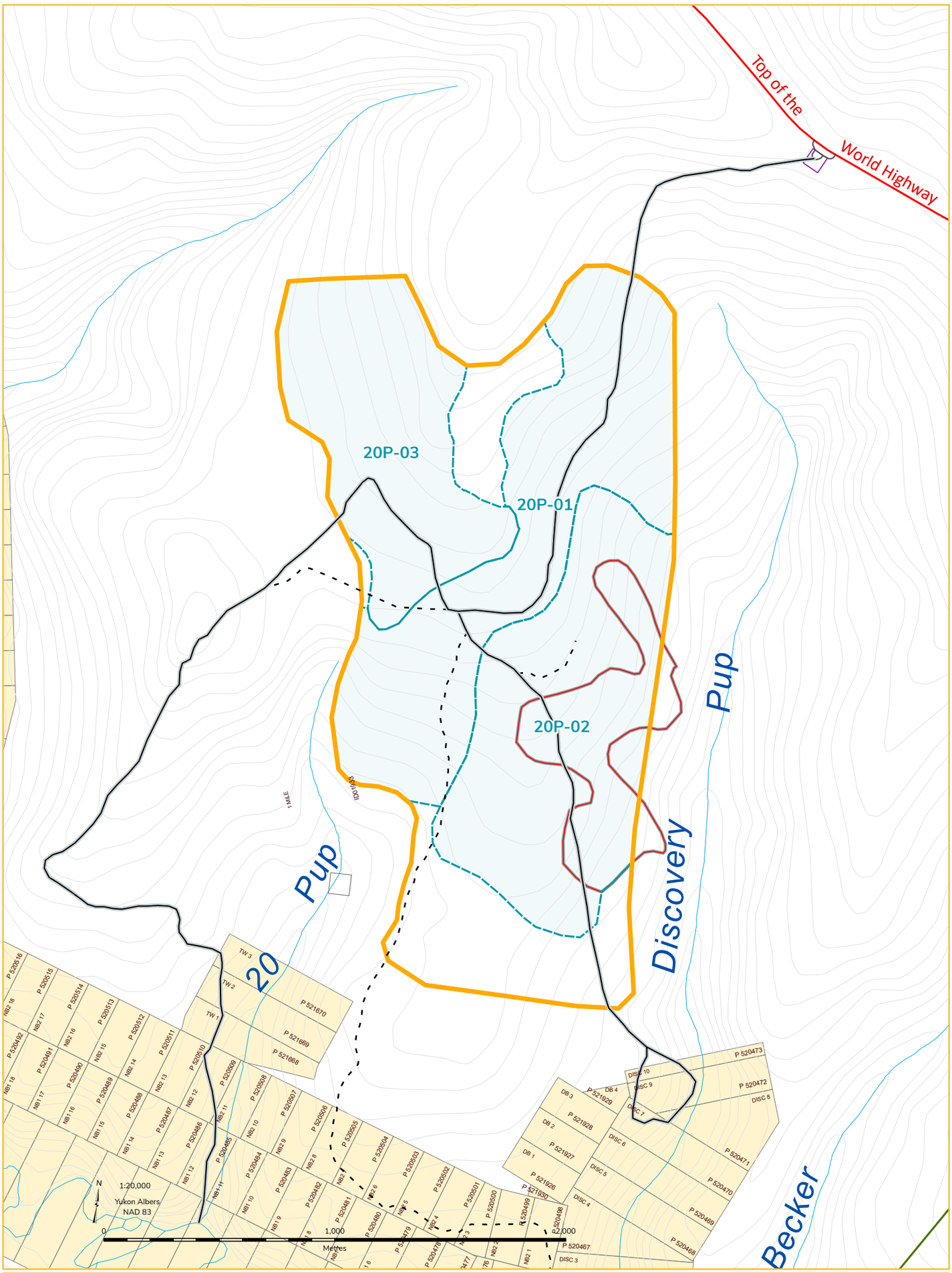

20 Pup THP Disturbance Map

FRMP: Dawson Forest Management Plan

THP STATS
Dawson NRO District
THP Area: 399 ha ±

Date: November 17, 2021

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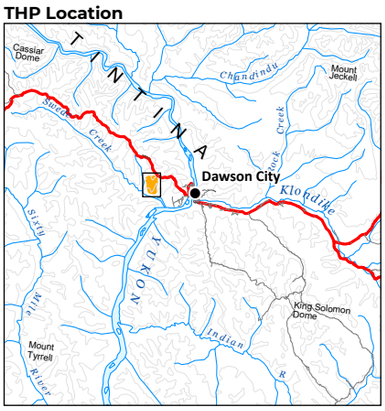
THP Location



Project Specific Features

- 20 Pup THP Boundary
- Proposed Operating Units
- 1952 Fire

Placer Claims

- Active and Pending
- Expired

- Existing Access/Trails
- Old Roads - Require Upgrades

Land Administration

- Land Dispositions
- Land Notations
- Surveyed Land Parcels

First Nation Administration

- Surveyed Settlement Lands
- Unsurveyed Settlement Lands
- Interim Protected Lands

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