

Partridge Creek Timber Harvest Plan



FOREST MANAGEMENT BRANCH

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Submitted by
Greg Cowman, Area Forester
Forest Management Branch

A handwritten date "June 12, 2012" in black ink, written in a cursive style with a horizontal line underneath.

Date

A handwritten signature in black ink, appearing to read "Lyle Dinn". The signature is written in a cursive style with a horizontal line underneath.

Approved by
Lyle Dinn, Director
Forest Management Branch

A handwritten date "June 12, 2012" in black ink, written in a cursive style with a horizontal line underneath.

Date

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Executive Summary

This proposed Timber Harvesting Plan (THP) has been identified as a potential timber source for commercial woodcutters in Mayo, Stewart Crossing and vicinity.

The area surrounding Mayo has seen timber harvesting in support of local industrial operations and use since the 1930's. Roads in the area, developed for a variety of uses, have been used for access to timber for personal fuelwood and building products during this time period. This has created a situation where the roaded land-base has a minimal supply of timber available for commercial development.

The Partridge Creek THP has seen some small scale harvesting in the past, has existing access and unlike other areas still contains a timber supply which will support harvesting to meet local needs under current demands, for up to 10 years.

The THP identifies two operating units, with an estimated gross timber volume in excess of 90,000 cubic meters (m³). After allowances for riparian management, visual buffers, maintenance of old growth stands and retention harvesting strategies the potential green wood harvest for the THP could be 45,000 m³. There is also the opportunity for commercial fuelwood harvesting, to salvage blow down and dead standing timber along existing access routes and around the edges of previous disturbance.

The THP sets operational goals and objectives for the submission of harvesting rights within the planning area.

The *Forest Resources Act* requires that commercial timber harvesting licences may only be issued where a THP is in place. The objective of this THP is to provide opportunities for small scale commercial harvesting which assist in satisfying local demand and provides mitigation that protects identified values.

All applicants for timber harvesting will be required to meet the submission requirements of the new legislation (FRA, Sec19(1)). The applications for harvesting licences require notification to the affected First Nation and public in the area of the application. The First Nation and public may make representations to the Branch Director on the application for a period of no less than 30 days. (FRA, Section 18).

In addition, applications that trigger a Yukon Environmental and Socio-economic Assessment require submission to the local Development Office in Mayo for public review prior to issuance.

1.0 Introduction

1.1 Background

The Partridge Creek area was initially established as a Harvest Planning Area under the previous *Yukon Lands Act, Timber Regulations*, during the 1990's. Several small harvesting permits were issued and a small mill was set up to process a portion the timber harvested. Since 2001 no permits have been the issued in the area.

The *Forest Resources Act*, which came into force on January 31, 2011, requires that a THP be prepared prior to the issuance of commercial timber harvesting licenses and cutting permits.

Recently, there has developed a small demand for green timber harvesting licenses in the Mayo District and like all small Yukon communities there is always a demand for fuelwood. Opportunities to develop harvest areas close to the community are limited due in part to historical use, natural disturbance patterns and other land use objectives.

A review of district forest resources and discussions with the Mayo Renewable Resource Council and the Lands Department of Nacho Nyak Dun provided direction to develop this area to meet small volume needs for the local communities.

1.2 Ecoregion and Drainages

The THP lies in the Boreal Cordillera Ecozone within the transition area between the Yukon Plateau Central and Yukon Plateau North ecoregions.

The ecoregion area is characterized by groups of rolling hills and plateaus separated by deeply cut, broad valleys. The climate is cold and semiarid. The mean annual temperature for the area is approximately -3.5°C with a summer mean of 12°C and a winter mean of -19°C. Mean annual precipitation varies from 250 mm in the southern areas near Carmacks to 400 mm at higher elevations in the north and east.

White and black spruce form the most common forest types. Black spruce is usually dominant in wetter areas. Lodgepole pine frequently invades burnt-over areas and very dry sites. Alpine fir occasionally occurs at the treeline but is sparse and is usually associated with white spruce and occasionally with paper birch. Sedge tussocks and/or sphagnum are common in wetlands. Scrub birch and willow occur in subalpine sections that extend up to the treeline. A significant vegetative feature of this ecoregion is the presence of extensive grasslands on all low-elevation, south-facing slopes.

The forests suffer frequently from recurring natural fires such that early seral communities are most common. Elevations are above 1000 m, except for major river valleys, which lie below 600 m in the northwestern portion. Several mountains reach heights of 1500 m.

Loamy morainal and sandy fluvioglacial material is dominant in the ecoregion. Much of the ecoregion is covered by a veneer of volcanic ash 10–30 cm thick. Permafrost is discontinuous to sporadic with high ice content associated with fine-textured valley deposits. Characteristic wildlife includes caribou, grizzly and black bear, moose, beaver, fox, wolf, hare, raven, rock and willow ptarmigan, and golden eagle. Land uses reflect recreational, tourism, hunting, and trapping values as well as some forestry activities and mining.

The THP is bounded by Partridge Creek to the north and the McQuesten River to the south, both of which flow southerly into the Stewart River, which in turn flows westerly into the Yukon River.

1.3 Socio-Economic Considerations

The communities of Mayo, Pelly Crossing and Stewart Crossing have fairly limited economic opportunities outside of the established government services, mining and tourism, which provide most of the economic base.

Traditional activities are important in the economy and lifestyle of the First Nation people in the communities.

Timber harvesting does not register on the economic scale of the region, nonetheless residents practice forest resource harvesting to support subsistence lifestyles and utilize timber as a domestic and commercial heating source.

Recent interest in timber harvesting for local building products and commercial fuelwood extraction has precipitated some interest in looking to forest management as a new opportunity. This THP will allow the local harvesting under the new legislative regime in support of those who may wish to use and supply timber products to the communities for these identified purposes.

However small an impact this may be, economic development and diversification are goals for the area. With support for planning and sustainable forest resource use, the opportunity to develop a larger economic base in forest management is available.

2.0 Planning Area Identification

The planning area lies east of the Klondike Highway, between the McQuesten River and Partridge Creek drainages. The area is divided topographically into two distinct operating units based on their geographic location on the landscape. Refer to Appendix A – Overview Map.

Table 1: Land Classification within the THP area

Partridge Creek Timber Harvest Plan				
Land Class	AREA (ha)	% of THP	OU 1 (ha)	OU 2 (ha)
Forested	3027.5	78.76	540.7	2486.8
Non-Productive	242.2	6.30	124.6	117.6
NSR	550.7	14.33	40.9	509.8
Wetland	12.6	0.33	12.6	
Rivers	8.5	0.22	8.5	
Urban/Developed	2.5	0.07	2.5	
	3844.0	100.00	729.8	3114.2

Operating Unit 1 – P1 – McQuesten

The operating unit is located along productive riparian and lowland forests of the McQuesten River. The unit has been identified for commercial harvesting for a client that currently holds a placer claim in the area. The approval of the THP will allow the operator to salvage timber from the placer claim and process it for commercial sale.

The stand of timber currently identified for harvest in this operating unit contains an estimated 2700 m³ of wood over an area of almost 11 hectares. It is located on the N shore and immediately upstream of the Bride location. The THP is targeting a selection harvest level of 100m³ annually based on client needs.

Timber, within this Operating Unit, further upstream from the proposed harvesting unit are not accessed by road and for wildlife and riparian concerns are excluded from harvest planning.

Operating Unit 2 – P2 - Partridge

The operating unit lies above the topographic break to the McQuesten River and is accessed by the Vancouver Creek Road.

The area is an upland forest consisting of fire origin stands of aspen, black and white spruce. A gross volume of 130,000m³ is estimated to be contained in the 860 ha of mature white spruce stands. Table 4.

Several small blocks harvested about 10 years ago, have regenerated naturally to white spruce with variable levels of stocking.

The Vancouver Creek Road and old logging roads provide existing access into the operating unit.

2.1 Landscape Issues

2.1.1 Wildlife

Reconnaissance did not identify wildlife use or sign requiring special mitigation. During operations and site plan layout, should indicators warrant, mitigation for wildlife concerns, shall meet the FMB Planning Standards for Wildlife Features, approved under the new legislation, which may be found at: http://www.emr.gov.yk.ca/forestry/pdf/planning_standards_wildlife_features.pdf

No significant concerns related to wildlife were identified by Department of Environment in relation to this proposed THP. The expected small scale of operations and previous disturbance leads to an expectation that the various species of wildlife will not be significantly impacted by proposed harvesting activity. Cavity nests were identified as a potential concern and where identified within harvest areas, operators will be required to meet the Wildlife Standards and shall reserve snags and trees with indications of cavity nesting, when operationally safe to do so.

2.1.2 Biodiversity

To maintain landscape level biodiversity over time both harvest rate and cut/leave pattern must be considered. Forest harvesting should attempt to emulate the Natural Disturbance Zone (NDZ) regime, as described in the Timber Harvest Planning and Operating Guidebook (THPOG, 99).

Operating Unit 1 in the Riverine and Lowland NDZ 1 & 2, is subject to small scale disturbances related to flooding, insects and disease rather than large scale fire. Small patch cuts or selection harvesting systems best emulate this disturbance pattern.

Operating Unit 2 in the Upland NDZ 3 & 4, experiences more frequent stand originating events from fire than the lowland area, normally occurring every 100 years with the average disturbance in excess of 100 hectares in size. Operational concerns and demand will limit the size of harvest openings. Planned retention and reserve areas within patch cutting will best emulate this fire disturbance pattern and conserve biodiversity across the landscape.

2.1.3 Riparian and Water Resources

The THP is bounded by two waterways, the McQuesten River to the south and Partridge Creek to the north. Two small non-classified drainages are the only other riparian features identified within the planning area.

Topography and location indicates a minimum 200m riparian management area along Partridge Creek to the north.

Harvesting along the McQuesten River will be minimized in accordance with the rights granted by Placer Mining permits and selective harvesting.

All classification and riparian management will meet the FMB Planning Standards for Riparian Management, approved under the new legislation, and may be found at:

http://www.emr.gov.yk.ca/forestry/pdf/planning_standards_riparian_management.pdf

2.1.4 Recreation and Visual Impact

The Klondike Hwy is a known tourist travel corridor and the McQuesten River has value for recreationists using the waterway for hunting access and other pursuits.

Operating Unit #1 will see limited harvesting along the McQuesten in keeping with small scale operations, selection harvesting and riparian buffering which will minimize negative impacts to recreational opportunities and associated visual concerns.

Operating Unit #2, is visually screened from both the highway and the river, by its upland location.

2.1.5 Archaeological and Cultural Values

Archaeology Branch of Tourism and Culture performed an overview assessment of the planning area and identified high potential areas for values. These are shown on the Appendix B Map. A site assessment will be scheduled prior to timber harvesting within these polygons and a sub-surface assessment will be conducted if soil disturbance related to roads or management treatments is required.

Cultural values in this area have not been identified.

2.1.6 Other Values

The Vancouver Creek Road is an existing road accessing mining claims and other land tenures that are located east of the THP, and the road is not maintained by the Department of Highways. The use of the road by timber harvesters will be monitored by FMB to ensure seasonal access for other users is maintained.

Quartz mining claims that exist over the north-western section of the THP were referred to the claim holders for comment in regards to timber planning and use in the area. It was indicated that timber would not likely be a concern (personal communication) and no formal comments were received.

2.2 Stand Level Issues

The THP identifies general areas in which there are opportunities to provide harvesting licenses and cutting permits. Prior to the issuance of a license the *Forest Resources Act* requires the submission of an application and preparation of site specific plans. Site Plans will provide the detailed additional information required under the *FRA, Regulation, Division 4*.

2.2.1 Ecosystem and Stand Composition

Table 2: Forest Cover Species Distribution within THP.

Partridge Creek Timber Harvest Plan Area				
Species	Area (ha)	% of Area	OU 1 (ha)	OU 2 (ha)
White Spruce	1622.7	53.60	311.8	1310.9
Trembling Aspen	1239.1	40.93	224.2	1014.9
Black Spruce	165.7	5.47	4.7	161.0
Total	3027.5	100.00	540.7	2486.8

Operating Unit 1 – McQuesten

The OU consists of two principle forest types. Aspen dominated with white spruce understory, from a more recent disturbance, and white spruce dominated stands that have not seen a stand replacing major disturbance in more than 160 years. As shown in Table 3 – all spruce leading stands in OU #1 are in excess of 140 years of age.

The topography is generally flat with a thin layer of sandy-loam soils over lacustrine gravels. The duff layer ranges in depth from 5 to 20 cm with a very thin humus layer under un-decomposed fines and mosses.

The target stand is multi-layered mature spruce with volumes in excess of 250 m³/ha over 10.8 hectares. This provides the opportunity for individual or group selection silviculture systems to minimize opening size in this sensitive riparian area.

Table 3: Age Class Distribution of White Spruce in THP

Partridge Creek Timber Harvest Plan Area				
Age Class (20year)	White Spruce Leading Type			
	Area (ha)	% of total	OU 1 (ha)	OU 2 (ha)
≤40	21.0	1.29	0	21.0
60	185.4	11.43	0	185.4
80	33.0	2.03	0	33.0
100	211.6	13.04	0	211.6
120	283.4	17.46	0	283.4
140	121.9	7.51	0	121.9
>140	766.5	47.24	311.8	454.6
Total	1622.7	100.00	311.8	1310.9

Operating Unit 2 – Partridge

The OU contains a mosaic of white spruce, aspen and black spruce leading forest types. The distribution of forest types is shown in Table 2 and the age classes are shown in Table 3.

The terrain is level with a silty-loam soil capped with 5 to 8 cm duff layer and mosses.

Target stands of spruce, over 120 years of age, occupy more than 65% of the spruce forested land base in this operating unit, unusual for this Natural Disturbance Zone where older forests normally occupy 15 % or less of the land-base. Merchantable volumes of timber in these stands range in volume from 130 to 200 m³/ha.

The white spruce stands are variable in stocking and structure. The harvesting system will be based on site specific stand characteristics, applicant needs, equipment available and will be outlined as required by the legislation in the site plan. The area will provide an opportunity for a full range of silviculture systems from patch cuts to retention and selection systems.

2.2.2 Cultural, Heritage and Archeological Sites

Applications in identified areas of high archeological potential will require surface site assessment prior to harvesting activities and a sub-surface assessment where activities are proposed that involve soil disturbance such as road and landing development.

Refer to Appendix B Map showing areas of high potential.

2.2.3 Other Land Users

The Forest Management Branch provided information to the holders of trapping concession #69 within the THP areas.

The trapper expressed no concerns related to timber harvesting as most trapping currently occurs along the Klondike Highway corridor, so would not be impacted by operations. (personal communication)

No other land use concerns have been brought forward.

3.0 Harvesting Section

3.1 Operating Unit Areas and Volume Summaries

Table 1 provides a summary of areas and estimated timber volumes in the two operating units.

Table 4 – Area and Volume Summary for Spruce Leading stands > 120 yrs.

Operating Unit	Area (ha) ¹		Volume (m3) ²		Target Volume	Retention % of Net
	Gross	Net	Gross	Net		
1 – McQuesten	311.8	10.8	63,800	2,700	500	81%
2 – Partridge	859.9	557.6	130,300	88,170	25,000	72%
Totals	1171.7	613.6	194,100	90,870	25,500	

1 Net area derived from removal of riparian, low volume or isolated stands in OU.

2 Volumes identified are taken from current Forest Cover Inventory estimates.

The THP has been prepared to meet the needs of small green timber harvesting opportunities for local communities. It is anticipated that the volumes of timber identified will provide for a minimum of 5 years harvesting at the current Annual Limit for the Mayo area or more years at current levels of demand.

3.2 Harvest Scheduling and Season

Ground conditions in both operating units indicate fine to medium textured soils which will enable harvesting during dry summer and fall as well as frozen winter conditions.

Operations will not be allowed during spring break-up or at other times when soils may be subject to compaction and rutting due to wet conditions.

Site specific constraints for harvesting will be outlined in the Site Plans prepared for each harvest block.

3.3 Silviculture Systems and Reforestation

Operating Unit - P1 – McQuesten will be restricted to small scale selection harvesting to maintain forest cover and values related to this lowland and riparian forest.

Operating Unit - P2 – Partridge has the opportunity to be managed through several suitable silviculture systems which will depend on the timber applicant's abilities, equipment and volumes requested. Protection of understory stems will be encouraged during harvest.

From past harvesting, it is anticipated that natural regeneration will occur to some degree. Post harvesting surveys will be conducted on harvest areas to ensure regeneration meets Yukon Stocking Standards. Should natural regeneration not meet the standards a fill planting will be scheduled.

Site specific constraints for regeneration will be outlined in the Site Plans prepared for each harvest block.

4.0 Access Management

Existing roads shall be used as the primary access into all OU of this THP.

Any new development proposed with forest harvesting applications shall be required to minimize road width and landing size and will be built to standards recognized by the *Forest Resources Act* for construction, maintenance and decommissioning.

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.

All new road construction in the THP may require a YESSA submission to the Designated Office in Mayo.

Operating Unit 1 – P1 – McQuesten

The area targeted for harvesting is adjacent to several placer claims and private property immediately next to the Klondike Highway. No new roads are anticipated due to the proximity of the stand to the private property.

Operating Unit 2 – P2 – Partridge

Vancouver Creek Road proceeds east from the Klondike Highway and is the southern boundary of the Operating Unit. The road is an existing public road that accesses mining claims and other land tenures east of the Operating Unit. FMB will monitor road use to ensure that access is not impeded for other users.

An old logging road, which accesses previously harvested blocks, heads north through the THP from about 5 km on the Vancouver Creek Road.

New roads and trails will be required to access areas proposed for harvest. All proposed harvesting will require site plans approved by FMB, which contain standards for soil conservation and disturbance levels within the harvest block.

Access along new roads developed may be restricted to Timber Resource Licence holders, to reduce negative environmental impacts, for reasons of safety or other considerations.

5.0 References

Timber Harvest Planning and Operating Guidelines, Department of Indian Affairs and Northern Development, 1999. (THPOG,99)

Socio-economic considerations

Yukon Community Profiles <http://www.yukoncommunities.yk.ca/communities/>

APPENDIX A

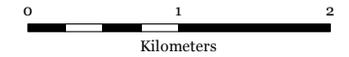
1:50,000 Overview Map

Partridge Creek Timber Harvest Plan Area

Northern Tutchone District Mayo Harvest Area

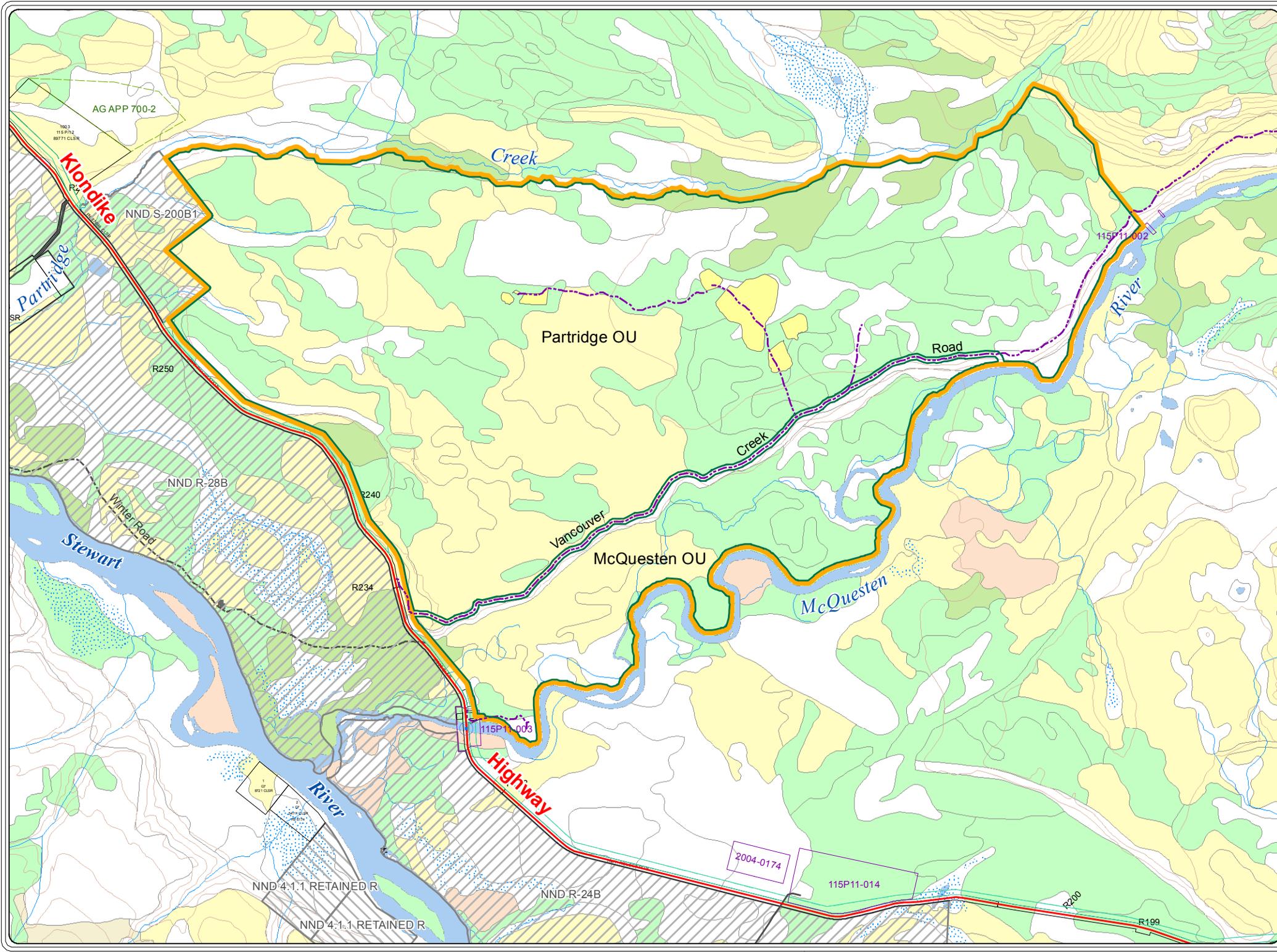
For more timber harvest information
Web: www.emr.gov.yk.ca/forestry
Phone: 1.867.456.3999

Date: June 12, 2012

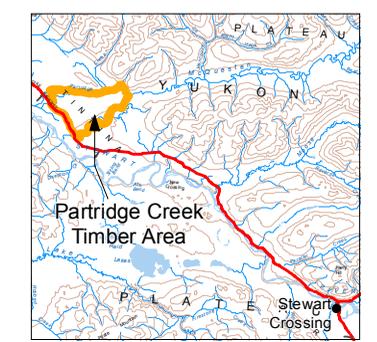


1:50,000 Yukon Albers
NAD 83

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



- | Project Specific Features | Land Administration |
|------------------------------------|---------------------------|
| Access Roads | Agricultural Applications |
| Past Harvesting | Agricultural Dispositions |
| Operating Units | Land Applications |
| Timber Harvest Area | Land Dispositions |
| | Land Licenses |
| | Notations |
| | Surveyed Easements |
| | Surveyed Land Parcels |
| Forest Cover | |
| Black Spruce | |
| White Spruce | |
| Subalpine Fir | |
| Lodgepole Pine | |
| Balsam Poplar | |
| Birch | |
| Larch | |
| Trembling Aspen | |
| Non-Forested | |
| First Nation Administration | |
| A: Surface & Subsurface Rights | |
| B: Surface Rights | |
| FS: Fee Simple | |
| Unsurveyed Interim Protected | |



APPENDIX B

Partridge Creek Heritage Overview Assessment



APPENDIX B
ARCHEOLOGY
HIGH POTENTIAL
AREAS SHOWN
IN RED.

Appendix C:
Representation Summary

Name of Plan	Partridge Creek Timber Harvest Plan
Prepared Date	May 8, 2012
Prepared by	Greg Cowman, Area Forester
Review Period	February 14 to March 19, 2012

Comments were received from:

- YG, Department of Environment

The following table contains a summary of the comments received, with responses to the comment and how the comment has been addressed.

Partridge Creek Timber Harvest Plan

May 2012

Topic	Name/ Organization	Comment	Consultation Comment Response	How comment/s have been addressed.
General				
Implement standard mitigations for wildlife, riparian areas, and wetlands	Dept of Environment	Licensed operators in the THP area should follow the approved FMB operating standards to prevent potential impacts to wildlife, riparian areas, and wetlands. If the mitigation measures contained in the standards are followed, these are considered acceptable to prevent potential impacts to environmental values.	As indicated in the text of the THP document, operational standards for riparian areas and wetlands will be met. Where new standards have not been approved operations will use the Timber Harvest Planning and Operating Guidebook. (THPOG, 99)	Wildlife Feature Standards are in place and will be used during operations.
Specific				
Cavity nests	Dept of Environment	Cavity nests for birds likely to be present within THP area. Trees with evidence of existing bird cavities should be retained wherever possible.	Where identified during layout and operations, wildlife trees will be reserved from harvest as per the Wildlife Features Standards.	Section 2.1.1 reworded to draw attention to the issue for operators.