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BR Timber Harvest Plan

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Part 1 - Introduction

The area near the north end of Marsh Lake has a long history of timber harvesting, primarily focused on saw logs, dating back to around 1985. Harvest volumes have been relatively small over those 40 years with total reported harvests in the neighborhood of 10,000 cubic metres (about 250 cubic metres or 110 cords per year).

This BR Timber Harvest Plan (THP) provides for the continuation of a small, defined wood supply for a local wood harvester over a 10-year period. The BR THP covers an area of approximately 180 hectares to the south of the Yukon River and about 5 km west of Marsh Lake.

The largely inactive 2008 Sawmill Creek/Lewes Marsh Timber Harvest Plan covered an area of approximately 5400 hectares and was infrequently permitted, resulting in limited wood harvest since its approval. The northeastern aspect of this general area has resulted in relatively high volume, old-age timber stands due to higher soil moisture conditions than drier south and west facing slopes, and a low occurrence of wildland fire disturbance. This BR THP is situated in a low elevation, northeastern portion of the 2008 Sawmill Creek/Lewes Marsh Timber Harvest Plan area.

The local wood harvester has carried out small-scale, low-impact logging within the BR THP area for the past 15 years, with approximately 10 years of active harvesting. Timber falling has largely occurred in fall and early-winter and is a highly selective being performed “by hand” using chainsaws, and ATVs are used to access harvest areas. Hauling of downed timber occurs in winter months, with snow cover, using a small, nimble articulated skidder. The harvester’s residence is adjacent to the BR THP so no mobilization of equipment is required and access to the BR THP has been via existing trails (i.e., no “forestry road” construction has occurred). Harvest over the years has been between 100-120 cubic meters of sawlogs and incidental firewood per season. While the BR THP contains approximately 18,000 cubic meters of harvestable timber, operator capacity and constraints around various values (e.g., heritage resources and caribou winter habitats) results in a proposed harvest of approximately 692.4 cubic meters of harvested wood over a 10-year period.

The BR THP falls within the Traditional Territories of Kwanlin Dün First Nation and Carcross/Tagish First Nation. There are no settlement lands within or immediately adjacent to the BR THP.

The 2020 Whitehorse and Southern Lakes Forest Resources Management Plan (2020 Management Plan) is the collaboratively-developed, guiding document for forest resources planning and utilization in the Southern Lakes region. The 2020 Management Plan addresses the complex dynamics between preservation and utilization, traditional/recreational values and industrial/commercial uses, as well as addressing the risks associated with high volume, contiguous fuel loads and the public's concerns around safety and protection of assets. The BR THP strives to meet the balanced approach of the 2020 Management Plan being specifically designed to minimize or eliminate impacts on wildlife and heritage resources while at the same time providing for the continuation of small-scale harvesting activities by an operator with an acknowledged, light footprint on the land. Harvest efforts to reduce dense, large-timber stands near developed values (i.e., residential properties) are targeted to reduce fuel loads and risks related to a large-scale wildland fire event.

This BR THP complies with the *Forest Resources Act* and the *Forest Resources Regulation*, and aligns with the Forest Management Branch's Operational Standards:

- Forest resources roads
- Riparian management on streams and lakes
- Soil conservation
- Wetlands riparian management
- Wildlife features standard

The BR THP falls within Zone 1 of the 2020 Management Plan. Timber harvest plans may be developed in this zone and the priority is to protect existing values through timber harvesting. The BR THP is within Yukon River Landscape Unit, where key values include: the adjacent Lewes Marsh Habitat Protection Area; habitats for salmon and freshwater fish, moose and furbearers, and; caribou winter range.

Part 2- Forest Resources and Timber Harvesting

The following section describes the forest resources, objectives for timber harvesting, locations that are suitable for harvesting, and access.

Ecosystem description

The BR THP is located 5 km west of the Marsh Lake outlet into the Yukon River (Part 4 – Map 1). The area is in the Yukon Southern Lakes eco-region within the Boreal Cordillera eco-zone. Characteristic terrain features of this eco-region include broad valleys and large lakes. Set within the rain shadow of the St. Elias Mountains, the climate is dry and cool, with discontinuous permafrost zone, where permafrost underlies less than one quarter of the landscape. Soils tend to be alkaline, and wetlands are typically dominated by marl formation. The ecoregion supports the highest mammalian diversity in the Yukon, with 50 to 60 known species.

Forest resources

The forest stands in the BR THP area are typically comprised of mature white spruce and lodgepole pine. Due to the area's aspect, generally northeast oriented, soil moisture levels are relatively high and the white spruce-feather moss complex dominates. These stand types are on a variety of sites, from lowland transitional sites, upland flat to complex upland made up of eskers and moraine features. Black spruce has a limited distribution. There is no subalpine fir present within the BR THP area.

Forest resources health

There are no known forest health issues within the BR THP area; however, there have been several forest health issues identified in the general area, including: flooding, aspen decline, western balsam bark beetle, large aspen tortrix, porcupine feeding, and pine needle cast.

The Forest Management Branch takes a risk-based approach to manage forest health concerns that arise, monitors forest health in the Yukon annually and releases a report

summarizing the current state of forest health. The most recent forest health report can be found at: <https://yukon.ca/en/science-and-natural-resources/forests/learn-about-forest-health> and provides additional information on the regional context of biotic and abiotic stresses. In addition to the aerial monitoring, Forest Management Branch documents and assesses any public or resource harvester reports of forest health concerns.

Location and focus of timber harvesting

The BR THP is immediately south of the residence of the local operator (Part 4 - Map 2.) Due to this proximity, no forest resources roads have been constructed to access the operating unit during past harvesting efforts, nor are they proposed. Access to harvest areas would be on unimproved skid trails using an ATV and a small, articulating skidder. The area of the BR THP is approximately 180 hectares.

Harvest would be highly selective and focus efforts on trees greater than 20 meters in height, resulting in the majority of the BR THP (i.e., 90%) not being impacted by timber harvesting. Part 4 – Map 3 shows the boundary of the BR THP; tree heights as determined from recently acquired LiDAR imagery (blue dots are trees greater than 20 meters in height, yellow dots are trees greater than 25 meters in height), and areas with elevated potential for the presence of heritage resources.

There are three identified harvesting areas in the BR THP (Table 1). Blocks A and B, while small and within a polygon with elevated heritage potential, would target the removal of 85% of large trees which contribute to fire spread rates and incidents of spot fires from the airborne transport of fire brands. Mitigations to protect unknown heritage resources are address below in Part 3 – page 14. Harvest in Block C would be highly selective for the straightest, largest trees particularly suitable of use as dimensional lumber and harvest levels would target in-block retention of 85%.

Table 1. Harvest block area and volumes of BR THP.

Harvest block	Area (ha)	Coniferous volume (m ³ /ha)	Estimated total volume (m ³)	Proposed harvest volume (m ³)
A	2.0	120	240	204 (with 15% retention)
B	1.7	120	204	173.4 (with 15% retention)
C	15	140	2,100	315 (with 85% retention)
Total	18.7	- -	2,544	692.4

Timber harvesting methods

The proposed harvesting activities in the BR THP would remain similar to those used by the existing operator and would include selective saw log harvest and limited green fuel wood harvesting, most of which would be related to access and the salvage of non-sawlog portions of harvested trees.

Harvesting activities would consist of patch cuts with retention and selective logging methods. To effectively contribute to fuel load reduction 85% of large trees would be removed from Blocks A and B, while only 15% of the trees within Block C would be harvested. Due to the location of the BR THP (i.e., north-east aspect) and minimal “edge” development due to the removal of only selected trees, the risks from windthrow are expected to be low.

Harvesting equipment would include ATVs for access, chainsaws, and small-scale harvesting equipment and skidders to move harvested trees. Logs would be staged and processed on the operator’s private property adjacent to the BR THP.

Application for authorizations to harvest within the BR THP must be submitted to the Forest Management Branch. Applications must include a site plan which includes the proposed harvesting methods, and must be approved by the Director.

Proposed harvesting methods would be assessed based on their alignment with:

- The requirements and objectives of this BR THP;
- The Whitehorse and Southern Lakes Forest Resources Management Plan;

- The Forest Resources Act and Forest Resources Regulation; and
- The Forest Management Branch operational standards and guidelines.

Schedule for undertaking timber harvesting

The BR THP would remain active for a duration of 10-years, or upon the completion of harvesting operations (i.e., 692.4 cubic meters of wood harvested). Estimating the timing for timber harvesting can be challenging, as it depends on operator capacity and demand for products. Detailed schedules for timber harvesting would be outlined in the site plan of each cutting permit, with this BR THP providing for:

- access (using ATVs) to harvest areas and fall trees with a chainsaw in late-summer/early-fall (August 15 to October 30), and;
- hauling of harvested trees with a small skidder in early-winter (generally October 30 to December 31), and potentially earlier if the ground is frozen and there is adequate snow cover to protect vegetation and heritage resources.

This timing is proposed to address concerns related to soil characteristics identified in the [Soil Conservation Standards and Guidelines](#), and other considerations such as wildlife, heritage resources and other land use activities.

Applications for harvesting licences require notification to the affected First Nation(s) and the public for a minimum period of 30 days.

Silviculture and reforestation

Silviculture is the science of controlling the establishment, growth, compositions, health and quality of forests after timber harvesting has been completed or other forest disturbances (such as insect or fire). Silviculture activities in Yukon are guided by the Silviculture Strategic Plan, 2018 (<https://yukon.ca/sites/yukon.ca/files/emr/emr-silviculture-strategic-plan-yukon-forests.pdf>). The 2019 silviculture stocking standards are used to determine if natural regeneration is sufficient or if additional silviculture treatments like tree planting are required.

Natural regeneration is the preferred method of reforestation because there is no reason to plant trees by hand if there are already trees growing naturally in areas that have been harvested. Due to the small-scale, selective harvest of trees and only the use

of skid trails to access harvest areas it is unlikely any site-specific silviculture activities would be required in the BR THP. However, the above-noted Silviculture Strategic Plan, 2018, and 2019 silviculture stocking standards would be applied to Block C if post-harvest monitoring by Forest Management Branch staff indicates natural regeneration proves to be inadequate.

Blocks A and B, as fuel reduction areas, would require long-term maintenance to meet the intent of meaningfully reducing risks associated with wildland fire. Therefore, Blocks A and B would not subject to silviculture actions, except perhaps efforts directed towards stand replacement with deciduous tree species.

Existing and proposed access

The BR THP is accessible via an existing, 5 km gravel road at approximately km 1393 of the Alaska Highway, which leads to the local operator's private residence. No forest resources roads are required to be constructed related to the implementation of the BR THP. Access to harvest blocks would be from the operator's residence on a limited network of existing skid trails. Permit and authorization applications must include a map indicating approximate skid trail locations, temporary staging areas (if required), and other development specific to the proposed operation. No gates controlling access would be required.

Enforcement

Compliance and enforcement play an important role in the management of this timber harvest plan. Natural resource officers, designated as forest officers under the *Forest Resources Act*, oversee compliance and enforcement of forestry activities. Based in Whitehorse, these officers inspect and enforce commercial harvesting operations. All forest users must ensure they adhere to relevant laws, regulations, and permit conditions.

Violations of the *Act* or the *Forest Resources Regulation* may lead to enforcement. Some examples include harvesting without proper authorization, non-compliance with permit terms, or unauthorized use of forest resource roads. Natural resource officers conduct inspections to verify permit compliance, assist operators in adhering to regulations, and prevent environmental damage. Inspection frequency varies based on operation scale and operator history.

Officers employ various measures to ensure compliance, such as resolving issues with clients, issuing notices of non-compliance, imposing fines, or suspending permits/licenses.

Compliance, Monitoring and Inspections, and the Forest Management Branch, would work closely with the First Nations to conduct joint site visits and inspections.

More information can be found in the [compliance and enforcement in Yukon forests fact sheet](#).

Part 3 – Values and Impacts

The following section addresses a range of values important to Yukon First Nations and residents, identified in the area of the BR THP. The values include: wildlife, water quality and fish habitat, soil conservation, biodiversity, heritage resources, recreation and visual impact, as well as trapping and outfitting. This section also identifies strategies to reduce adverse impacts on the values identified due to timber harvesting.

Wildlife

The BR THP is an area rich in wildlife species typical of those found in southern Yukon. Moose, wolves and bears are consistently present on the landscape. The nearby Lewes Marsh Habitat Protection Area is alive with waterfowl and aquatic species during the open-water season with swans arriving in April and, breeding and migrating birds abundant until late-fall. Beavers, muskrats, otters and a wide variety of fish species can be found in the marsh and nearby Marsh Lake. Portions of the area are important enough to be classified as wildlife key areas, specifically for:

- caribou - winter range;
- beaver/muskrat and waterfowl – year-round habitats year in nearby Lewes Marsh Habitat Protection Area, and;
- bald eagle - summer/reproduction habitat.

Caribou

The Marsh Lake area is within the range of the Carcross caribou herd. This woodland caribou herd spends the winter in low elevation, coniferous forest habitats where they feed on terrestrial lichen and where snow cover is relatively light. Woodland caribou are listed as a species of special concern in Canada by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Caribou are very important to the First Nations in the region and rebuilding the caribou population has been the focus of wildlife conservation efforts for the past 30 years. Careful management of caribou

habitat is a key consideration in the planning and design of timber harvest operations in this area.

The Department of Environment found that the general area of the BR THP is along a potential migration corridor but of only moderate suitability for winter use by caribou ([Range assessment as a cumulative effects management tool: Assessment of the Carcross Caribou Herd Range in Yukon. Francis, S., and Nishi, J., 2015](#)).

The Forest Management Branch commissioned a 10-year study ([Lewes Marsh Caribou Lichen Research and Monitoring, 2023](#)) to assess the impact of different levels of harvest intensity on terrestrial forage lichens in the winter range of the Carcross caribou herd. The results from this study show that stand thinning may provide a bridging strategy to extend forage lichen availability in late-seral lichen forested areas; whereas a decline in lichen cover was observed in unharvested areas over the same 10-year period.

In recognition of the high value placed on caribou, the following strategies to reduce adverse impacts on caribou due to timber harvesting in the BR THP include:

- Operations would cease when caribou are sighted in the area. Any caribou sightings would be reported to the Department of Environment.
- Harvesting would not occur during the critical late-winter period.
- High in-block retention for Block C which is located away from residences and higher traffic areas.
- Access into the area would be restricted to licensees and permitted personnel during operations.

Moose

Moose are another important species in the Southern Lakes. Moose are a valued meat source for Yukoners and they play an important role in the ecosystem, notably as a key prey species for wolves.

While the BR THP does not overlap with wildlife key areas for moose, it is possible to find moose in the area; therefore, operations would cease if moose are present during active harvesting activities.

Water Quality

Only one stream is considered to flow year-round in the area of the BR THP, that being along the eastern boundary of the BR THP. While the stream appears to flow to the north-west between the operator's residence and the BR THP boundary in reality it flows by a shorter path to the Yukon River, that being straighter north in the corridor between surveyed land parcels (Part 4 – Map 3).

No stream crossings area required for harvesting to occur in the BR THP and all operational development would be consistent with the current riparian and wetland management standards. This includes the Forest Resources Act and its Regulations, Riparian Management on Streams and Lakes Standards and Guidelines, Wetlands Riparian Management Standards and Guidelines.

<https://yukon.ca/sites/yukon.ca/files/emr/emr-forest-resources-regulation-riparian-management-streams-lakes-standards-guidelines.pdf>

Soil conservation

Protecting the integrity of soils and their hydrological function is essential to maintaining a healthy and productive forest ecosystem. The [Soil Conservation Standards and Guidelines](#) have been established to conserve soil productivity and hydrological function during harvesting operations. These standards can be found at [Yukon.ca/forestry-policies-standards](https://yukon.ca/forestry-policies-standards).

Harvesting activities within the BR THP would include the use of ATVs to access harvest areas for the purposes of tree falling, and skidders would be used to haul harvested trees when the ground is frozen ground and there is adequate snow to protect soils. With this phased “season/equipment” approach the majority of concerns related to impacts of harvesting activities on soil integrity would be eliminated. Regardless, the Soil Conservation Standards and Guidelines would be adhered to in the development of site plans and referenced in authorizations.

Biodiversity

The area of the BR THP, like most of the Yukon, is home to a wide range of plant and animal species, including several wildlife species listed under the Species at Risk Act (Table 2). There are no critical habitats identified within the boundary of the BR THP for

the listed species, with recognition of the potential winter-use of moderately suitable habitat (referenced above) by the local caribou herd.

Table 2. Wildlife species listed under the *Species at Risk Act* in the BR THP area.

Species	SARA listing
Little Brown Myotis	Endangered
Bank Swallow	Threatened
Barn Swallow	Threatened
Grizzly Bear	Special Concern
Northern Mountain Caribou	Special Concern
Wolverine	Special Concern
Olive-sided Flycatcher	Special Concern
Rusty Blackbird	Special Concern
Short-eared Owl	Special Concern
Common Nighthawk	Special Concern

Habitat availability is not a limiting factor for any of the listed, or unlisted species of plants or animals in Yukon. As harvesting operations in the BR THP would be limited to late-summer/early-winter only a relatively small number of species would likely be encountered during harvesting activities, such as but not limited to: red squirrels, snowshoe hare, chickadees, grey jays, grouse, goshawks, great horned owls, marten, lynx, red fox, wolverine, foxes, wolves, mule deer, caribou and moose. It is possible that black bears could den in the lowland forests that the BR THP is located in.

In addition to suspending operations when large animals are observed, the Yukon Forest Resources Act – Wildlife Features Standard would be applied to protect specific wildlife values such as nest, mineral licks and dens.

Heritage resources

Heritage resources and historic features are important to all Yukon people. The preservation of these values is an important consideration in the planning of the BR THP. Legislation and policy applying to the management and protection of heritage resources includes Chapter 13 of the Carcross/Tagish First Nation and Kwanlin Dün First Nation Final Agreements, as well as the Yukon Historic Resources Act and the Archaeological Sites Regulation.

The *Historic Resources Act* protects archaeological and palaeontological objects and the sites where they are found. Under this legislation it is prohibited to survey, document, disturb, alter, excavate or remove objects from historic sites without a permit.

Areas of elevated heritage potential were identified during a 2020 Heritage Resources Overview Assessment of the larger Sawmill Creek/Lewes Marsh Timber Harvest. The layout of Block C within the BR THP has been configured to avoid harvest activities in areas of elevated heritage resource potential. Blocks A and B are within an identified area of elevated heritage resource potential.

A Heritage Resource Impact Assessment is generally required when harvest activities are planned to occur within areas identified as having high potential for the presence of heritage resources. Due to the following efforts to reduce or eliminate ground disturbances, it is not anticipated that any meaningful risks to heritage resources would exist:

- no land clearing or road development would occur;
- access only with ATVs during the snow-free period;
- hauling only occurring during frozen ground/snow cover periods of the year, and;
- the operator being familiar with the [Yukon Tourism and Culture - Handbook for Identification of Heritage Sites and Features](#).

Further, if historic features or heritage resources are discovered during operations, the timber operator would immediately suspend operations, inform a Natural Resources Officer, as well as the heritage departments of Yukon, Carcross/Tagish First Nation and Kwanlin Dün First Nation.

Recreation and visual impact

The area of the BR THP experiences limited use by local residents and others: for harvesting (hunting, trapping, and gathering); as an access point to the backcountry, and; other wilderness activities such as bird watching. This limited use is attributed to the access road from the Alaska Highway typically being regarded as a “private” road to several of the residential properties along its length. While this is not actually the case, use and access of the area is largely limited to the local residents.

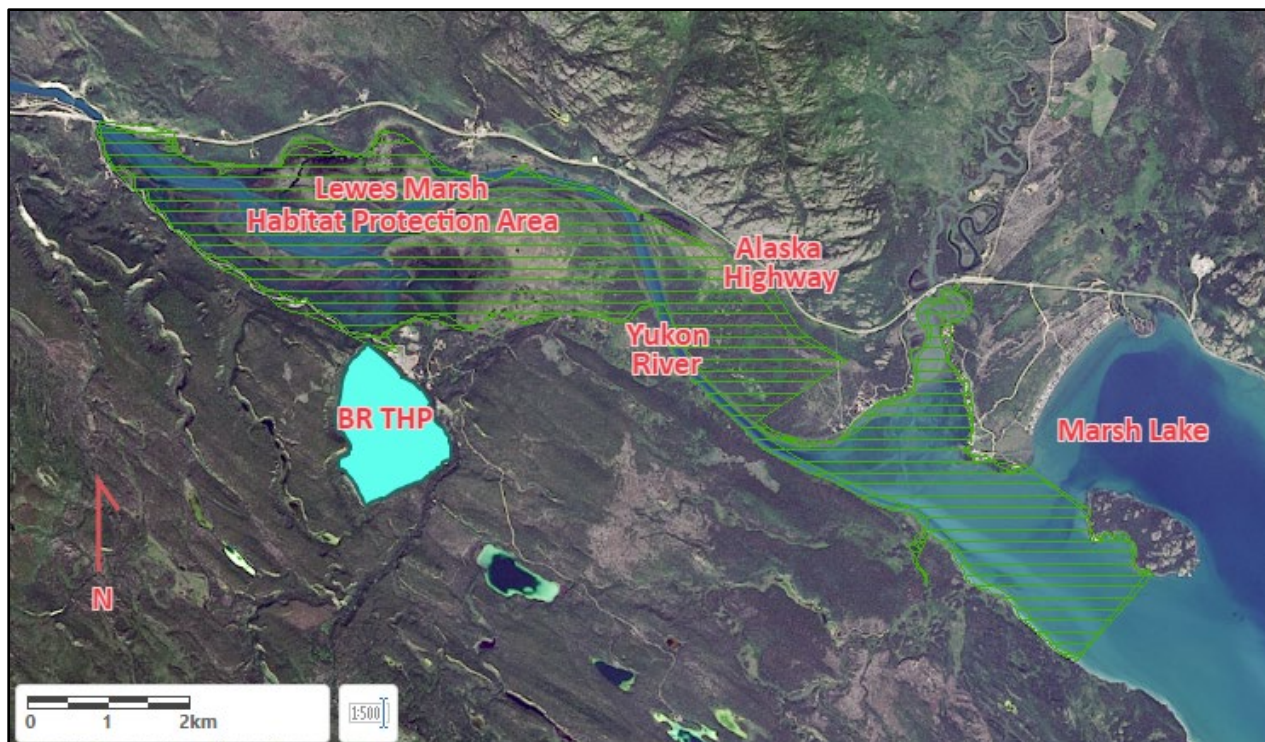
Timber harvesting can impact the visual quality of landscapes by creating visual contrasts between cut areas and adjacent stands. The harvesting approach of the BR THP, which is the selective harvest of merchantable-sized trees, in small patches with relatively high retention, is unlikely to be detectable to casual observers, typically travelling on the Alaska Highway.

Trapping and Outfitting

The BR THP overlaps within Registered Trapline #296, and with Outfitting Concession #17. There is expected to be no impact to outfitting activities due to the timing of timber harvest activities and their location. There may be some overlap with trapping activities. To avoid any land use conflicts the permit holder must contact the registered trapping concession holders 14 days prior to commencing harvest. The permit holder must not damage any signs of trapping equipment, trapping sets, and trails.

Part 4 - Maps

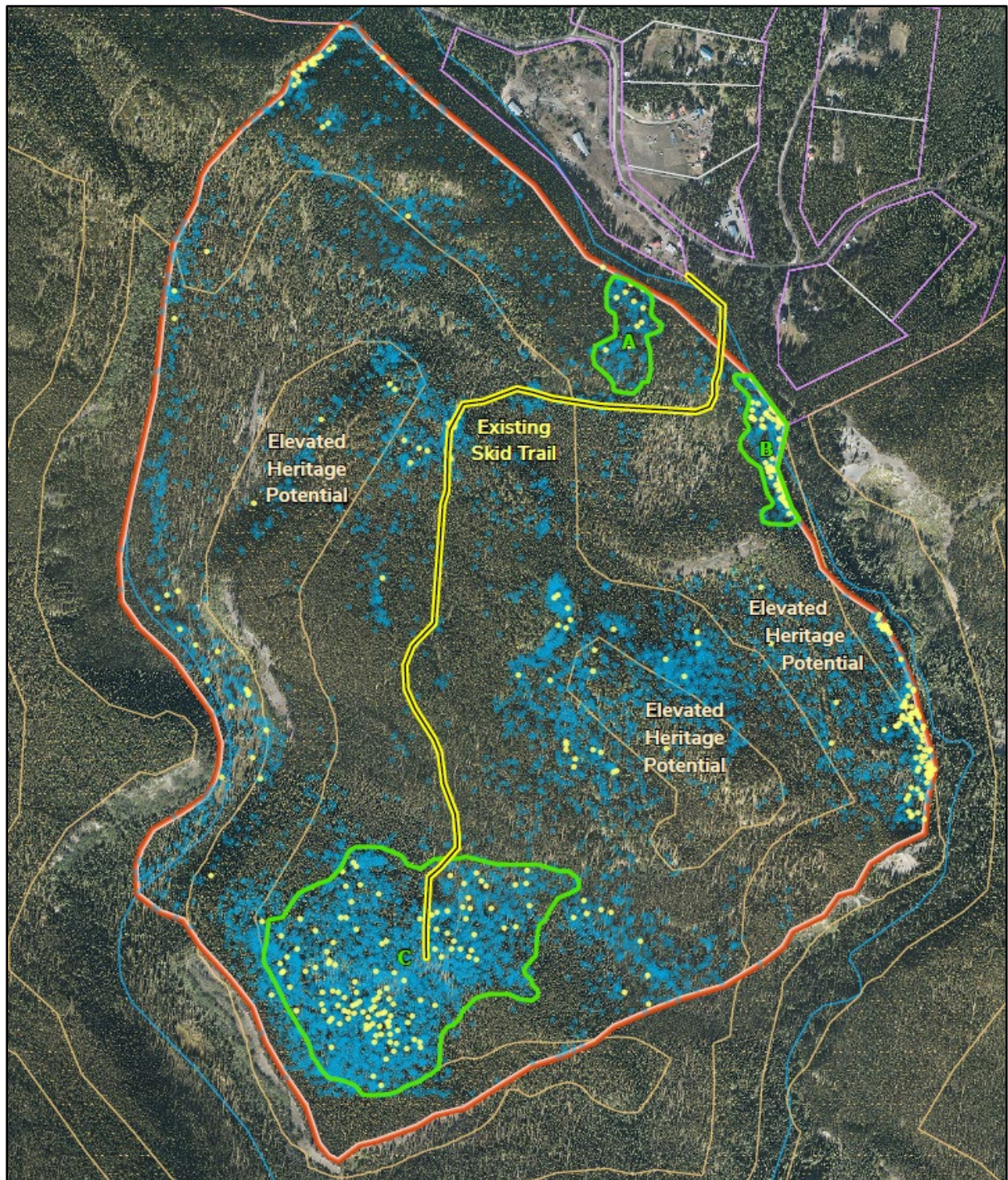
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Map 1. Location of BR THP south of the Yukon River and west of Marsh Lake.



Map 2. Configuration and location of the BR THP relative to site access and the operator's residence.



Map 3. Access to identified harvest areas and areas with elevated heritage resource potential within the BR THP.