



PINE CANYON UNIT 17
2024-2025
SILVICULTURE TREATMENT PLAN



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Executive summary

If a harvest area is found to be underperforming and is not likely to reach the established reforestation goals, a silviculture treatment plan with remedial activities can be implemented. A silviculture treatment plan outlines the reason for the treatment, where and what activities will be undertaken and the anticipated outcomes. The plan also provides First Nations and the public an opportunity for review and comments on proposed treatments, as required under the *Forest Resources Regulation*.

The planned treatment is located within the Marshall Creek area forestry reserve, approximately 10 kilometres northeast of Haines Junction along the Alaska Highway. The area has been impacted by a historic large scale spruce beetle outbreak (starting in the early 1990s and spanning approximately two decades), with salvage harvesting occurring in the region.

The Champagne and Aishihik First Nations Final Agreement, the *Forest Resources Regulation*, and the following considered in developing this silviculture treatment plan: the Strategic Forest Management Plan for the Champagne and Aishihik Traditional Territory, the Integrated Landscape Plan for the Champagne and Aishihik Traditional Territory, the Pine/Canyon Timber Harvest Plan, the Silviculture Strategic Plan for Yukon Forests, and the associated site plan.

The objectives of this silviculture treatment plan are to maintain acceptable regeneration levels according to relevant plans and stocking standards. The project area has a historic harvest of 194.10 hectares. 50.15 hectares requires reforestation: area A (8.7 hectares), area B (33.14 hectares), area C (8.31 hectares).

Due to the site conditions, various treatments will be required to reforest the site. Seedlings will be primarily planted in clearings without natural regeneration and will also be used to fill in spots in areas with some natural regeneration or stands that were only partially harvested. White spruce (*Picea glauca*) will be planted, and various site preparation techniques may be used to promote natural regeneration and the survival of planted trees. The treatment is planned for June 2025, with monitoring based on the stocking standards.



Background

Disturbance history

The Pine Lake/Marshall Creek area has a history of extensive spruce bark beetle infestations at epidemic levels (starting in the early 1990s). There are currently only endemic levels of active spruce bark beetles in the area. Surveys show up to 84% of merchantable trees have been attacked. Timber harvesting in the area occurred between March 2017 – July 2018 and between November 2021 – November 2023.

Previous Silviculture prescriptions

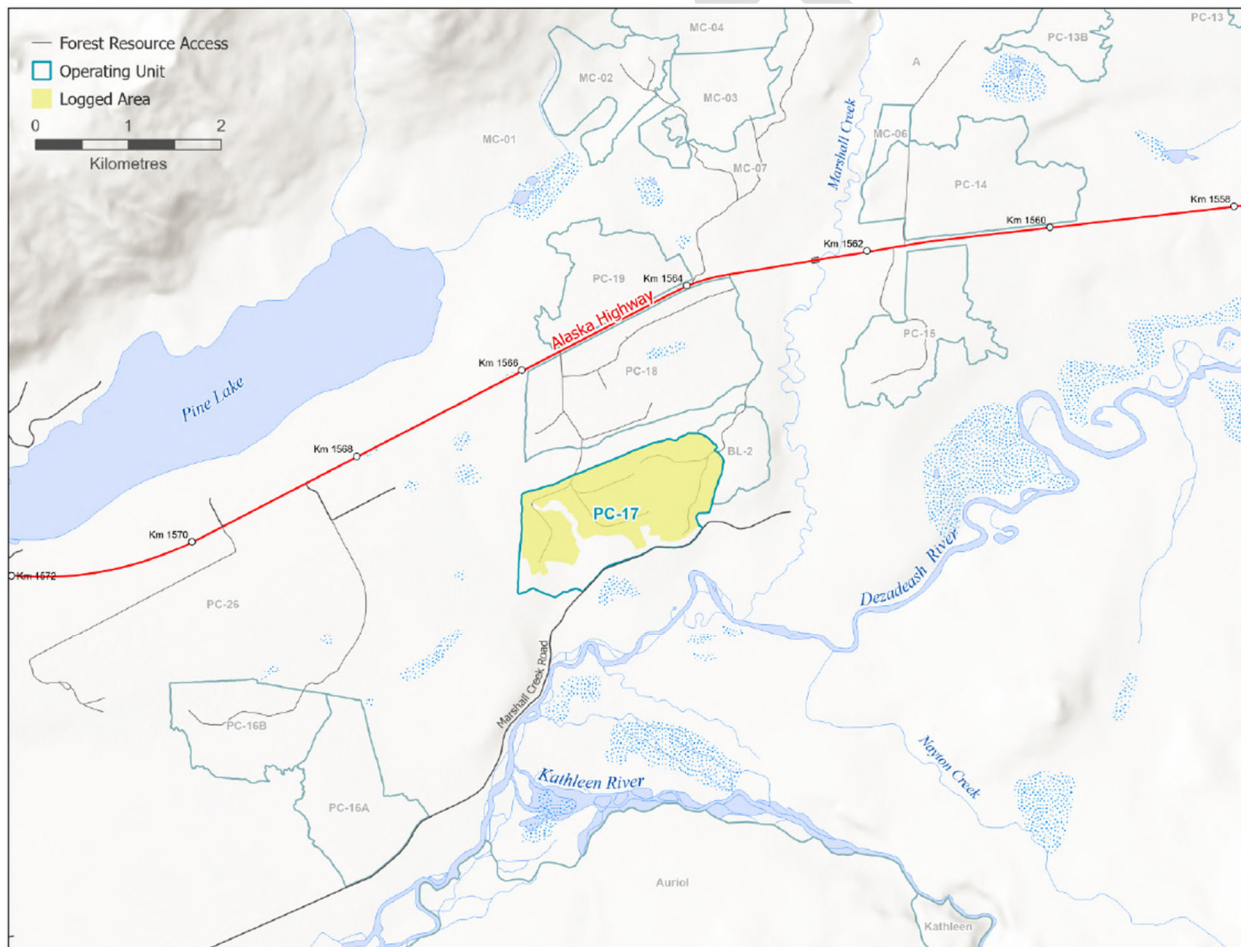
- A mix of harvest prescriptions was used: selective harvesting, partial cut, patch cut, patch cut with retention and clear cut.
- Previous regeneration prescriptions at the site include: natural regeneration supplemented with fill planting where necessary.

Treatment location

The treatment will take place at the PC-17 Operating Unit within the Pine/Canyon Timber Harvest Plan. Access to this area is located at kilometre 1562 of the Alaska Highway, 13 kilometres northeast of Haines Junction (Figure 1).



FIGURE 1: OVERVIEW OF THE PINE CANYON OPERATING UNIT 17 IN THE PINE/CANYON TIMBER HARVEST PLAN





Site details

- Natural regeneration is the primary reforestation method.
- Fill planting is the secondary reforestation method.
- Preferred species:
 - White spruce (*Picea glauca*).
- Acceptable species:
 - Trembling aspen (*Populus tremuloides*);
 - Balsam poplar (*Populus balsamifera*);
 - White birch (*Betula papyrifera*);
 - Lodgepole pine (*Pinus contorta*);
 - Subalpine fir (*Abies lasiocarpa*); and
 - Black spruce (*Picea mariana*).
- Slopes are generally south facing, even and level. The soil at this site has well to moderate-well drainage, a nine-centimetre organic layer, and a silt clay-clay composition.
- The vegetation inventory for the area shows a predominately pure spruce wood stand composed of white spruce with heights ranging from 11 metres to 25 metres and an average of 14 metres.
- Site class in the opening is poor.
- This site is within the Klondike Plateau Boreal Low Subzone; BOLkp/01.
- The stocking standard for this site is coniferous leading mixed wood:
 - Target stocking – 1400 stems per hectare;
 - Primary minimum stocking – 1100 stems per hectare.

Post-harvest conditions

- The site has been harvested in the winter during frozen ground conditions.
- Area A was clear-cut harvested.
- Area C includes openings cleared for operational purposes along a section of the PC17 Forest Resource Road.
- Area B, D and E, have been selectively harvested leaving a mosaic of openings.
- Surveys from 2023 shows the density of competing species, mainly from wild roses (*Rosa Acicularis*), ranges over the site from little to none.
- The current area to reforest is 50.15 hectares and includes area A, B and C



FIGURE 2: MAP OF SILVICULTURE TREATMENT AREAS IN THE PINE/CANYON TIMBER HARVEST PLAN

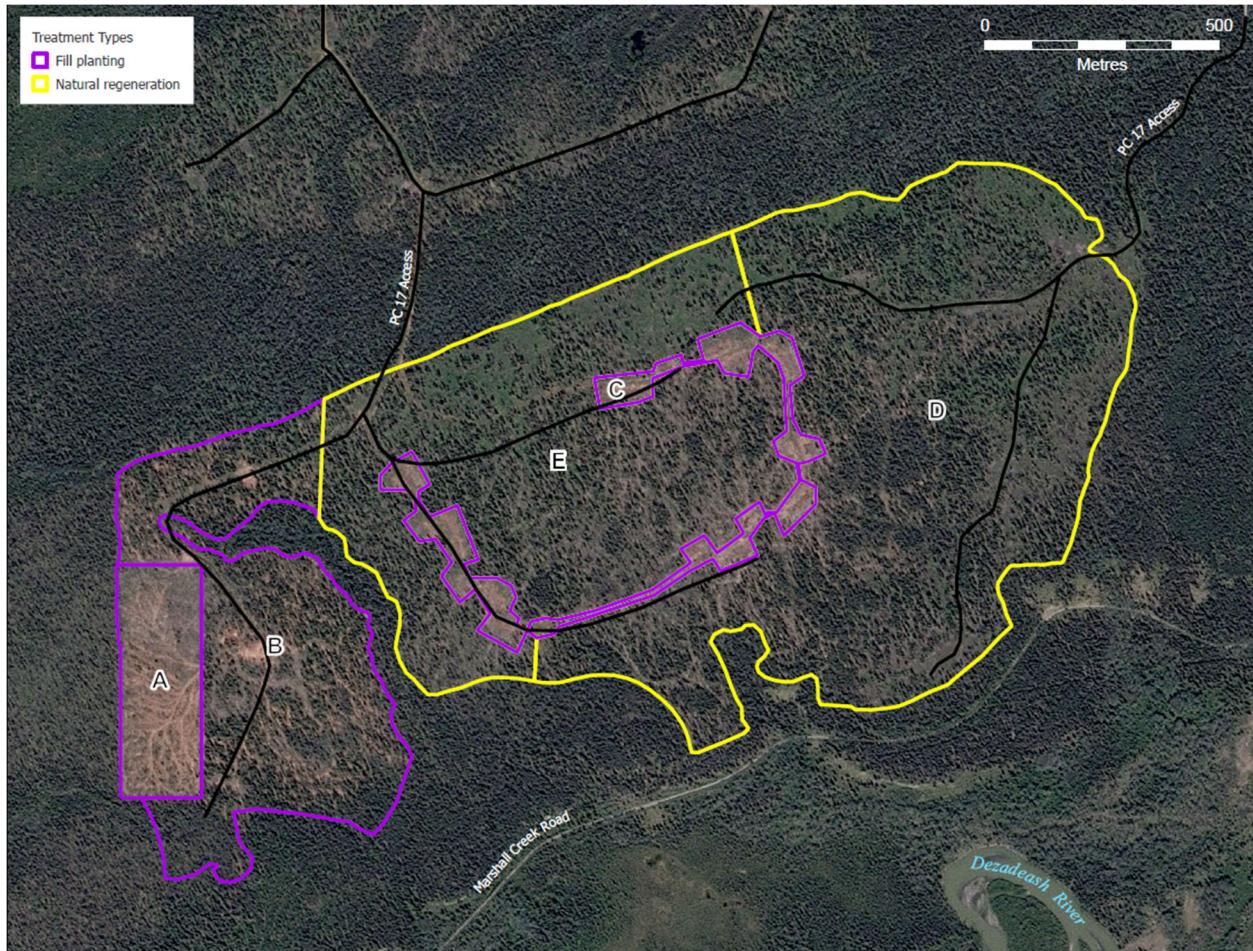




FIGURE 3: 2023 PHOTO OF AN AREA HARVESTED IN THE PINE/CANYON TIMBER HARVEST PLAN BETWEEN 2017 AND 2023 THAT REQUIRE REFORESTATION.





Planning considerations

The Director is required to ensure consistency with approved plans and legislation. This treatment plan follows the principles set out in higher level plans and agreements. Each are described below:

Public and First Nations consultation

As per section 57(3)(a)(b)(c) of the *Forest Resources Regulation*, copies of this treatment plan will be made available to the public and any First Nation whose traditional territory overlaps wholly or partially with the area to which the plan will apply. The First Nation and public are invited to make representations during a period of not less than 30 days. All comments received will be taken into consideration when making a decision on the plan.

First Nations Final Agreements

In accordance with the Champagne and Aishihik First Nations Final Agreement (17.14.2.2 – 17.14.2.6), the Government of Yukon will provide written notice to Champagne and Aishihik First Nations of any invitation for public tenders for contracts associated with silviculture; provide Champagne and Aishihik First Nations the first opportunity to accept any fixed term contract offered by Government associated with silviculture; and include a criterion for employment of Champagne and Aishihik persons in any contract opportunities associated with silviculture within the Champagne and Aishihik First Nations Traditional Territory.

Strategic Forest Management Plan for the Champagne Aishihik Traditional Territory

This plan meets the objectives of the Strategic Forest Management Plan for the Champagne and Aishihik Traditional Territory (2004), including the following goals and objectives:

- Planting white spruce to maintain a coniferous leading mixed wood stand will help restore and enhance ecosystem regeneration (Goal A - Objective 1);
- Reforestation addresses the strategic direction to support the ecosystem's ability to maintain natural processes after disturbance (Goal A – Objective 2);
- Planting restores forest productivity in areas subject to harvest practices (Goal A – Objective 6);
- Planting restores the visual aesthetics of forests that have been cut or significantly affected by natural disturbances (Goal B – Objective 12);
- The First Nation and public are invited to consult on this plan (Goal C – Objective 7);



Pine/Canyon Timber Harvest Plan

This area is a part of the Pine/Canyon Timber Harvest Project for the Pine Lake and Canyon Landscape Units within the Champagne and Aishihik Traditional Territory (2008). This plan recommended reforestation of all harvest areas (Section 3.4), first via natural regeneration and then supplemented with fill planting. The site plan recommended that planting occur no later than four years after harvest.

Silviculture Strategic Plan for Yukon Forests

This plan meets the objectives of the Silviculture Strategic Plan for Yukon Forests (2018), including the following goals and objectives:

- Planting is necessary to fulfill reforestation requirements (Goal 1 – Objective 2);
- Planting white spruce is an ecologically appropriate silviculture practice for the area (Goal 1);
- Planting contracts will be available for local companies to bid on (Goal 2 – Objective 2);
- First Nations and the public will be invited to consult on this plan and notified of economic opportunities and reforestation activities (Goal 4 – Objective 2);
- The seedlings for planting are managed effectively and transparently (Goal 4 – Objective 3).

Stocking Standards

The Yukon Silviculture Stocking Standards (2019) require a target stocking of 1400 well-spaced stems per hectare and a primary minimum stocking of 1100 well-spaced stems per hectare according to the coniferous-leading stocking standard. The Forest Management Branch will monitor these openings to determine when regeneration meets these standards.

Treatment objectives

This treatment plan aims to complete the following objectives:

1. This treatment is to assist with the objective of restoring and meeting regeneration target stocking to enhance lagging natural regeneration and sequester additional carbon on this site.; and
2. Ensure a valuable forest stand will be available for future harvests.

Planned treatments and schedule

Adaptive management will be used to ensure that the treatments will meet the goals and objectives of this silviculture plan. Adaptations from previous prescriptions include:



- Planting treatment will occur in June 2025 and will include:
 - Fill planting of up to 25,000 white spruce seedlings in areas A, B, and C;
 - Natural regeneration in areas D and E; and
 - If stocking standards have been met in areas A, B, and C, fill planting of any excess seedlings in areas D and E where regeneration is low, such as skid trails and landings.

Trials or research

Seedling and natural regeneration will be tracked in each varying treatment type to monitor success and inform future treatments in the area.

Director
Forest Management Branch

Date