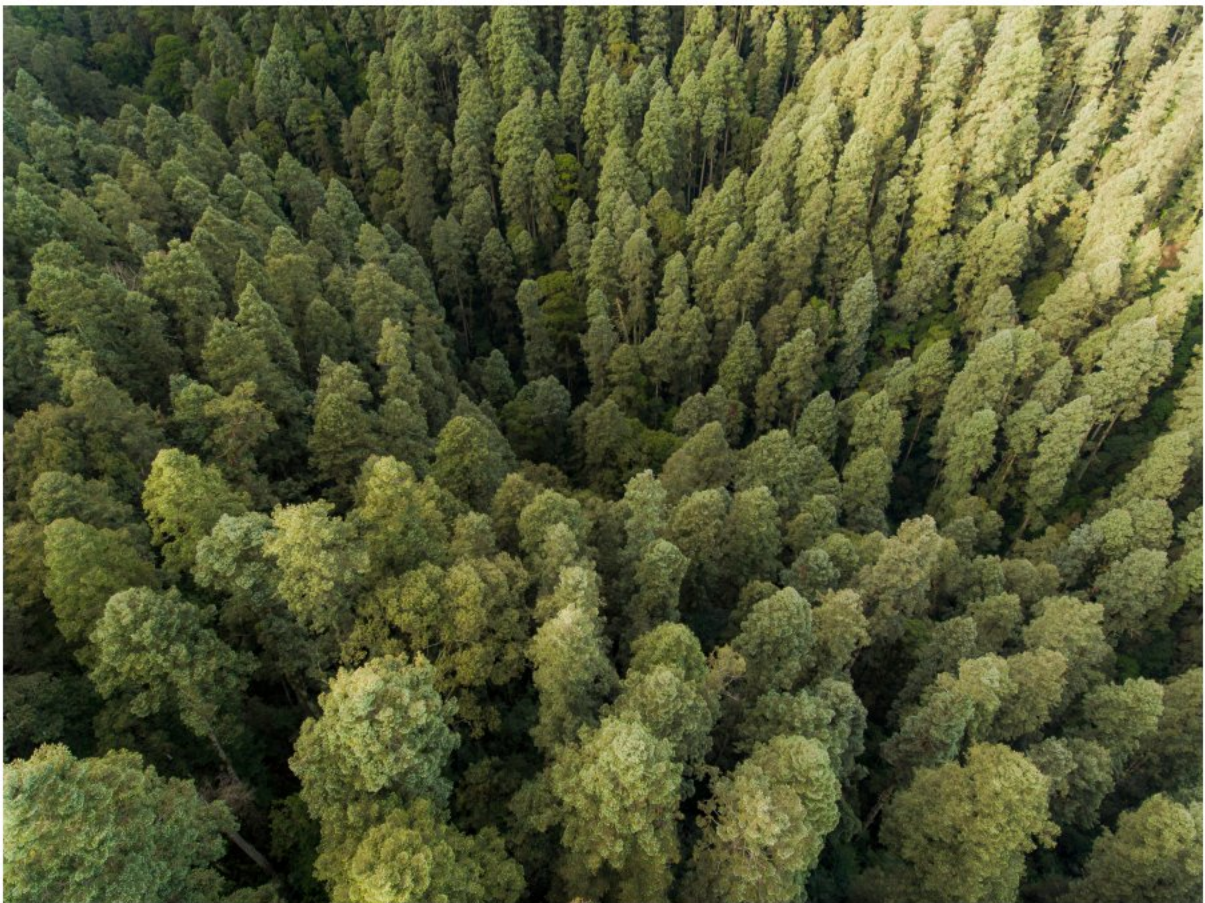


Project Profile

# CM Lake

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## Project Overview

Partnered with an Indigenous band in the interior of British Columbia near 100 Mile House. The area is very hilly with a blend of south and north exposure. The site consisted of heavily burned Douglas fir and lodgepole pine.

## Site Details

**Species:** Interior Douglas Fir, Hybrid Spruce, Interior Lodgepole Pine, Western Larch

**Size:** 7.5 Hectares

**Target Seedlings:** 11,250

**Burn Age:** 2021

**Planted:** May, 2022

**Biogeoclimatic Zone:** Sub-boreal Spruce (dry warm and moist mild)

**Land Preparation:** None

## Flagged Transect Summary (Permanent Plot)

In the first year, seven plots of flagged rows were distributed across the site with pods planted directly adjacent to flags. These permanent plots allowed us to assess early germination rates and species mix before circular plots could be established. Flagged plots consist of rows of embedded pods and rows of pods dropped on the surface, to also help us account for the differences between pods that get buried and those that do not. We used a sampling density of 1 plot / hectare for this site.



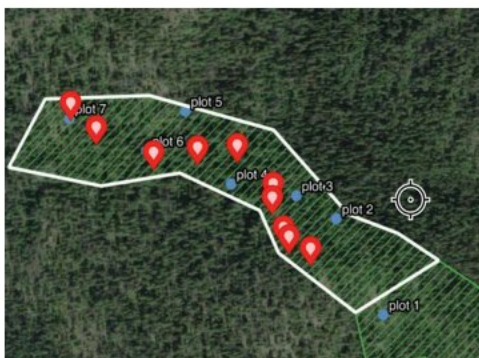
*Permanent (flagged) plot distribution across the block.*



*Flagged pod rows across the burned, hilly block.*

## Circular Plot Summary (Temporary Plot)

In the second year, ten circular plots were distributed at the site. These circular plots have an area of 55 m<sup>2</sup> with seedlings counted within the circle area. These plots follow the BC Ministry of Forests guidelines as a reliable method of predicting the average Stems per Hectare across a site.



*Circular plot distribution across the block.*



*Flagged seedlings in the regenerating understory.*

## Findings: Temporary Plot Assessments at Year 2

| Site                                  | CM Lake           |
|---------------------------------------|-------------------|
| Size (ha)                             | 7.5               |
| Target Seedlings Per Hectare (SPH)    | 1,500             |
| Target Seedlings per Circular Plot    | 8                 |
| Plot #                                | Seedlings Counted |
| 1                                     | 15+               |
| 2                                     | 11                |
| 3                                     | 2                 |
| 4                                     | 5                 |
| 5                                     | 4                 |
| 6                                     | 11                |
| 7                                     | 15+               |
| 8                                     | 2                 |
| 9                                     | 1                 |
| 10                                    | 15+               |
| <b>Seedling Count for Entire Site</b> | <b>&gt;11,390</b> |
| <b>Average Stems Per Hectare</b>      | <b>&gt;1,518</b>  |



*Seedling assessed at 3 months*



*Seedling assessed at 15 months*

| Species Mix (Year 1 permanent plots) |       |
|--------------------------------------|-------|
| Douglas Fir                          | 57.8% |
| Hybrid Spruce                        | 9.5%  |
| Western Larch                        | 1.5%  |
| Lodgepole Pine                       | 31%   |

Counts shown as "15+" were capped at 15 seedlings per plot; site totals are therefore reported as minimums (>).

### Takeaways

1. Permanent plots showed very high germination rates in the first 3 months. If these were used to predict average germinants across the entire site it would amount to roughly 3,900 per hectare.
2. A late-summer heat dome, predation, and poor pod placement spurred significant germinant mortality in the first year (>60%).
3. Fortunately, there was no additional mortality between fall 2022 and fall 2023. In fact, permanent plots showed many seedlings germinate in year 2 (likely due to suboptimal conditions in year 1).
4. Douglas Fir and Lodgepole Pine were the best performers at this site.
5. The temporary plots indicated that the site was sufficiently stocked by the end of year 2. This is due to Flash Forest's pods and likely some natural regeneration.
6. There was some variability between the temporary plots, ranging from 1 to more than 15 seedlings per plot, partially attributable to microsite differences in shade, sunlight, slope direction, soil type, and water table.

7. Microsite differences have been accounted for in our machine learning model, which will be used to adjust planting densities within a block to ensure more even distribution in future planting.