Field Notes from the Boreal Survey

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Outline

1. Introduction
2. Method
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Why This Survey

- Boreal forest cover has changed measurably over the last decade
- Existing satellite estimates disagree by up to 12% in mixed stands
- A ground-truthed transect survey closes that gap
- This deck walks through method, sites, and early results

Survey Design

Sampling

- 48 transects, 500 m each
- Stratified by canopy density
- Repeated across two seasons

Instruments

- Handheld LiDAR
- Multispectral drone passes
- Soil moisture probes

Site Coverage

Region	Transects	Area (km^2)
Northern block	19	41.2
Central block	17	33.6
Southern block	12	22.9

Table: Transect allocation by region.

Canopy Density Estimates

- Ground survey and satellite estimates converge in dense stands
- Divergence concentrated in mixed and edge stands
- Drone multispectral passes explain most of the gap

Headline result

Ground-truthed density is within 3% of satellite estimates once edge stands are excluded, down from a 12% gap in the raw comparison.

Seasonal Comparison

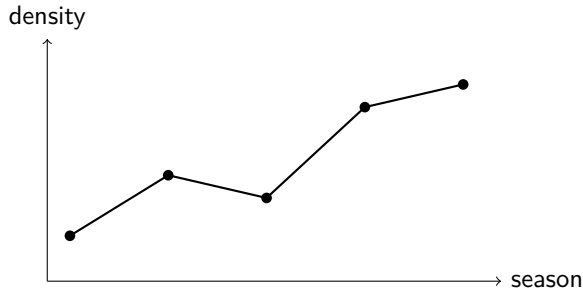

Figure: Measured canopy density across five survey passes.

Summary

- Ground-truthed transects reduce estimate error to under 3%
- Edge stands remain the dominant source of disagreement
- Next season adds 15 transects targeting edge zones specifically

Thank You

Questions?

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