## Using LiDAR to Delineate Ancient Forests

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#### What is an Ancient Forest?



## Why are they important?





# Why is this project needed?

### Study Area

f**restry** 



#### Project Data



university of british columbia

### Stand Metrics Using LiDAR





Figure Credit: Oliver and Larson (1990)



#### Variables

#### Adapted from de Assis Barros, L., & Elkin, C. (2021)

- 1. Height variation
- 2. Abundance of broken tops
- 3. Presence of regeneration
- 4. Density of standing dead trees
- 5. Dead fallen trees (canopy gaps)
- 6. Additional variables as possible:
- Proxy for DBH
- Biomass
- Tree spread



Adapted from Oliver and Larson (1990)

#### Stand Structure-Aerial Photo







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of british columbia

university

#### Stand Structure-LiDAR



#### **Expected Results**

Old Growth Open canopy Height variation Visible gaps Heterogeneous

Recent cutblock disturbance

Second Growth Closed canopy Little height variation Homogeneous





#### Acknowledgements

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References:

de Assis Barros, L., & Elkin, C. (2021). An Index for Tracking Oldgrowth Value in Disturbance-prone Forest Landscapes. *Ecological Indicators*, 121

Oliver, C.D. and B.C. Larson (1990). Forest Stand Dynamics. McGraw Hill, NY