

Measurement and Analysis Issues for Complex Stands of British Columbia, Canada

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Presented at Session 050 of the XXII IUFRO WORLD CONGRESS Brisbane, Australia, August 8 to 14, 2005

What are **Complex Stands**?

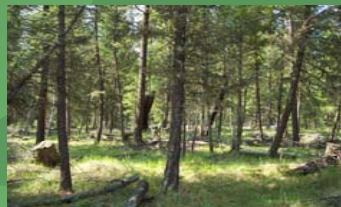
- Multi-aged
- Many species
- Diverse arrangements in space

Can be **Natural**

Example: Interior Cedar Hemlock, Southeastern BC, Canada



Or **Created**: Via Partial cutting
Uneven-aged Douglas-fir, Northeast BC, Canada



Created: via Retention Harvesting
Coastal BC, Canada

- Wildlife use
- High spatial variability
- “Edges” difficult to determine



Questions About Complex Stands

- Regeneration – where, how much, and what kind?
- Impacts of cutting and treatments on growth, regeneration, mortality
- What trees were left after harvest and where?
- Diversity of other vegetation? Animals?

Measurement and Analysis Issues

- Very High Variation: species, ages, spatial patterns
- Wide Variety of Management Regimes
- Need for even longer term trials

Changes in Measurements and Analysis

Change Expectations

Use simple graphs to illustrate measures and results

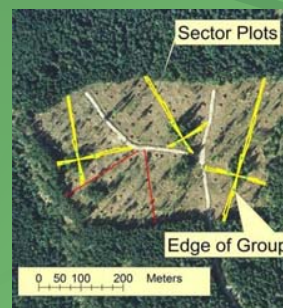
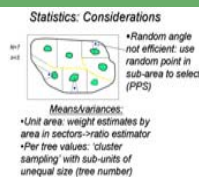


Experiments

- Larger experimental units, and split experimental units
- More covariates and blocking
- Sampling and subsampling
- Analysis is more complex
- Switch to other approaches

Sampling

- New methods for great spatial diversity: “Sector Plots”



Modelling Approaches

- Meta-modelling: combine results of many studies
- Mixed and general models: Distributions other than normal, subsampling, correlations in space and time, etc.
- Variable-Space Nearest Neighbour Analysis
- Virtual Experiments using models

Conclusions

More complex stands being retained and created

Methods to measure and model these stands are being developed and used but are:

1. New and often not well known
2. More complex: more steps, search algorithms

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