Background

Douglas-firs are a dominant species in tree farms in the northwest and knowing the rates of decomposition of their stumps after tree harvest may have implications on carbon/ nutrient cycling models and management. By assessing decomposition rates in Douglas-fir, this study will be able to create a model of decay for tree farms in this region. This model could also contribute to the study of carbon sequestration in tree farming practices.

Objectives

1. Create a model of decay for Douglas-fir stumps
2. Compare that model to others for Douglas-fir coarse woody debris
3. Determine the potential for decay of stumps at age “x”

Methods

- Choose stumps with a specific age
- Assess stumps for decay class
- Record stump height, diameter, bark thickness assessed in field
- Determine density using a resistograph
- Plot/Site information recorded
- Collect material for carbon and nitrogen
- Repeat for above and below ground

Below Ground

- Steps completed for above ground analysis are repeated every 4th stump (density, and carbon to nitrogen ratio) at 6” below soil surface

Analysis

- Determine significant factors of decay, including differences: 1) between ages, 2) among ages at different locations, and 3) between above and below ground measurements
- Carbon:Nitrogen ratios
- Event History “Death” Modeling
- **work in progress**

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References