Management Effects on Future Forest Productivity
Phase III: Harvesting, Slash Loading & Site Quality

Intermountain Forest Tree Cooperative Annual Meeting
April 7, 2015
Study Design & Treatments

Treatments:
- Bole Only - High Slash Retention
- Whole Tree – Low Slash Retention
- Vegetation Control

Site Quality:
- Higher Quality – Basalt (Good Soil Productivity)
- Lower Quality – Quartzite (Poor Soil Productivity)
Evaluate the effects of forest management operations on forest productivity by site quality types.
<table>
<thead>
<tr>
<th>Sites</th>
<th>Soil Parent Material</th>
<th>Site Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canus</td>
<td>Ash/Basalt</td>
<td>High</td>
</tr>
<tr>
<td>Lovell</td>
<td>Loess/Quartzite</td>
<td>Low</td>
</tr>
<tr>
<td>Ruby</td>
<td>Loess/Quartzite</td>
<td>Low</td>
</tr>
<tr>
<td>Slice</td>
<td>Ash/Glacial/Quartzite</td>
<td>Low</td>
</tr>
<tr>
<td>Phill</td>
<td>Loess/Ash “LUSH”/Basalt</td>
<td>High</td>
</tr>
<tr>
<td>Loon</td>
<td>Ash/Basalt</td>
<td>High</td>
</tr>
</tbody>
</table>
Study Layout

21 Douglas-fir Monitoring Trees
2-Year Volume Growth Across All Sites by Quality Type

Bed Rock

Surficial Deposit
2-Year Volume Growth by Treatment for All Sites Combined
Slice 3-Year and Canus 5-Year Volume Growth by Treatment

**Ash/Quartzite**

**Slice 3-Year Volume Growth**

**Ash/Basalt**

**Canus 5-Year Volume Growth**

[Graphs showing volume growth by treatment for Ash/Quartzite and Ash/Basalt.]

[Images of field conditions and a notice sign about herbicide application.]
2-Year Volume Growth by Site Quality and Treatment

- **High Quality (Basalt)**
- **Low Quality (Quartzite)**

![Graph 1: High Quality (BASALT) vs. Low Quality (QUARTZITE)]

- **High Quality (Ash)**
- **Low Quality (Loess)**

![Graph 2: High Quality (ASH) vs. Low Quality (LOESS)]
2-Year Volume Growth by Site Quality and Treatment
What About SLASH?

![Graph showing the relationship between 2YR VOL Growth and Slash Loading](image)

The graph illustrates the correlation between 2-year volume growth and slash loading in tons per acre. The data points indicate a positive correlation, suggesting that higher slash loading is associated with increased volume growth.
What About SLASH and SOILS?

2YR VOL Growth x Slash Loading x Soils

- Ash-Basalt
- Ash-Quartz
- Loess-Basalt
- Loess-Quartz

Volume (cm³) vs Slash Loading (tons ac⁻¹)