

# **Nutrient Management: Biomass Removals and Forest Productivity**

**Intermountain Forest Tree Nutrition Coop**

**Leonard R Johnson**

A stylized silhouette of a mountain range in a teal color, located at the bottom right of the slide.

# IFTNC Nutrient Management Study

## New Research Sites:

- ◆ *Research projects on UI Experimental Forest and Potlatch Forests*
- ◆ *Side-by-side operations of Cut-to-length and whole tree systems*
- ◆ *Harvest operations in late spring and early fall 2005*
- ◆ *Continuing measurements of nutrients and productivity*

# Potlatch Site: Scared Turkey



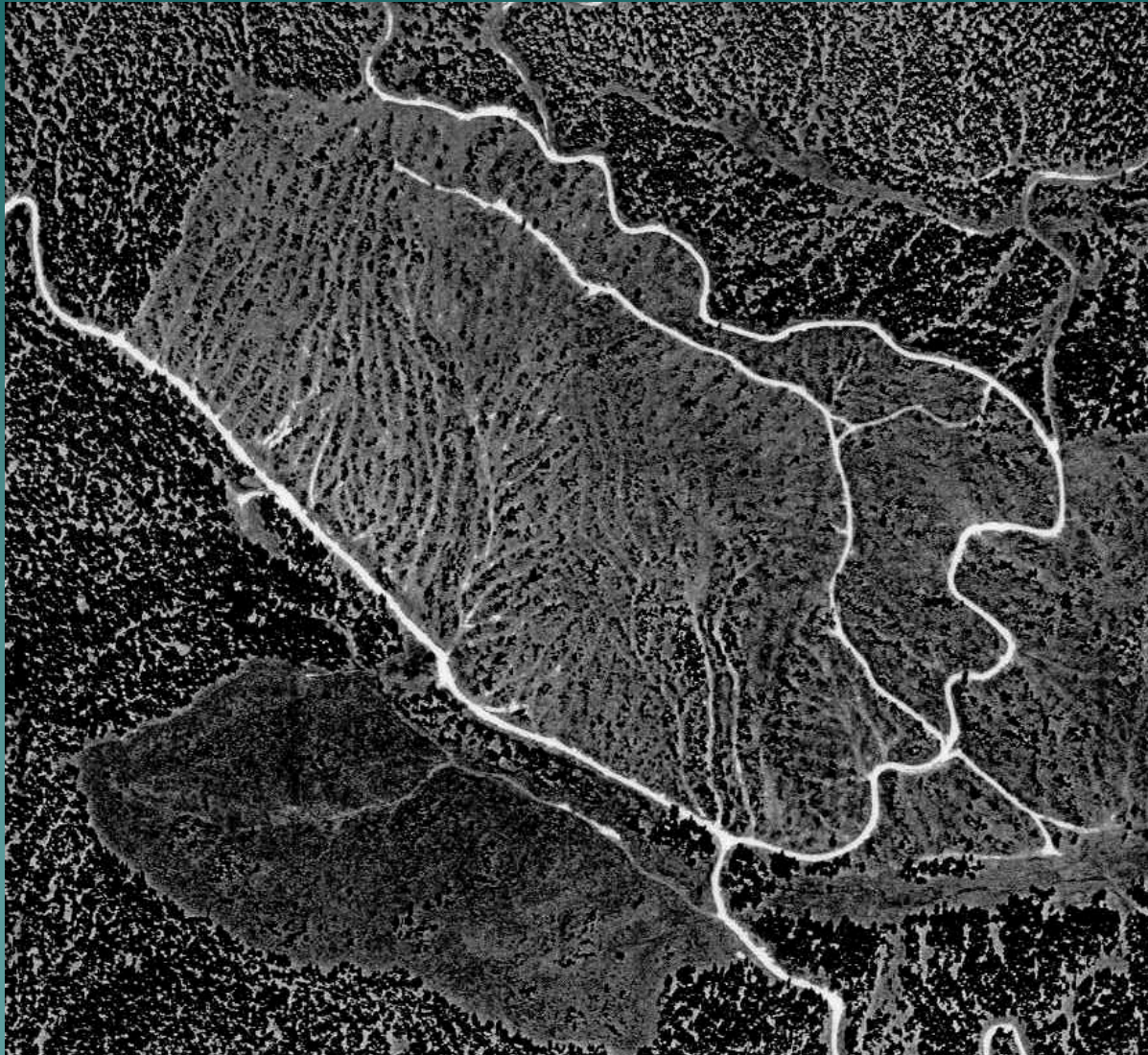
**Silt Loam (Ash Cap)  
over Granitic Rock  
Type**

**20-35% Slopes**

**Harvested  
May-June 2005**

**Over-winter slash  
before treatment**

# Air Photo of Harvested Unit



## Center of Cut to Length Trail



## Processed Logs in Cut to Length Unit





# Whole Tree Unit After Felling and Bunching



# Site Preparation for Planting

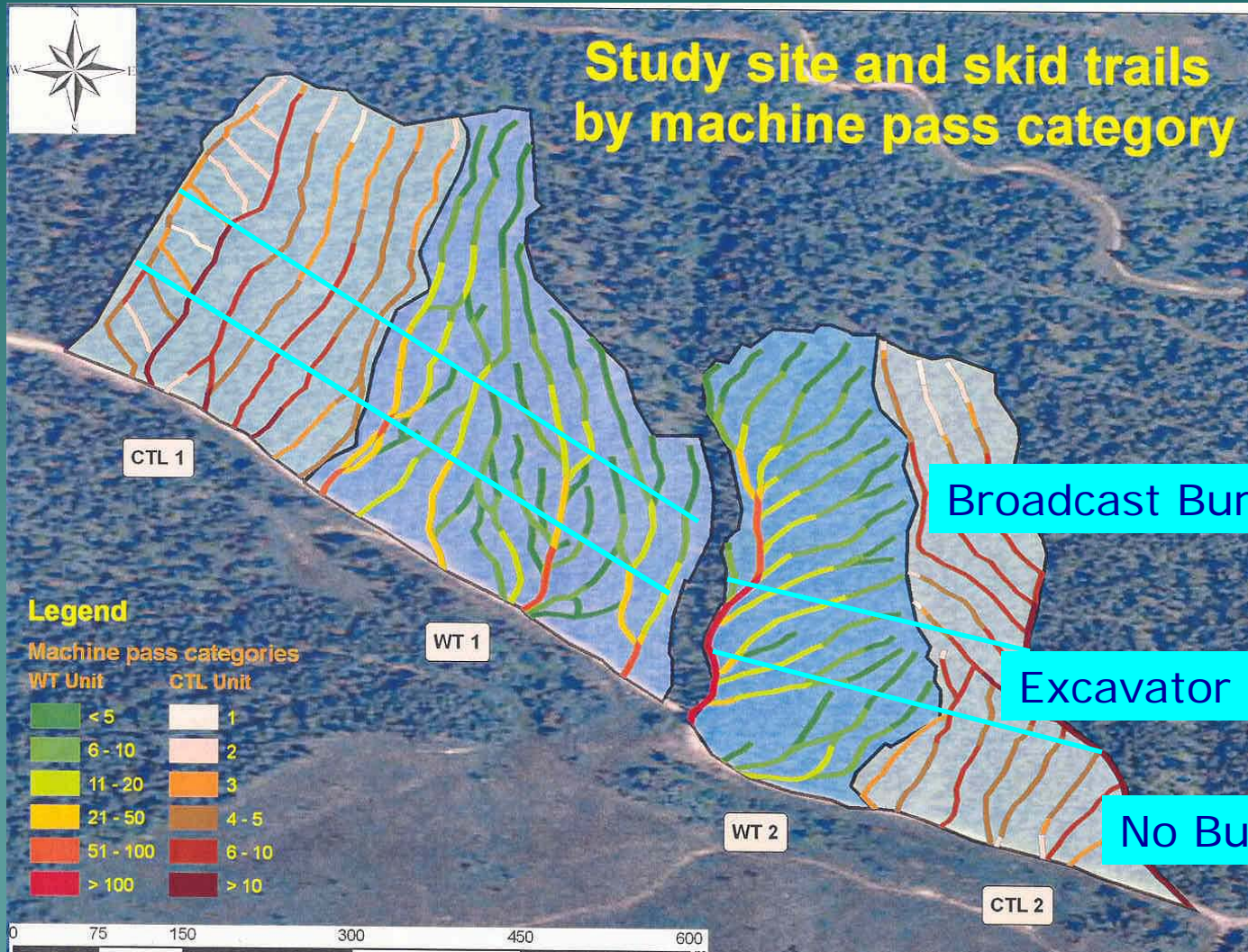


Off-trail Slash from  
Cut-to-Length

Over Winter Slash  
and then  
Broadcast Burn



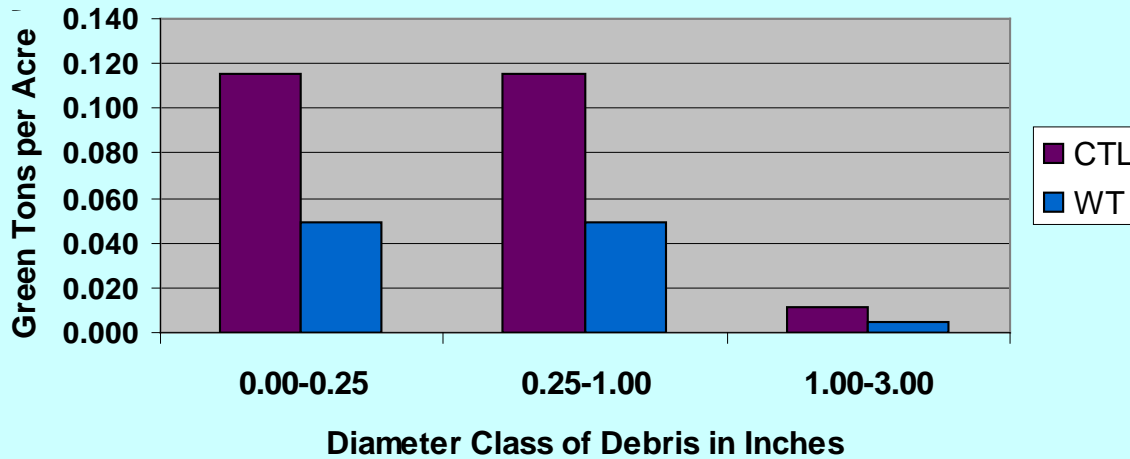
# Experimental Site Preparation Zones at Potlatch Unit



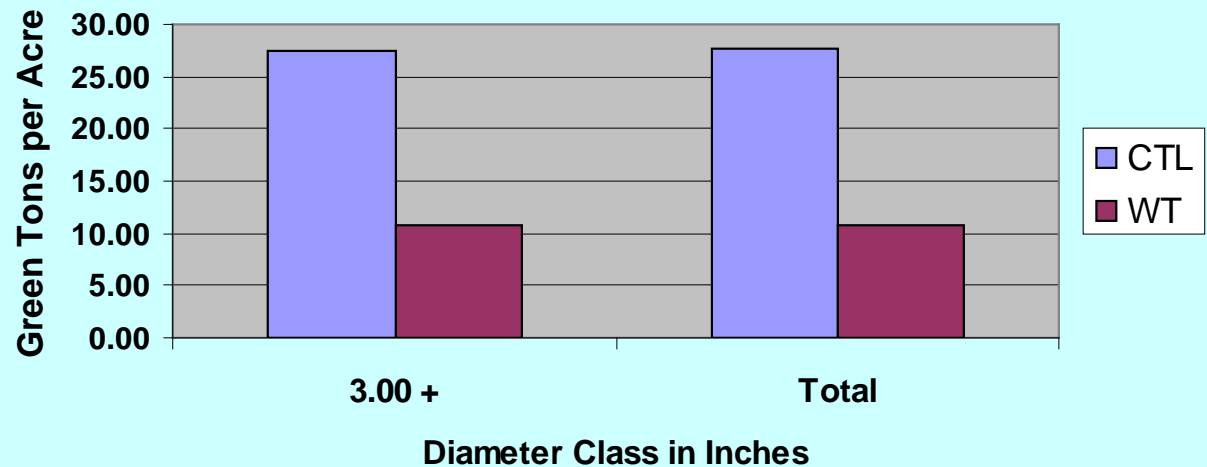


# Down Woody Debris Survey

## Small Woody Debris Totals After Harvest Potlatch Unit (Scared Turkey)



## Large and Total Woody Debris Summary After Harvest Potlatch Unit (Scared Turkey)



# UI Experimental Forest

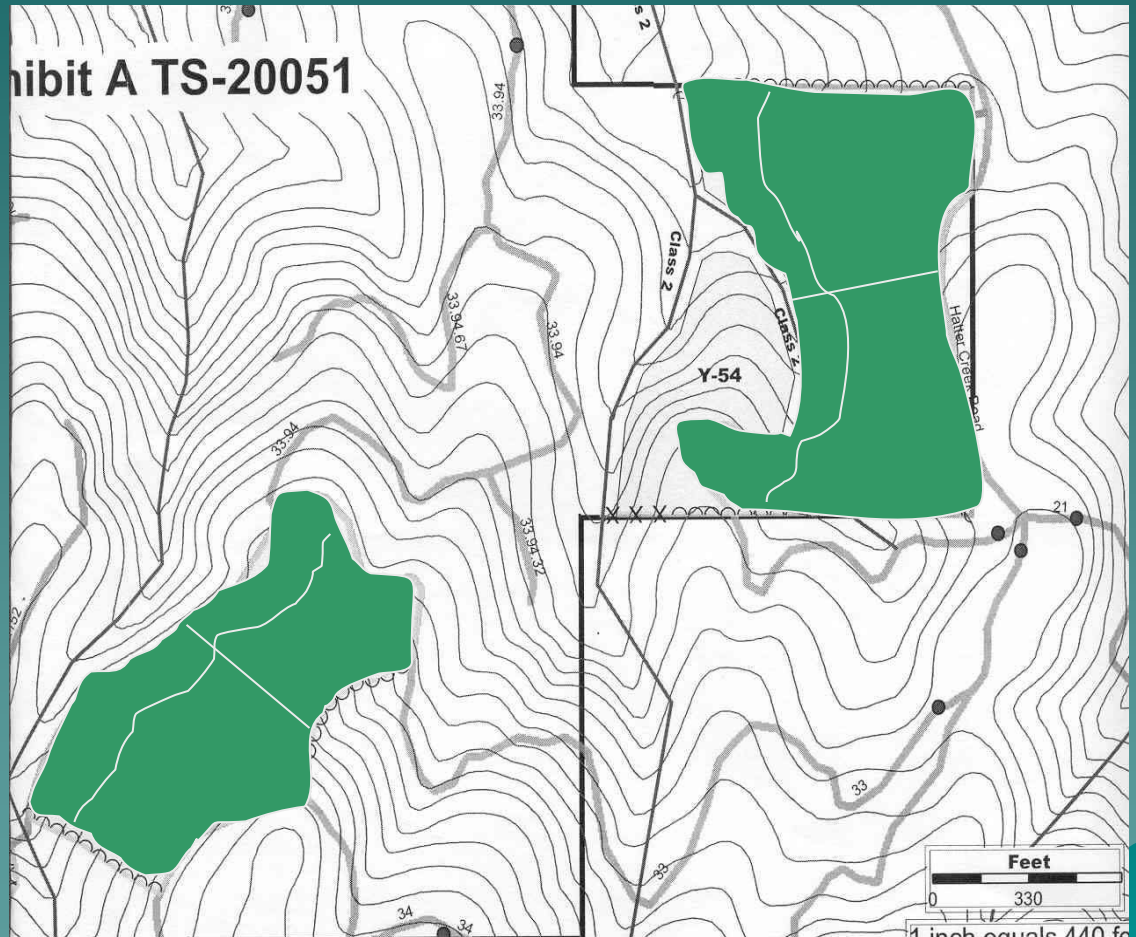
Silt Loam over  
Granitic Rock Type

Regeneration  
Harvest with  
Residual Trees

Harvested August  
2005

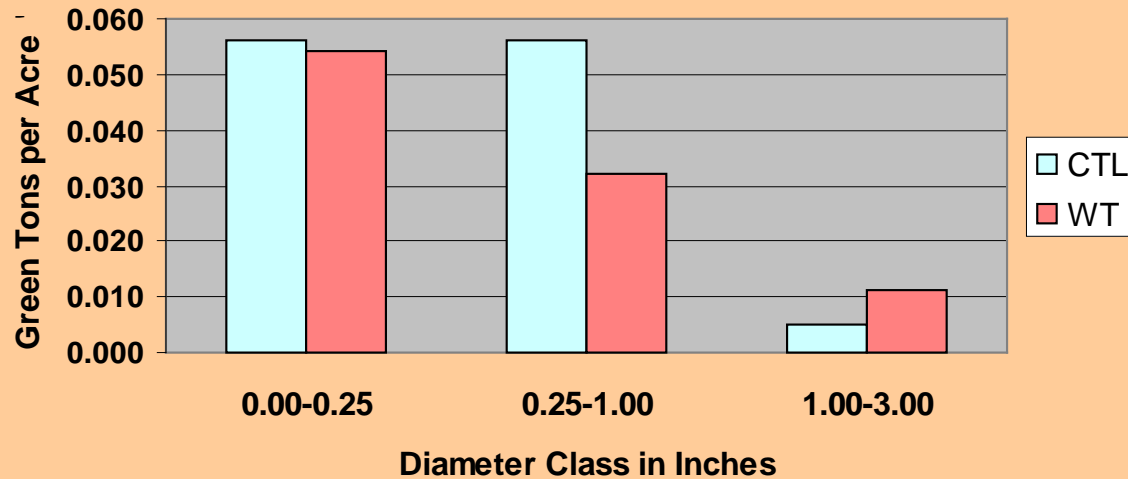
Broadcast Burn Fall  
2005

No-Burn Zone Left  
in each Unit

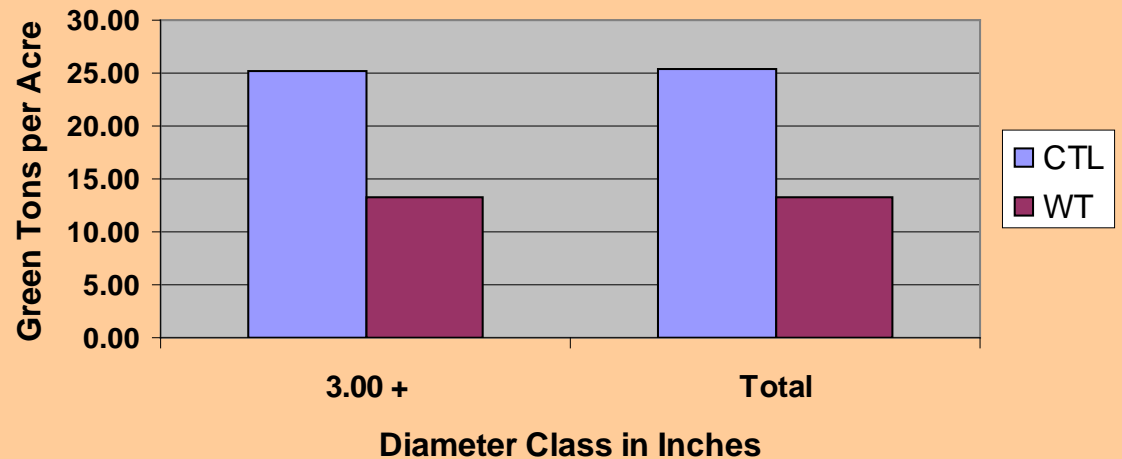


# Down Woody Survey

## Small Woody Debris Summary Totals After Harvest Experimental Forest

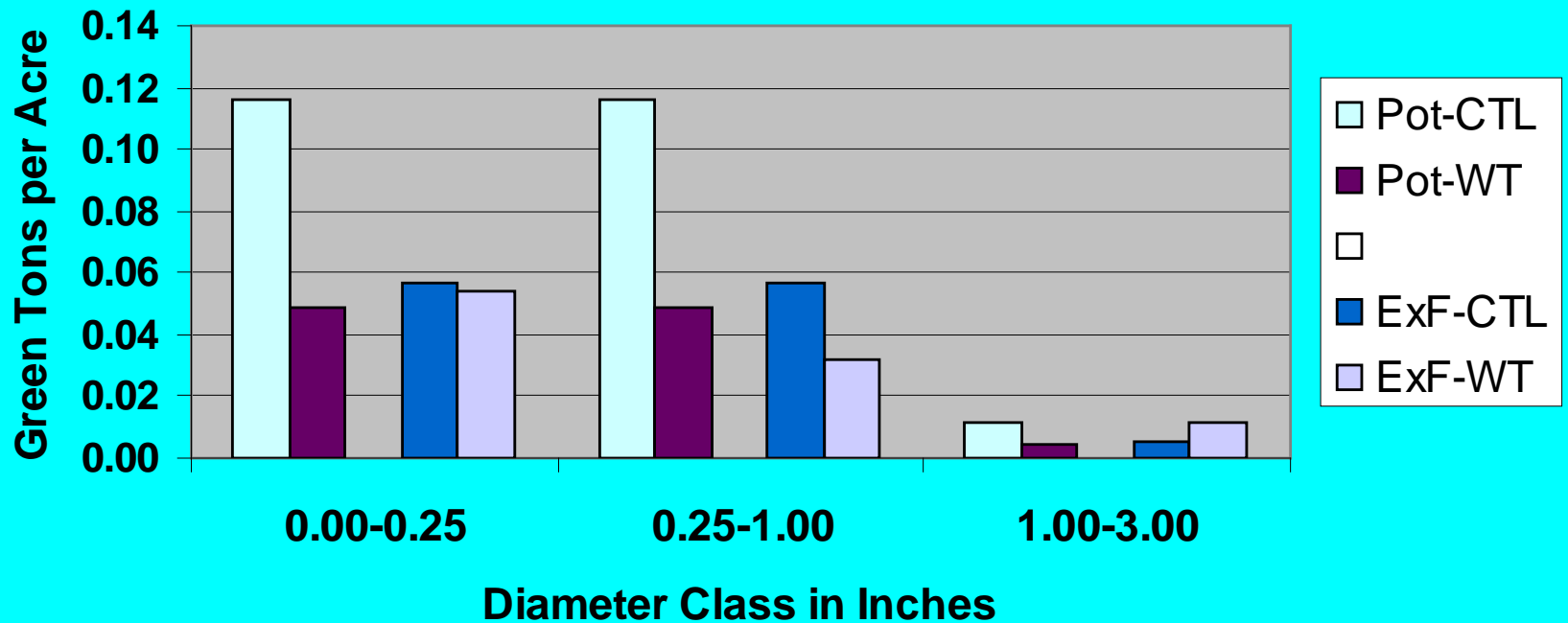


## Large and Total Woody Debris Summary After Harvest Experimental Forest Unit



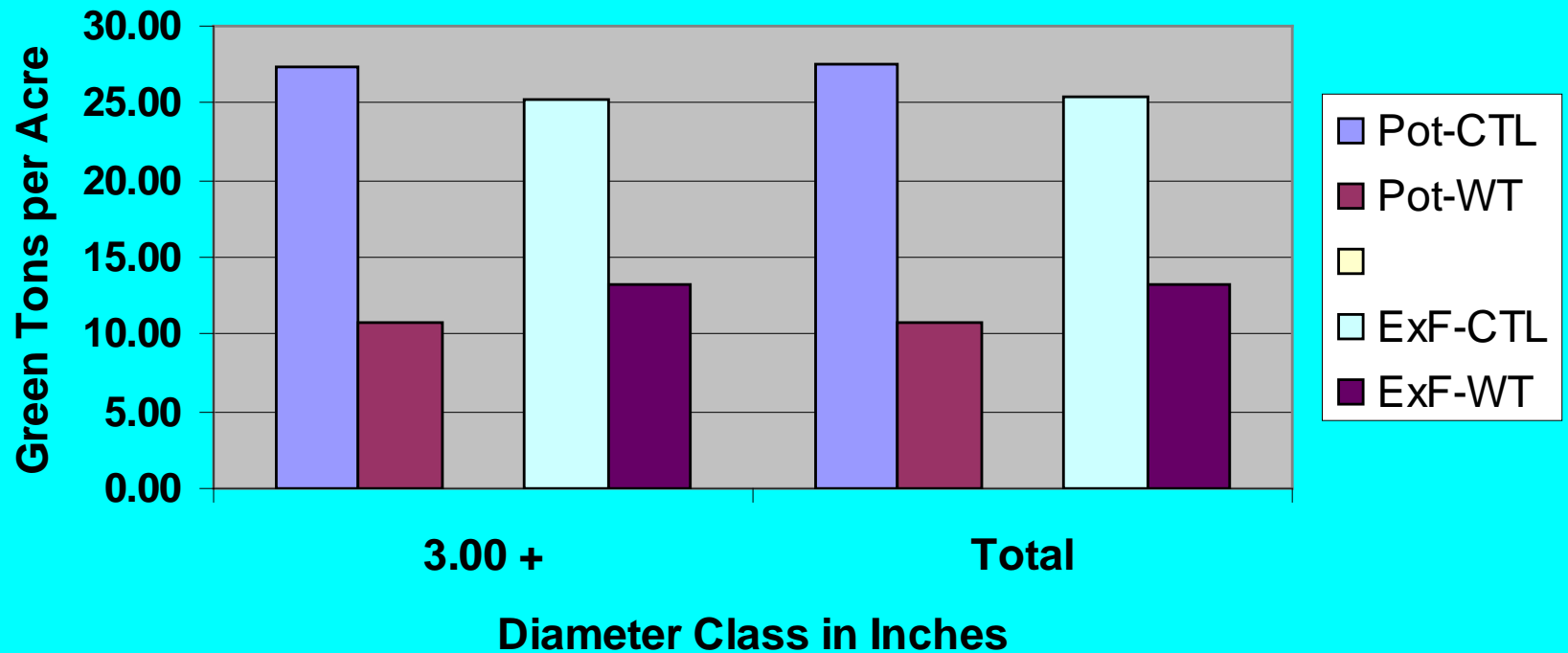
# Small Woody Debris After Harvest

**Small Debris Totals After Harvest  
Potlatch and Experimental Forest**



# Large Woody Debris After Harvest

**Large and Total Woody Debris Summary  
Potlatch and Experimental Forest**



# Research Questions

- ◆ We know that removal of the slash removes nutrients that could be cycled back to the site
- ◆ We can measure / estimate the amount of nutrients removed
- ◆ We're not sure what the long-term impact of this removal will be on site productivity

# Research Protocol

- ◆ Soil Resin Capsules in Treatment Units and in Control
  - Yearly for first two years
  - Periodically after two years
- ◆ Foliar Nutrient Status
  - Of Residual Trees at Experimental Forest
  - Of Seedlings at Both after two years
- ◆ Monitor Growth Differences

# Permanent Plot Establishment

- ◆ Identify Microsites by Soil, Slash Condition and Burn Condition
- ◆ Establish Permanent Plots with Variations in Site Conditions

