

Soil Resin Capsule Analysis

Cut-to-Length vs. Whole Tree Harvesting

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Nutrient Management Study

- 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

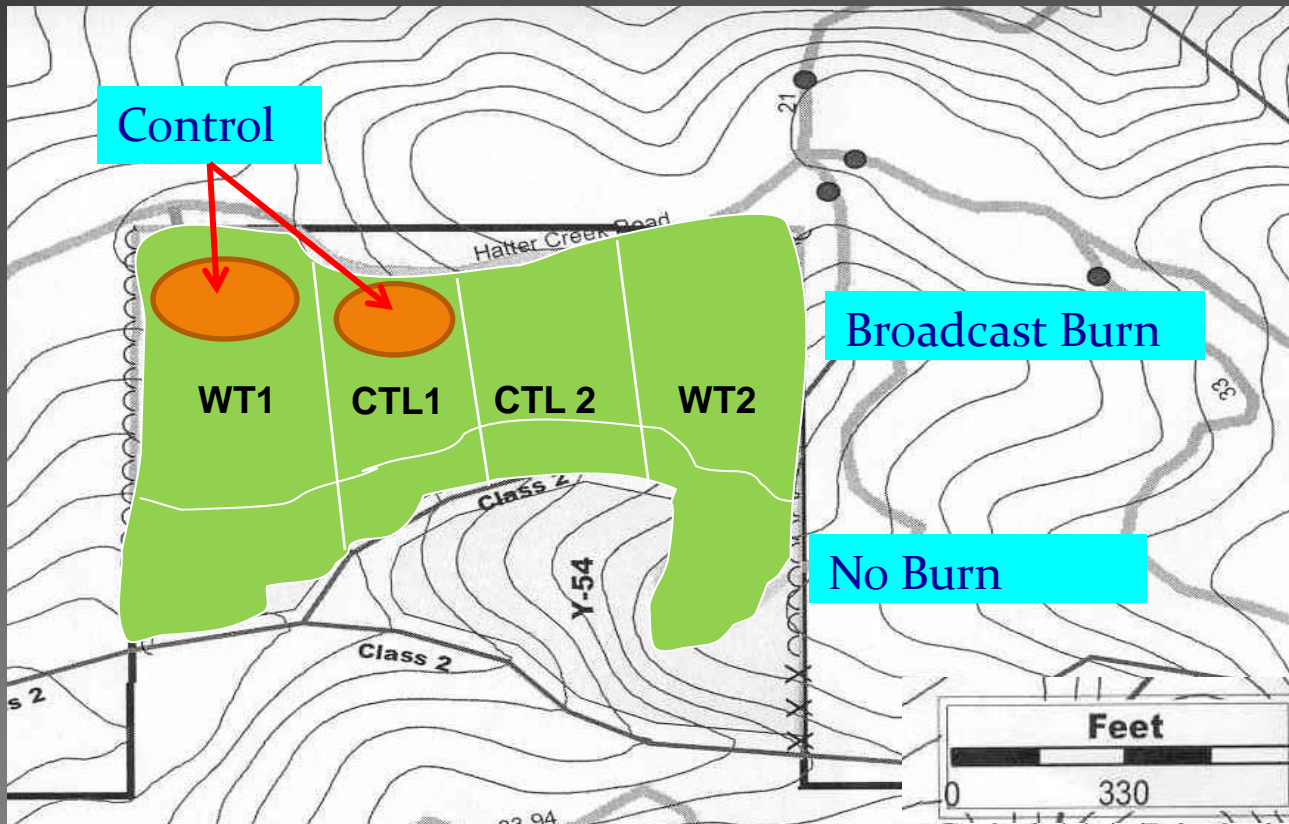
Experimental Design

- Experimental Forest:
 - 3 harvest treatments x 2 blocks x 2 site prep's
 - Control (2)
 - Cut-to-Length – No Burn, Burn (2)
 - Whole Tree – No Burn, Burn (2)
- Potlatch – Scared Turkey:
 - 3 harvest treatments x 2 blocks x 3 site prep's
 - Control (2)
 - Cut-to-Length – No Burn, Pile, Burn (3)
 - Whole Tree – No Burn, Pile, Burn (3)

Site Status

- Experimental Forest
 - Harvest 2005
 - Burn – Fall 2005
 - Resin capsules installed – Fall 2005
 - Planted – Spring 2006
 - Resin capsules replaced – Fall 2006

Experiment Forest: Hatter Creek



Two pits installed per treatment

Total pits: 20

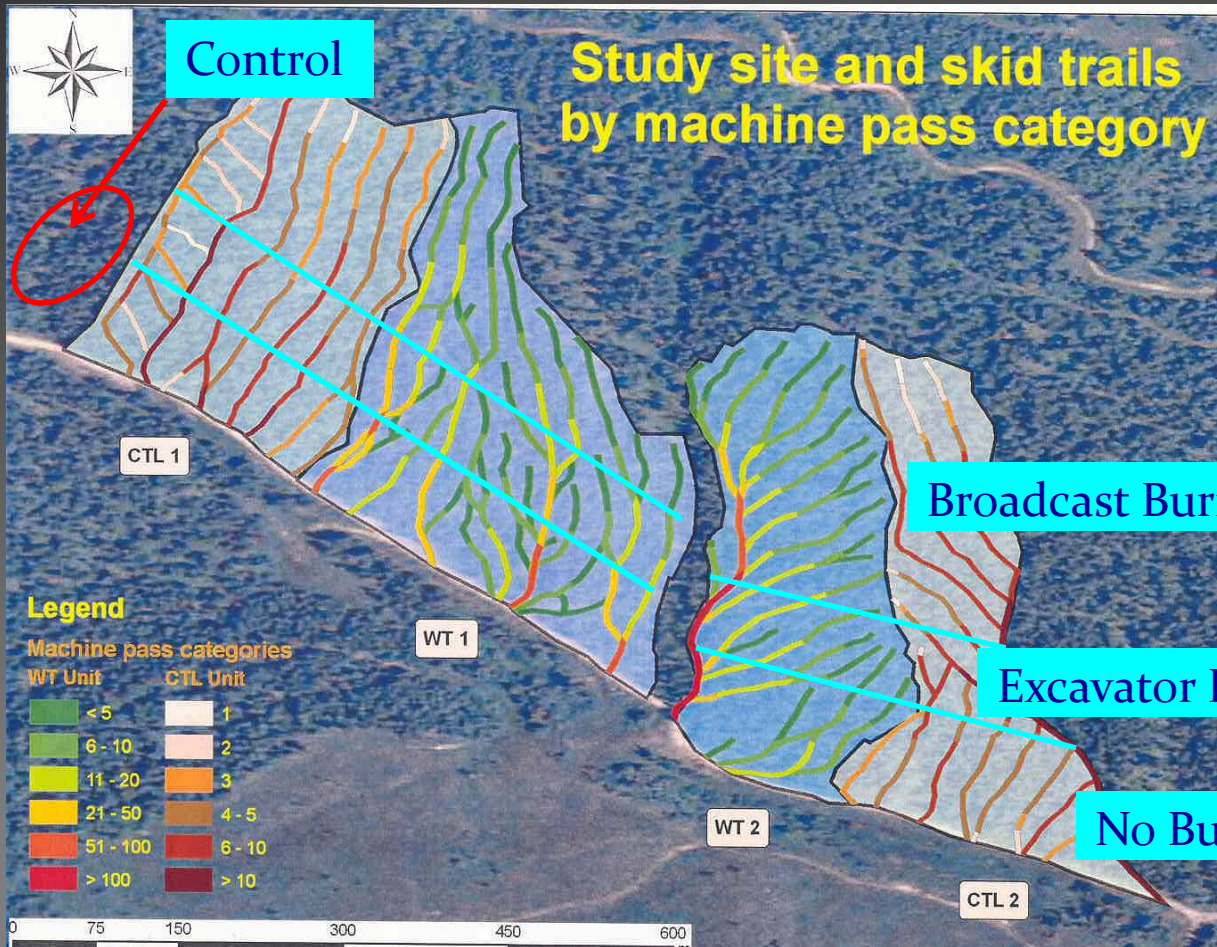
Two resin capsules per horizon per pit

Total capsules: 160

Site Status

- Scared Turkey - Potlatch
 - Harvest 2005
 - Resin capsules installed – Fall 2005
 - Excavator piled – Spring/Summer 2006
 - Piles burned – Fall 2006
 - Pits established on Burn treatment – Fall 2006
 - Resin capsules replaced – Fall 2006
 - Broadcast burn – Spring 2007

Potlatch Site: Scared Turkey



Two pits installed per treatment

Total pits: 28

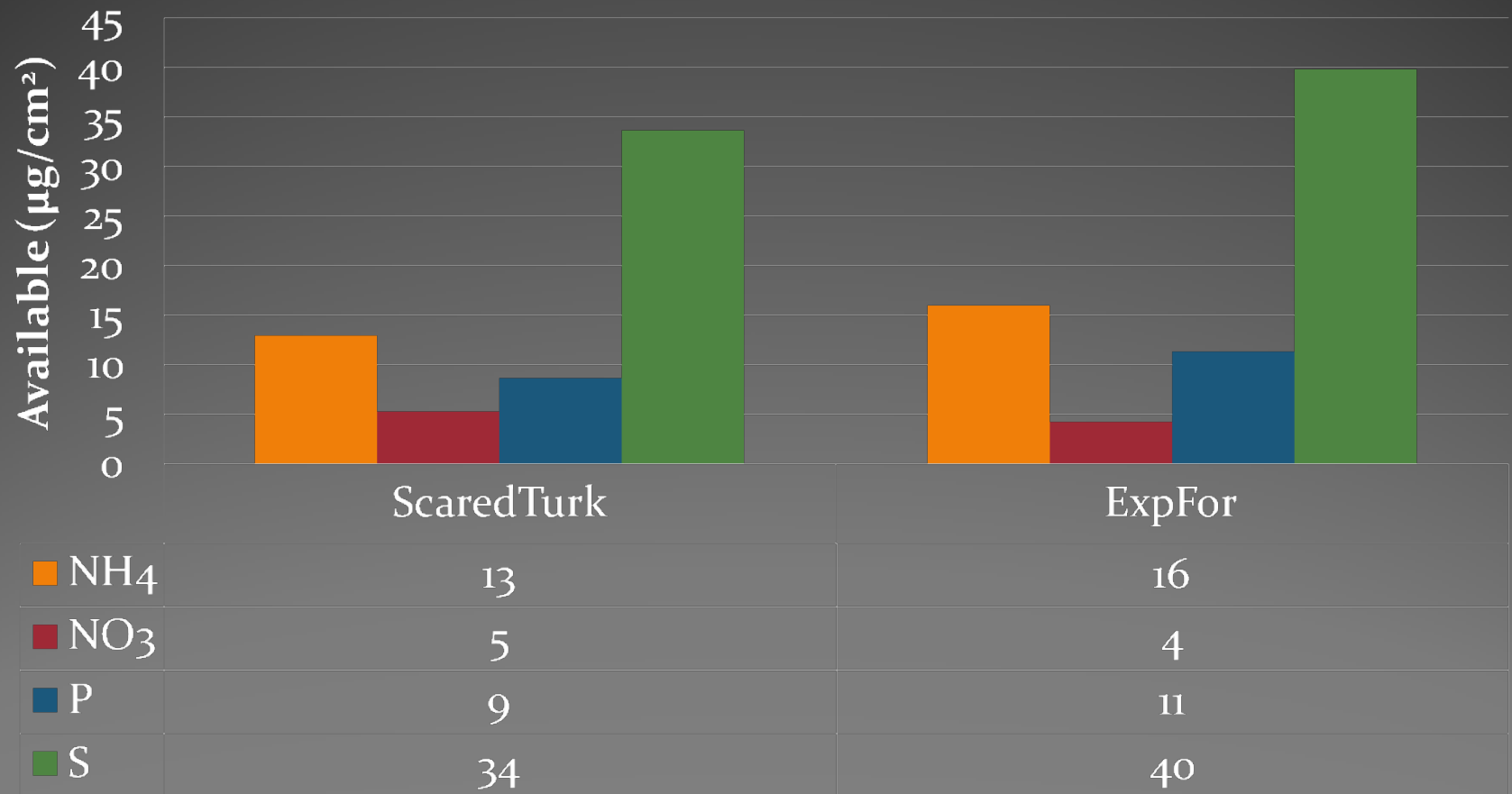
Two resin capsules per horizon per pit

Total capsules: 224

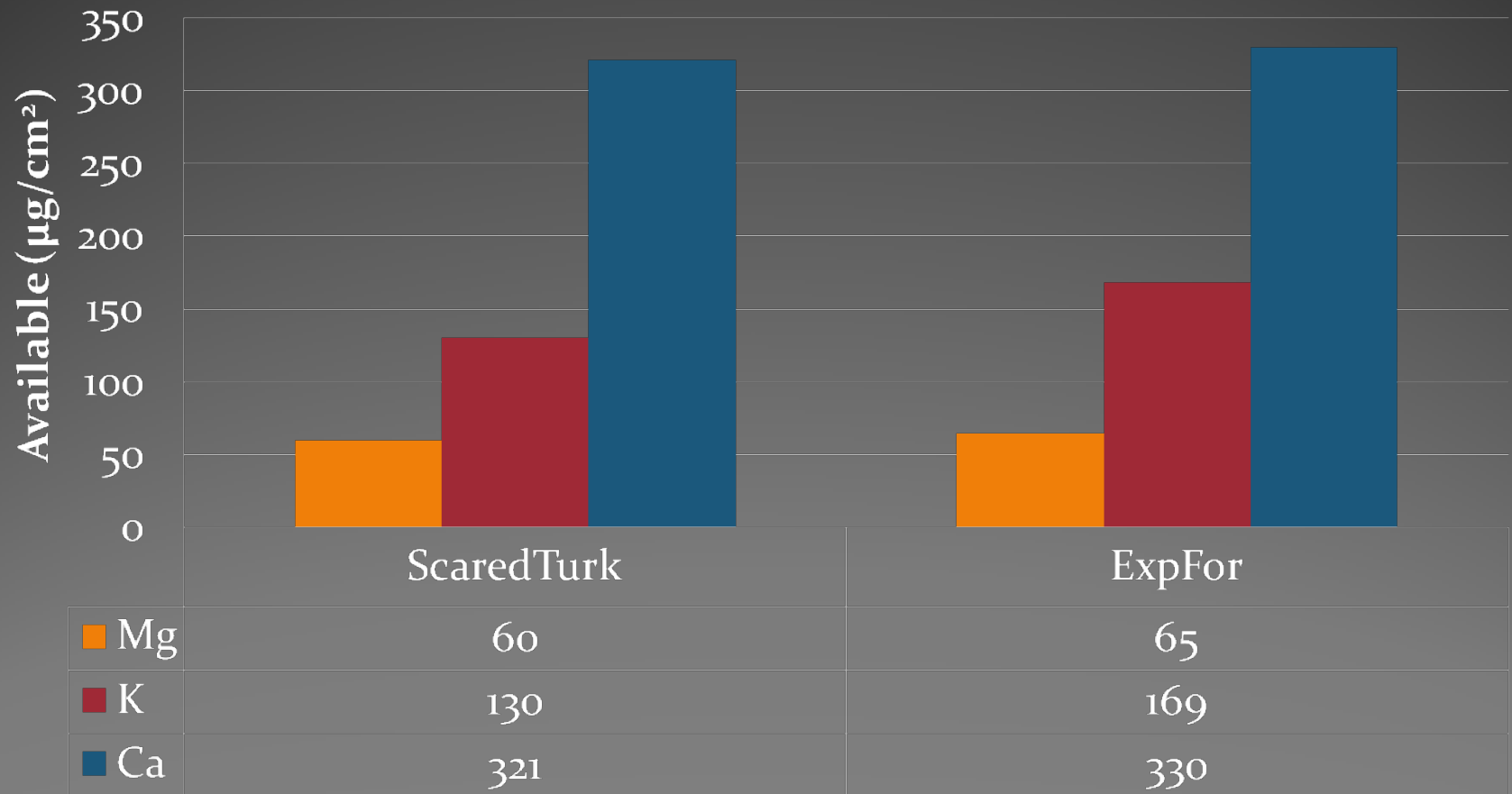


First-Year Capsule Data

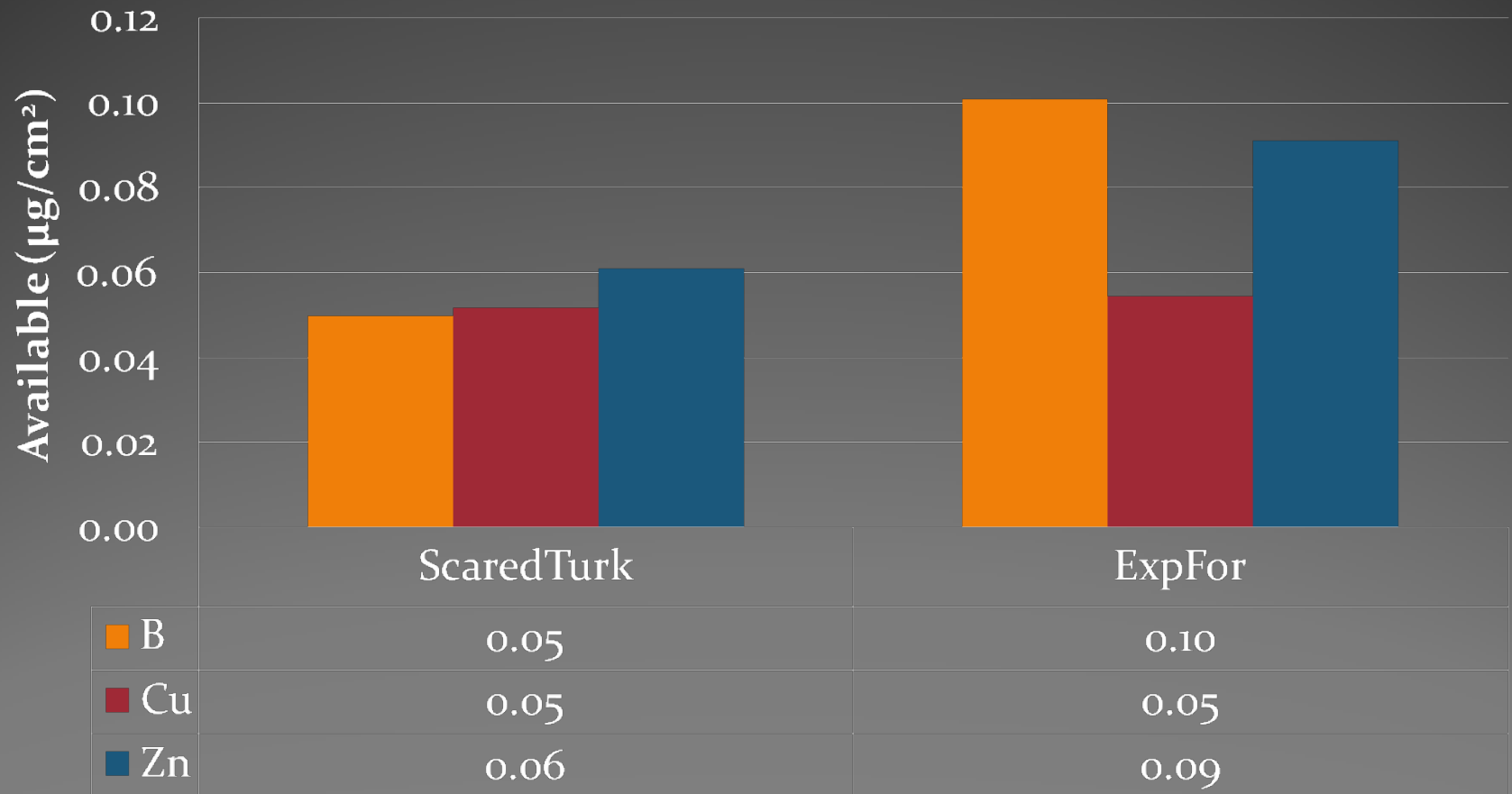
Between Site Analysis - Control



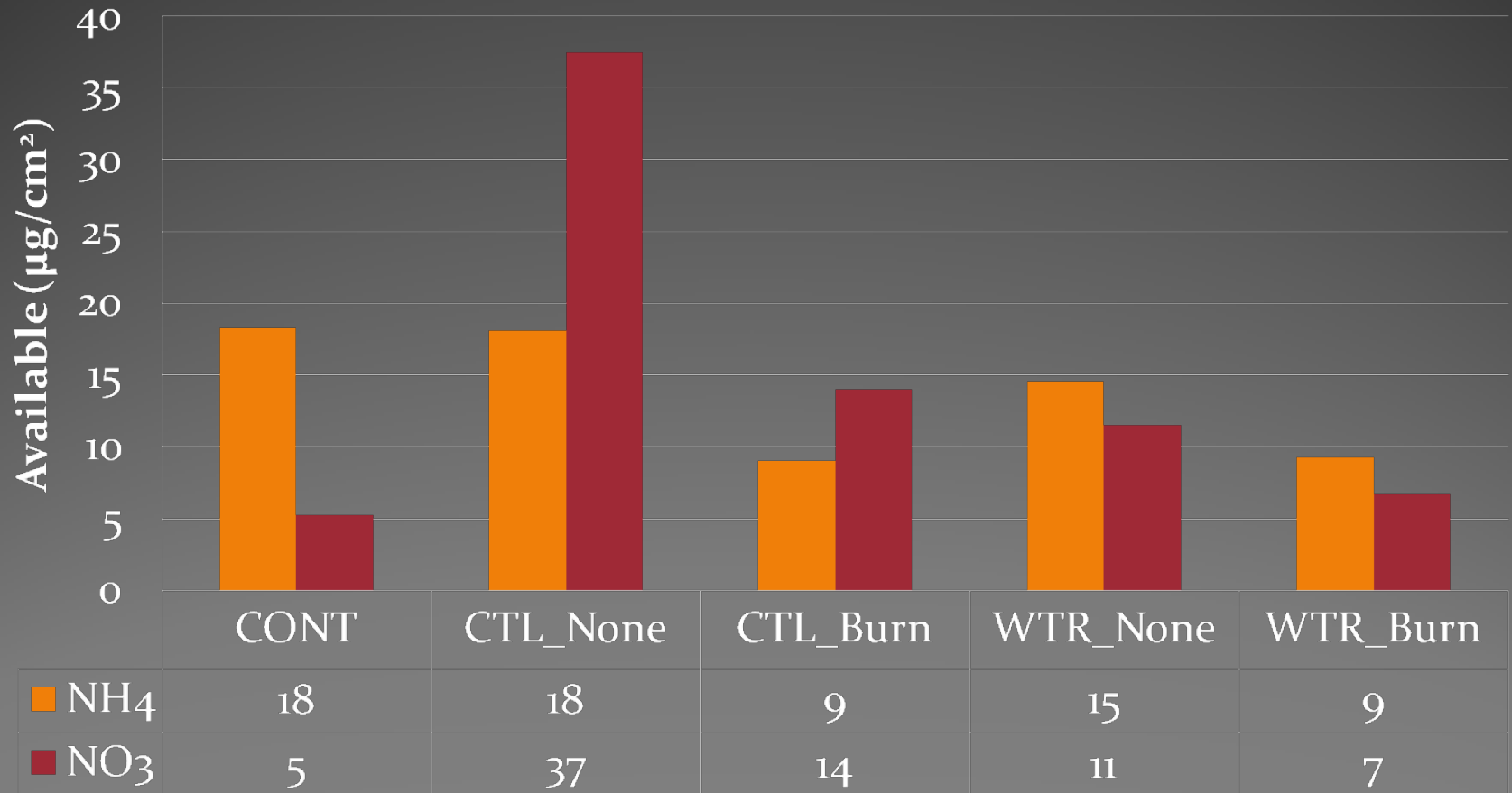
Between Site Analysis - Control



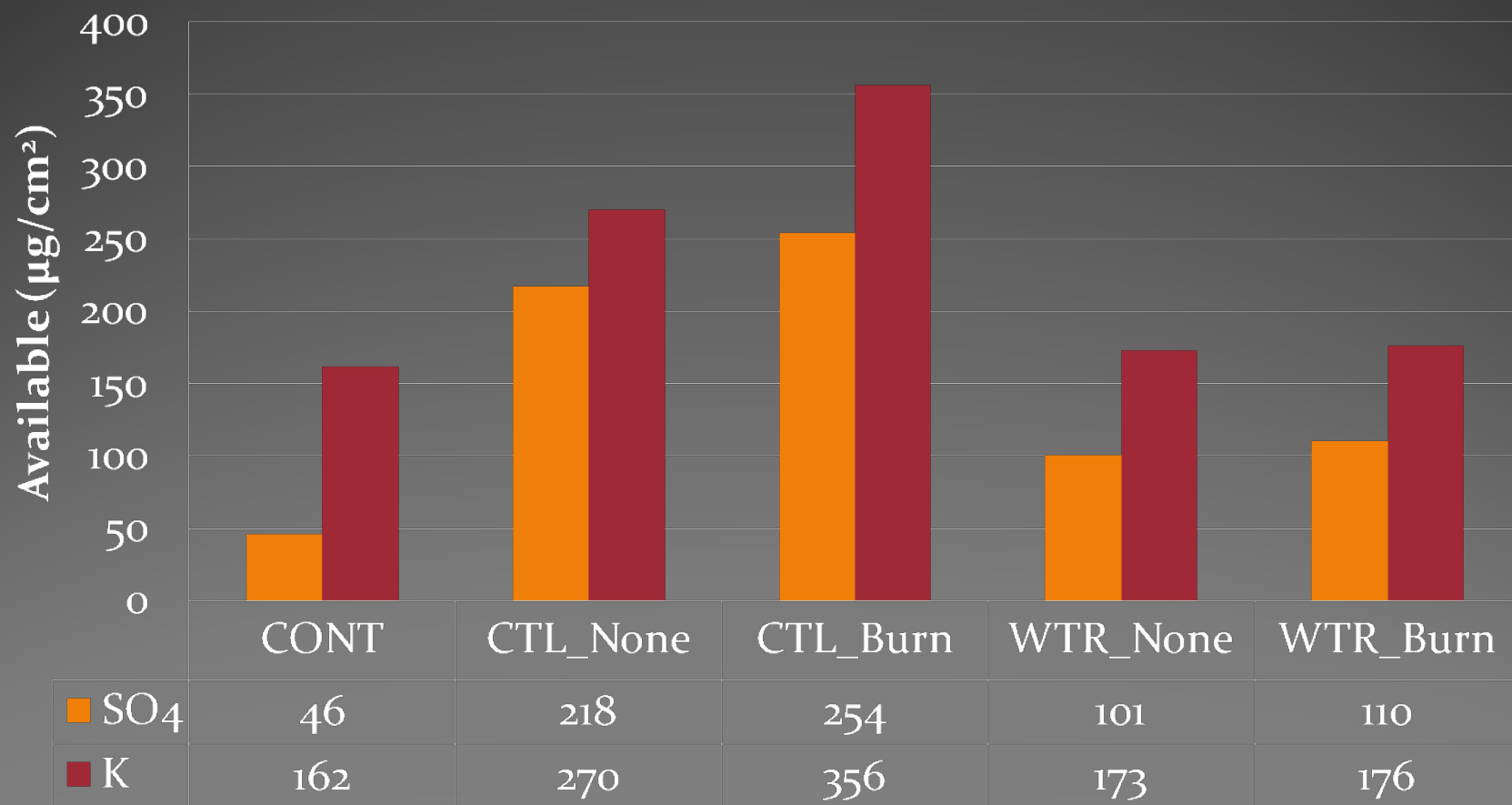
Between Site Analysis - Control



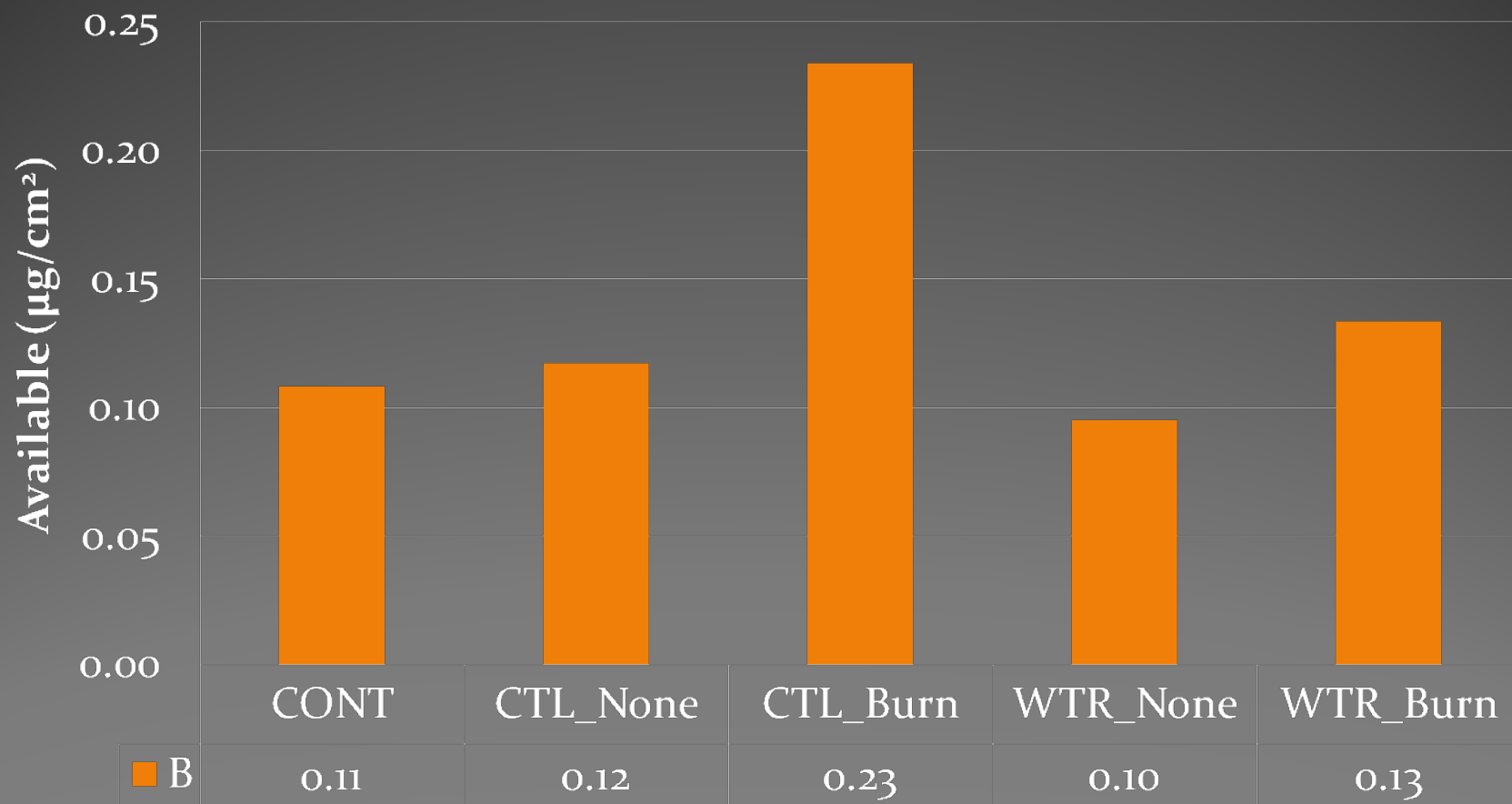
Exp. Forest – Nitrogen



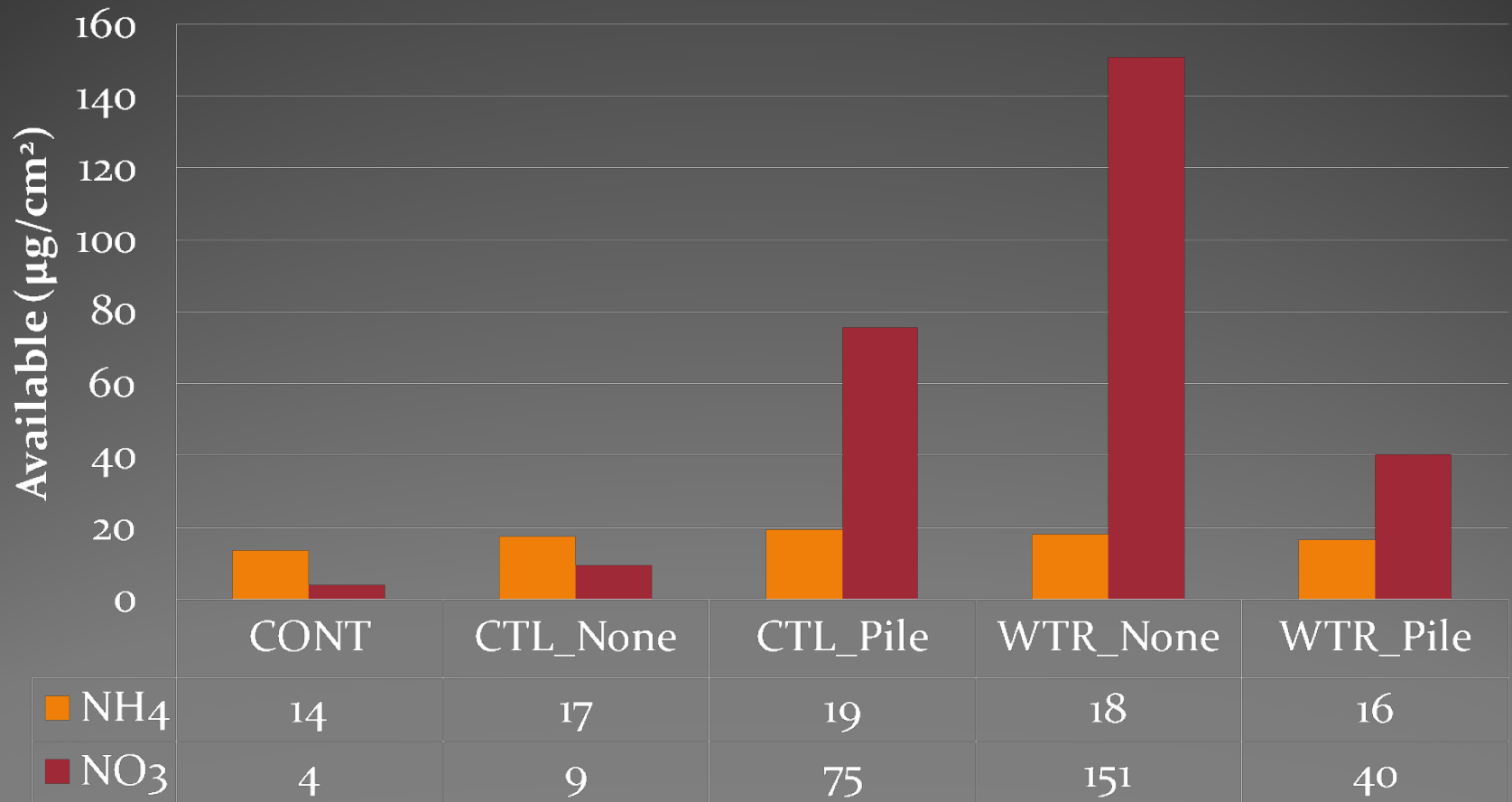
Exp. Forest – K & S



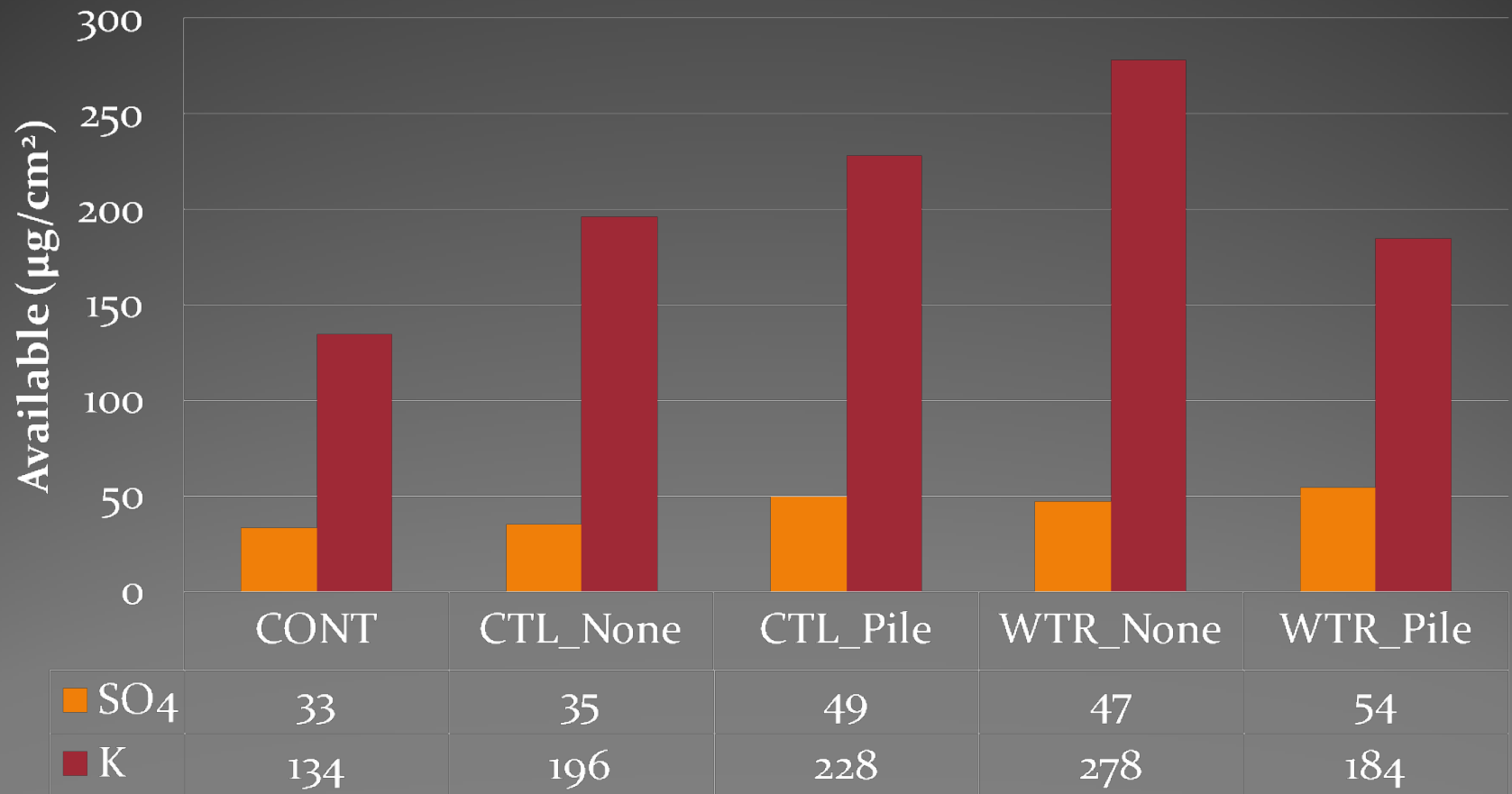
Exp. Forest – Boron



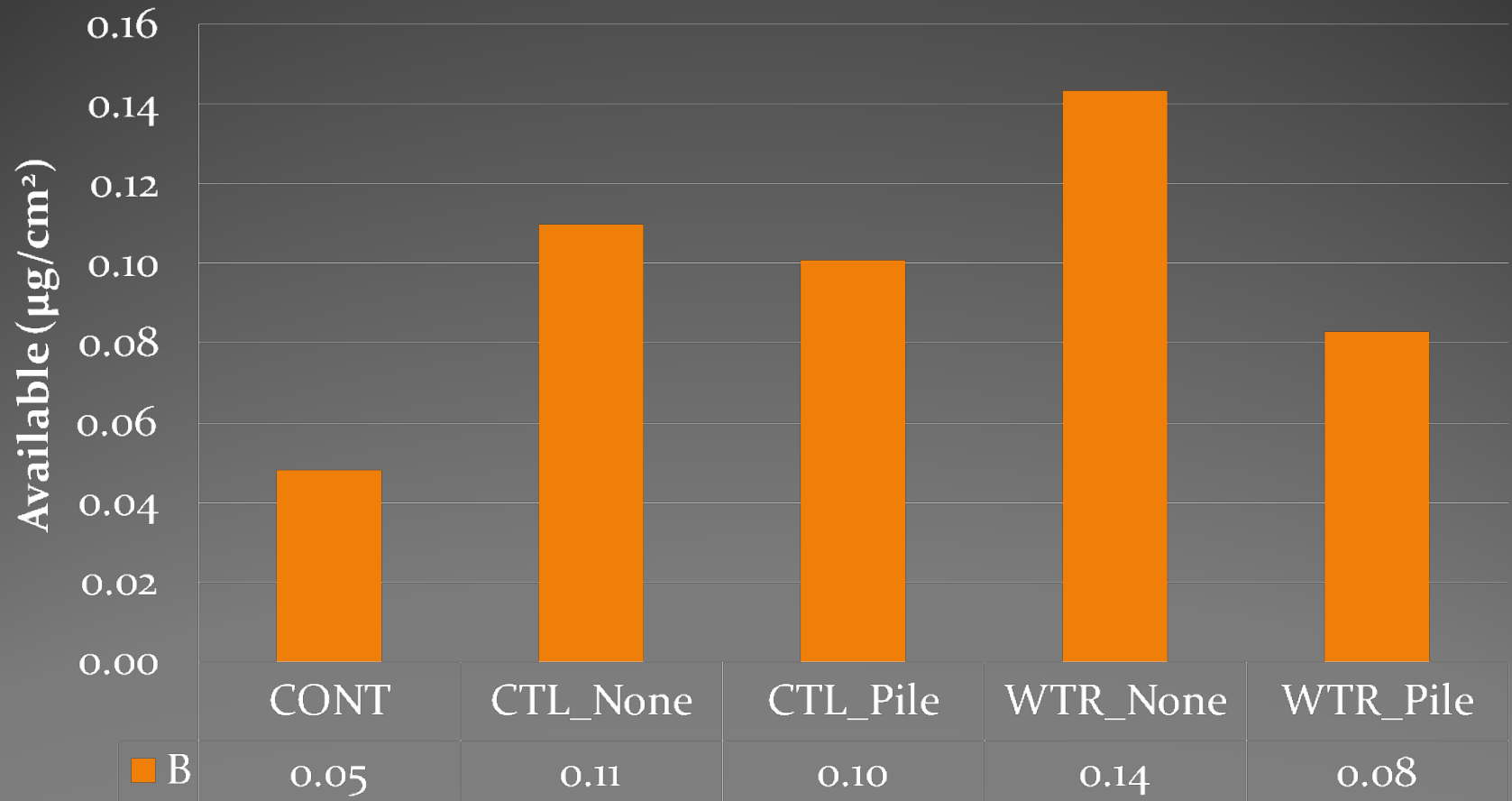
Scared Turkey – Nitrogen



Scared Turkey – K & S



Scared Turkey – Boron



First-Year Summary

- Plant available soil nutrient baselines have been established for the Experimental Forest and Scared Turkey
- Exp. Forest and Scared Turkey Control nutrient levels show significant differences for NH_4 , SO_4 , K, B & Zn
- First-year resin capsule results show a nutrient flush on the burn treatments at Experimental Forest
- Treatment effect by harvest type will be assessed in the 2nd year capsule data for Scared Turkey

Future Work

- Soil Resin Capsules in Treatment Units and in Control
 - Yearly for first two years
 - Periodically after two years (5-yr and 10-yr)
- Foliar Nutrient Status
 - Of Residual Trees at Experimental Forest
 - Of Seedlings at Both after two years
- Monitor Growth Differences
- Establish permanent plots for long-term analysis