

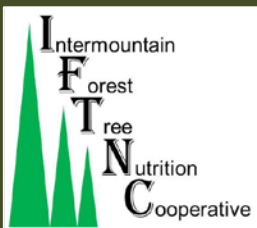
Nutrition Effects on Future Forest Productivity

Harvest by Site Quality Study



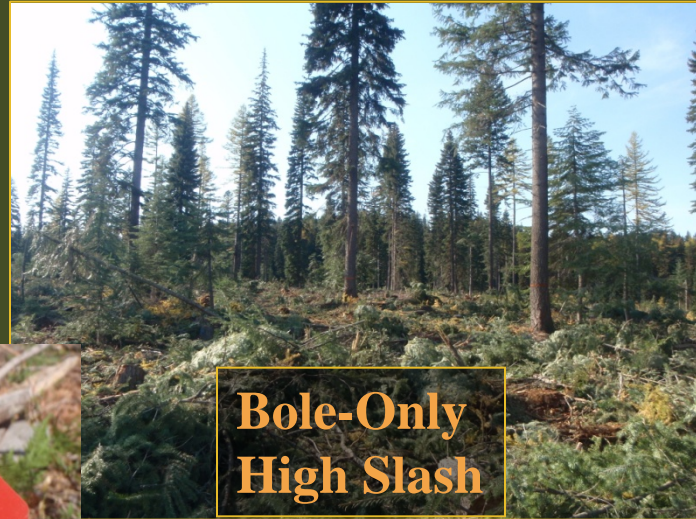
Intermountain Forest Tree Nutrition Cooperative
"2013 Annual Meeting"

University of Idaho
Terry M. Shaw





**Whole-Tree
Low Slash**



**Bole-Only
High Slash**



No Slash



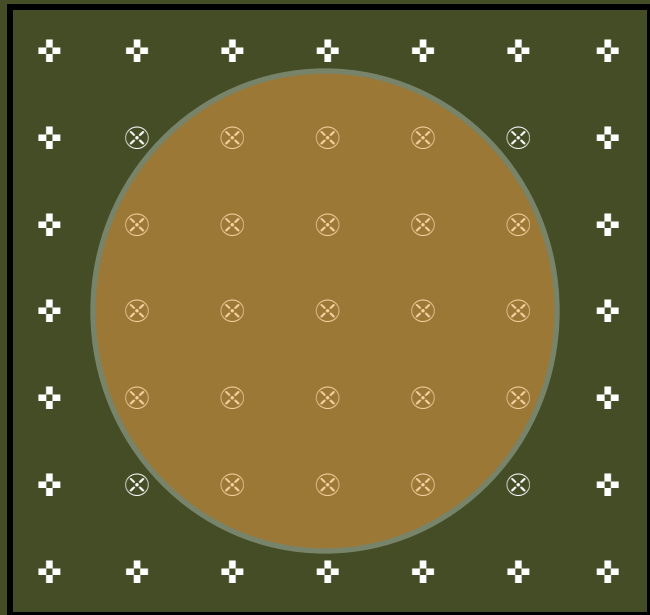
Veg-Control



Block 1 Bole Only	Block 2 Whole Tree	Block 3 Bole Only	Block 4 Whole Tree
High Slash	Low Slash	High Slash	Low Slash
High Slash	Low Slash	High Slash	Low Slash
High Slash	Low Slash	High Slash	Low Slash
High Slash w/veg control	Low Slash w/veg control	High Slash w/veg control	Low Slash w/veg control
No Slash	No Slash	No Slash	No Slash
No Slash w/veg control	No Slash w/veg control	No Slash w/veg control	No Slash w/veg control



Plot Layout



21 Plot Monitoring Trees





Study Sites

Site	Region/ Owner	Soil Parent Material	Site Quality
Canus	NEO/ Forest Capital	Ash/Loess/Basalt	High
Lovell	NID/ IDL	Loess/Quartzite	Low
Ruby	NID/ Potlatch	Loess/ Ash/ Quartzite	Low
Slice	NEWA/ WADNR	Ash/Glacial/Quartzite	Low
Phill	NID/ Bennett Lumber	Ash/Loess/Basalt	High
Loon	NEO/ USFS/Umatilla	Ash/Basalt	High

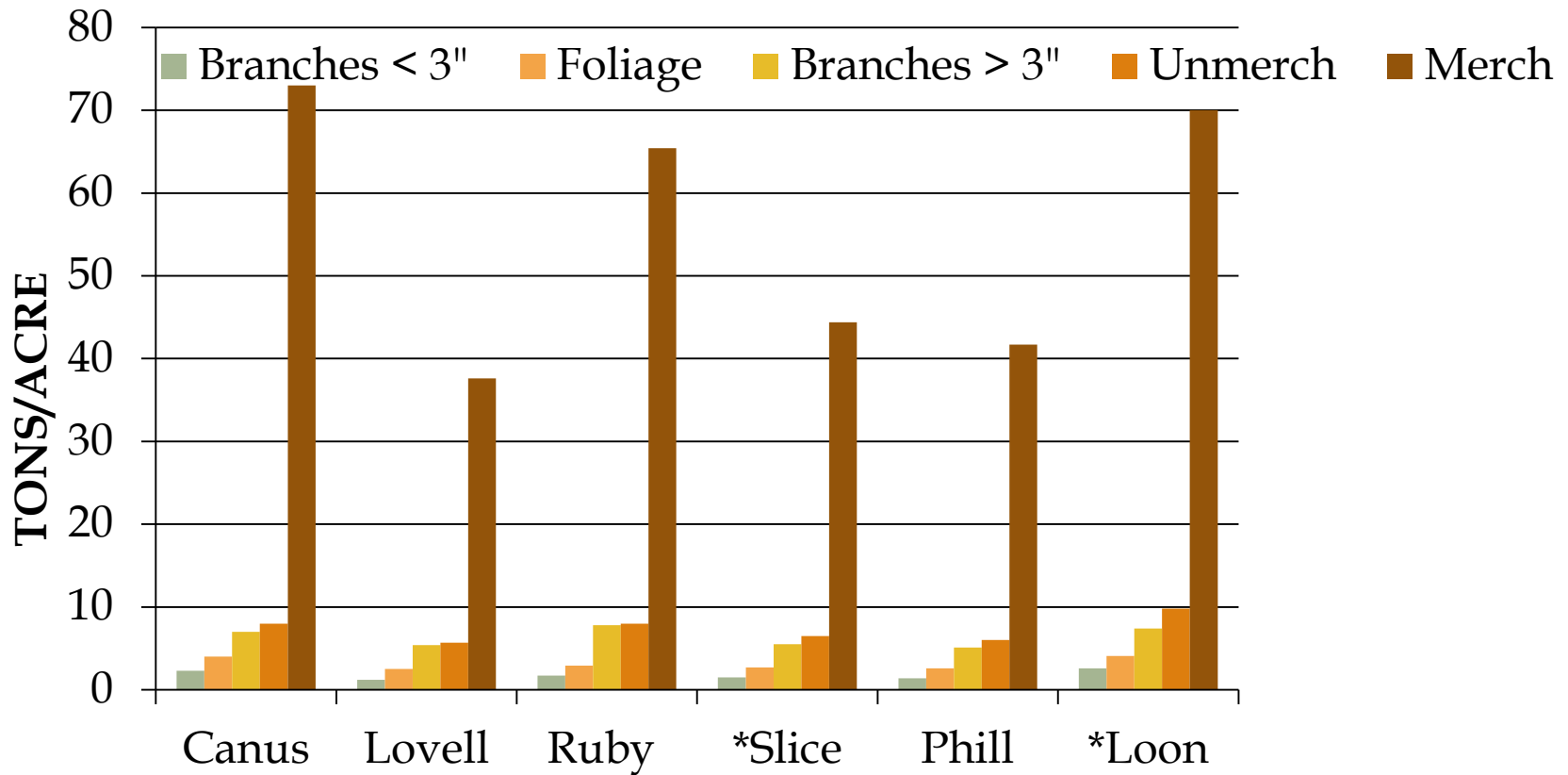


Site	Site Index	Basal Area	Site Height	QMD	Volume	
					Cu/ft/a c	Bd/ft/a c
Canus	73	134	86	11.9	4,218	22,605
Lovell	77	80	68	11.6	2,224	11,736
Ruby	69	123	80	13.2	3,675	19,858
*Slice	57?	90	81	11.8	2,569	13,208
Phill	71	78	89	11.3	2,370	12,646
*Loon	70	130	93	11.5	4,195	19,263

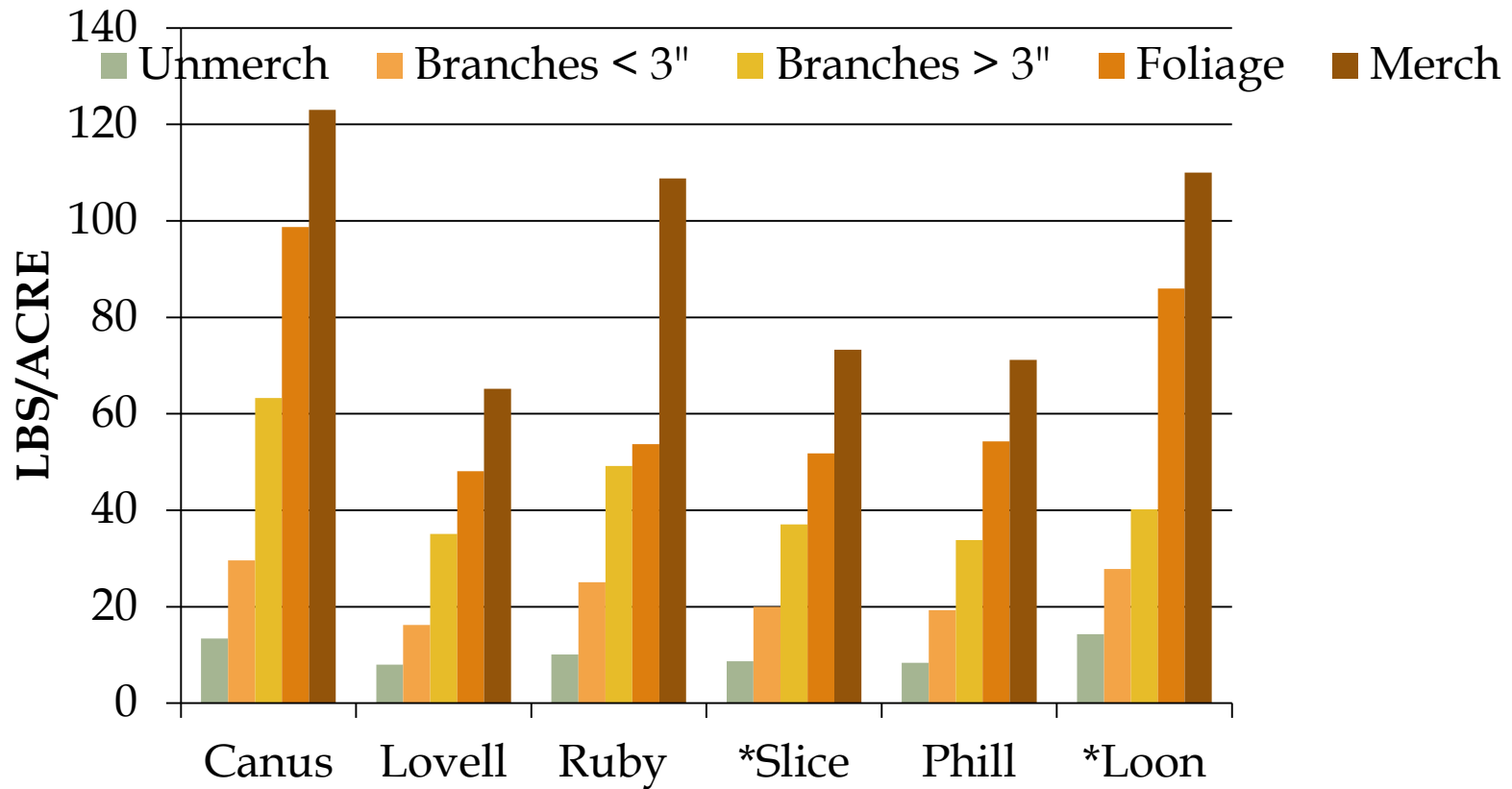
*Does not include "Heritage " leave trees.



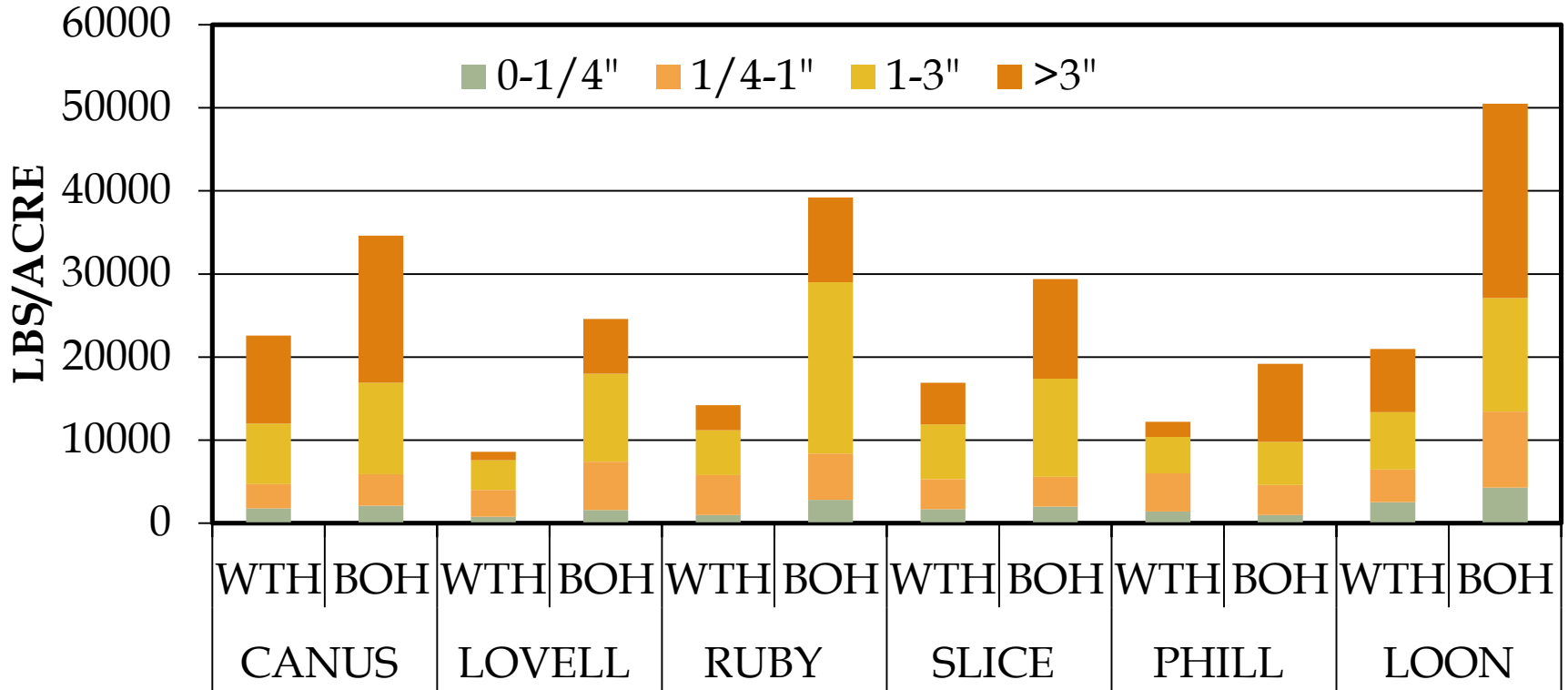
FVS PROJECTED STAND BIOMASS

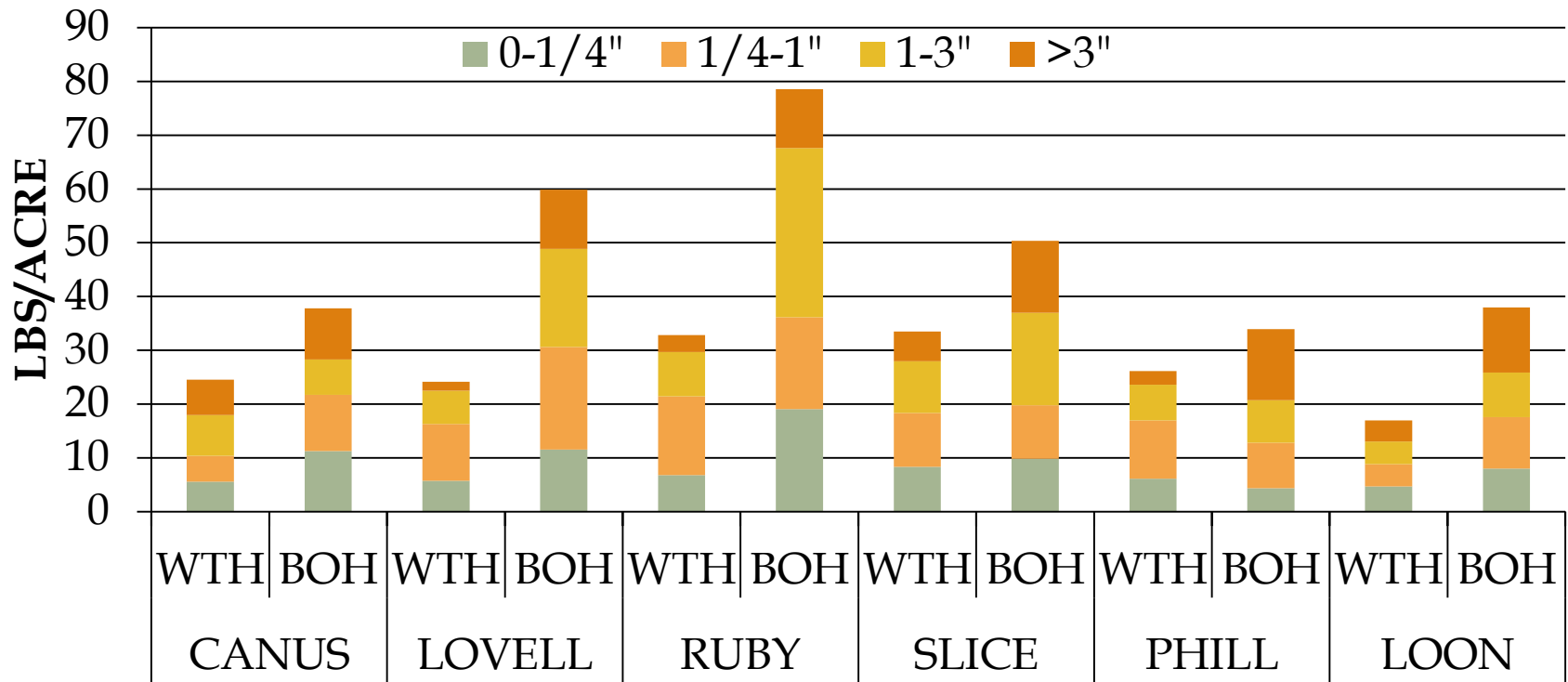


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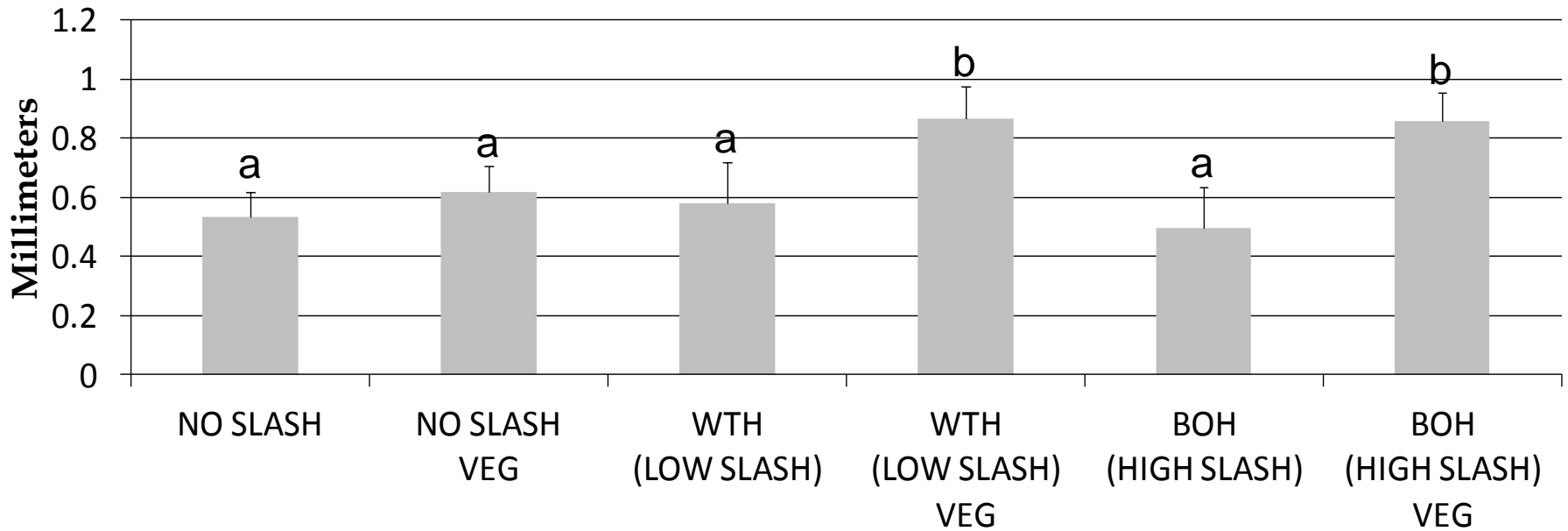
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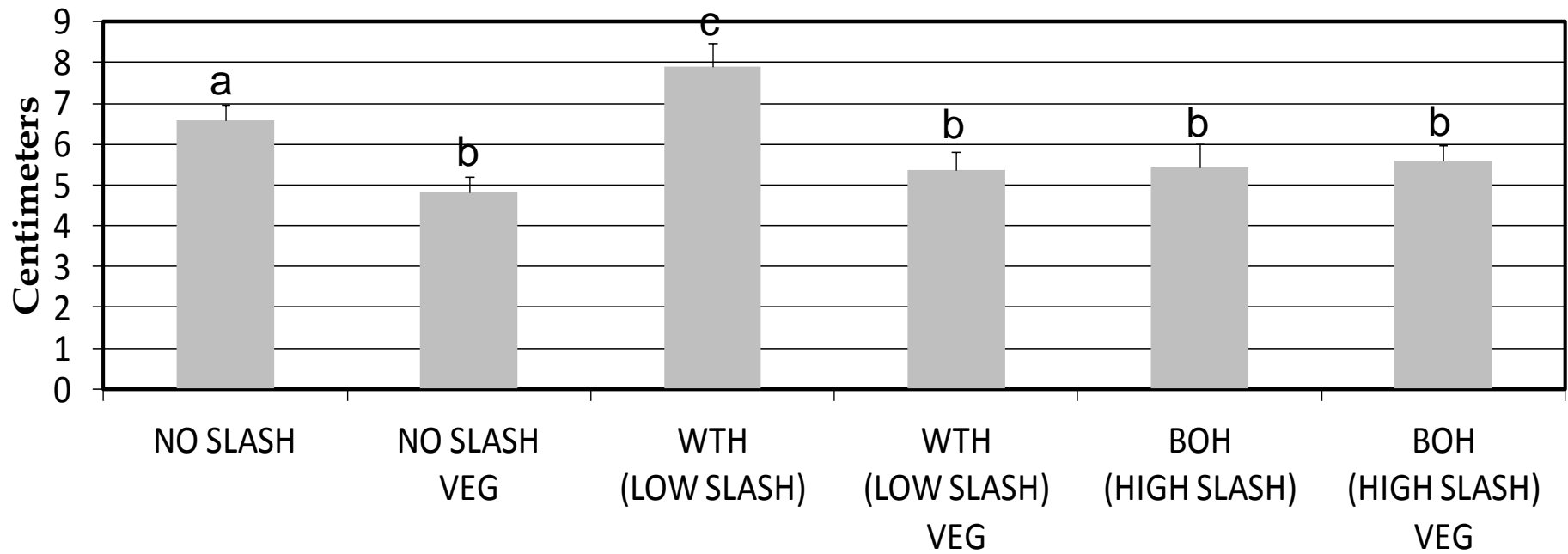




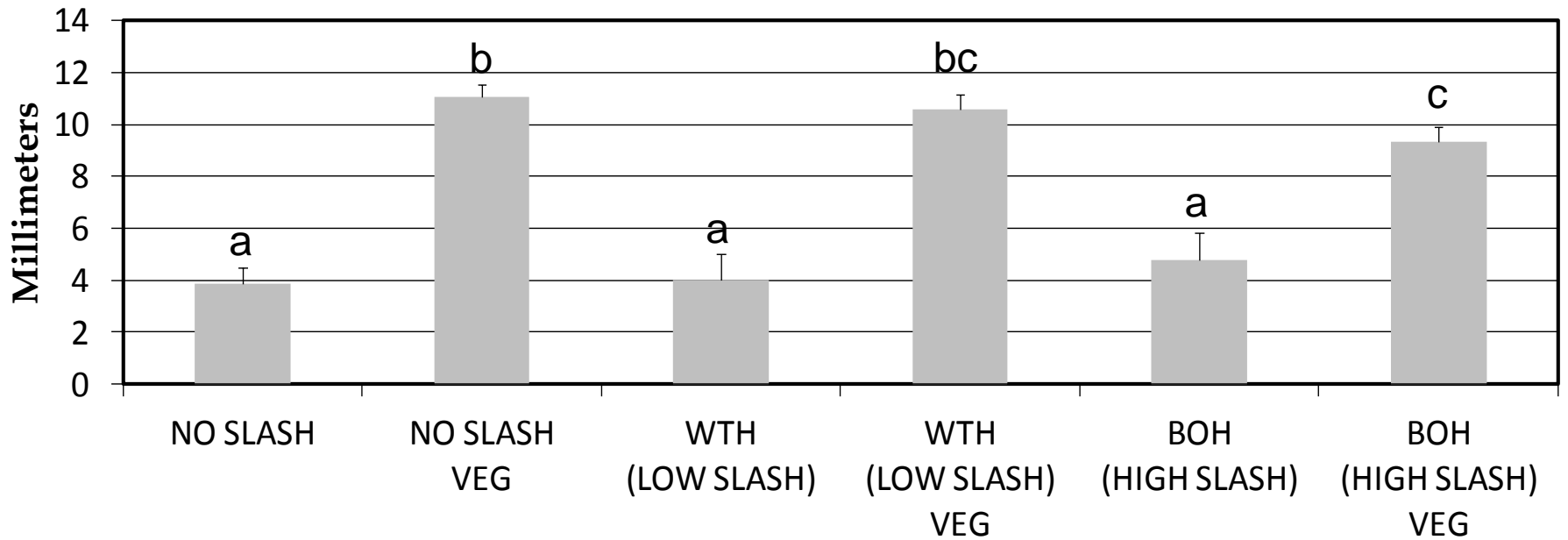
Site	Slash Retention (tons/acre)		Volume	
	WTH	BOH	Cu/ft/ac	Bd/ft/ac
Canus	11.3	17.3	4,218	22,605
Lovell	4.3	12.3	2,224	11,736
Ruby	7.1	19.6	3,675	19,858
Slice	8.5	14.7	2,569	13,208
Phill	6.1	9.6	2,370	12,646
Loon	10.5	25.3	4,195	19,263



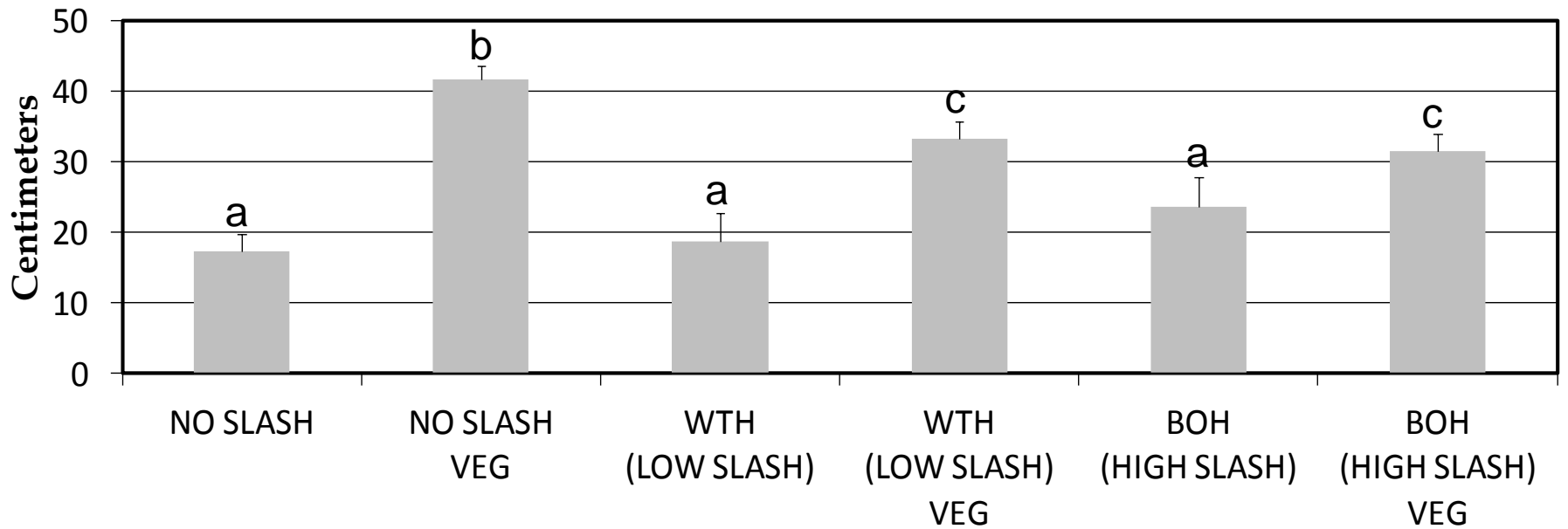
$P \leq 0.10$



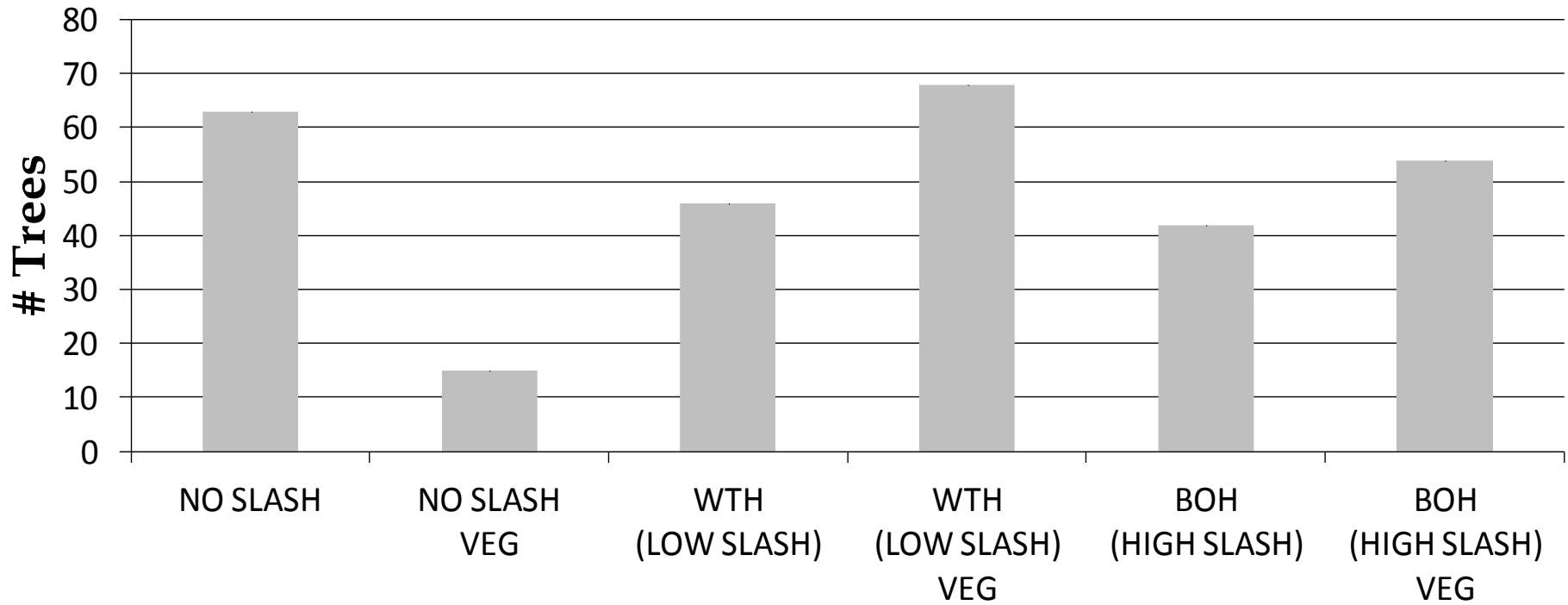
$P \leq 0.10$



$P \leq 0.10$

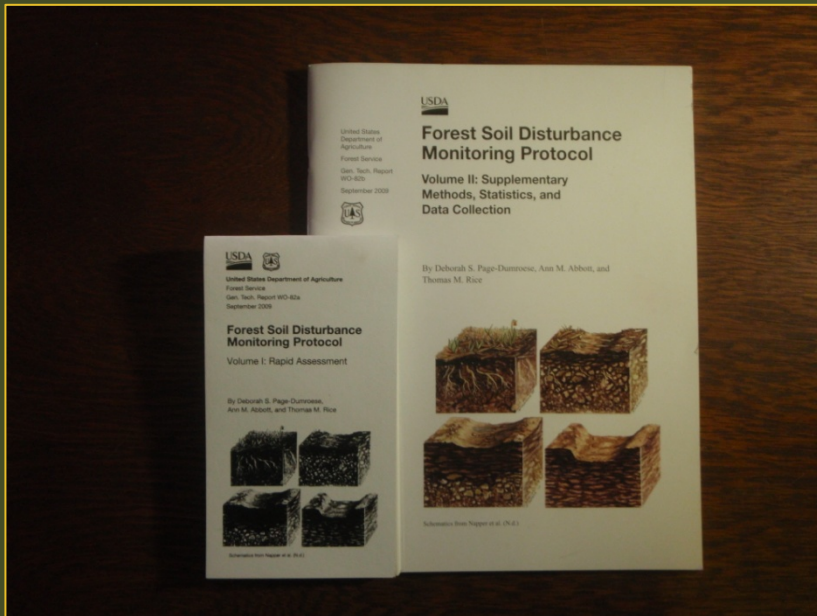


$P \leq 0.10$

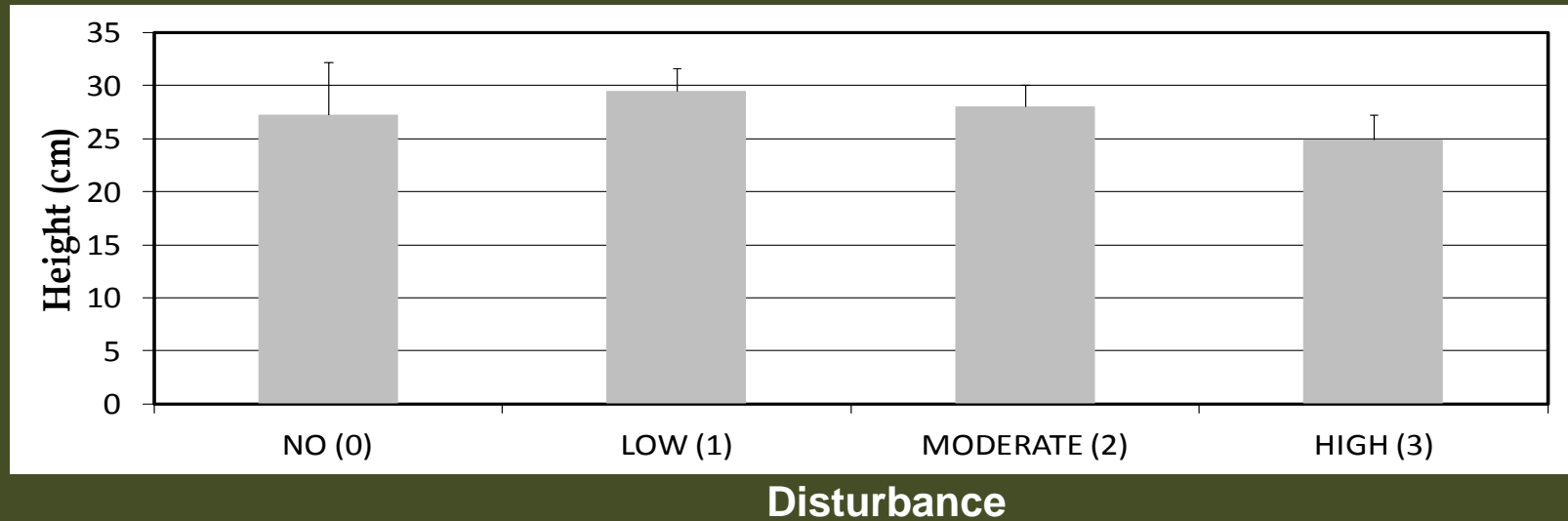
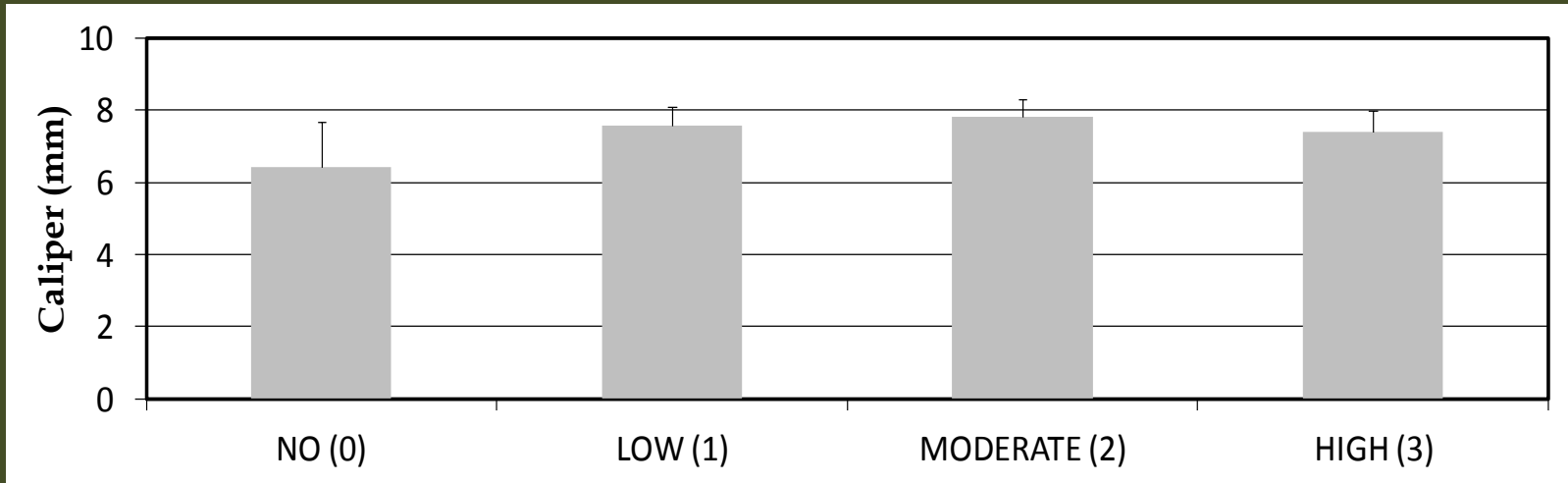




Forest Soil Disturbance

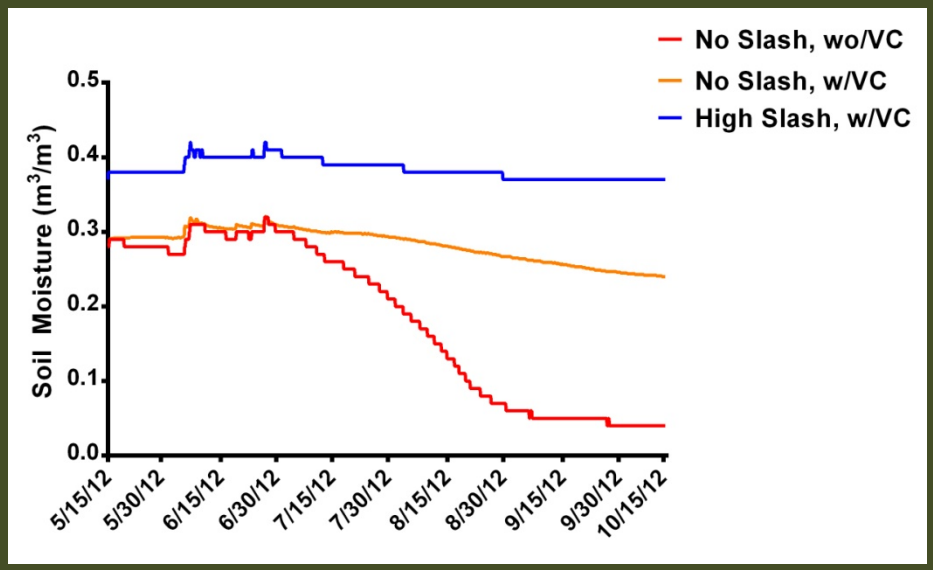
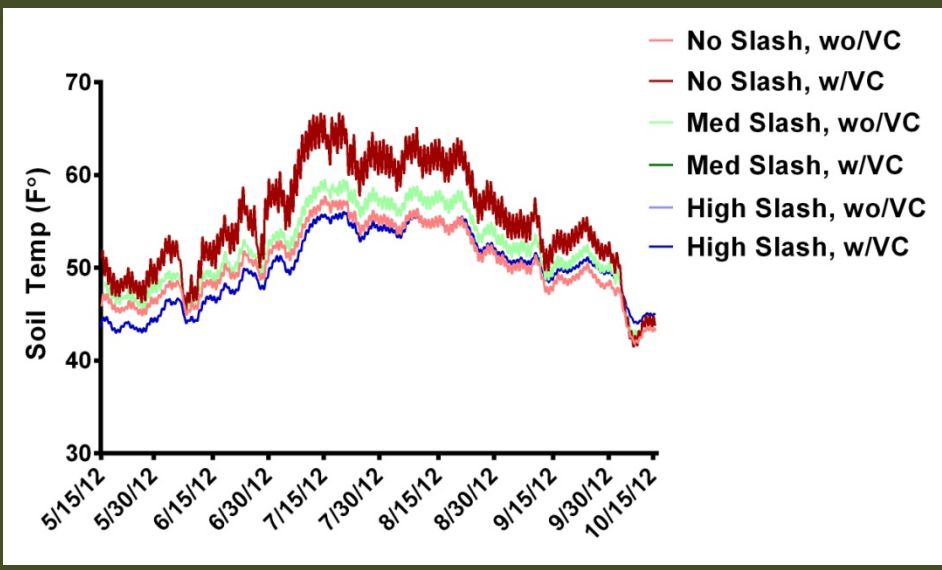


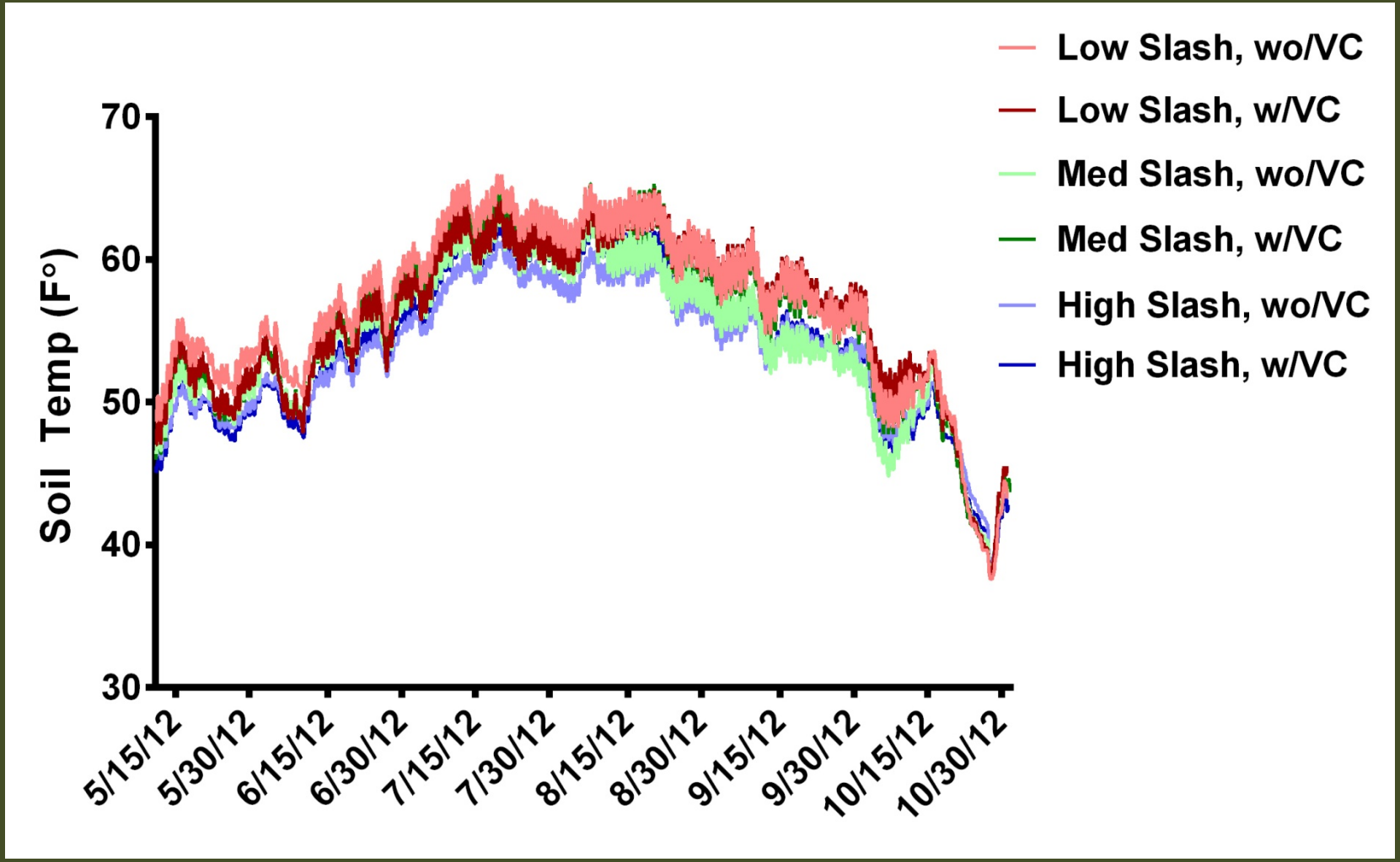
- ☐ 0 = No compaction, depressions, displaced forest floor (FF)/soil displacement and erosion
- ☐ 1 = slight compaction, faint depressions, FF intact, slight soil structure (SS) change (crumbly to platy), slight erosion
- ☐ 2 = Compaction and depressions moderately deep, FF partially intact or missing, SS change continuous, erosion moderate
- ☐ 3 = Compaction and depressions deep, FF missing, SS change continuous-deep, erosion severe





Slice Above Soil Temperature and Moisture







- ▣ Plant Loon SP2013
- ▣ Total Biomass (Carbon) and Nutrient Budget (above and below ground)
- ▣ Surface Soil and Resin Capsule Nutrient Assessment
- ▣ Long Term Growth Productivity Assessment
- ▣ Soil-Site Disturbance Assessment