

Intermountain Forest Tree Nutrition Cooperative

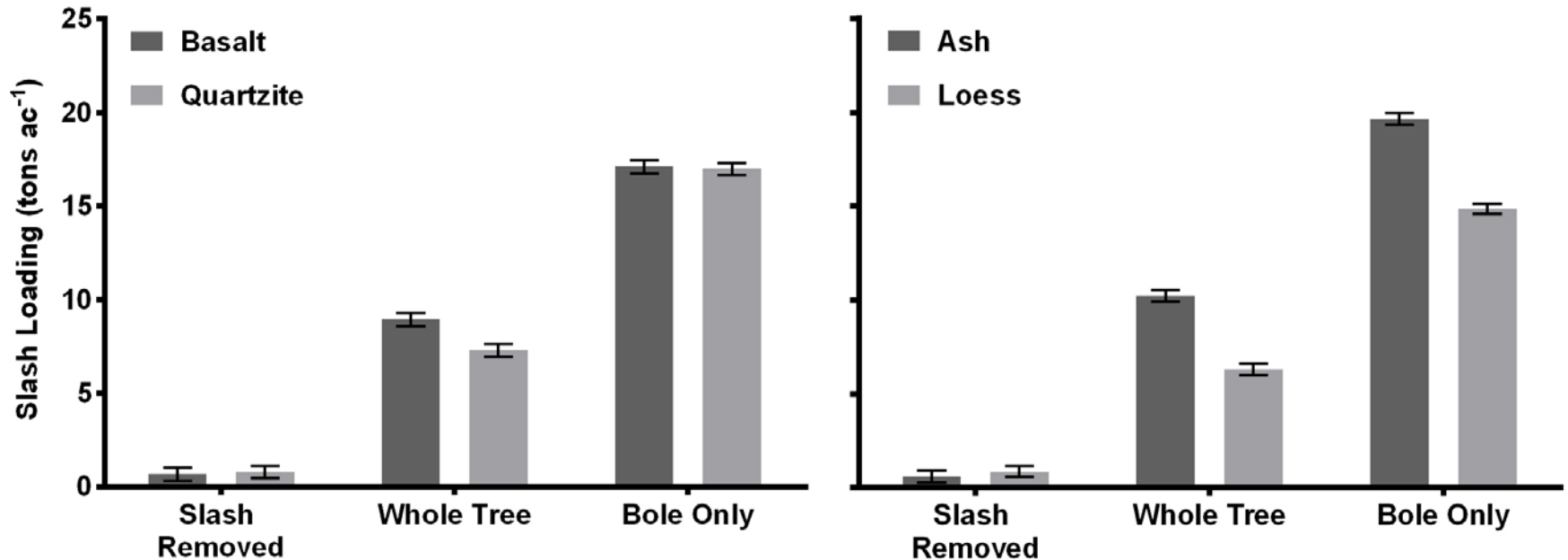
Nutrient Management Project Update:
Soil Nutrient Availability Relative to
Slash Loading & Veg Control

April 7, 2015

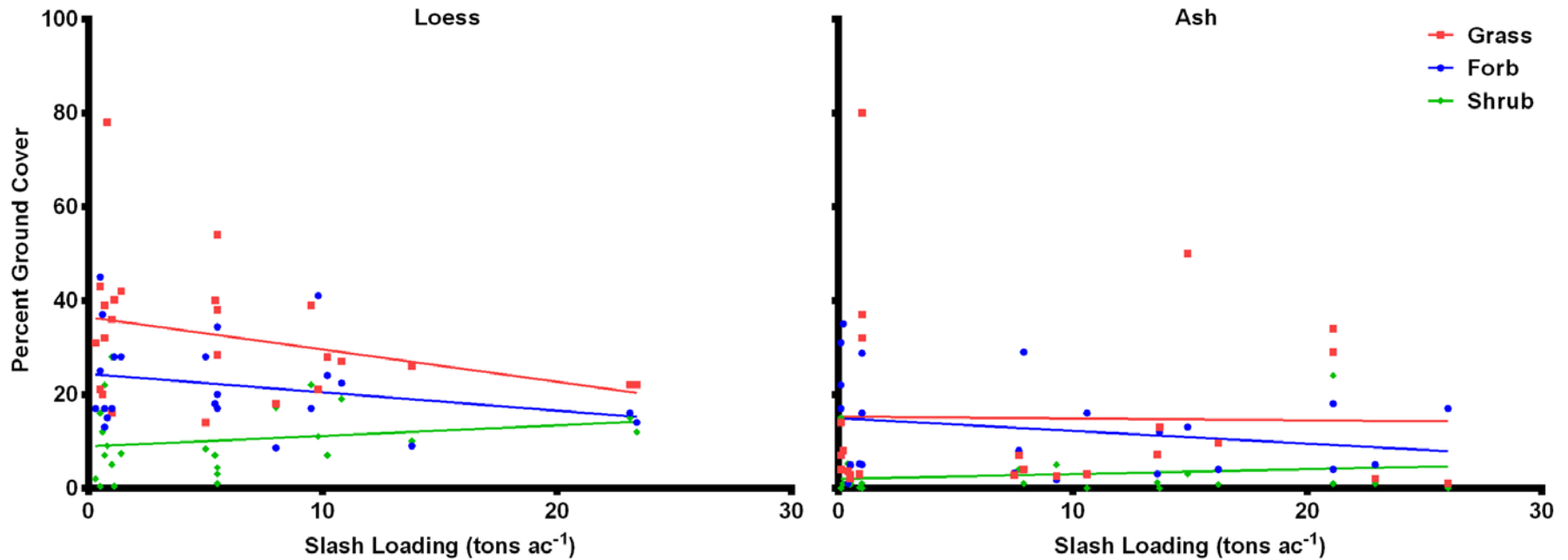
University of Idaho



Slash Loading x Soil Type



Ground Cover x Soil Type



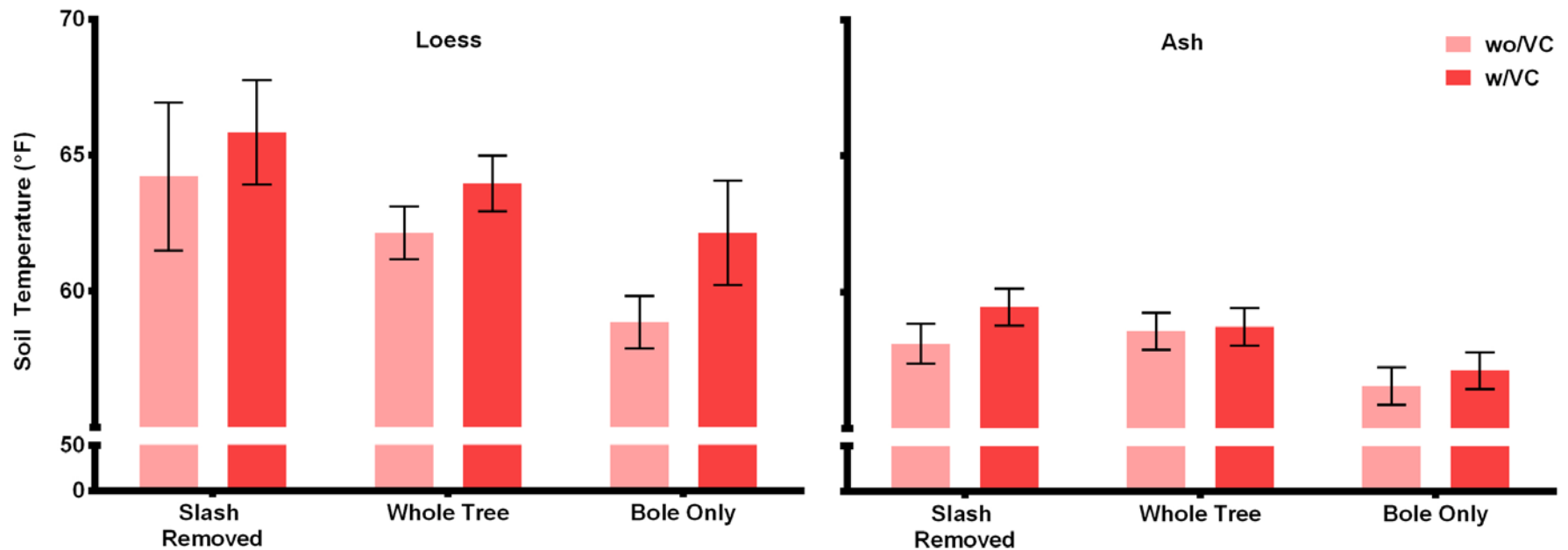
Methods

- Nutrient flux measured once a year with ion exchange resins - focus on N, P, K, S, B
- Soil Temp measured every three hours on all sites and treatment combinations
- VWC measured every 3 hours on No Slash (w/ and wo/veg control and Bole Only w/veg control



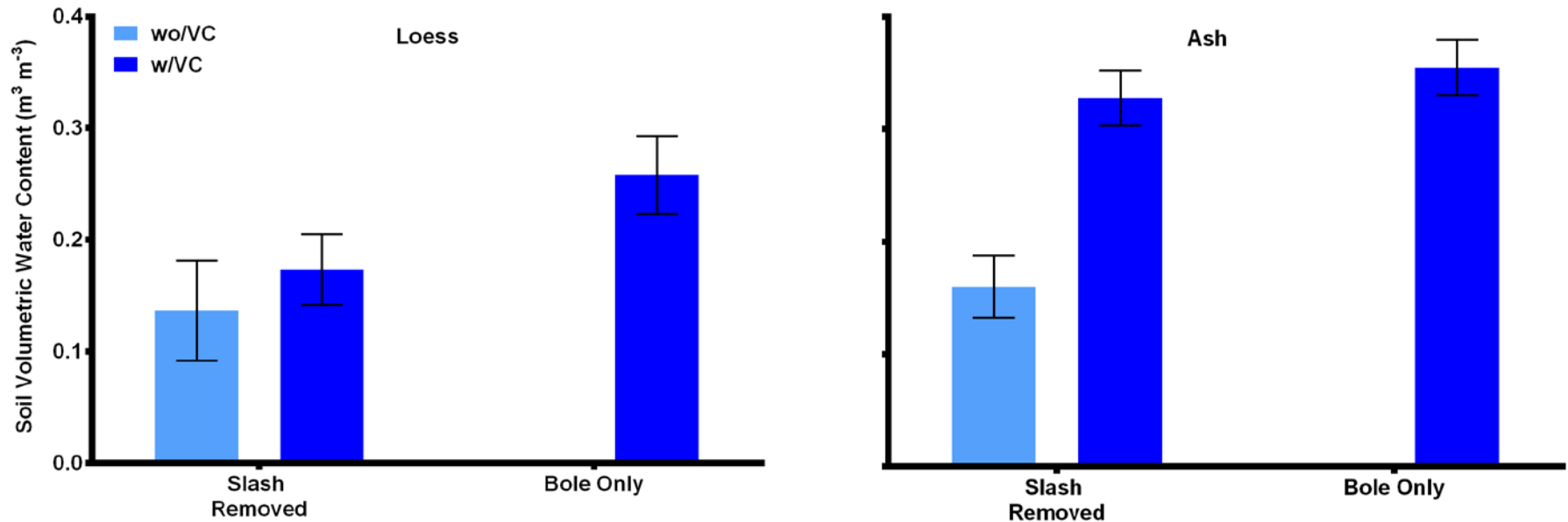
Mean Soil Temperature x Soil Type

July 15 - Sept. 15

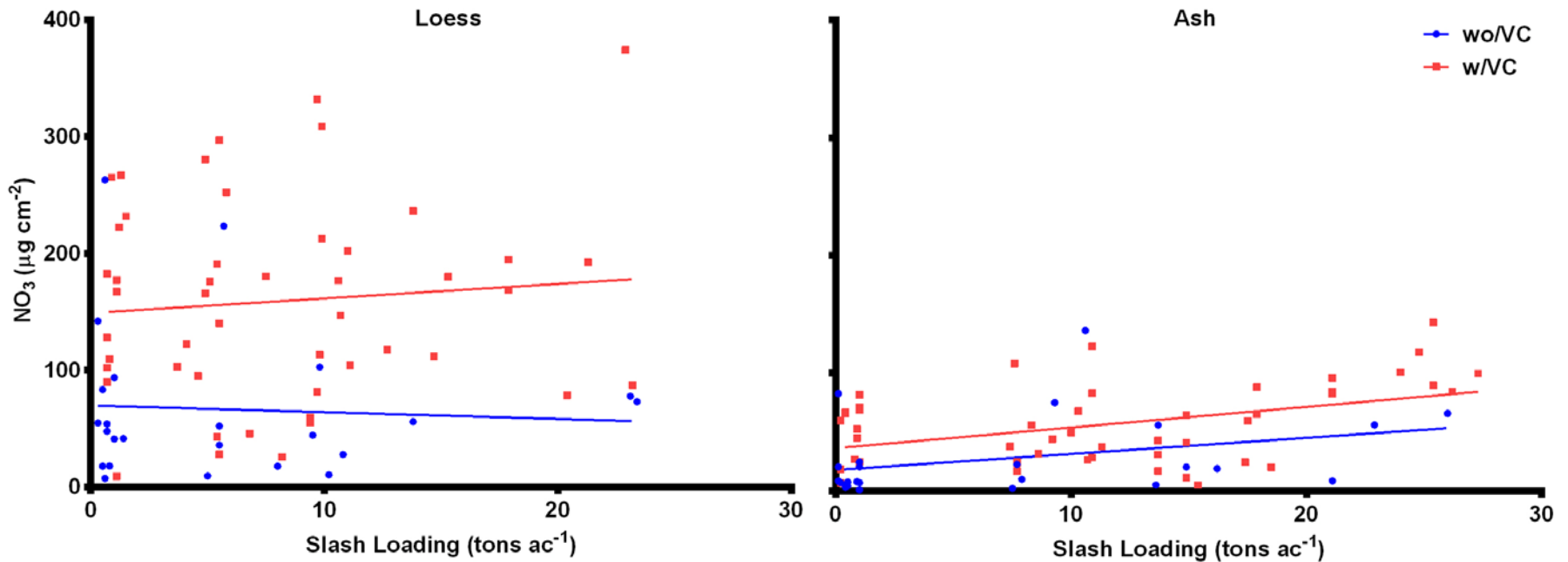


Mean Soil Moisture x Soil Type

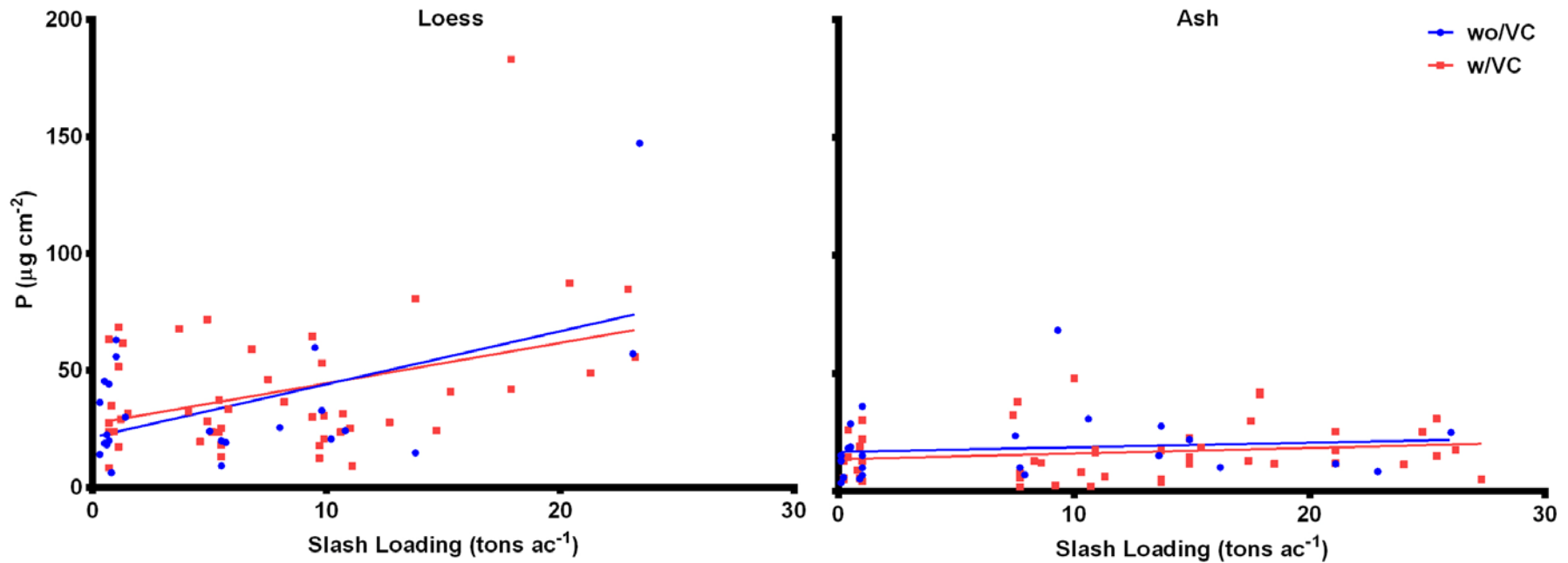
July 15 - Sept. 15



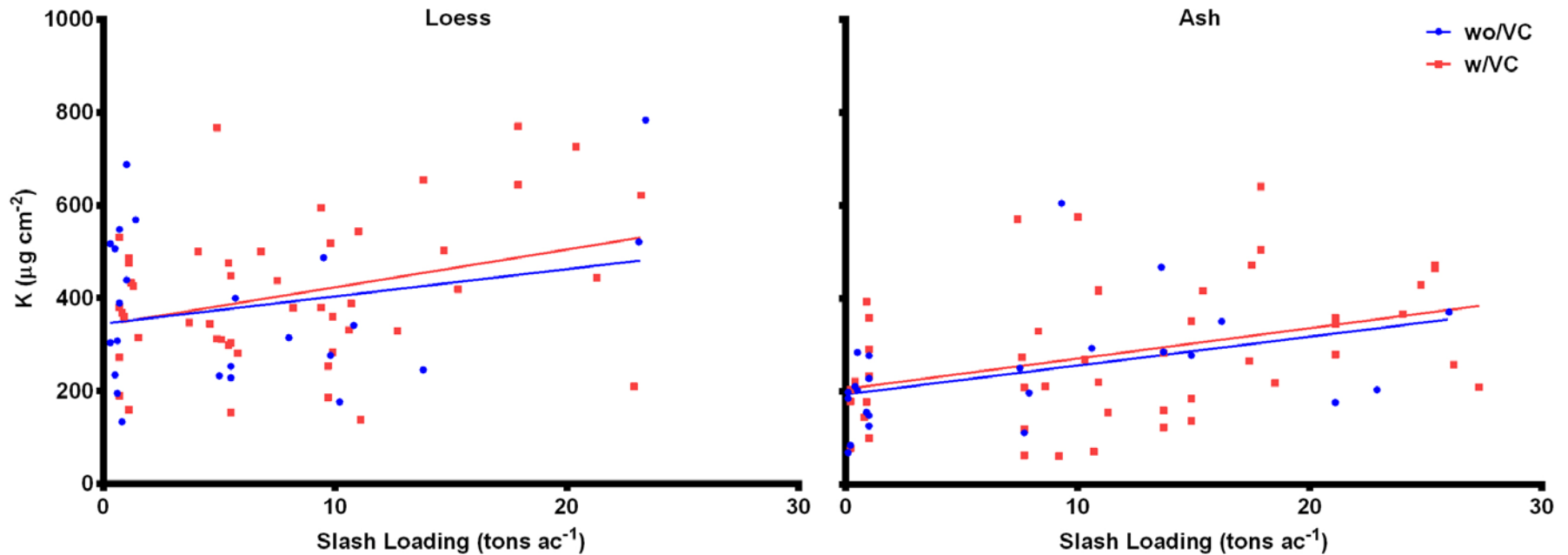
3 Yr Nutrient Flux - N



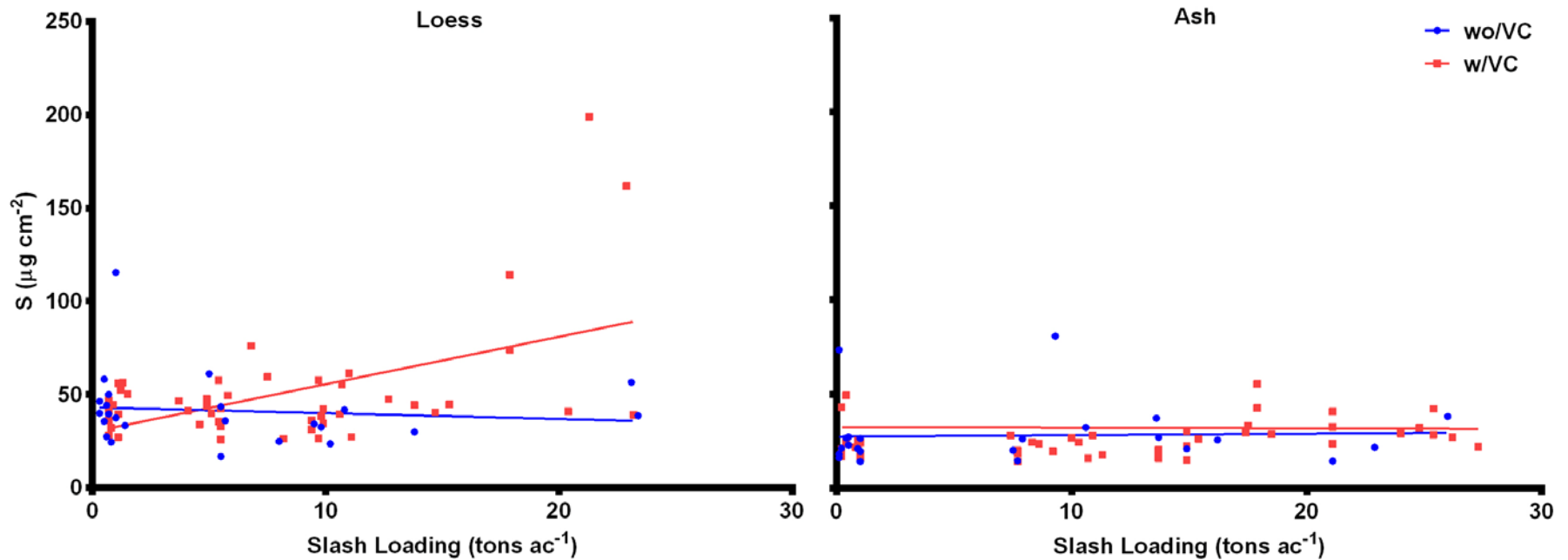
3 Yr Nutrient Flux - P



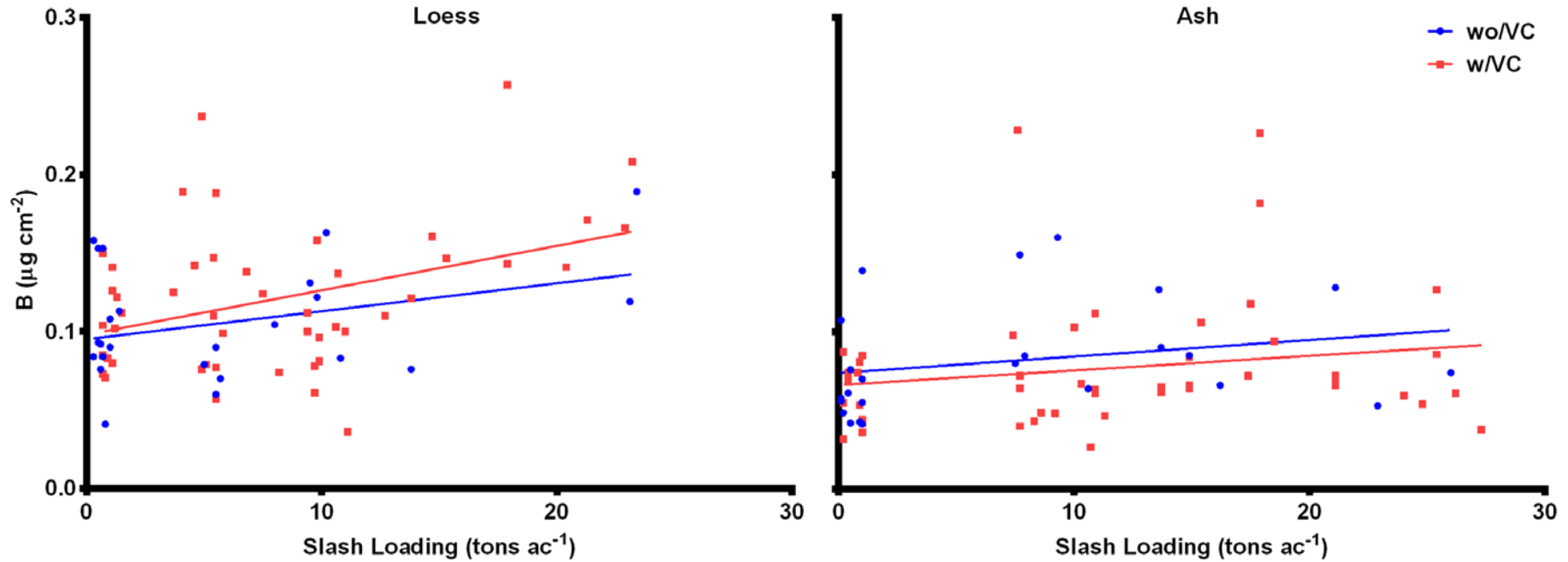
3 Yr Nutrient Flux - K



3 Yr Nutrient Flux - S



3 Yr Nutrient Flux - B



Summary

- Higher slash loading on ash, less on loess
- Overall, more understory veg component on loess soils, with high slash loadings acting as veg suppressant
- High slash loadings decrease soil temperature, while veg control tends to increase, particularly on loess soils
- Ash soils are cooler and moister than loess soils over late summer growing conditions

Summary

- Loess soils show higher flux of N, P, K, S, B than ash soils
- Veg control significantly increases N flux on loess soils, overall no significant impact on other nutrient fluxes (S anomaly)
- Ash soils preferentially sorb anions – particularly P and S, showing significantly lower fluxes than loess soils despite higher slash loads

Future Soil Monitoring

- Monitor all sites through 5 years, every fifth year thereafter
 - Temperature
 - Moisture
 - Soil nutrient flux
 - Soil nutrient pools

