

Initial effects of burn piles on vegetation and soil following conifer removal from a montane meadow

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Background

Encroachment of montane meadows by conifers



Background

Restoration challenges

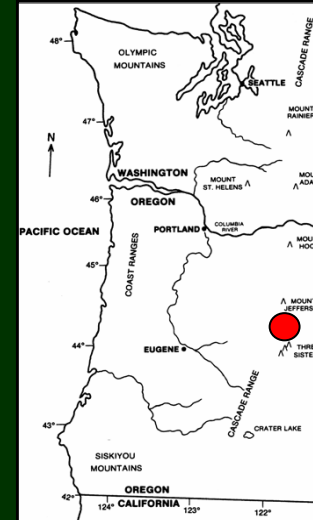
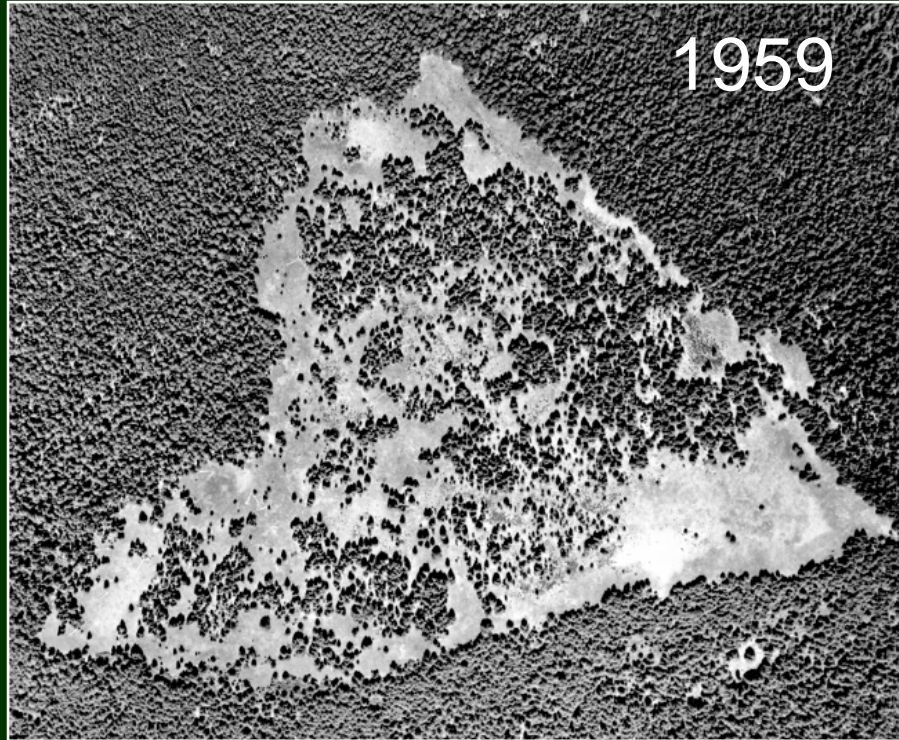


Background

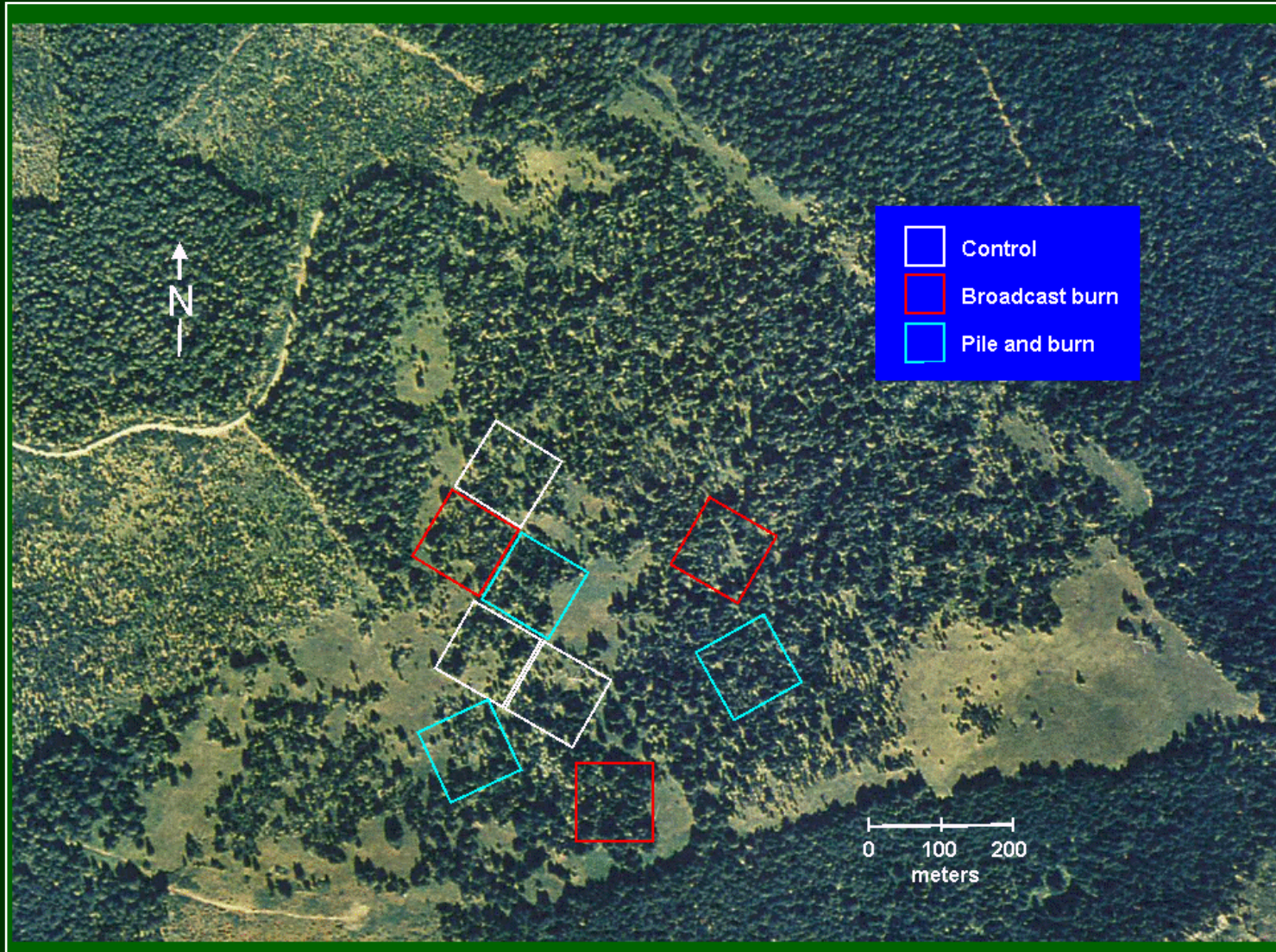
Slash disposal



Study Site



Study Site



Study Site

January 2006



Study Site

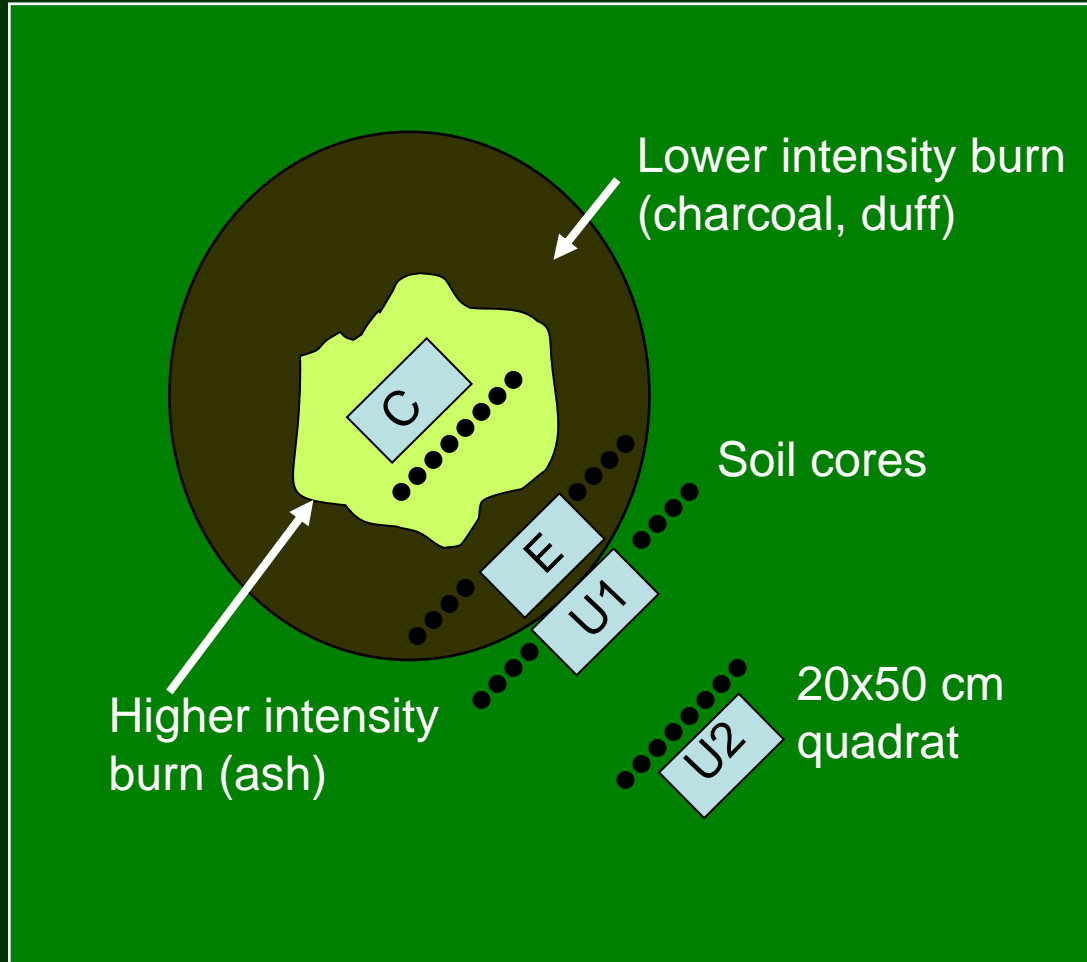
November 2006



Study Questions

- Do vegetation or soil characteristics vary with distance from the center of the burn scars?
- Do burning effects extend beyond the burn scars?

Experimental Design



Analysis: One-way ANOVA, post-hoc tests of means

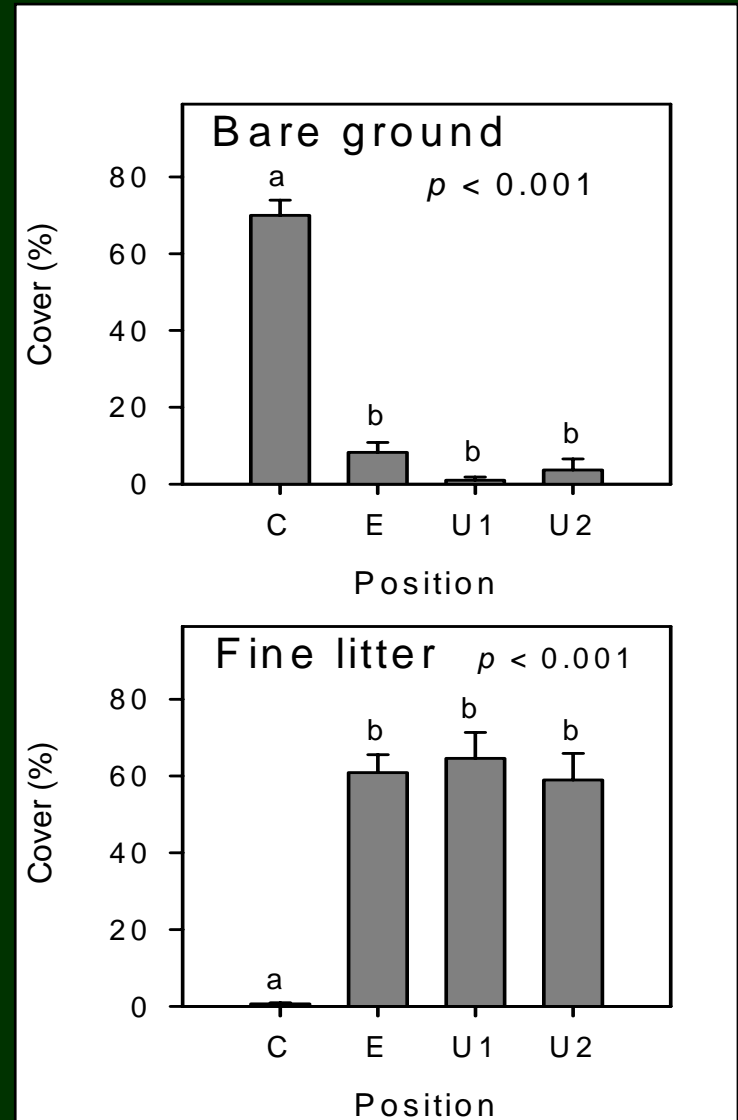
Results

Ground-surface conditions



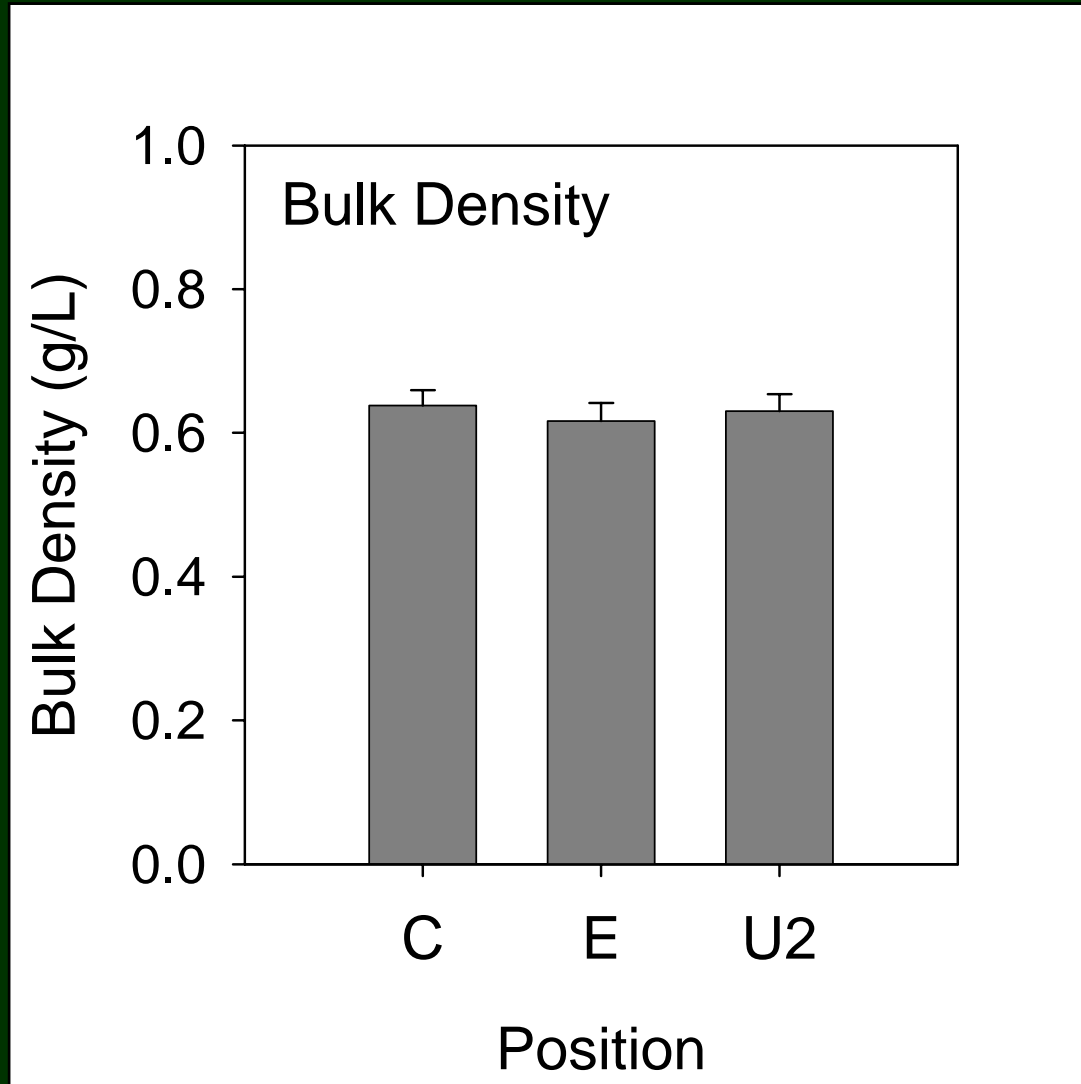
Central area: white ash

Outer ring: blackened duff, charcoal



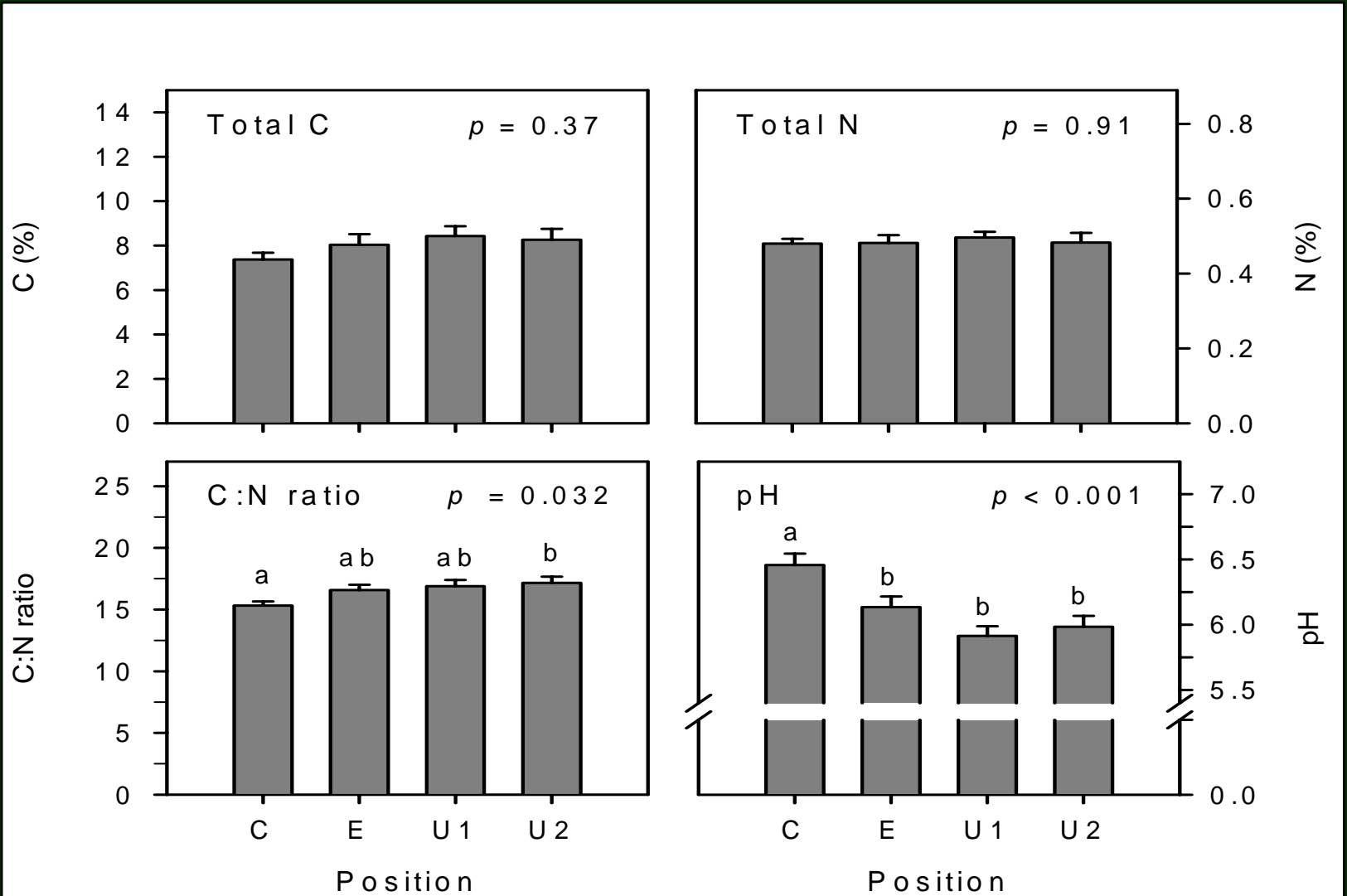
Results

Soil physical properties



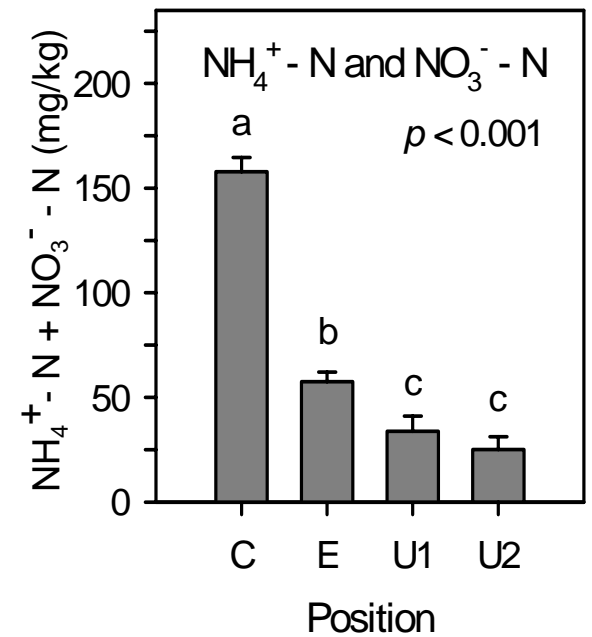
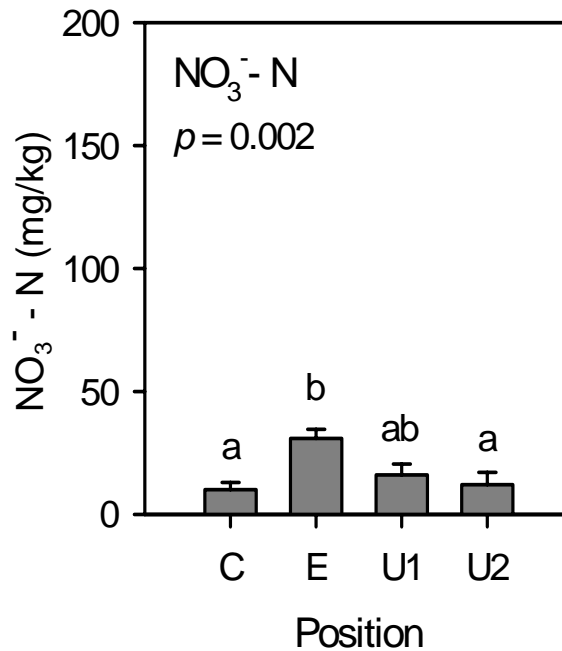
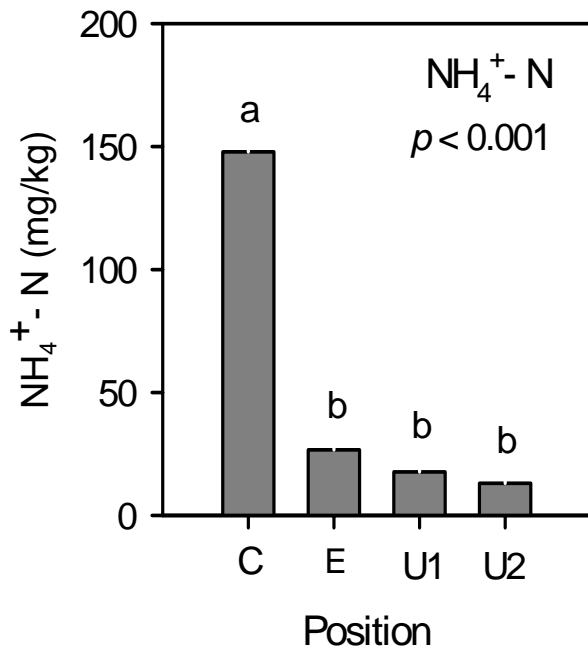
Results

Soil chemical properties



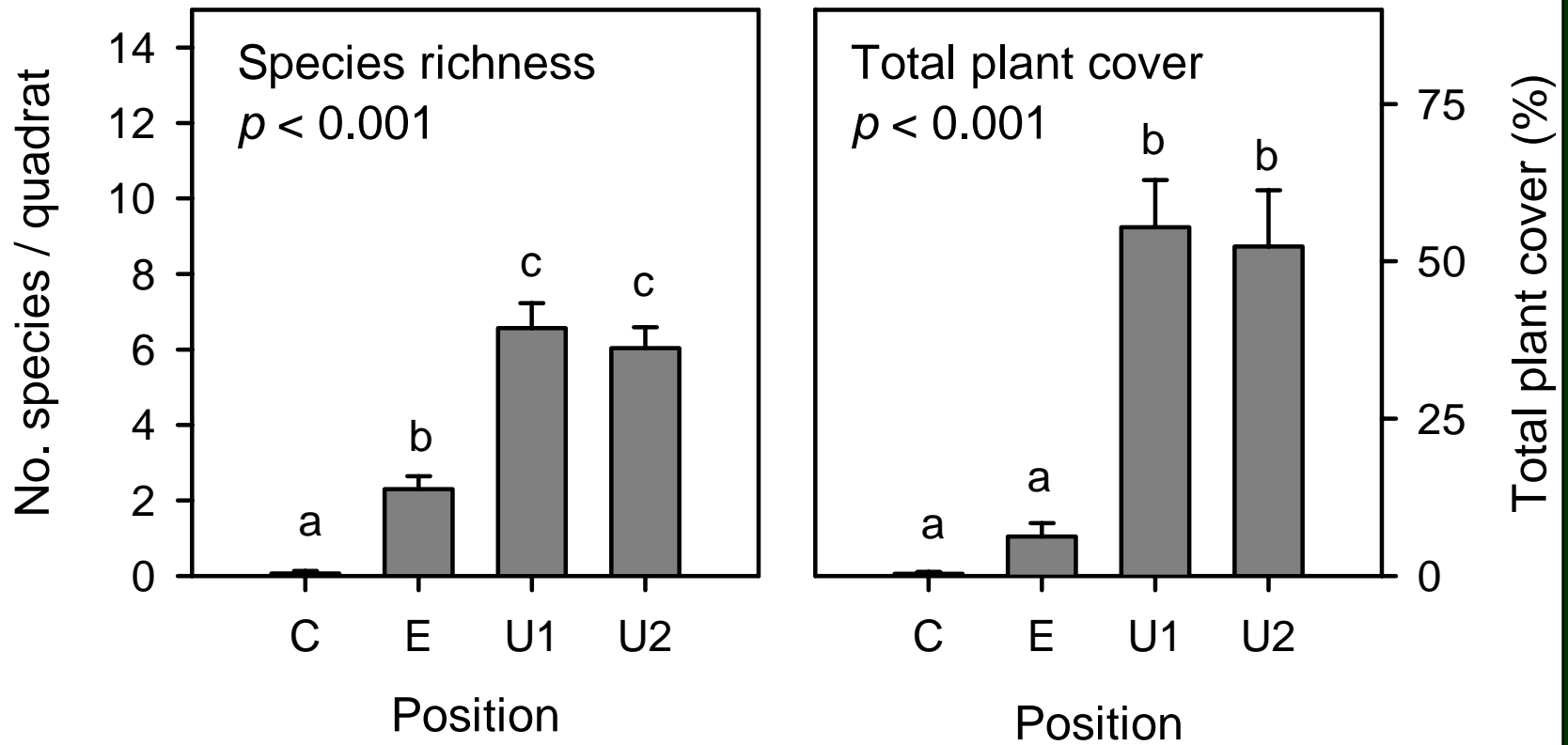
Results

Available N



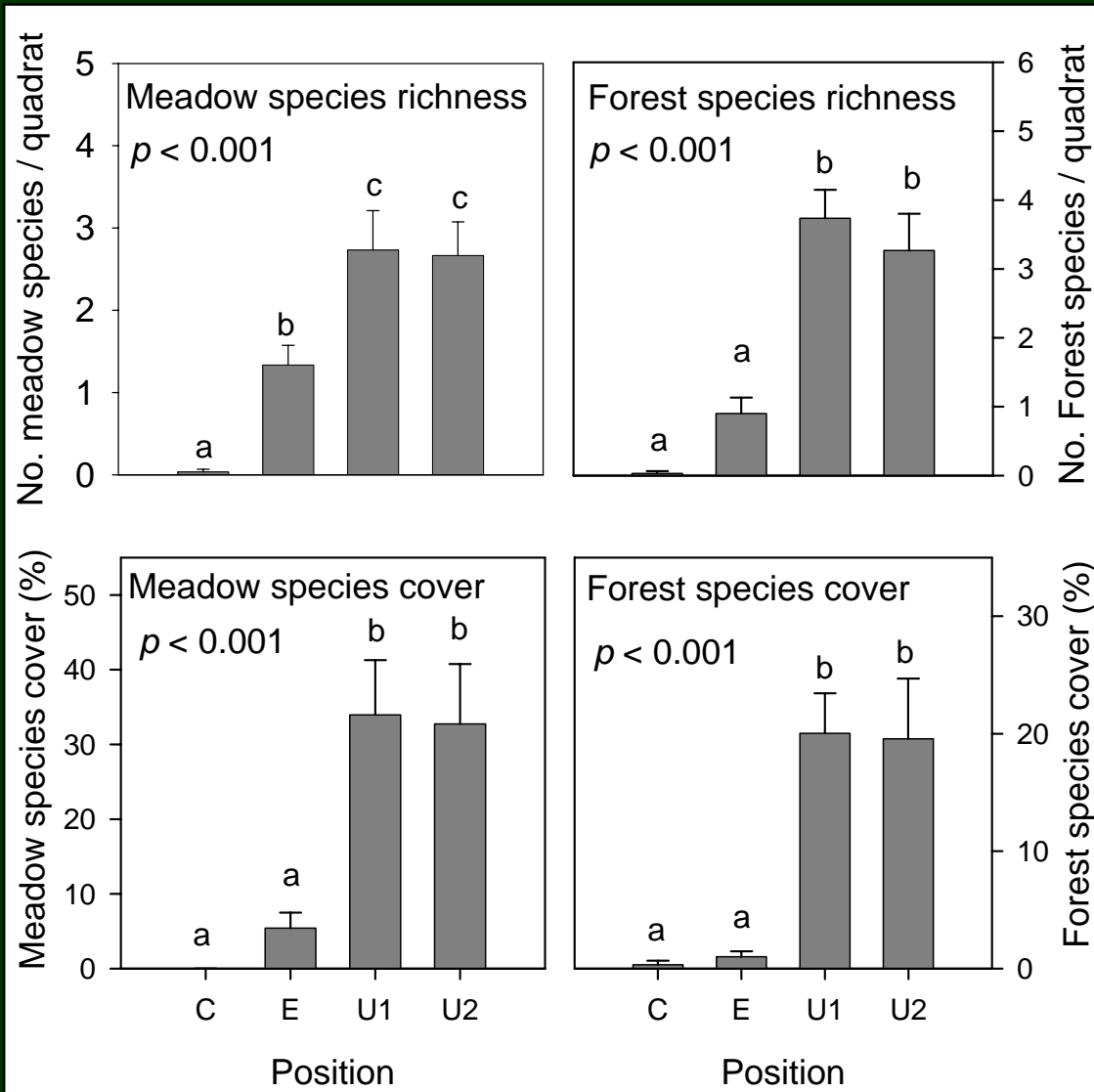
Results

Vegetation responses



Results

Meadow and forest species



Conclusions



Pile burning has severe but local effects on soil and vegetation. Effects on soil N are likely to be short lived.

Conclusions



No direct effects on adjacent unburned soils or vegetation.
Some survival or rapid colonization of burn edges by meadow species.

Conclusions



Little evidence of ruderal species.
Minimal establishment of conifer seedlings.

Acknowledgements

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SEEDS

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