

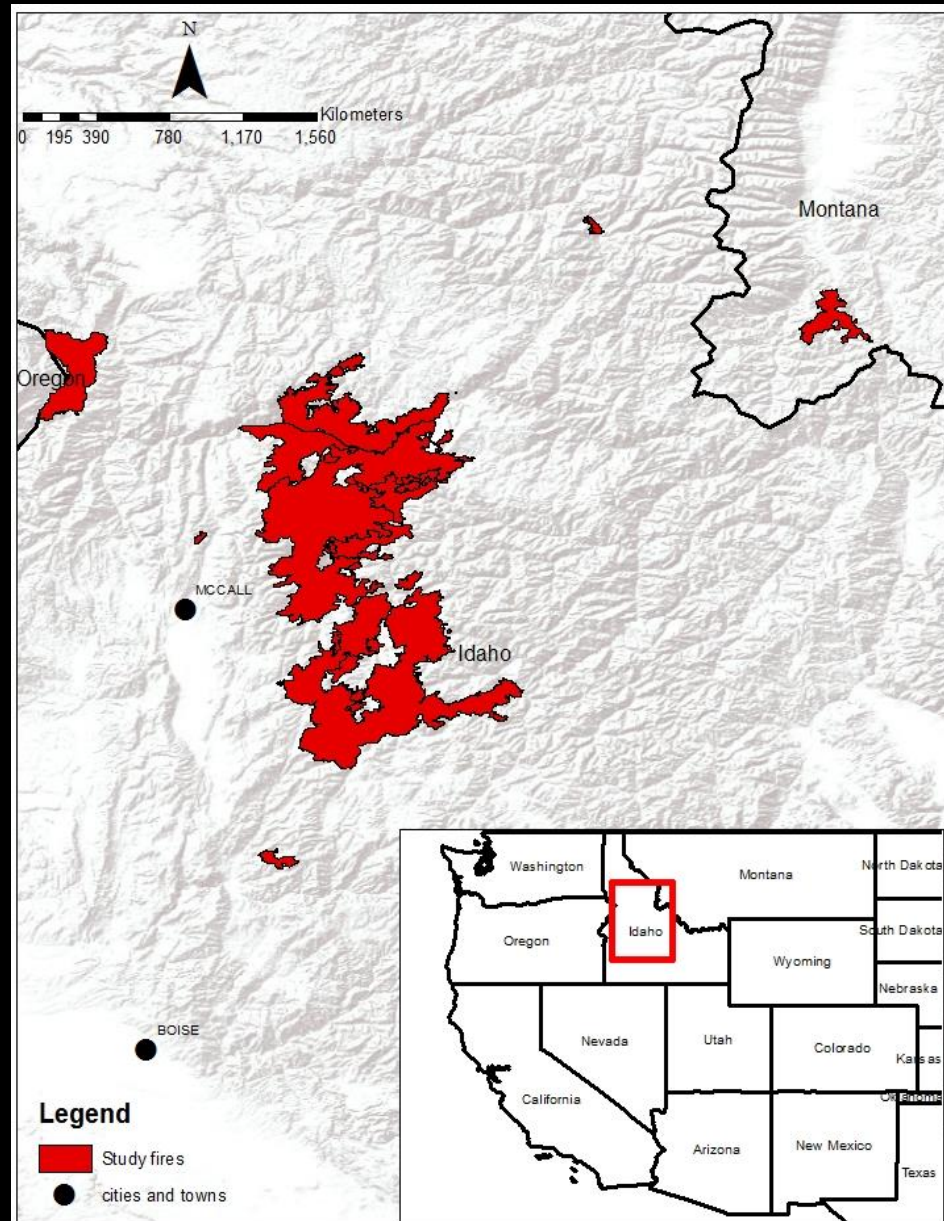


Fuel longevity, accumulation
following wildfire

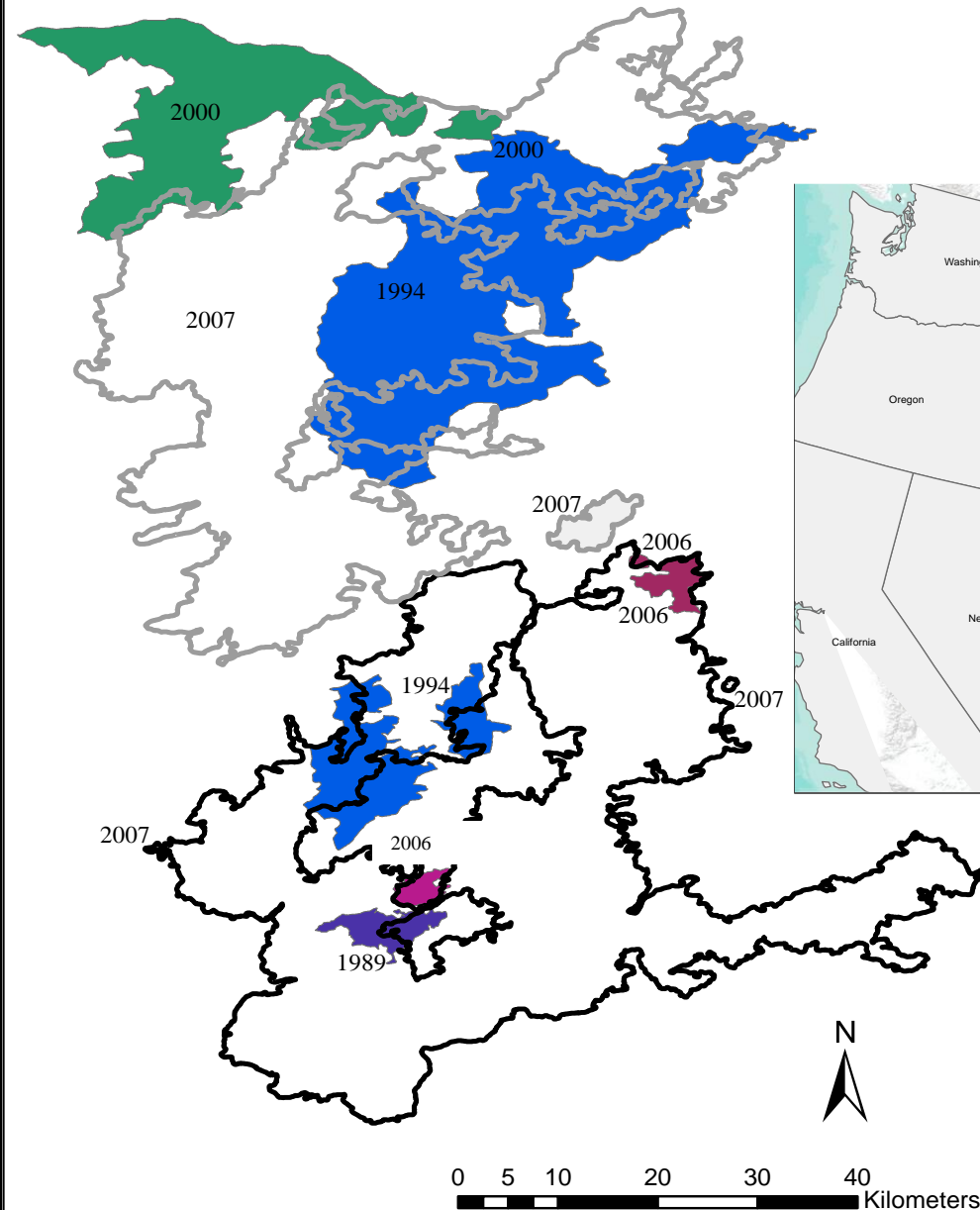
Research questions

- 1) How do canopy and surface fuels change through time following wildfires at different severities in mixed-conifer forests of the northern Rockies?
- 2) How are woody fuel dynamics influenced by repeated wildfires in a short period of time (<20 years)?

Study fires



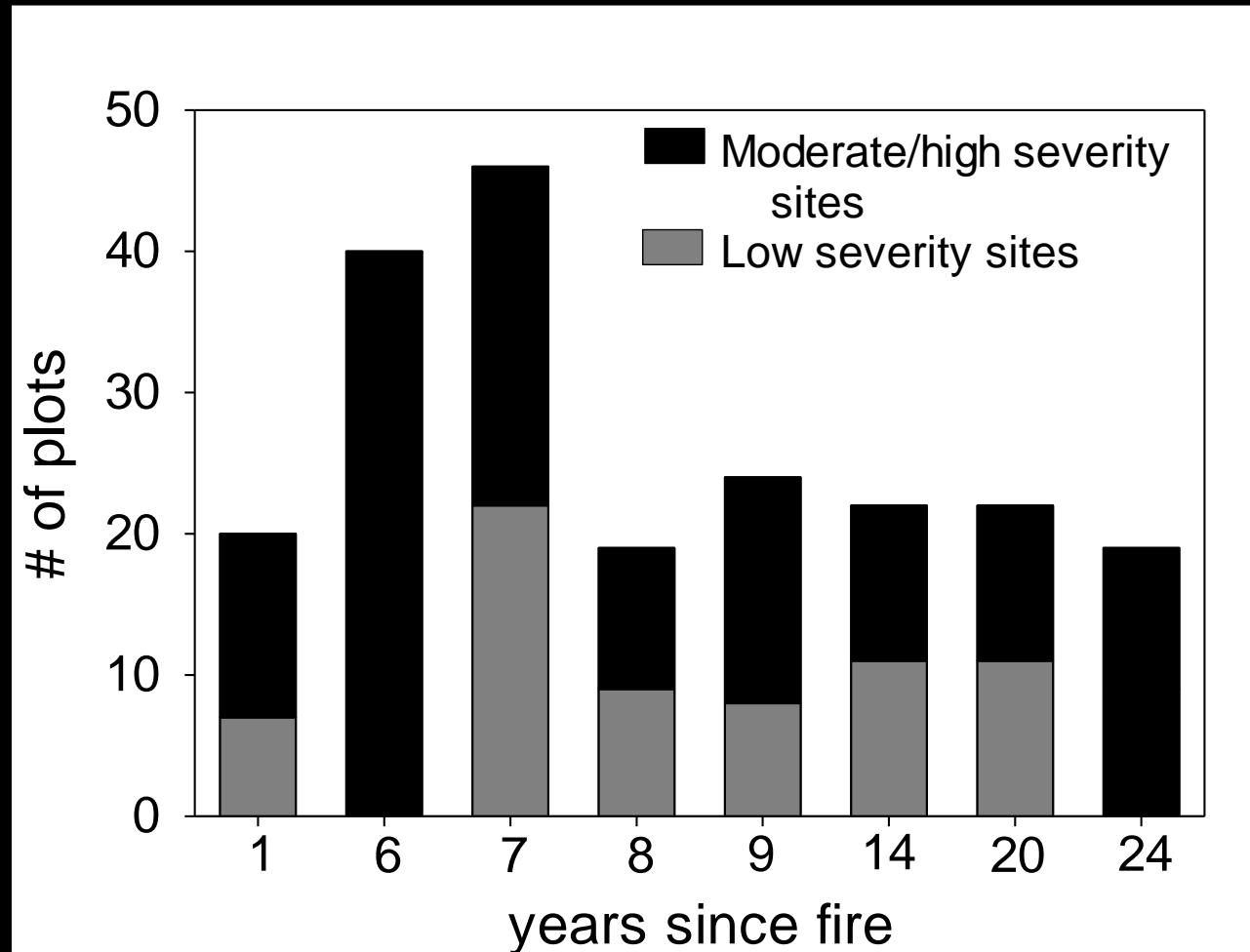
Fire Histories



- 1) low
- 2) high
- 3) low-low
- 4) low-high
- 5) high-high
- 6) high-low

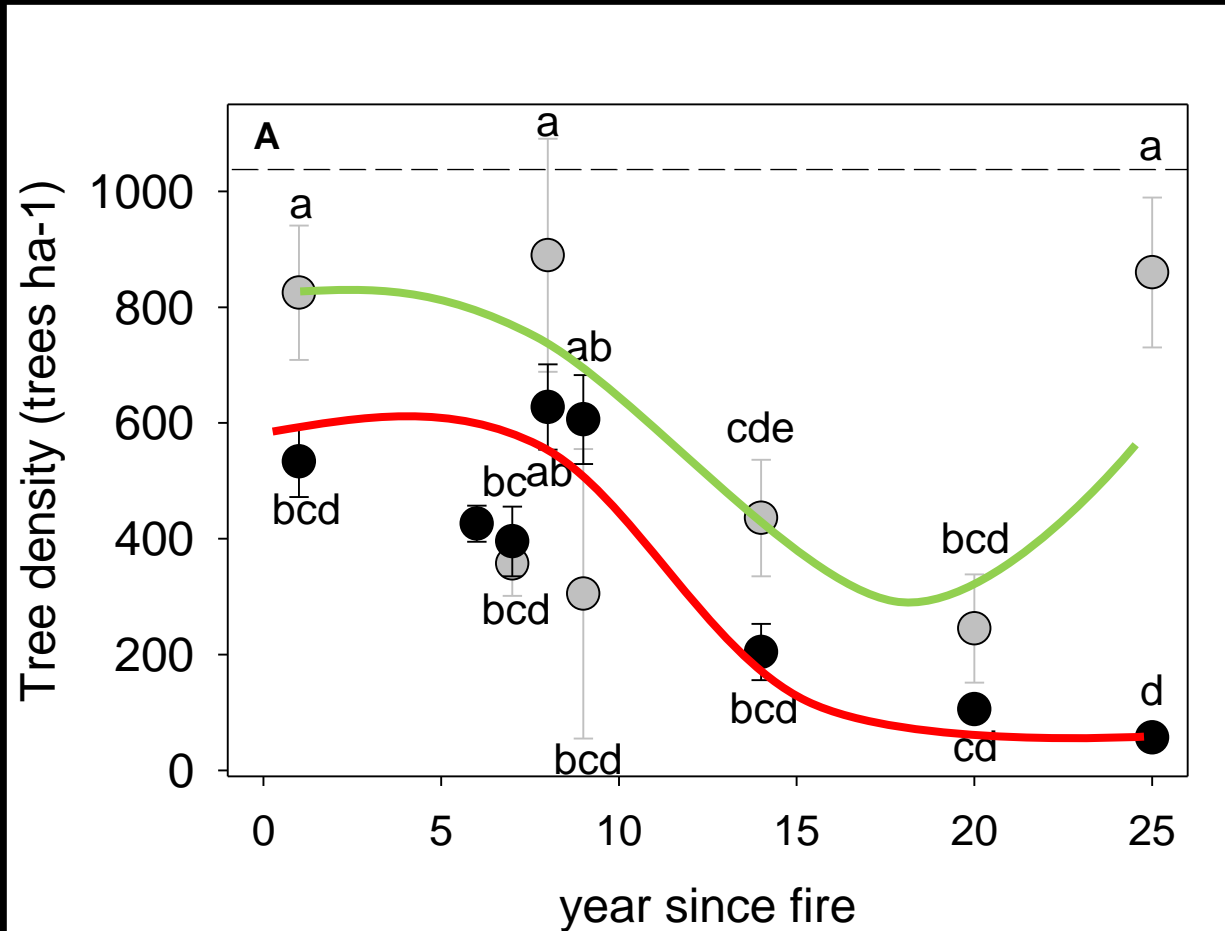
171 sites

Sites span 24 years since fire



One wildfire

Tree density



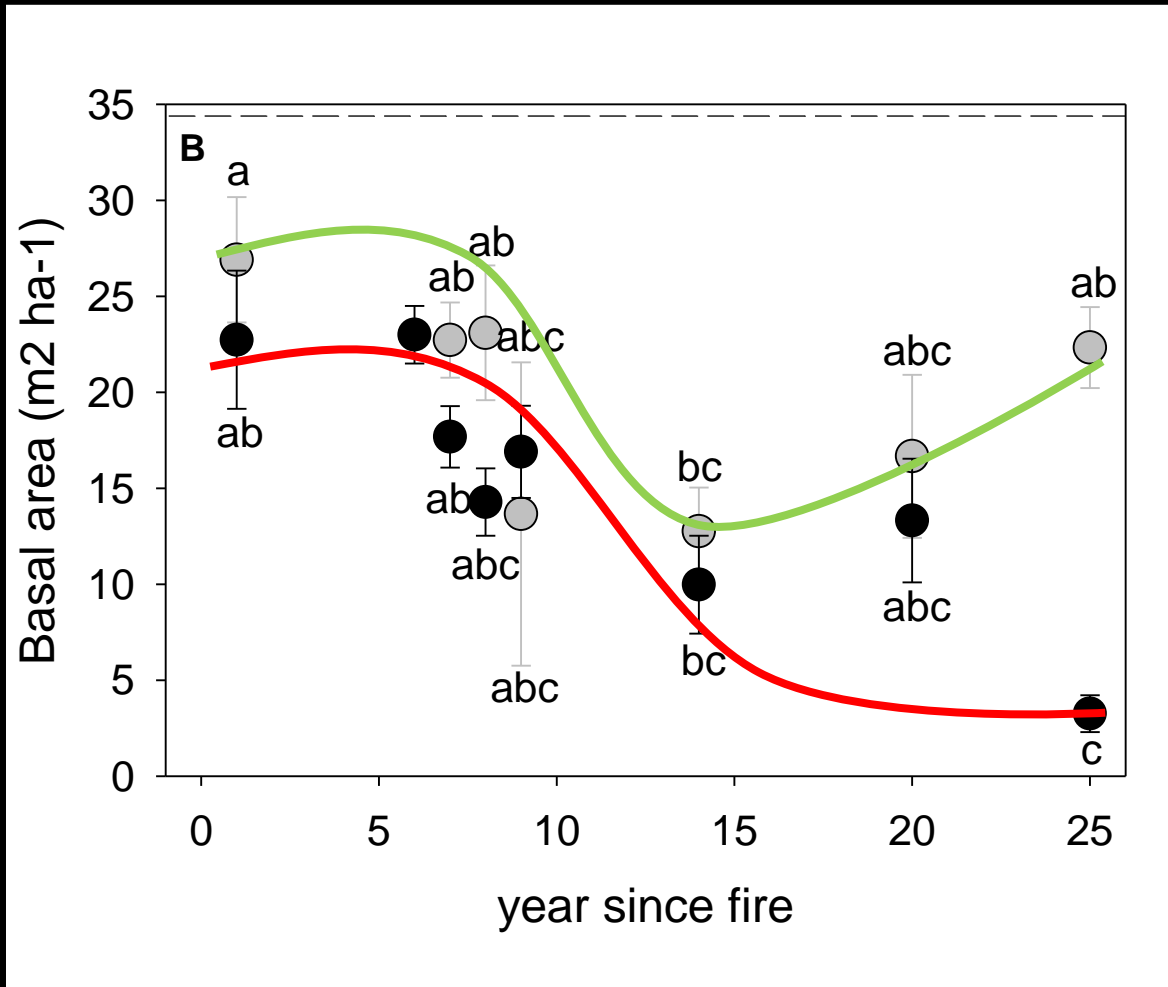
7 years post-fire



20 years post-fire

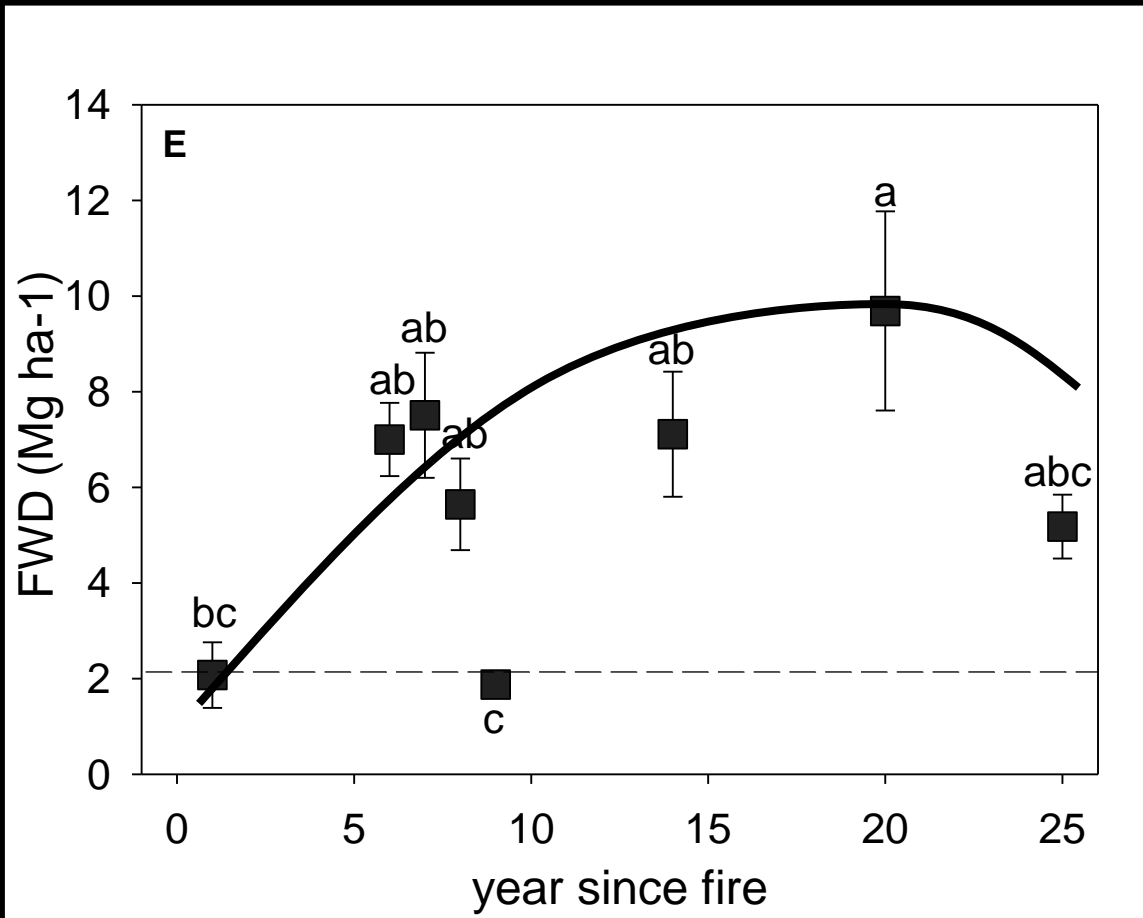
One wildfire

Basal Area



One wildfire

Fine woody debris



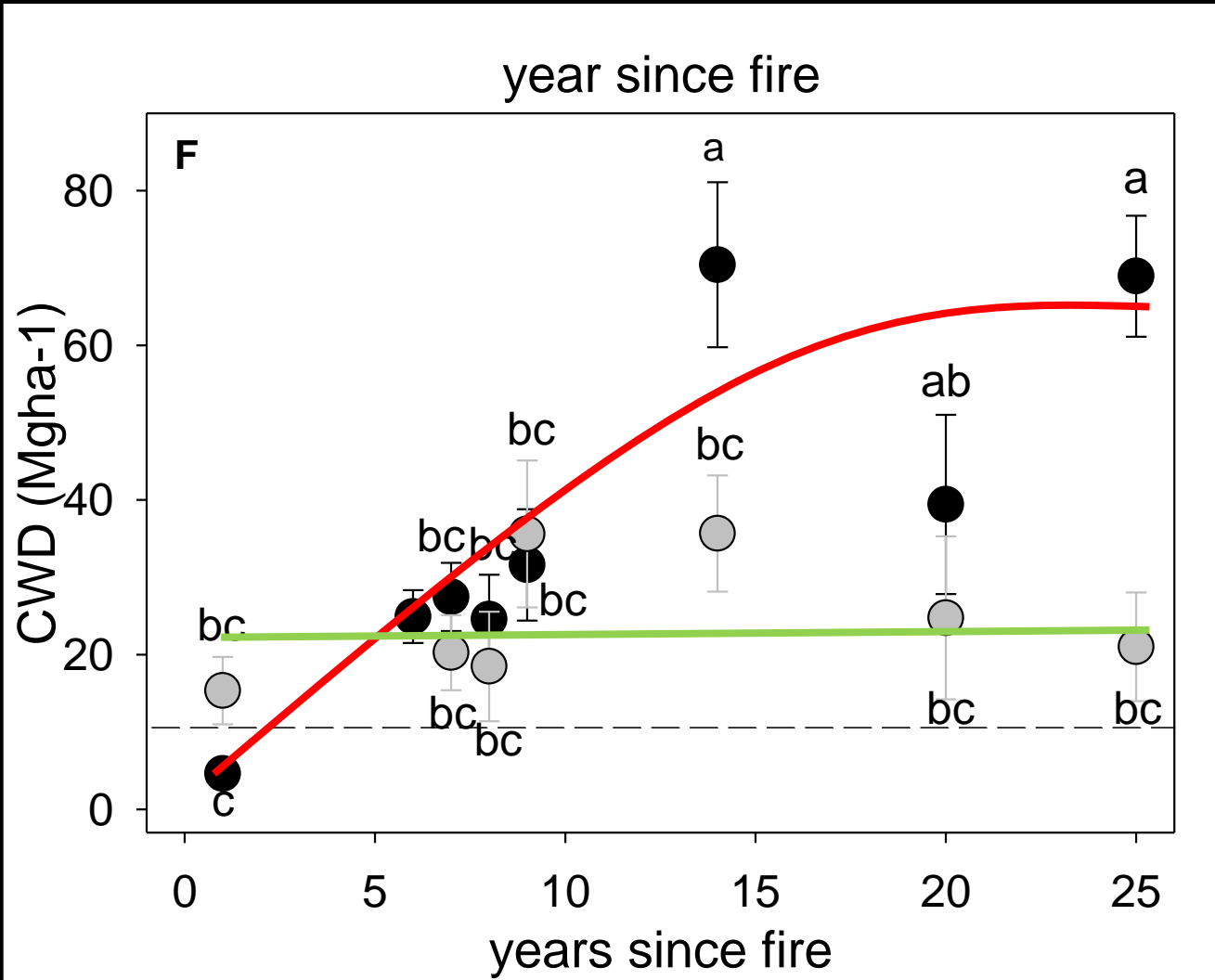
7 years post-fire



14 years post-fire

One wildfire

Coarse woody debris

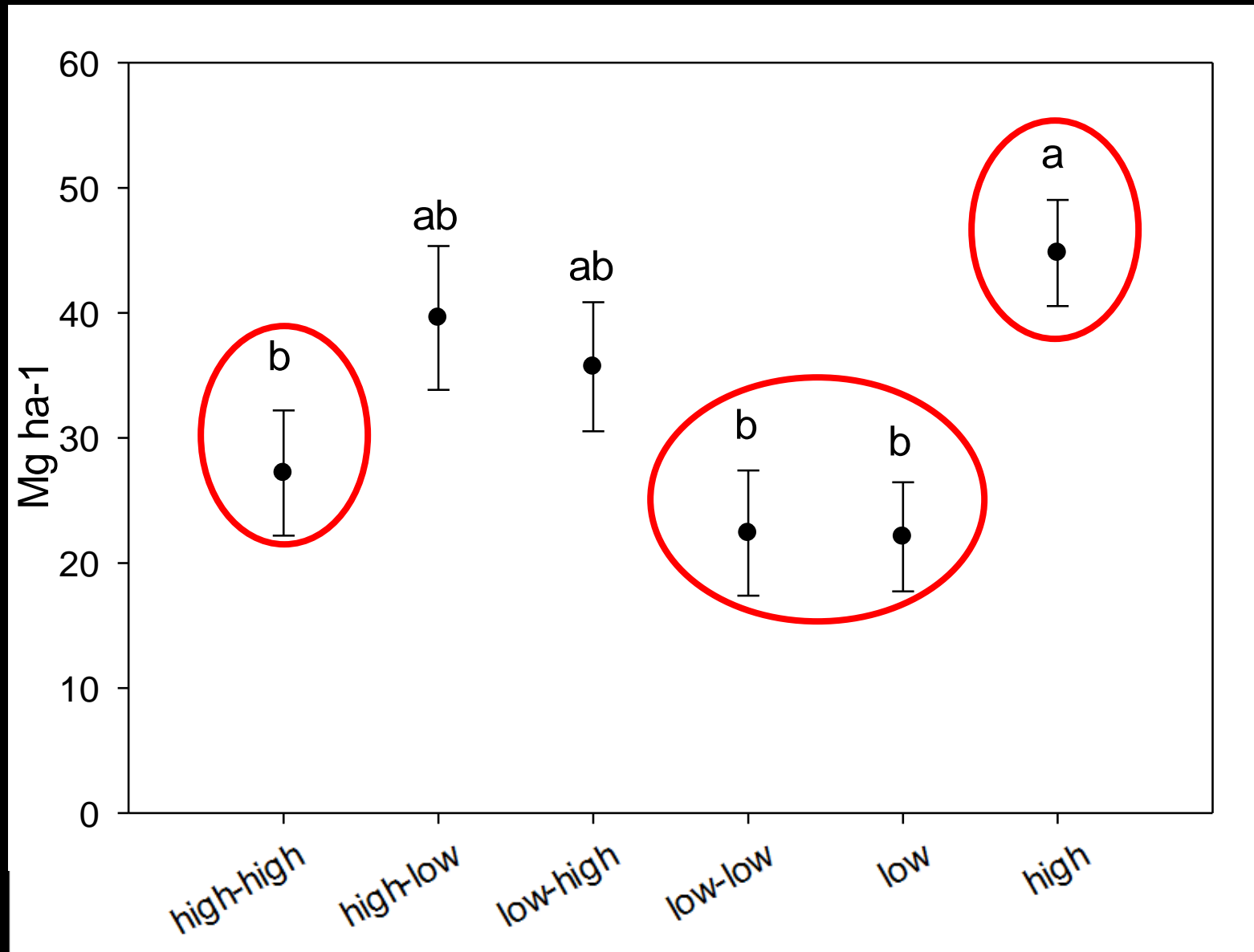


How are woody fuel dynamics influenced by repeated wildfires in a short period of time (<20 years)?



Repeated fires

Coarse Woody Debris



Repeated fires



Repeated high severity fires



high severity then low severity fire

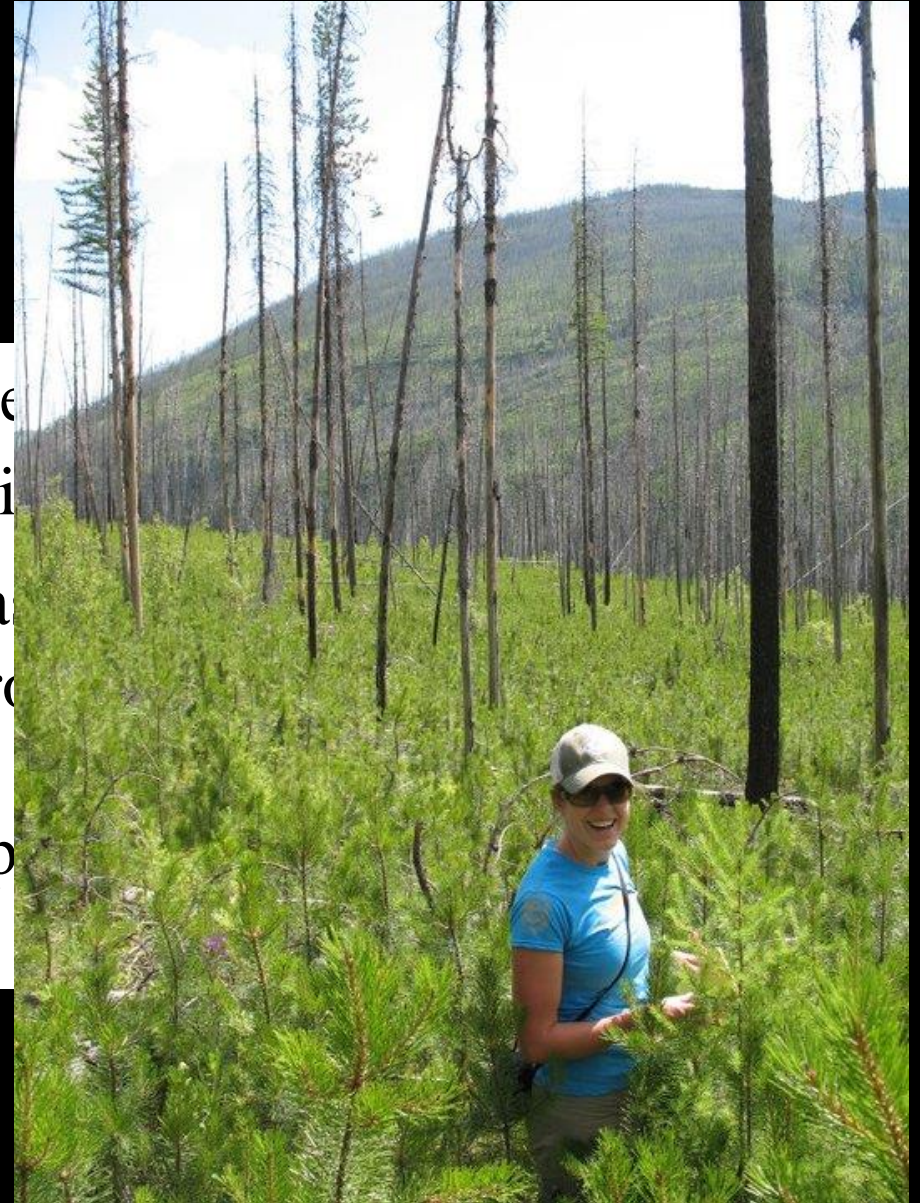
Repeated fires

Seedling Density

log/seedling density ha⁻¹ (1)



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Conclusions

- Single high severity fires experience high fuel loadings after ~10 years post-fire
- Low severity fires do not experience significant changes or increases in loadings over a 24 year period
- Repeated high severity fires significantly decrease fuel loading, but also have much less regeneration
- Fuel loading and snag fall rates support remote sensing analysis that shows the longevity of a wildfire to serve as a barrier to subsequent fires for up to ~10 year
- Repeated wildfires may be barriers for longer (highly dependent on vegetation response)