



Fire as a piece of the puzzle in coastal sage scrub restoration

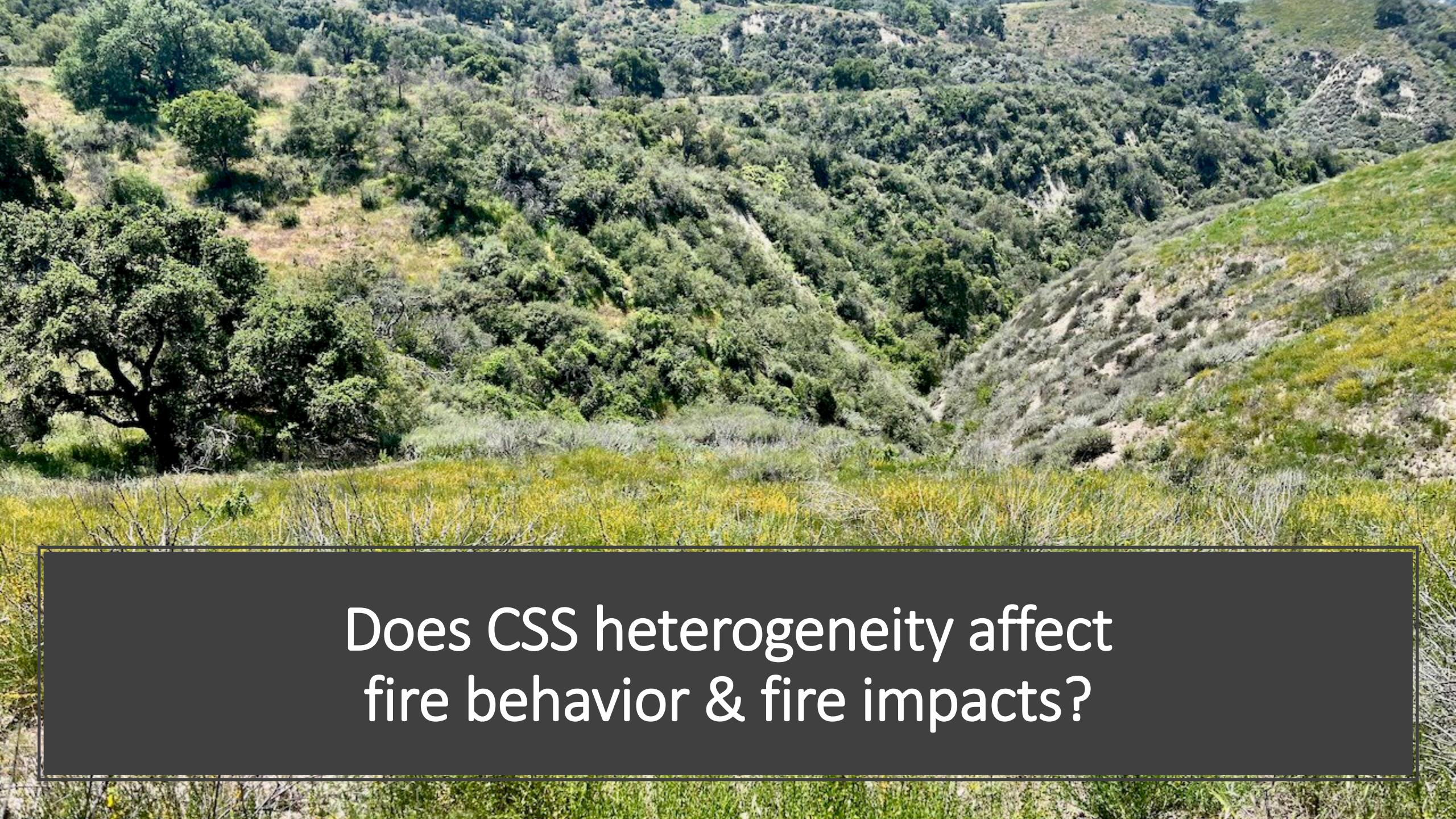
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CSS: deciduous aromatic shrub/sub-shrub matrix

“soft chaparral” | coastal moisture, more open canopy



Does CSS heterogeneity affect
fire behavior & fire impacts?

Acknowledgements

Research conducted on Chumash land

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 - Angela Giordani
- **Midland School**









Burn
temperature
higher under
shrubs



Soil Seed Bank Germination

- 2-4 cm-deep soil cores excavated from quadrats along permanent monitoring transects
- Pre- & post-burn

How do prescribed fire and isolated fire effects impact germination?

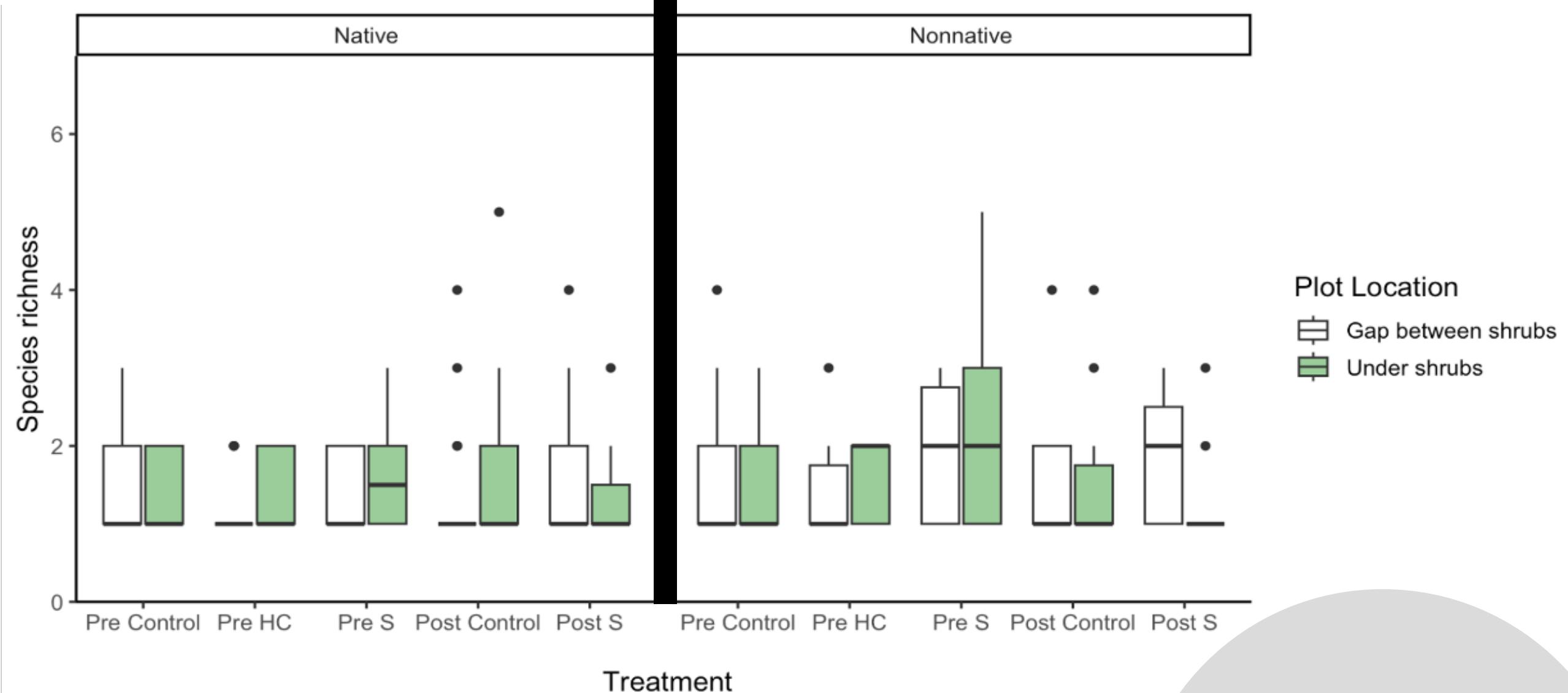
Treatments

- Pre Control: no treatment
- Pre S: cold-Stratified for 5 weeks @ 40°F
- Pre HC: cold-stratified & treated with Heat (10 min @ 200°F) & Charate
- Post Control: fire, no lab treatment
- Post S: fire, cold-Stratified for 5 weeks @ 40°F



All subsamples germinated Jan 2024 in
55-75°F greenhouse, watered daily





Species richness
similar across
treatments

Conclusions & Implications

- Patchy CSS canopy can cause heterogeneous fire behavior
- Prescribed fire did not significantly degrade nonnative seed bank
 - Possible negative effect on *Bromus* spp. & positive effect on *Festuca bromoides*
- Post-fire community primarily driven by seed bank
 - Fire outcomes reflect & reinforce landscape plant beta diversity
- Fire can be used alongside other invasive species management techniques to preserve & restore CSS