

When it rains it pours; impacts of deluge events on *Bouteloua gracilis* seeding

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Introduction

- Droughts reduce the abundance of the dominant species, *Bouteloua gracilis*, in Colorado's prairies.
- Current reseeding efforts do not consider selection of cultivar.
- Post-season deluge events may impact the success of reseeding efforts due to a mismatch in physiology and precipitation patterns.



Figure 1. May 2023, after drought ended near Carr, CO.



Figure 2. May 2025, two years after drought ended near Carr, CO.

Research Questions

- 1) Does post-season deluge stimulate *Bouteloua gracilis* seed germination and does cultivar influence this relationship?
- 2) How does surrounding vegetation impact seed germination?

Methodology

- Simulated severe drought 2018-2023.
- Broadcast seeded two cultivars in April of 2025.
- Deluge event in October of 2025.
- Surveyed for new germination in November of 2025.



Figure 3: *Bouteloua gracilis* seedling is marked after identification in SGS field site near Carr, Colorado.

Results

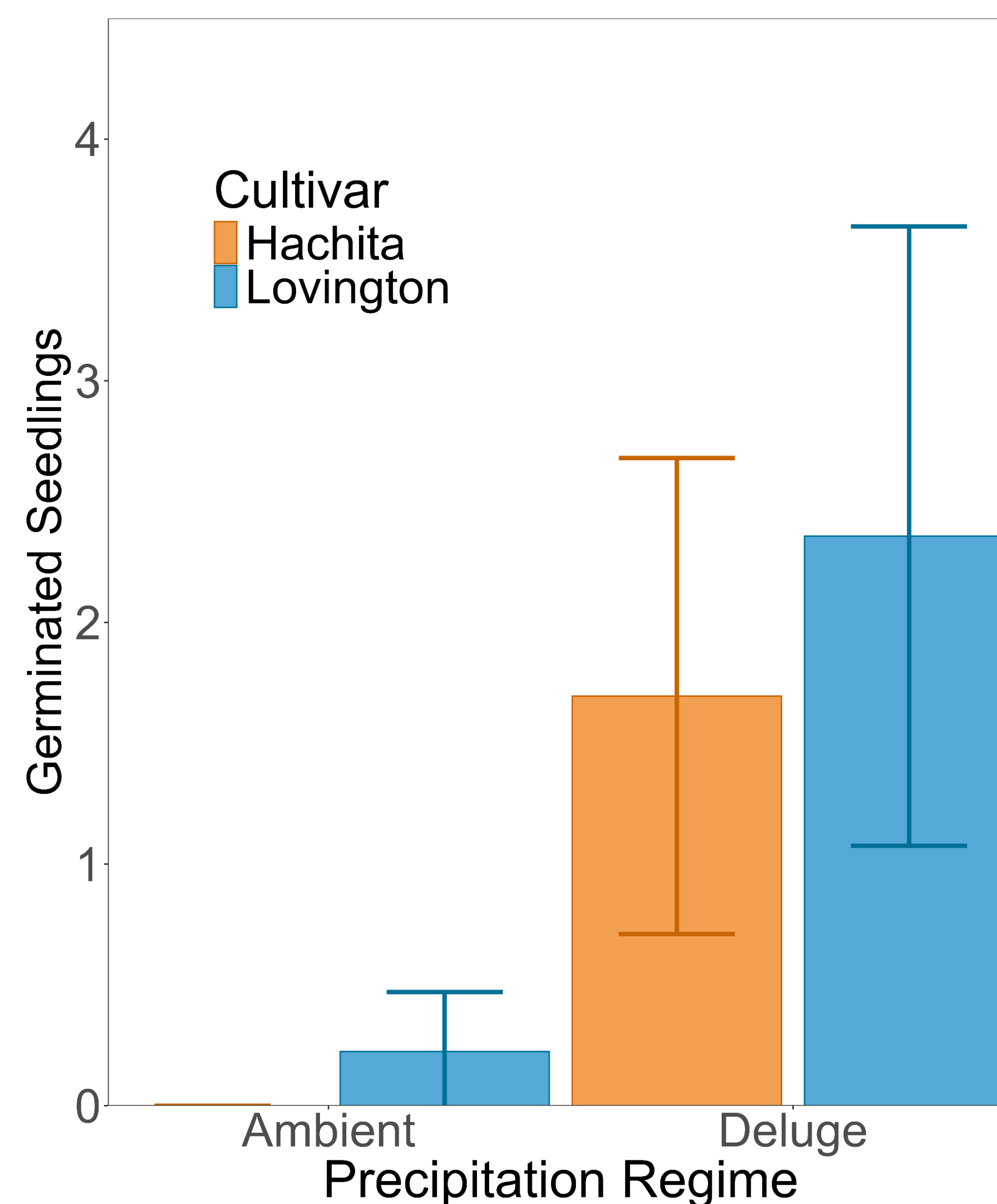


Figure 4: Deluge increased Lovington and Hachita germination when compared to controls.

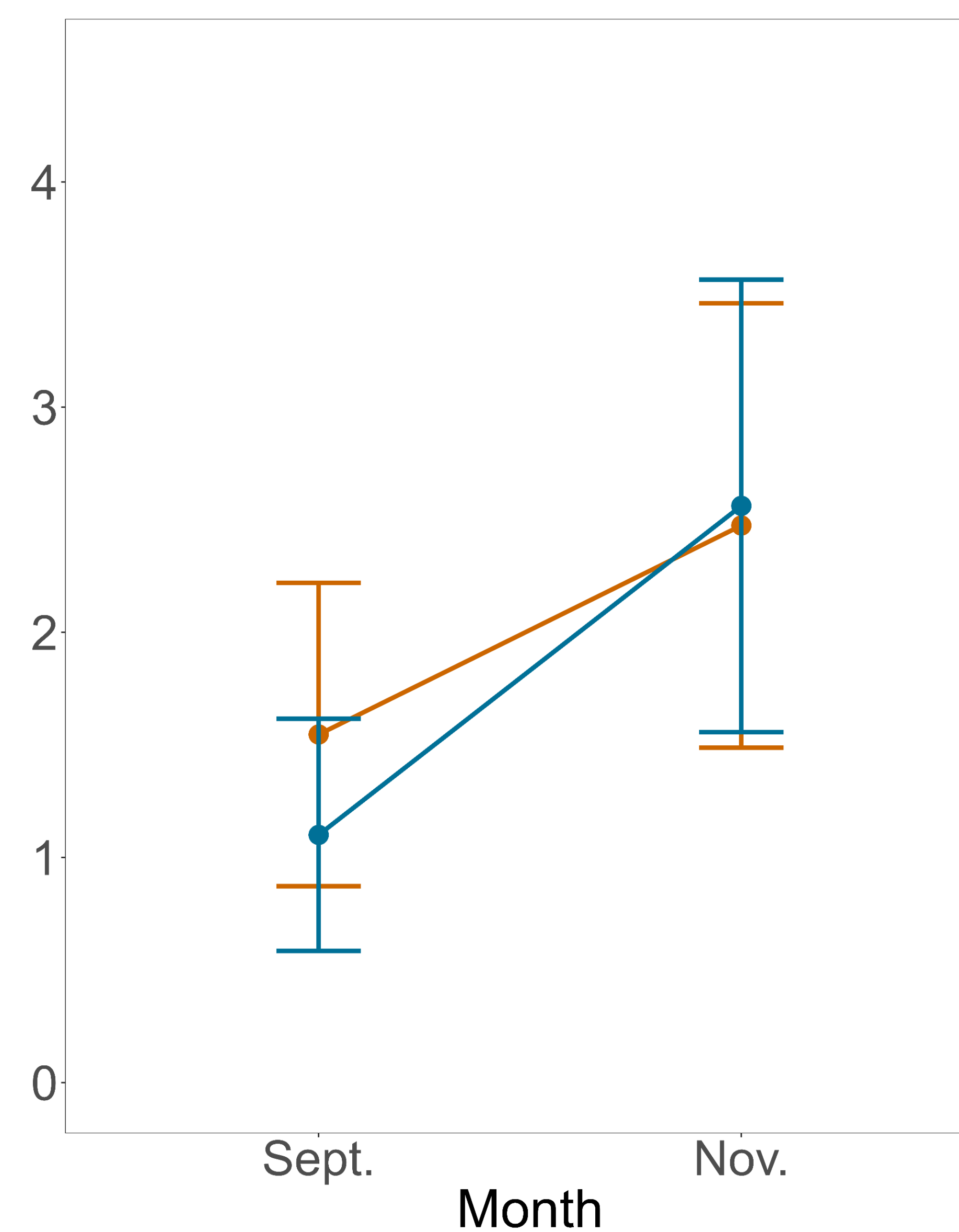


Figure 5: Deluge increased the total germination of both Hachita and Lovington cultivars across time.

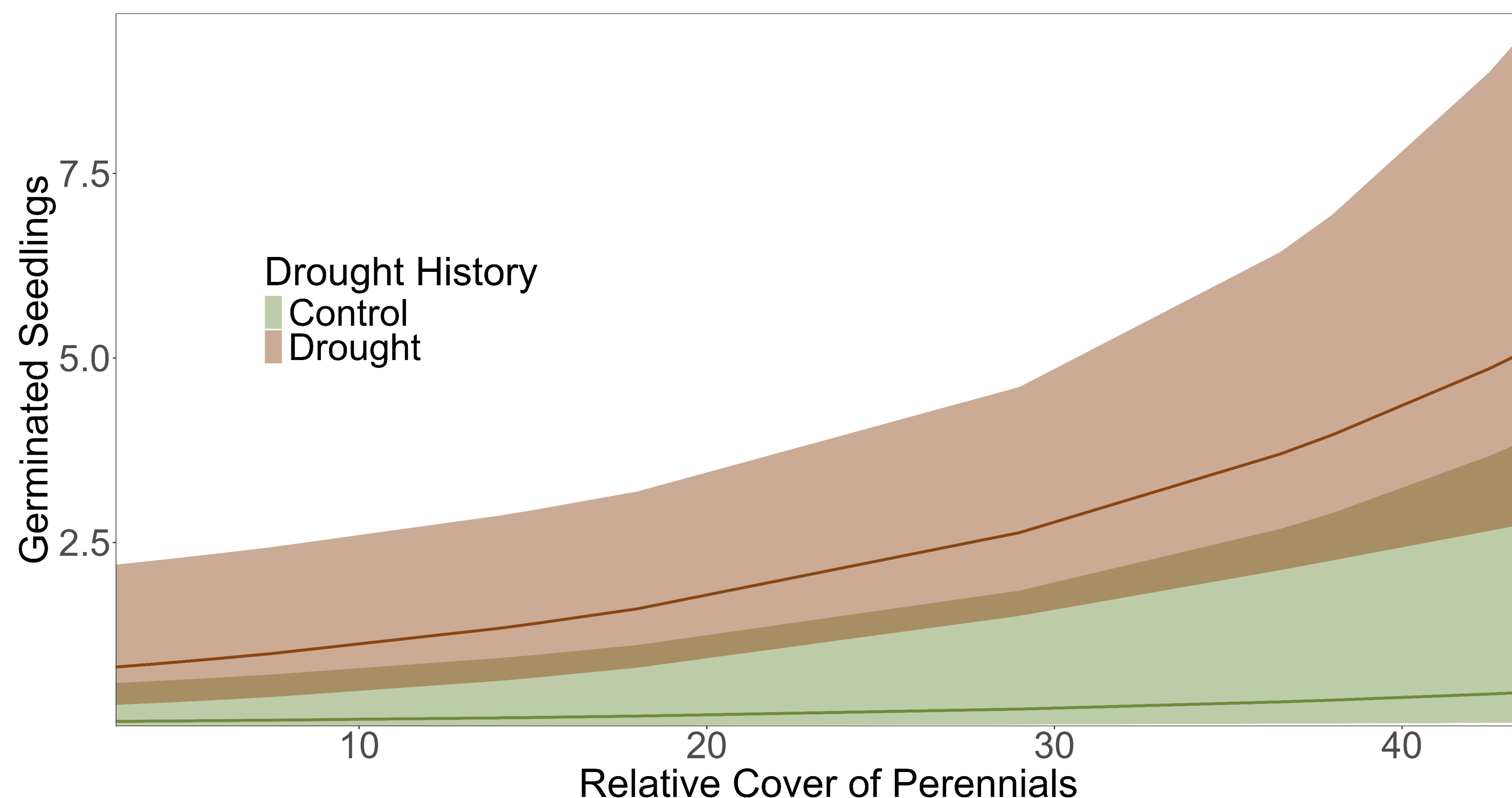


Figure 6: Germination significantly increased with perennial cover regardless of drought history.

Broader Impacts

- Deluge does successfully increase germination.
- Cultivar selection was not shown to impact germination in the context of deluge.
- Degradation in the cover of nearby perennials can limit the germination of *Bouteloua gracilis*.



Figure 7: Seedling and surrounding vegetation at the end of the growing season in drought recovery plot in field site near Carr, Colorado.

Next Steps

- Determining other factors driving survival and mortality.
- Monitoring survival of deluge seedlings in coming seasons.

Acknowledgements and Contact

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