

The Restoration of Plant-Pollinator Mutualisms in Serpentine Grasslands



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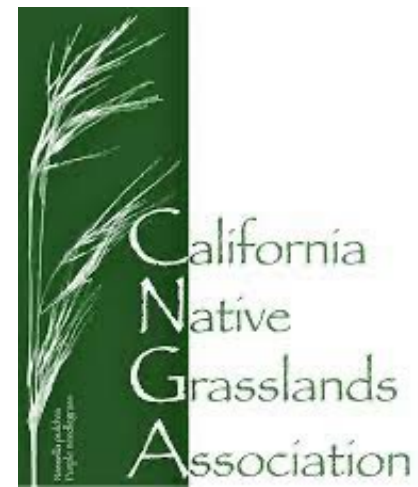
Acknowledgements

For thousands of years, the land where this study took place has been the home of Patwin and Miwok peoples. **Full land acknowledgment** at:

<https://politicalecologylab.ucdavis.edu/uc-davis-pe-lab-land-acknowledgement>

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Photos taken by Becca Nelson unless otherwise noted.



Natural Reserve System
university of california



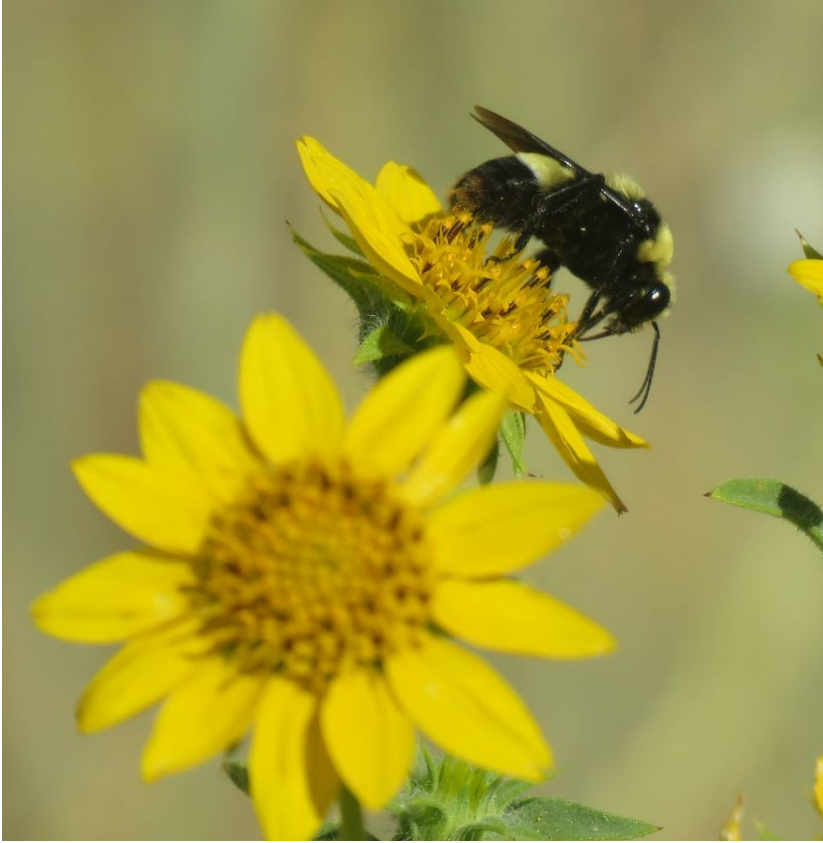
The PHI BETA KAPPA *Society*

THE NATION'S OLDEST ACADEMIC HONOR SOCIETY

— Founded December 5, 1776 —



Serpentine Grasslands are Refugia



Barbed Goatgrass: a Serpentine-tolerant Invader



Barbed Goatgrass
(*Aegilops triuncialis*)

An aerial photograph of a serpentine landscape. The terrain is characterized by a mix of dark grey, brown, and green patches, indicating different soil types and vegetation. A prominent feature is a large, irregularly shaped area of bright yellow-green, which likely represents a specific plant species or a particular soil condition. The overall scene is a natural, rugged environment.

**How does removing an invasive grass affect
serpentine plant-pollinator interactions?**

Hypotheses

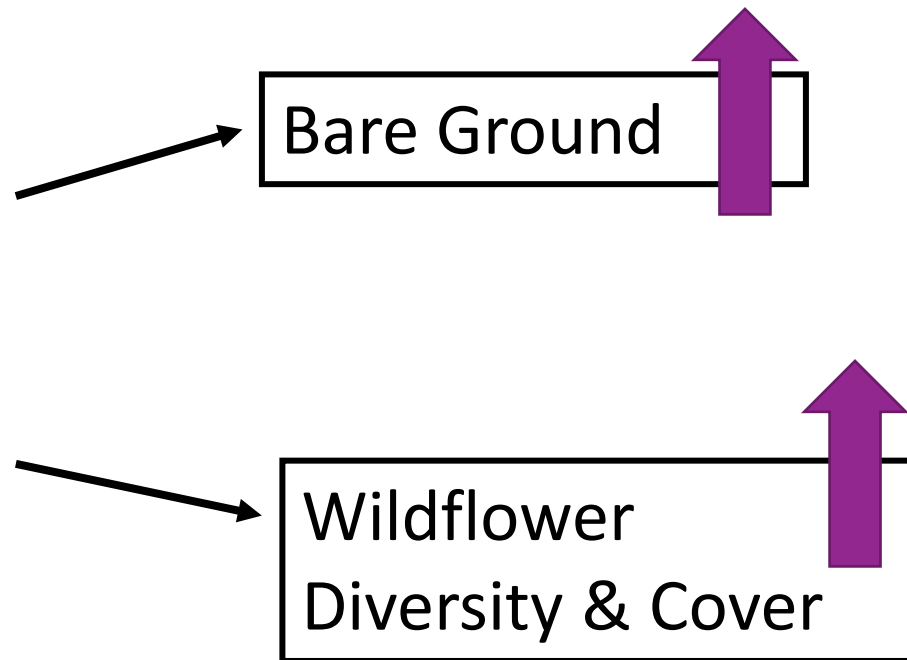


Restoration

Hypotheses



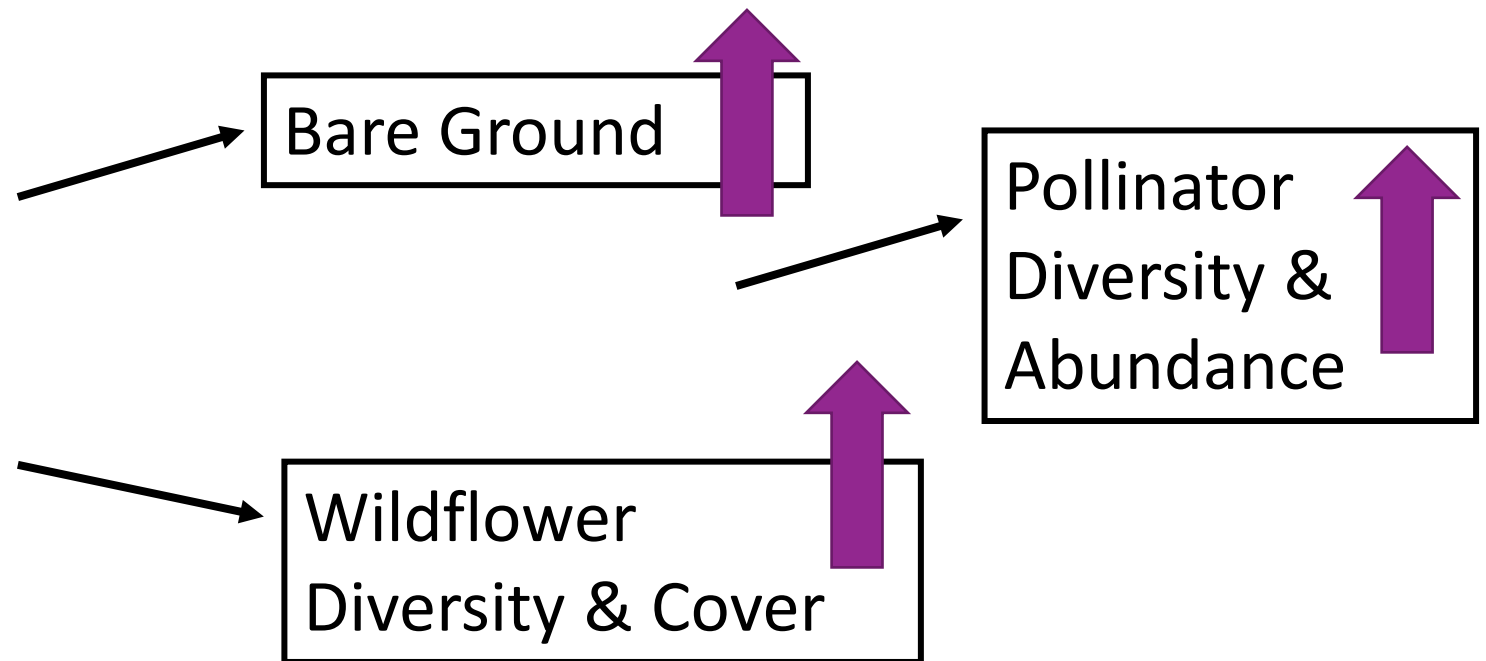
Restoration



Hypotheses



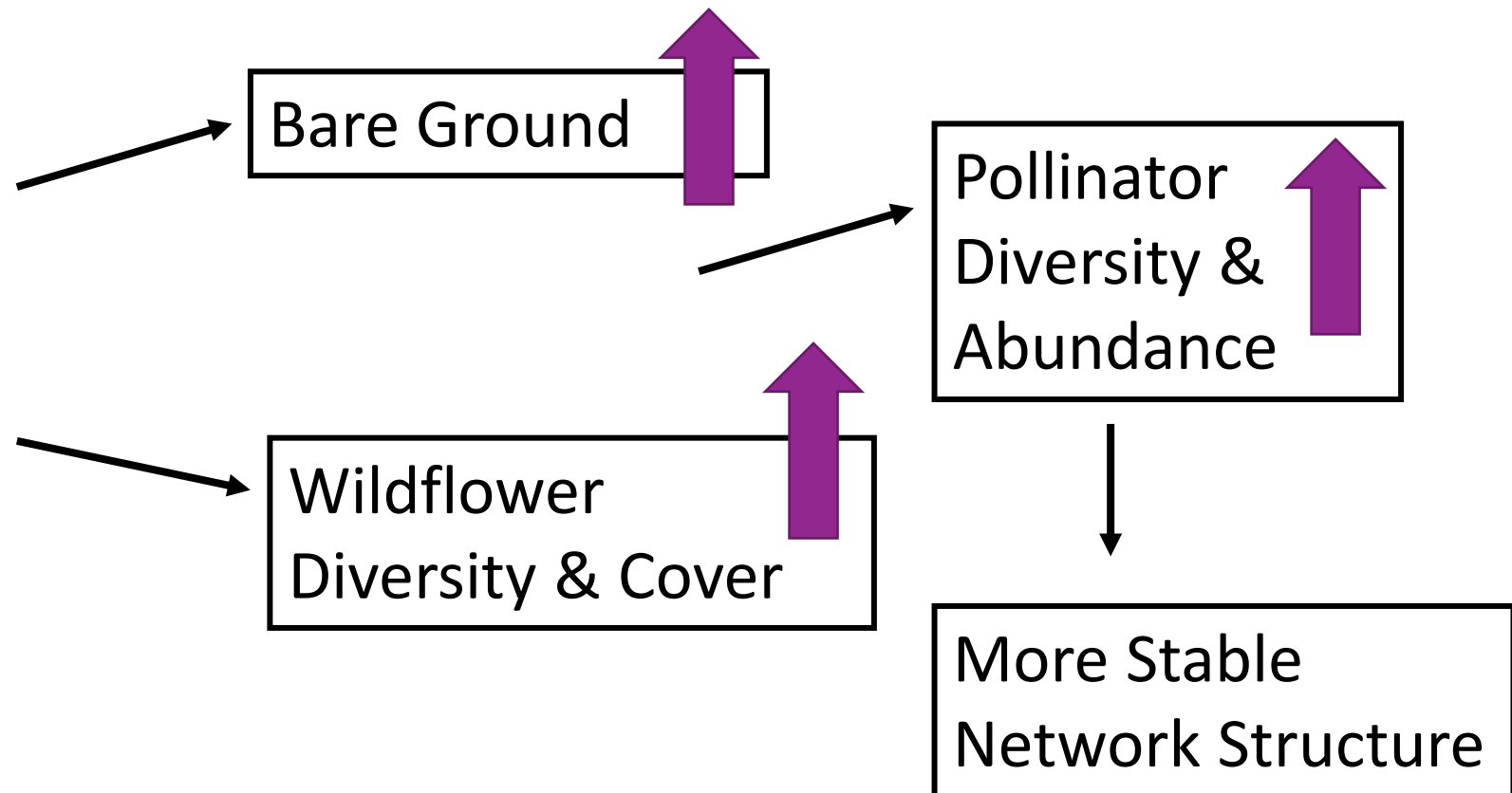
Restoration



Hypotheses

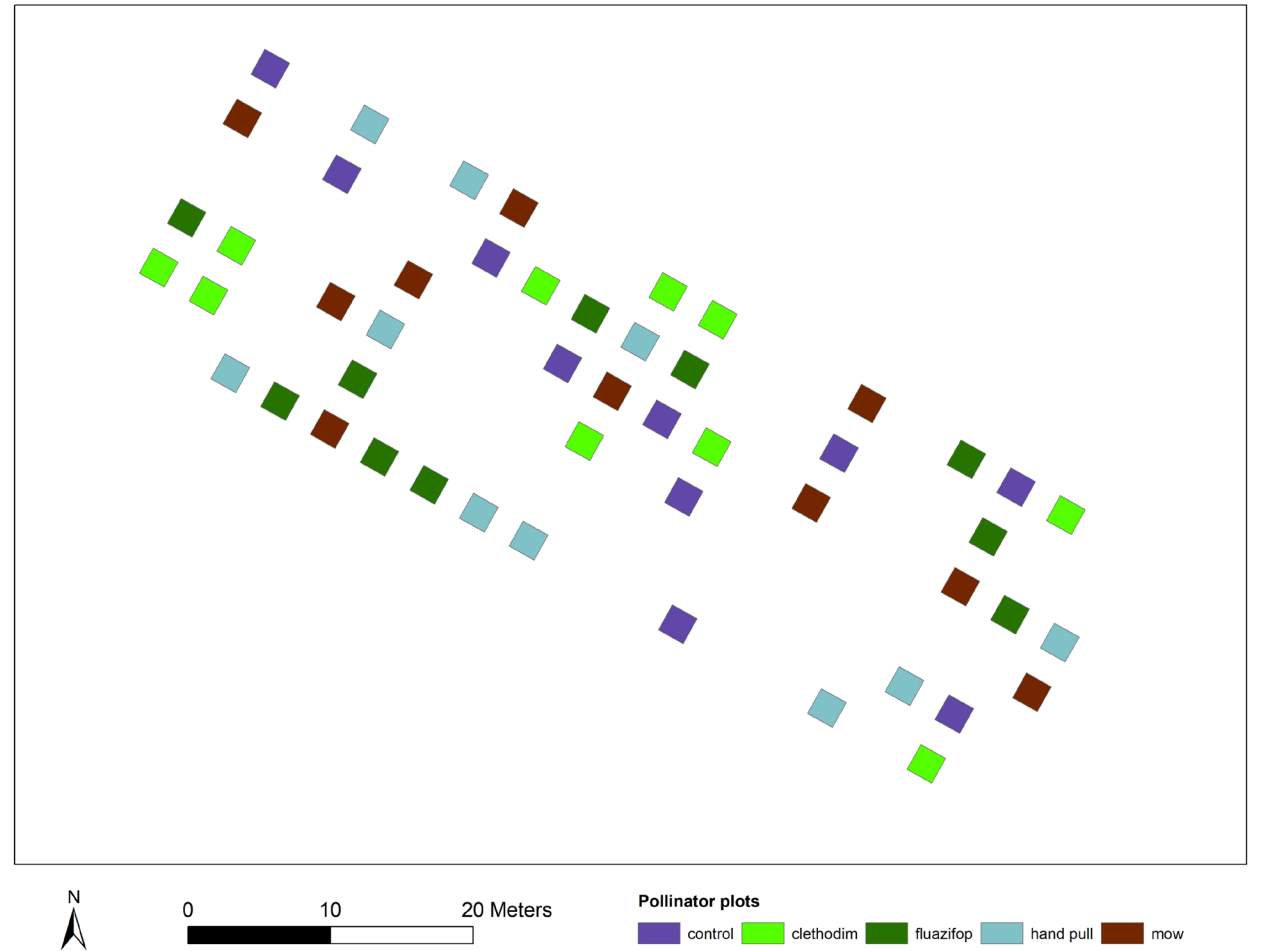


Restoration



Methods

- Goatgrass Removal treatments (hand-pulling, mowing, two grass specific herbicides) compared to control plots at UC McLaughlin Reserve
- 3 years of pollinator observations for 10 plots of each of the treatments during spring and summer for 2011-2013

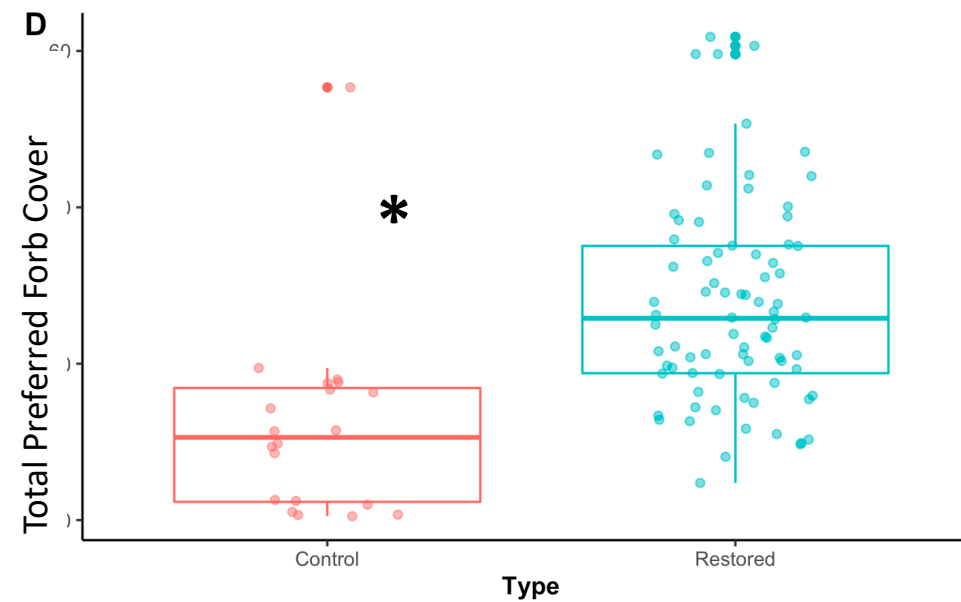
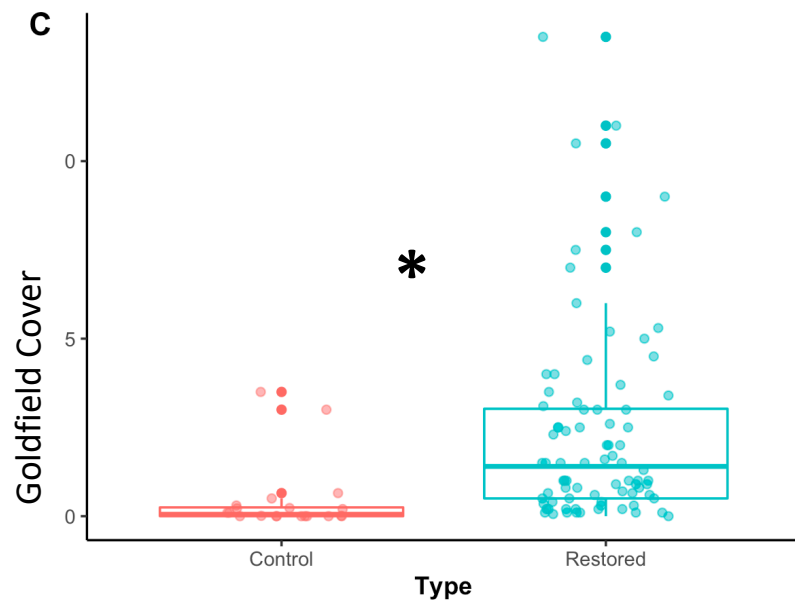
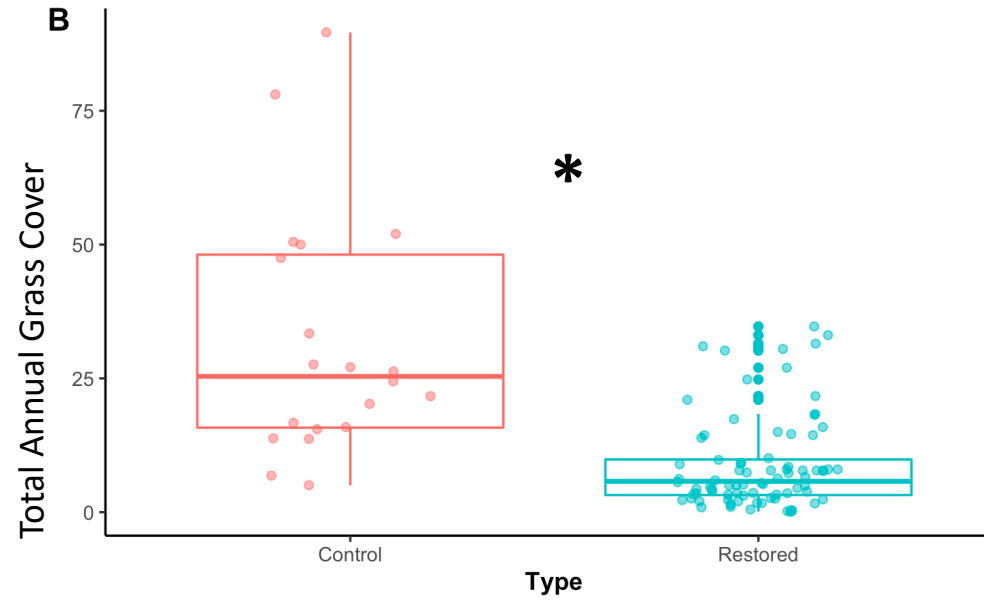
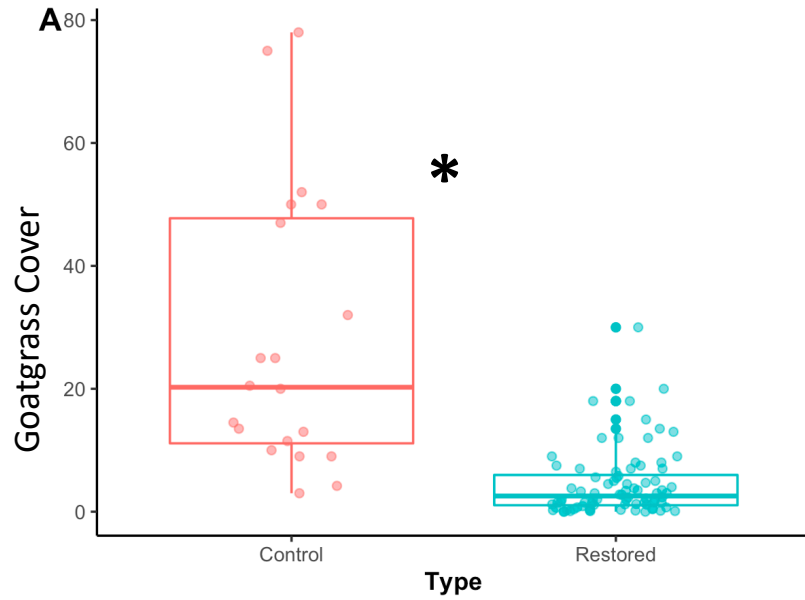


Aigner and Woerly 2011, *Invasive Plant Science and Management*



Plant Community Response

Nelson, Dritz, Valdovinos & Aigner
in submission Biological Invasions

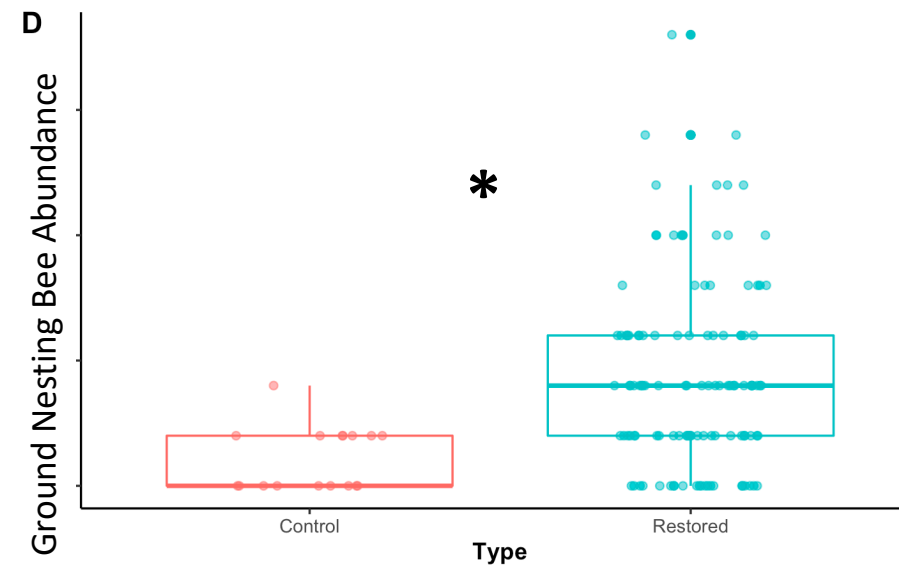
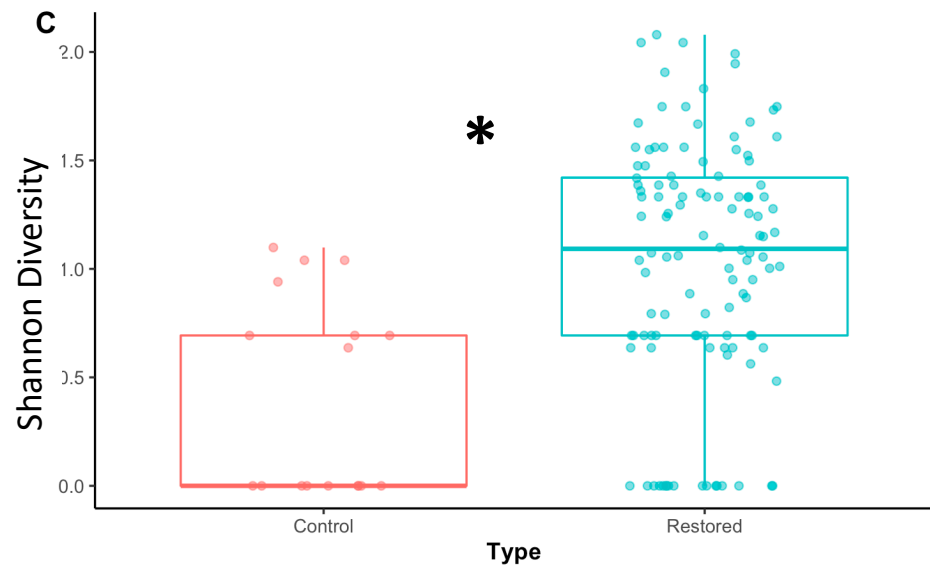
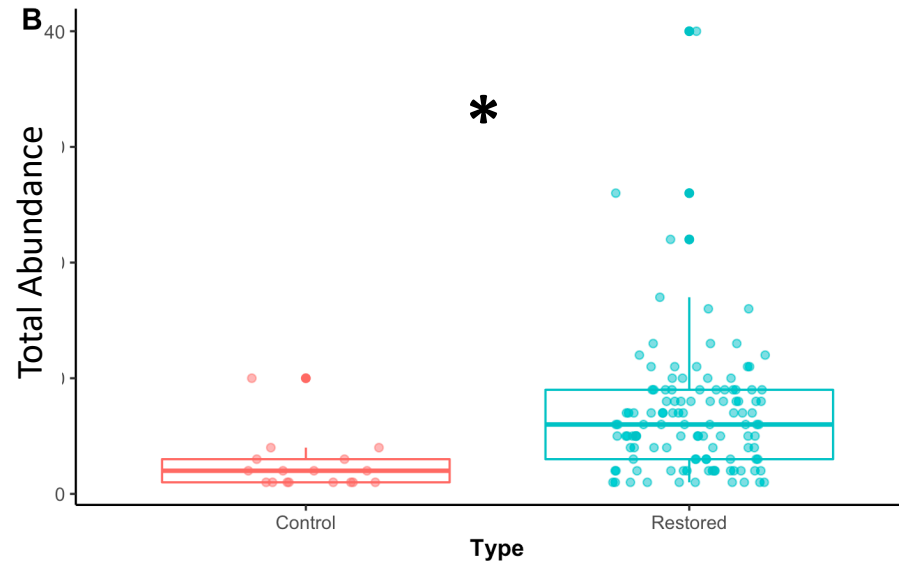
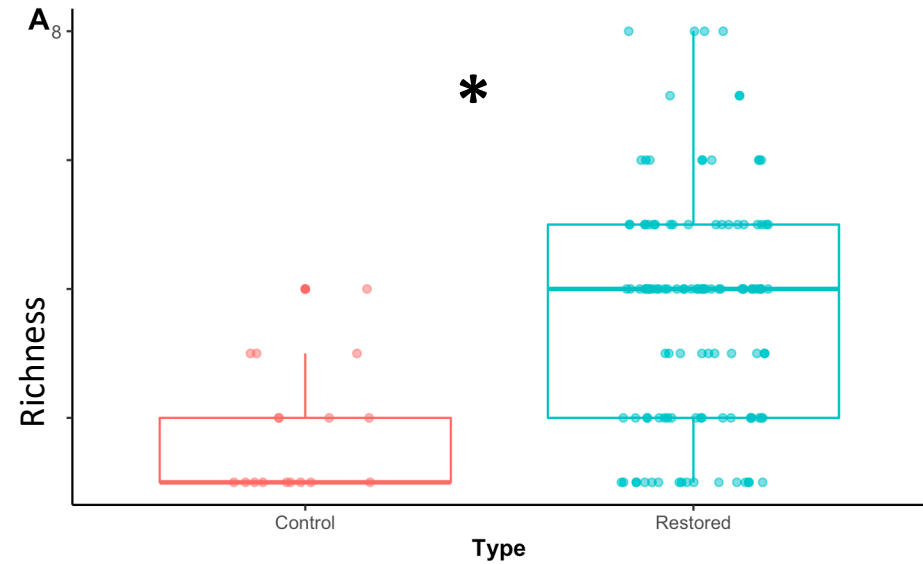


Type

- Control
- Restored

Pollinator Community Response

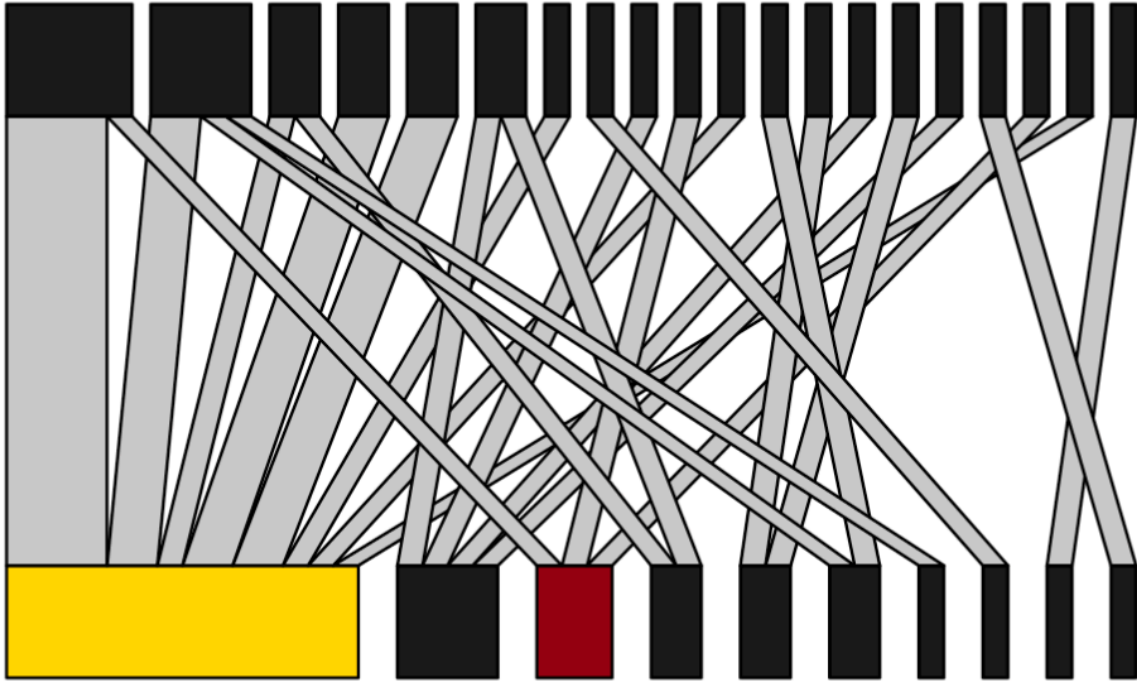
Nelson, Dritz, Valdovinos & Aigner
in prep



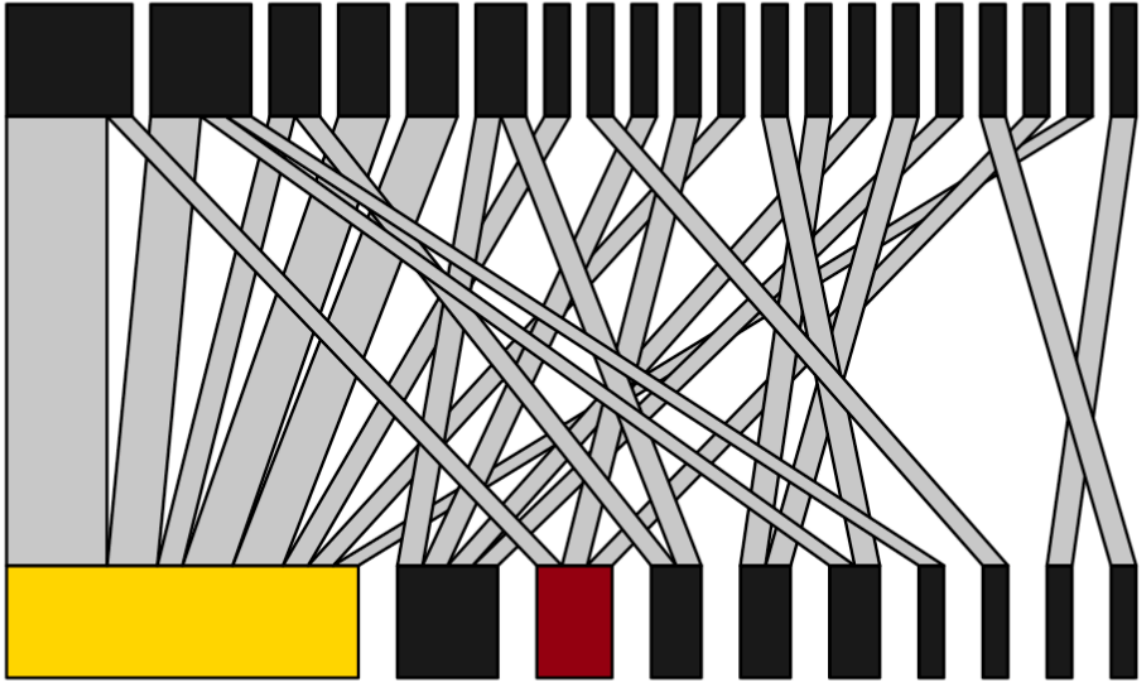
Type

- Control
- Restored

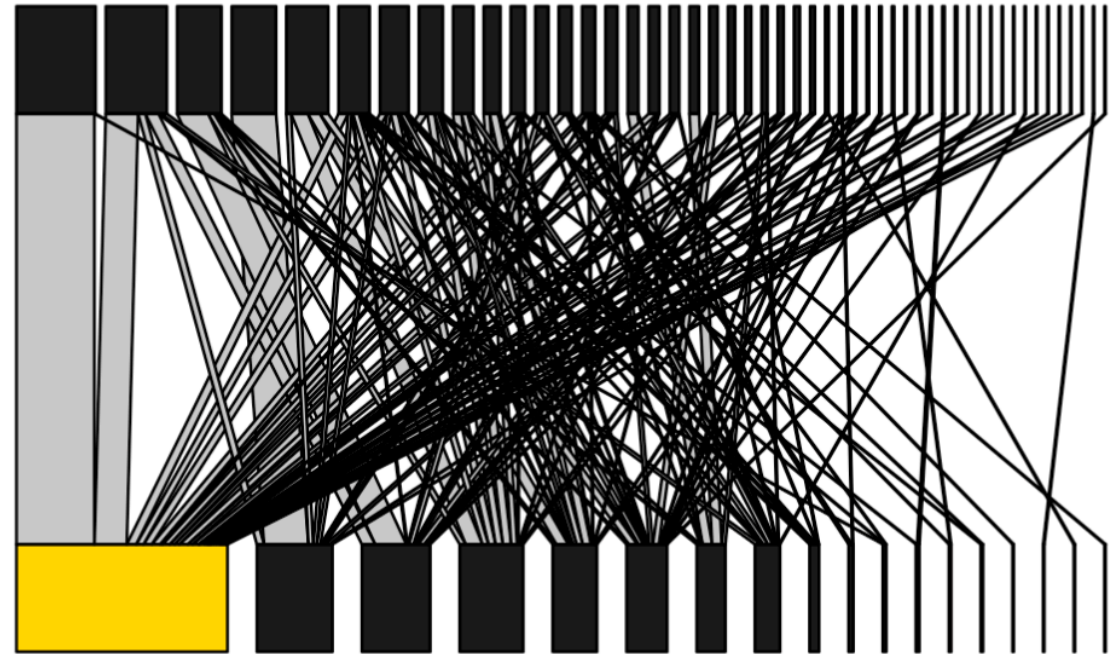
Control



Control



Restored



Goldfields: a Core Generalist Wildflower

- Most abundant wildflower
- Goldfields act as a key hub for pollinators
- Most strongly contributed to network nestedness
- Restoration enhanced the role of goldfields



California Goldfields (*Lasthenia californica*) 16



Goatgrass removal restored plant-pollinator mutualisms.

10 Years Later...

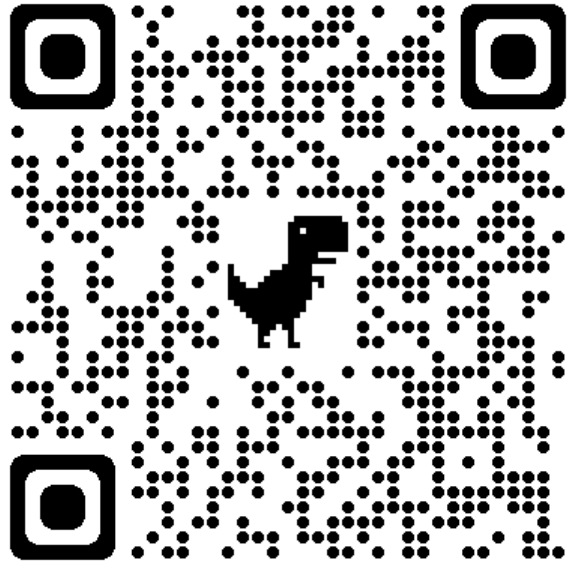


Thank you!



Questions? Contact ranelson@ucdavis.edu

Website &
SciComm



Restoration
Preprint



Restoration decreases nestedness

