Introduction

- 90% of wild plant species are directly dependent on insects for pollination. However, recent research supports large-scale pollinator decline.
- Pollinator habitat conditions within ponderosa pine forest have been altered due to logging, grazing & fire exclusion have led to unnaturally dense stands with closed canopies and low understory production.

Methods & Results

Study Area
- Red Feather Lakes, Colorado
- Prescribed burn took place spring of 2017
- 7 control plots, 7 treatment plots

Field Collection & Processing
- Collection took place once a month throughout the growing season: May – August
- Deployed blue vane traps for 48 hour periods
- Specimens were then sorted to morphospecies

Statistical Analysis
For each plot, we calculated bee abundance, species richness, and Shannon Diversity Index (H).

- 619 specimens collected
- Gamma diversity represented by 60 unique morphospecies
- *Bombus* was the most common genera

Discussion

- Bee abundance, species richness & species diversity are higher within treatment plots compared to control plots. However, this relationship diminishes over the course of the growing period.
- Prescribed fire benefits pollinator communities, and is associated with a higher site occupancy by foraging bees and higher overall bee richness.
- These findings can inform managers and assist with the creation of management methods utilizing prescribed fire that can achieve goals for both forest health & bee conservation

Future Research

- What habitat components drive this response among pollinator communities?
- What impact might fire have on pollinator communities >1 year after treatment?

Research Question

- How does prescribed fire impact pollinator communities in the Colorado Front Range?

Hypothesis: Sites that have undergone prescribed fire will experience an increase in abundance, species richness & species diversity of taxonomical groups of bees compared to control plots.

Species richness: Early in the growing season (May), mean species richness was 52% higher in treated sites as compared to control sites ($P = 0.0038$).

Bee abundance: In May, mean bee abundance was 63% higher in treated plots compared to control sites ($P = 0.023$) (Figure 5).

Species diversity: In May, mean species diversity was 30% higher in treated plots compared to control sites ($P = 0.020$) (Figure 6).

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Species diversity: In May, mean species diversity was 30% higher in treated plots compared to control sites ($P = 0.020$) (Figure 6).