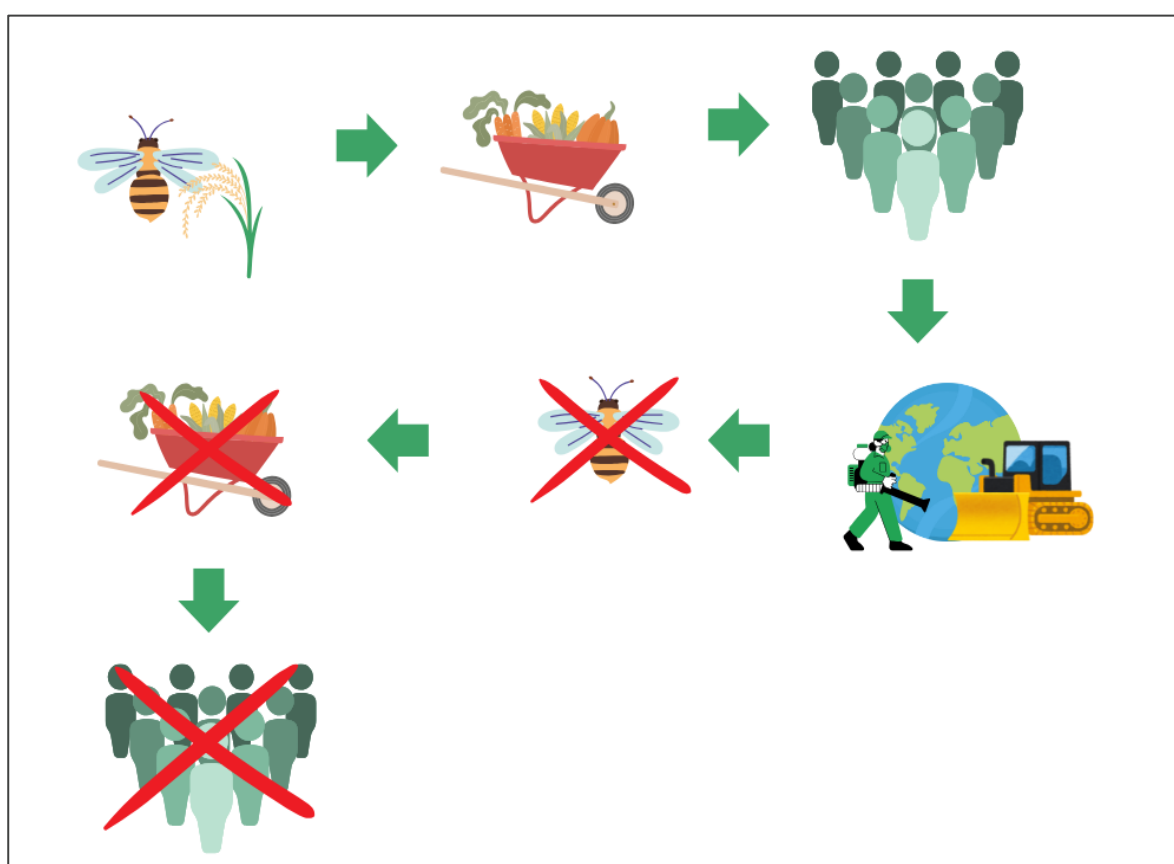


Internship funded by the Spalding Family

BEE CONSERVATION AND OUTREACH USING BEE HOTELS

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INTRODUCTION



-Bees are essential pollinators for both ecosystem health and human food systems.
-Infographic based on information published by Dicks et al., 2021.

-Colorado is home to ~1000 bees, many of which nest in cavities (Scott et al., 2011).

-To help protect and conserve native bees, many projects use Bee Hotels to provide shelter for these native species,

-Despite increasing popularity, not much is known about the optimization of these bee hotels for native species, especially when competing with non-native species (Maclvor & Packer 2015).

-This study aims to uncover whether an overhang helps to increase the occupancy of native bee species in bee hotels.

Methods

-Each bee hotel had 6 cavities of 6mm, 7.5mm, and 9mm for 18 cavities total per hotel.

-Hotels were placed at The Gardens on Spring Creek, CSU Foothills Campus, and CSU's Main Campus

-Hotels were checked every other week for occupancy.

-Occupants were categorized into four main groups

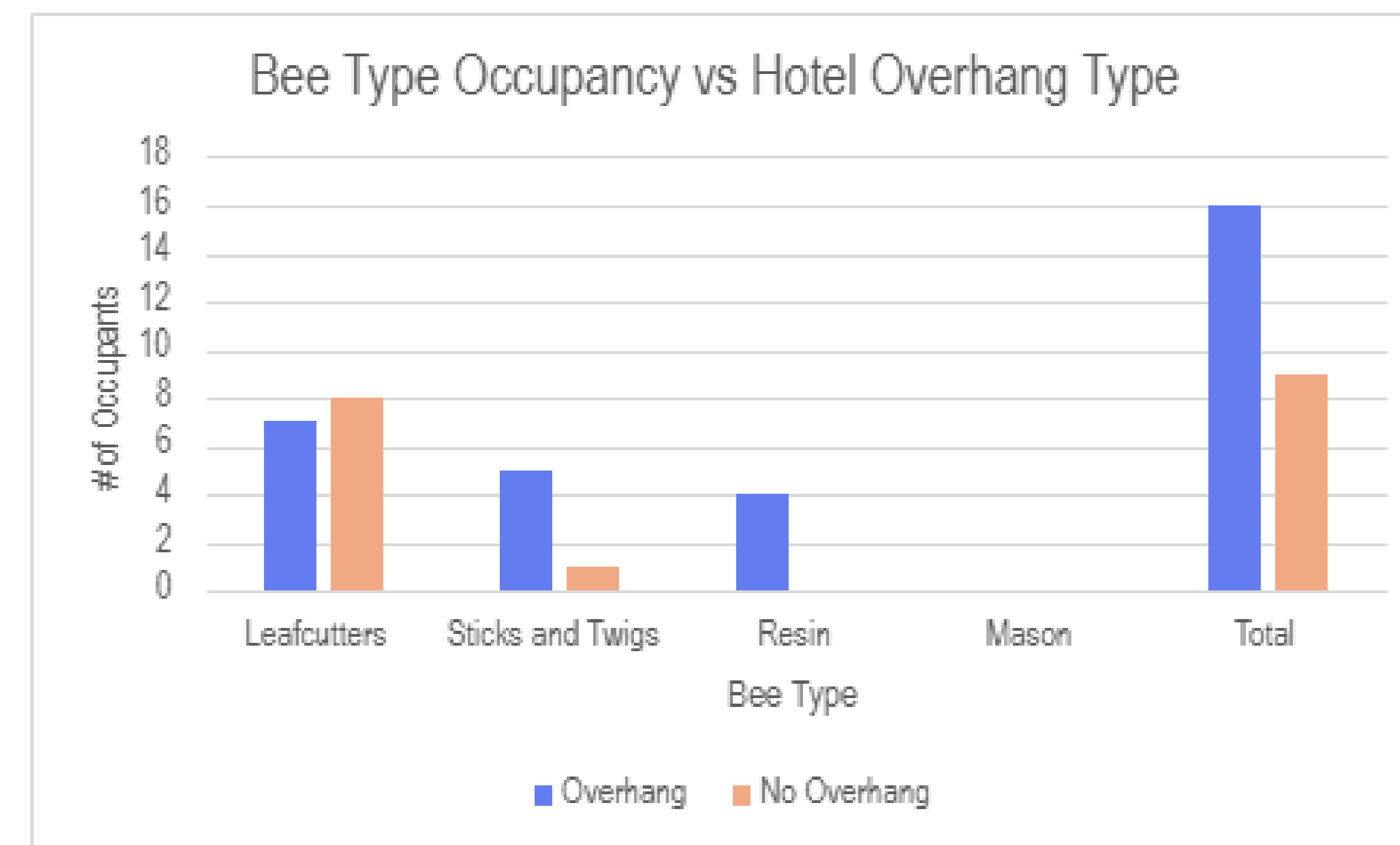
- Leafcutter Bees (*Megachile*)
- Resin Bees (*Megachile* & *Heriades*)
- Sticks and Twigs Bees (*Hoplitis*)
- Mason Bees (*Osmia*)



Results & Discussion



Image shows the difference between the Overhang (blue) Hotels and No Overhang (orange) Hotels.



-Bee hotels with overhangs were occupied at higher rates than those without.

-The hotels with overhangs also had higher diversity of bee genera.

-These results may indicate that overhangs are preferred for native bee species occupation of bee hotels.

-Floral diversity at various locations may be at play.

-Bee Hotels already have some optimizations, such as pointing the front SE (Bauer et al., 2015)

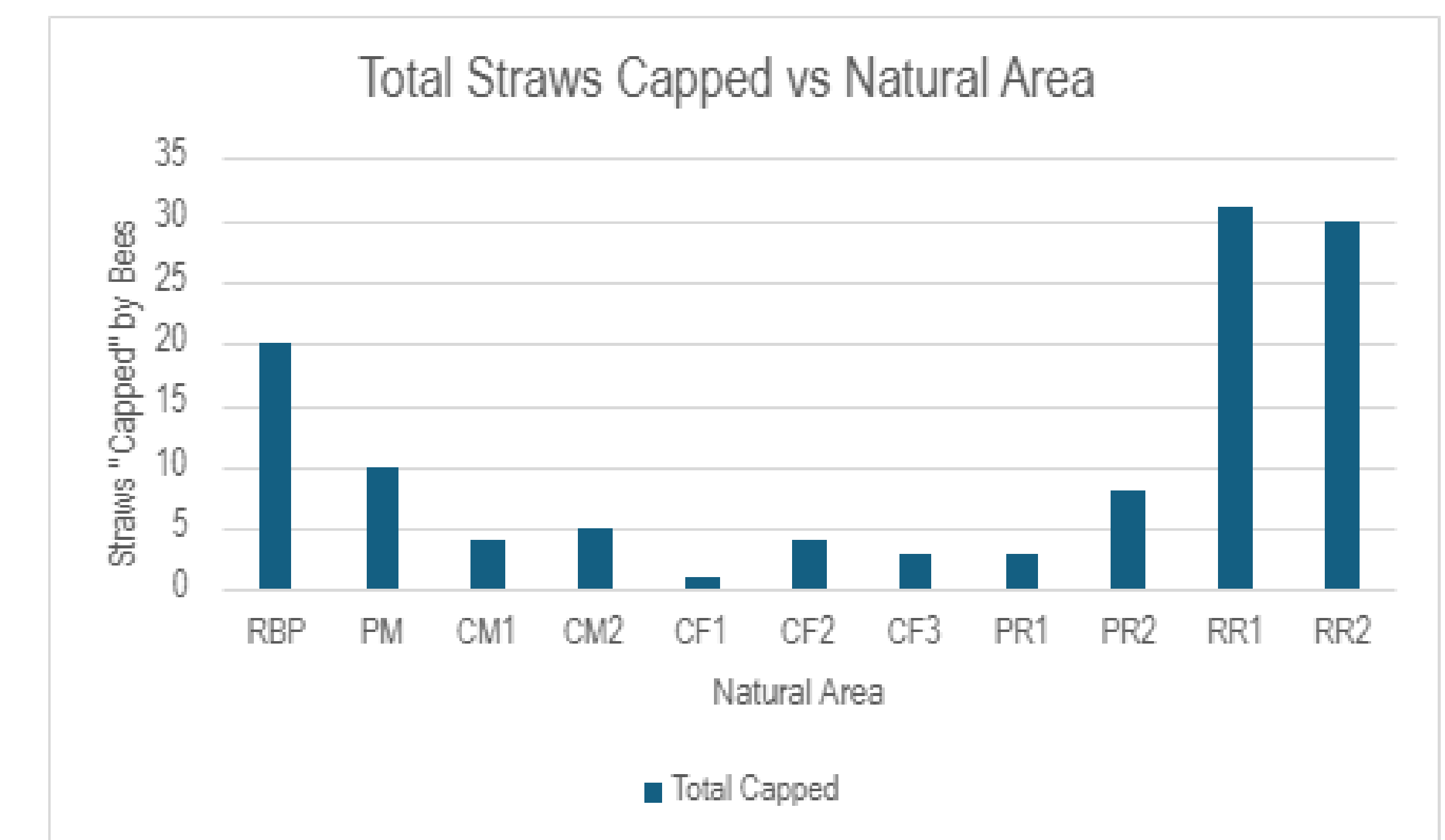
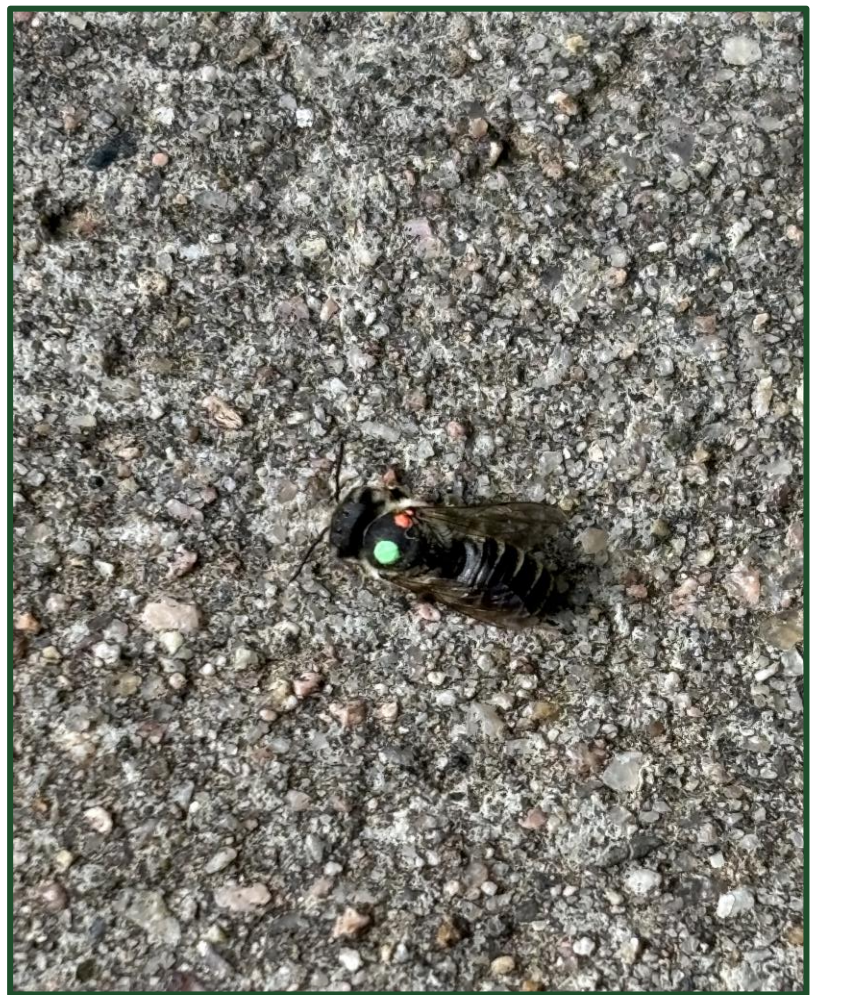
-These results help contribute to the optimization of bee hotels for native species, and therefore, for the conservation of these essential pollinators.

Other Projects & The Experience

-I also helped with a project assessing the distance from which leafcutter bees will return to their nest after being relocated into residential and natural areas.

-This process involved bee releases, surveys, and bee painting.

-An interesting aside from this project was the discovery that the bees did much better in some natural areas as compared to others.



-Back in May, I began this internship with a VERY limited knowledge of bees.

-Through this project, and various other side projects my knowledge and appreciation for these animals has expanded drastically,

-Not only has this internship affected me in pursuit of a career, adding to my skills as a scientist and a public communicator, but it has also affected my personal life.

-Now every time I'm hiking and walking, I notice myself noticing more, and when you notice something, you begin to care about it, and when you care, you conserve...

Acknowledgements



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