Do the Foraging Preferences of the Southeastern Blueberry Bee (*Habropoda laboriosa*) Differ Across Habitat Type?

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The Pollinator

Habropoda laboriosa, the **most efficient pollinator** of blueberry flowers and specialist pollinator of blueberry plants.

The Problem

Anthropogenic pressure such as land-use change is thought to be the cause of mass **insect decline** since the 1970s[1].

This study was conducted to better determine how **land-use change** is affecting *H. laboriosa*, and their **foraging preferences**.

Are the foraging preferences of *H. laboriosa* altered due to land-use change?

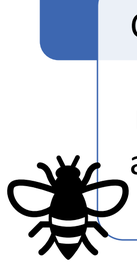
The foraging preferences of *H. laboriosa* are most likely altered when foraging in urban landscapes; however, their foraging preferences are less likely to be altered in agricultural landscapes.

This is because urban landscapes have a greater diversity of plants to forage on, while agricultural sites are predominantly dominated by blueberry species much like the natural landscapes.

Methods

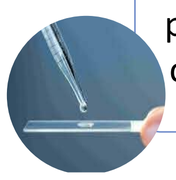
Step 1

Collect foraging bees at 7 natural, urban, and agricultural sites.



Step 2

Prepare pollen slides using pollen from the collected bees.

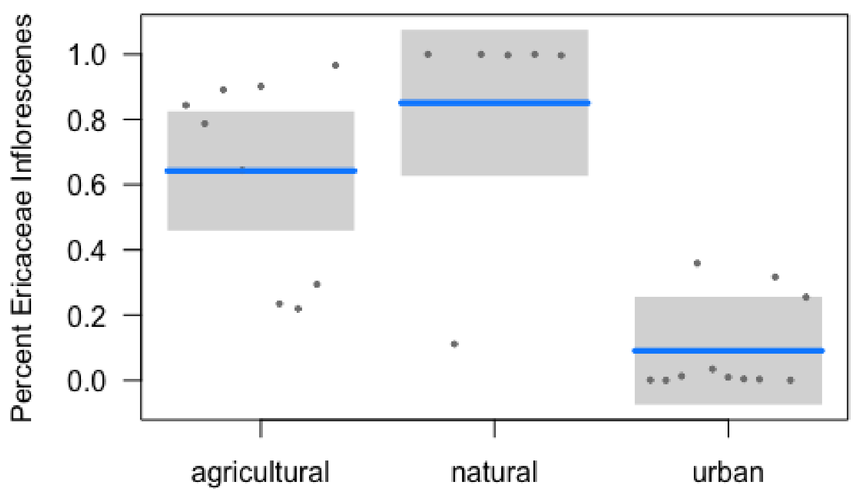


Step 3

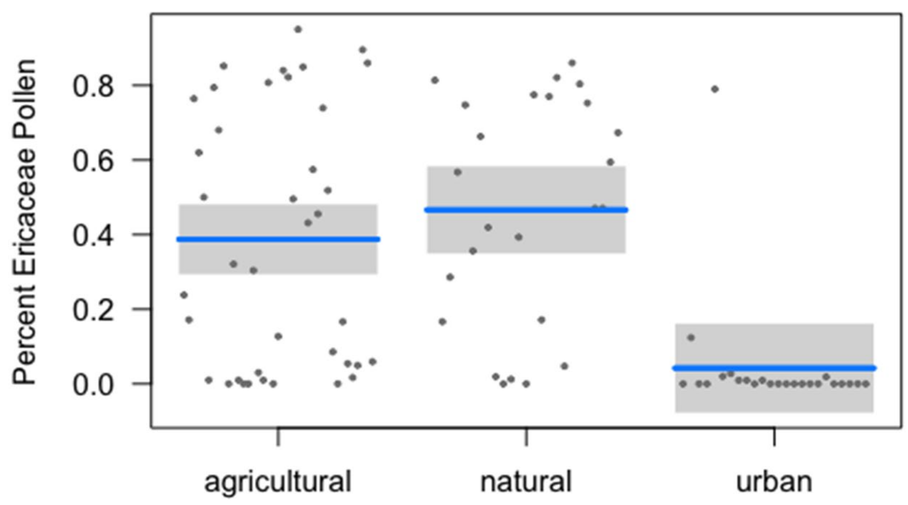
View slides under the microscope and record morphological diversity of each pollen grain.

Results

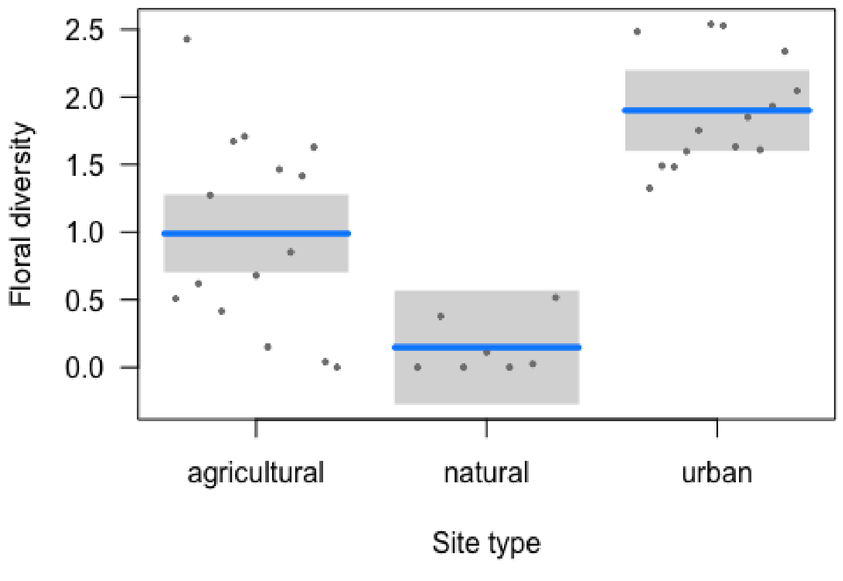
Percent of Ericaceae Inflorescences Across Habitat Types



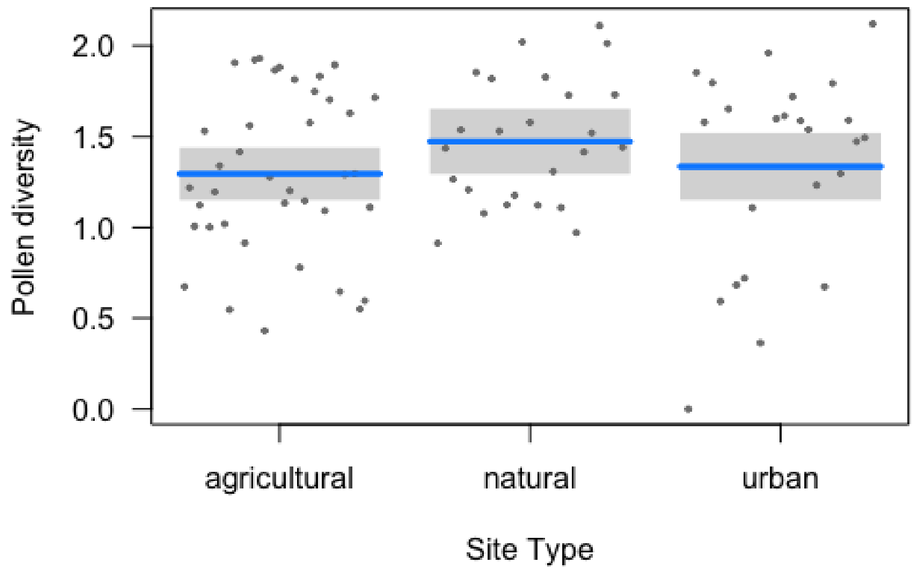
Percent Ericaceae Pollen Collected Across Habitat Types



Floral Diversity Across Habitat Types



Pollen Diversity Across Habitat Types



Outcome

1. *H. laboriosa* collected the least amount of blueberry pollen in urban habitats.

2. But, *H. laboriosa* did not collect significantly different levels of pollen diversity across the three habitat types.

Next Steps

- Body size study of *H. laboriosa* across habitat types.
- Further studies on *H. laboriosa's* specialist relationship with Ericaceous plants.

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References: [1]Hallman, C. A., Sorg, M., Jongejans, E., Siepel, H., Hofland, N., Schwan, H., . . . Kroon, H. d. (2017). More than 75 percent decline over 27 years in total flying insect biomass in protected areas. *PLOS One*, 1-21.