

Wild Bees of Prairies: Hidden Diversity in the Service of Conservation and Food Security



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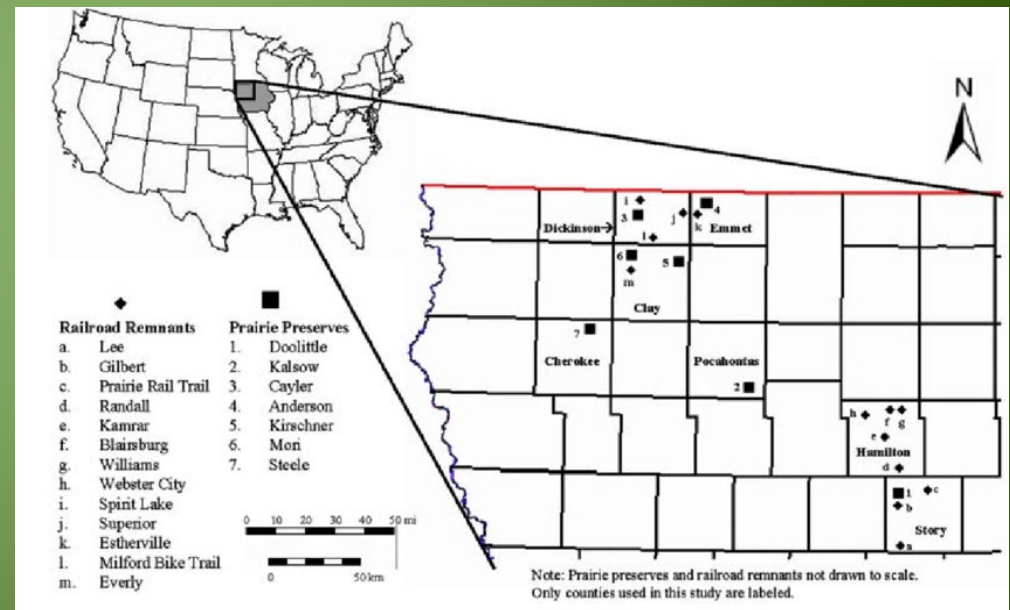
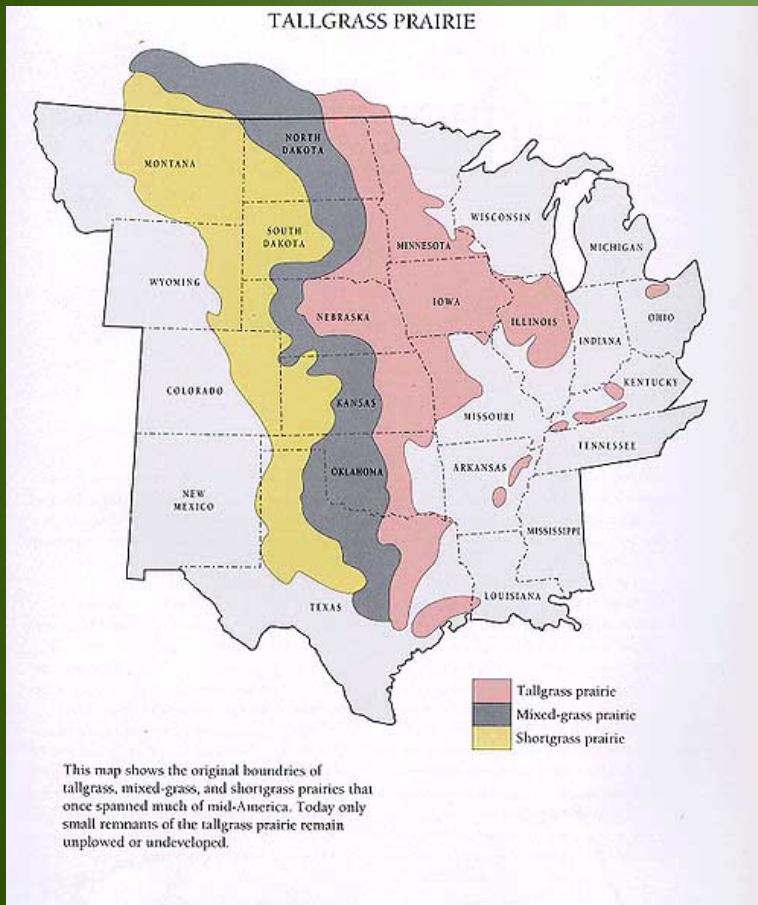
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The Prairies of N. A.

99.9 % destroyed in Iowa



The Data Base of Prairie Bees

- ~ 17,000 identified specimens
- 200+ species from 70 Iowa locations
 - Large preserves
 - Unprotected remnants
 - Produce farms
 - Urban sites
- Pan and net data
- > 250 plant species represented



Lesson 1 from the Prairies:

Prairie preserves are our bee reservoirs



Lesson 2 from the Prairies:

*Size matters **LESS** than you think!*

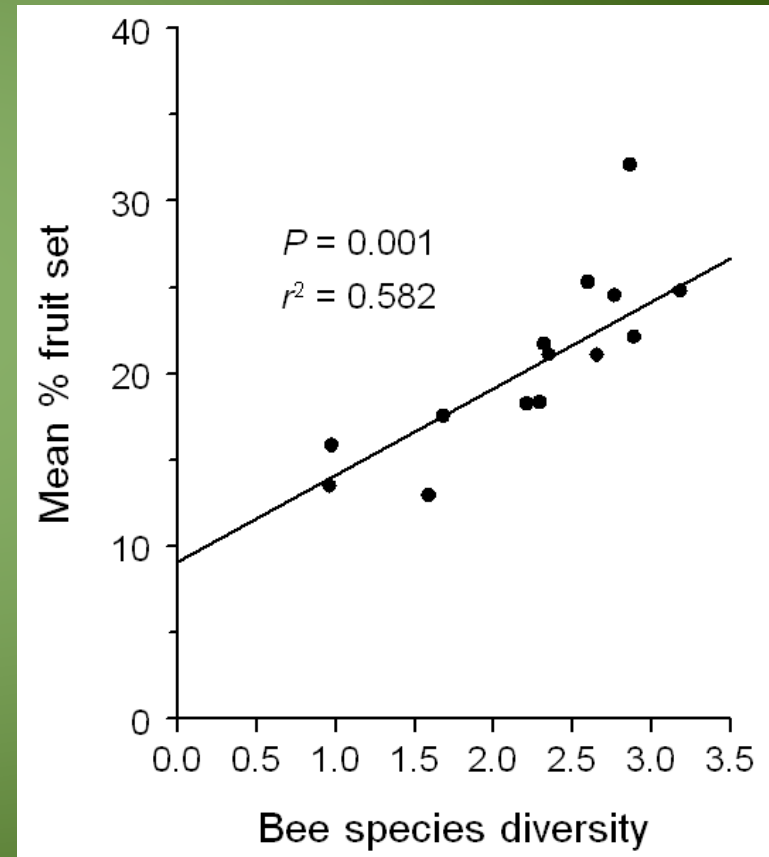


Lesson 3 from the Prairies:

Bee diversity improves prairie plant reproduction



Amorpha canescens (Fabaceae)



Lesson 4 from the Prairies:

Wild bees critical to produce farms

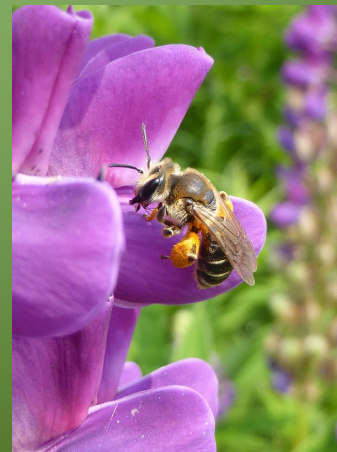
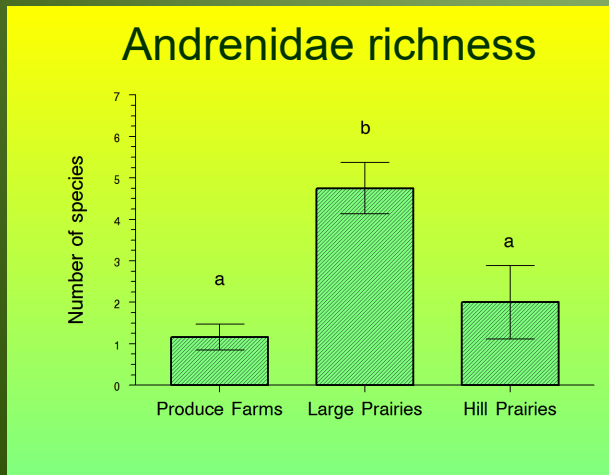
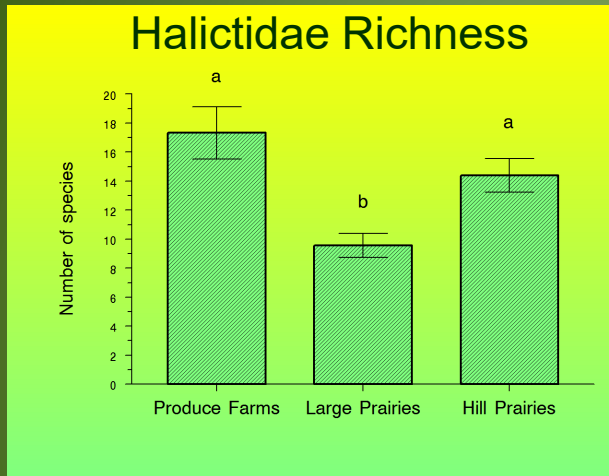
- 90% flower visits
- Honey bees not effective
- More crops, more diversity

But...

Bee community
composition differs

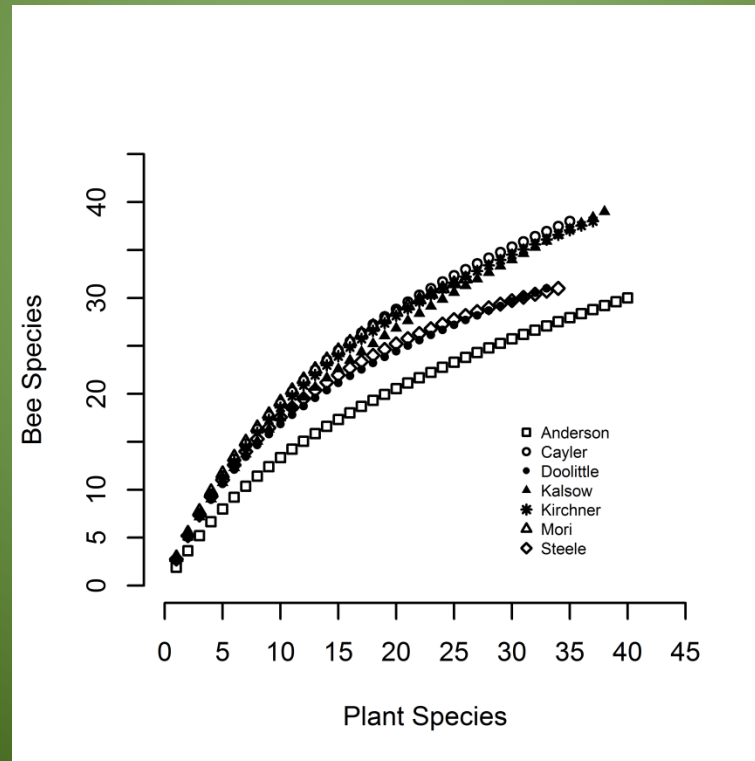


Bee Communities at Iowa Farms



Lesson 5 from the Prairie:

*Greater plant richness means greater
bee richness*



Lesson 6 from the Prairie:

In restorations plant choice matters



Amorpha canescens



Dalea purpurea



Zizia aurea



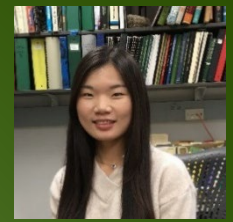
Ratibida pinnata

- Bloom across most of season
- Produce abundant pollen & high flower #
- Common in mixes and restorations
- Wide geographic ranges

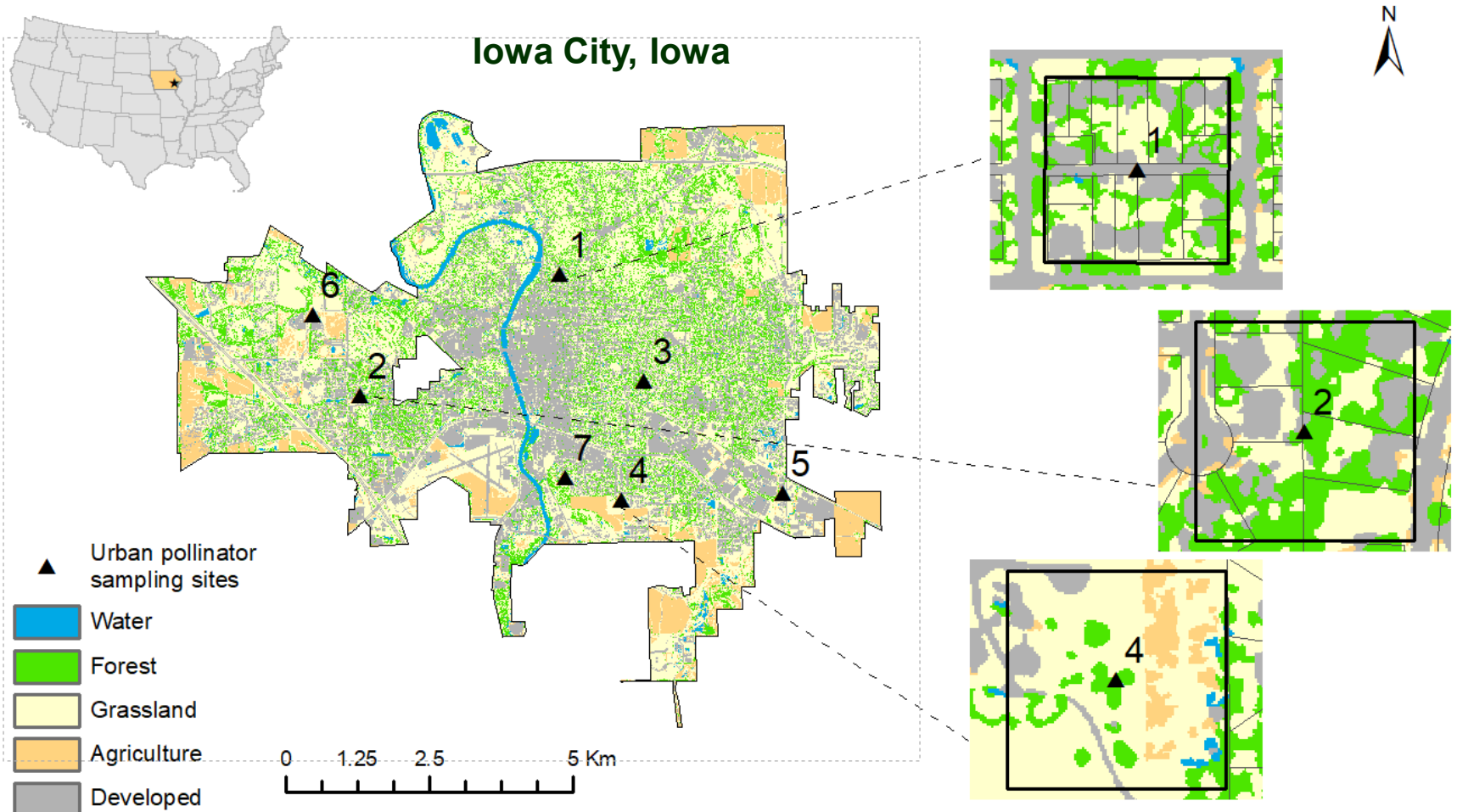


Heather Sander

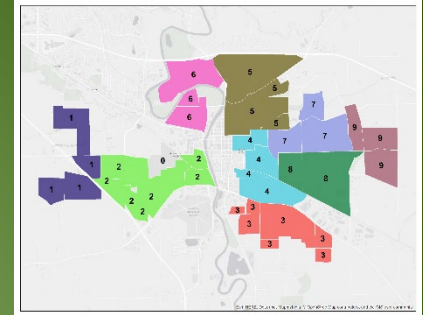
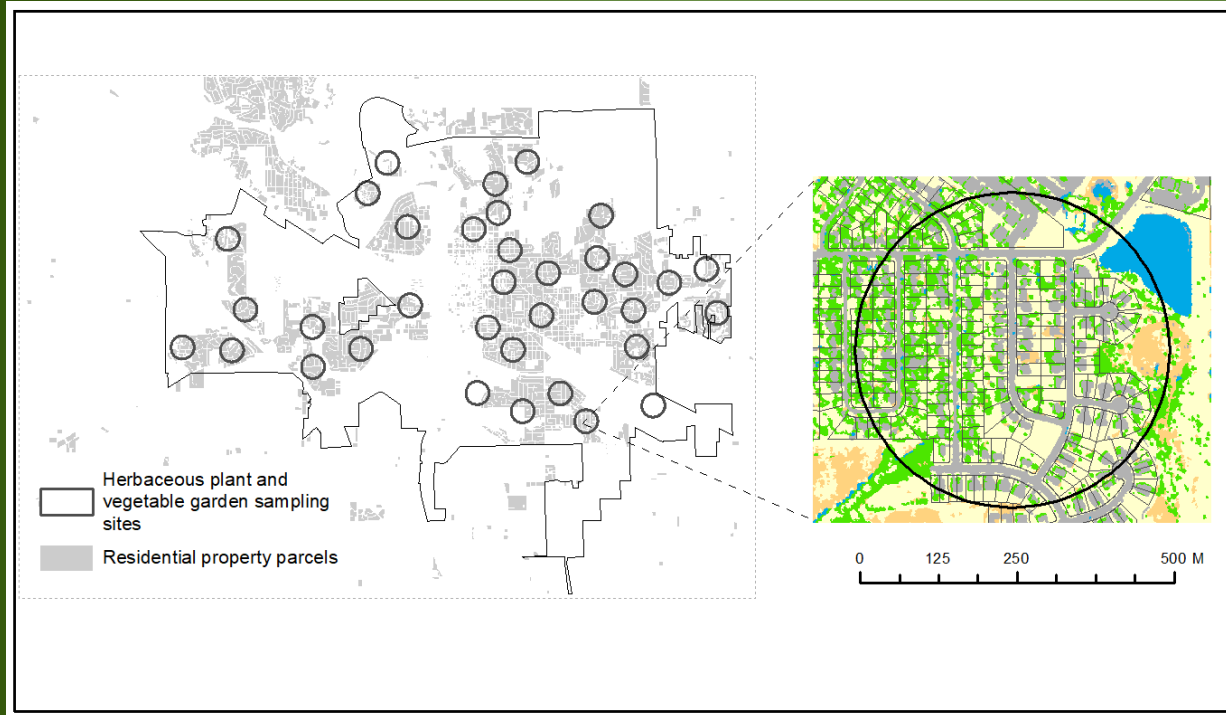
Urban Bee Studies



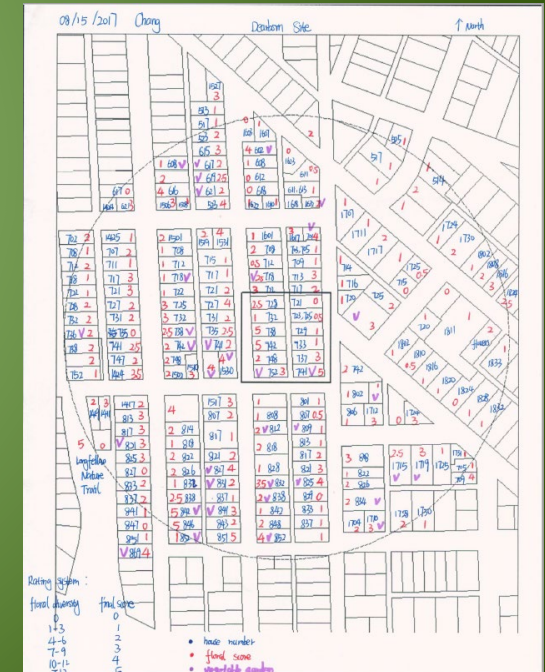
Chang Zhao



Quantify Plant Resources

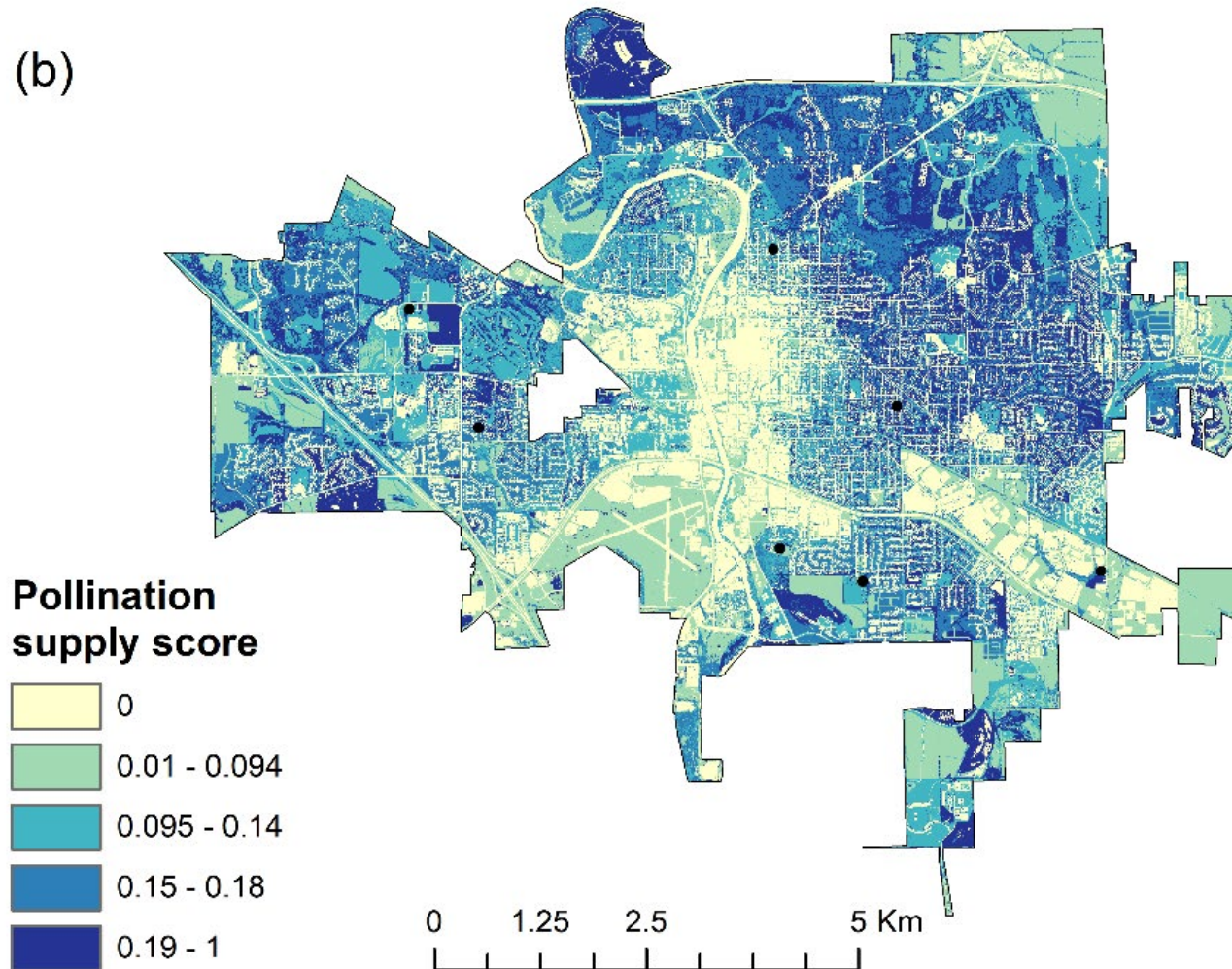


9 residential neighborhoods; 35 circular sites;
rate parcels based on plant richness from 0 to 5

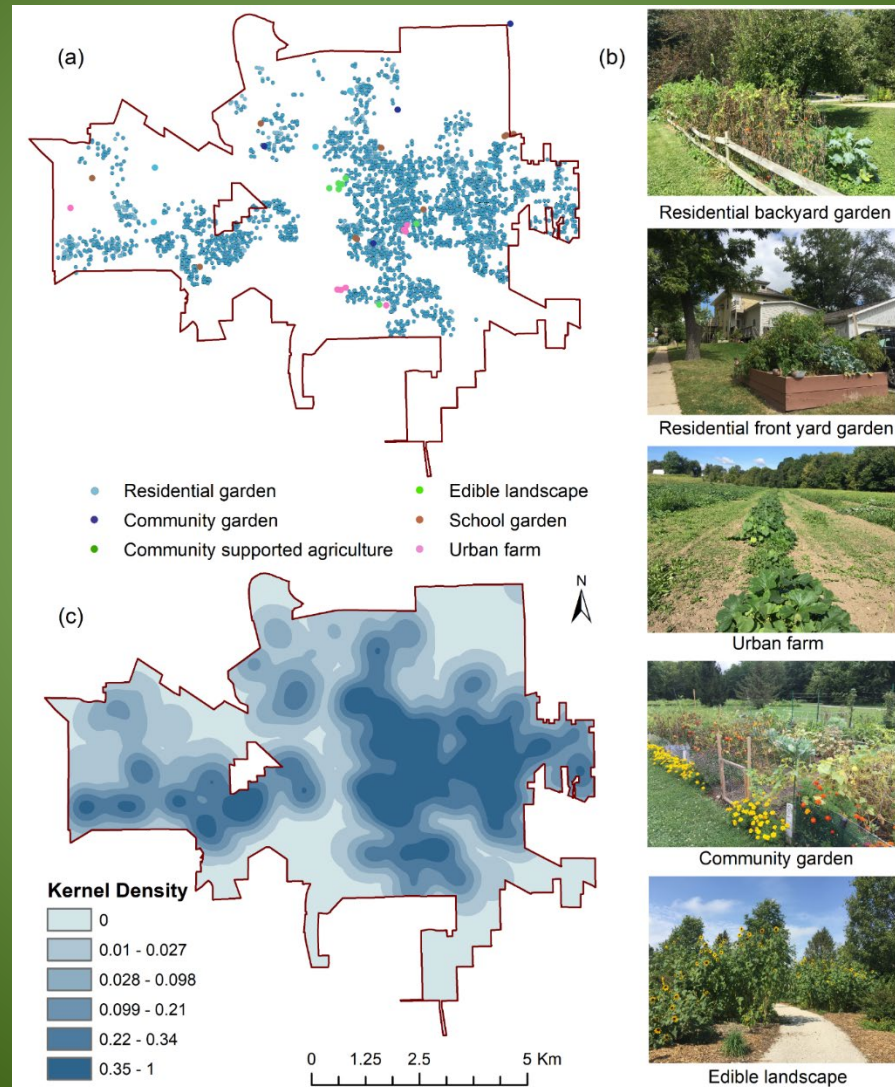


Urban Bee Supply

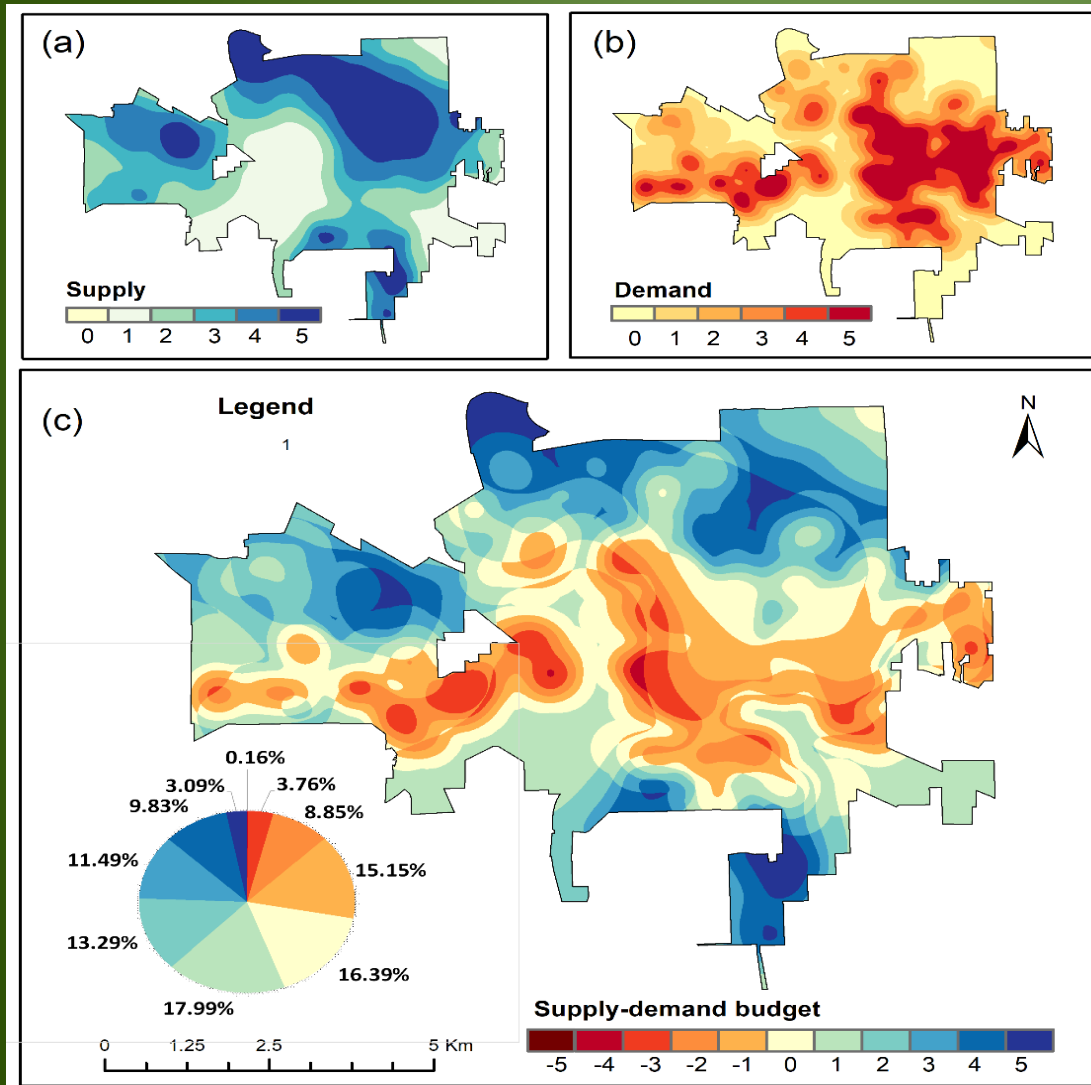
(b)



Demand for Pollinator Services



Supply vs. Demand



Socio-economical factors:

- Education level
- Income level
- Neighborhood age
- Rent vs. owning

Reasons for Hope in Urban Areas

Protect and restore natural areas



Provide varied floral resources



Involve people at the individual parcel level



Focus on neighborhood involvement

Acknowledgements

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- Maddie Ford

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