

# Burrowing Owl Habitat Selection in Urban Southeast Phoenix, Arizona

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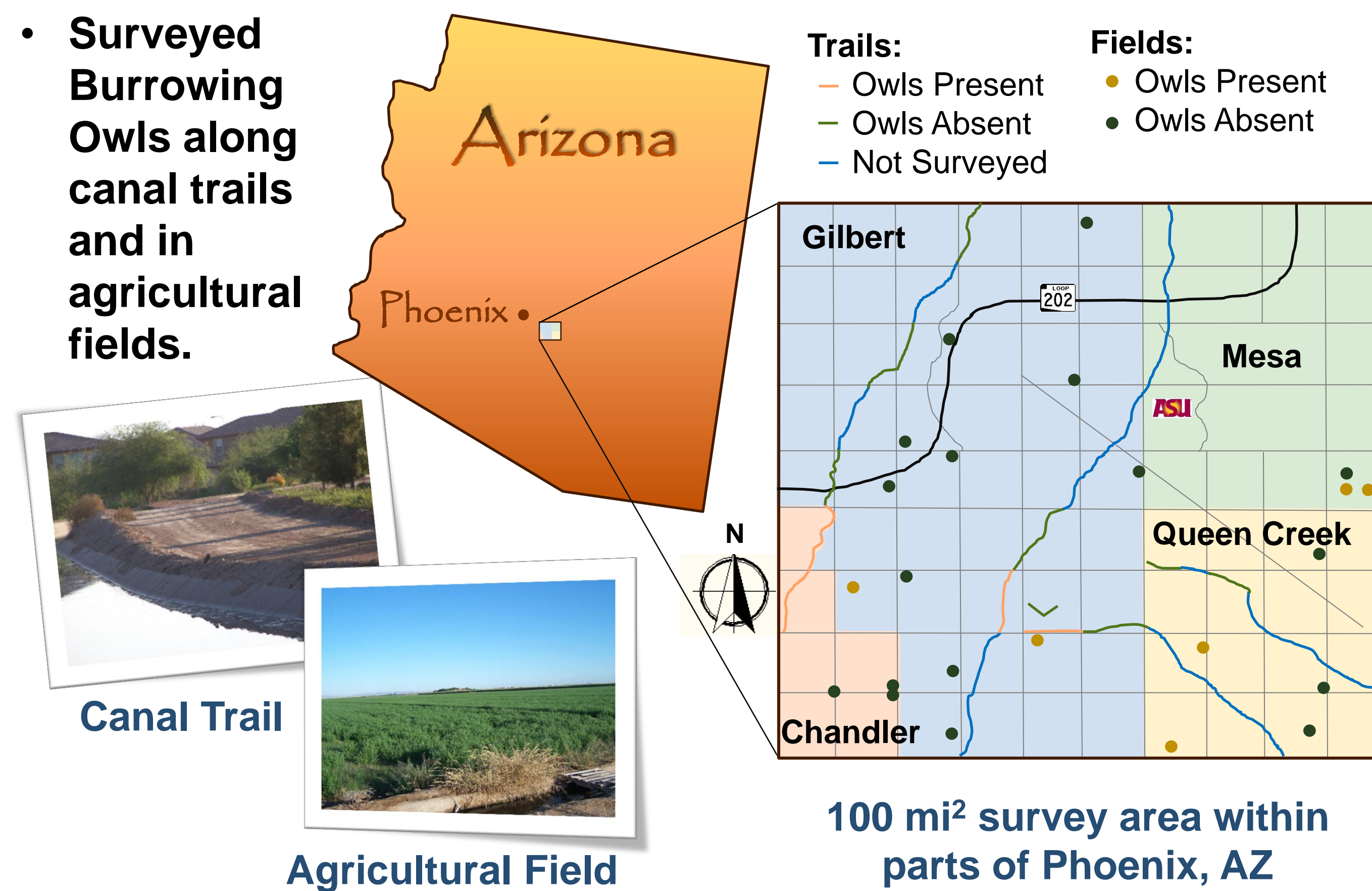
## Background

- Burrowing Owls (*Athene cunicularia*) are often found in agricultural areas, but have experienced a significant population decline over the last 100 years in parts of the US and Canada, which may be due to habitat destruction.
- The southeastern valley of Phoenix features numerous agricultural areas, but is rapidly becoming more urbanized, potentially displacing owl residents.
- To aid in relocation and translocation efforts, the landscape and microhabitat features of known owl residents can be described and quantified. This will allow natural resource managers to relocate Burrowing Owls in the city by seeking features similar to habitats utilized by resident urban owls.



## Study Sites

- Surveyed Burrowing Owls along canal trails and in agricultural fields.



## Objectives

- Determine Burrowing Owls detectability and rate of occupancy.
- Identify habitat characteristics (micro and landscape-level) of Burrowing Owls in Phoenix.

## Acknowledgments

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## Methodology

- Summer 2011
- 5:00-10:00 AM
- 23 Agricultural Fields
- 15 Canal Trails
- 1-3 Surveys Per Site

Owl Surveys

### Habitat Measurements

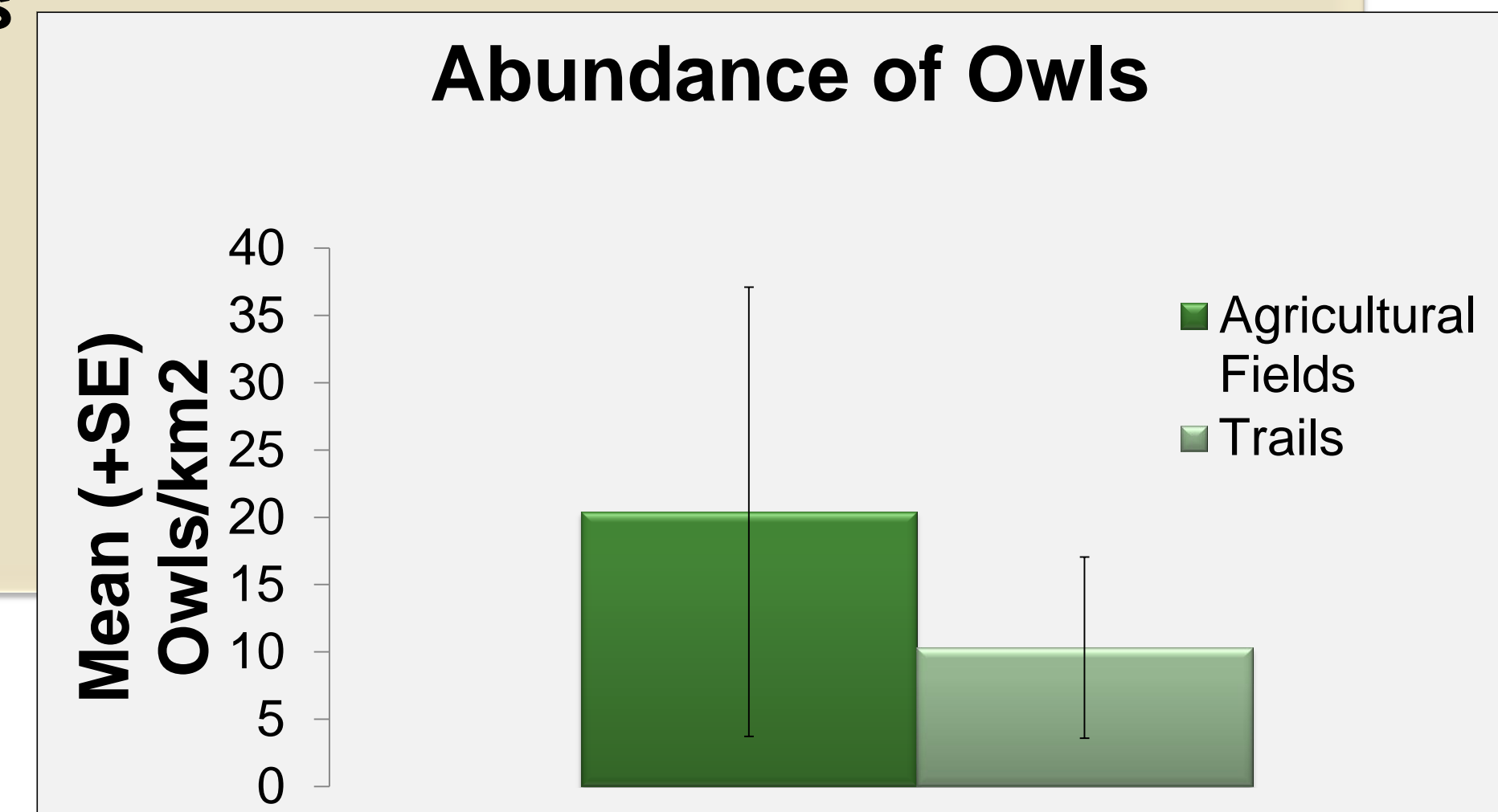
- Feature Use (Perch Type/Height)
- Microhabitat Characteristics (Ground Cover)
- Landscape Attributes (Urban/Water Presence)

- Man-Whitney Rank Sum
- Chi-square & Z-test
- Logistic Regression
- Program MARK

Statistical Analysis

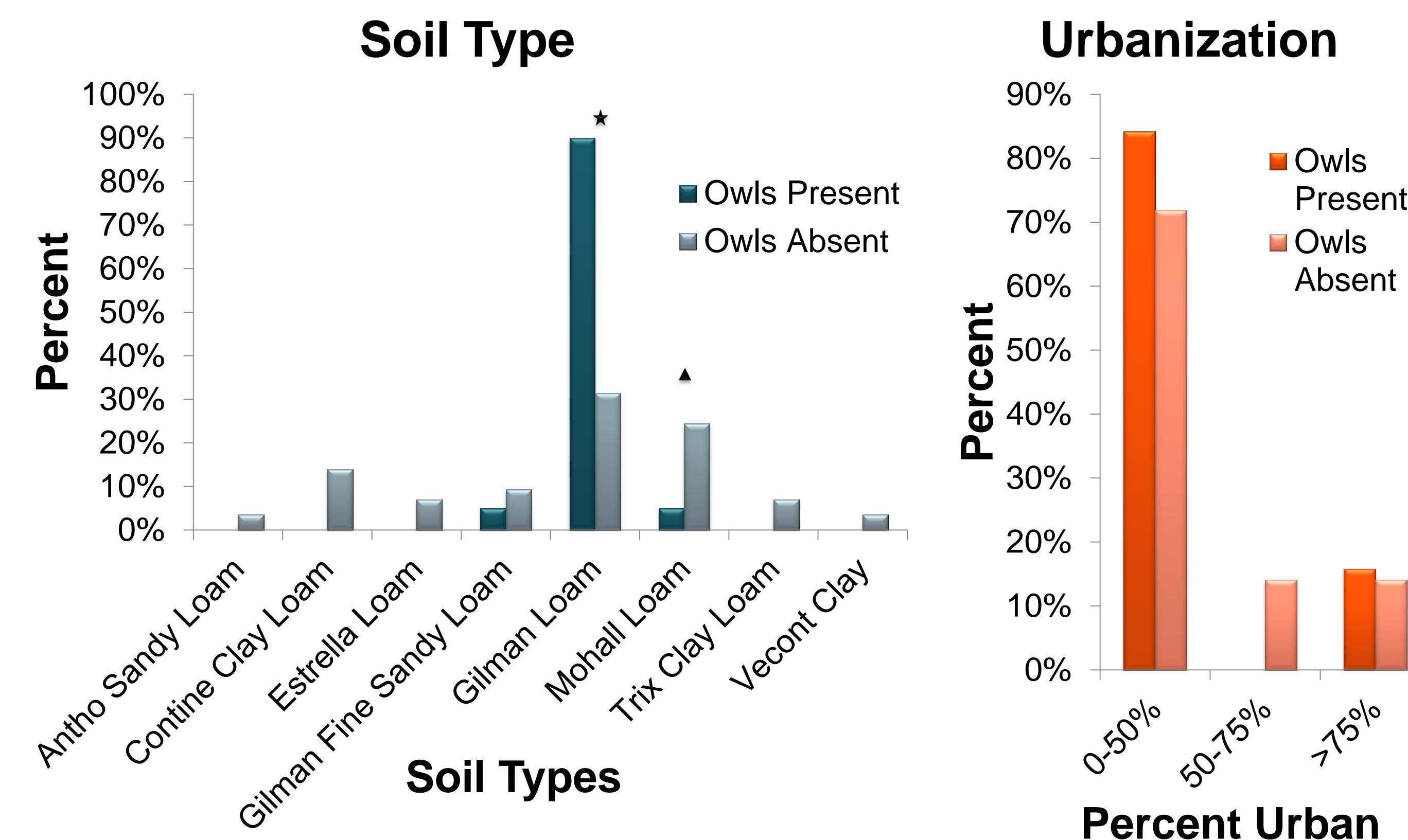
## Results: Abundance & Occupancy

- Owl detectability was 92% in fields and 52% along trails.
- Owl occupancy was estimated at 32% (SE = 8%) for both agricultural fields and trails.
- Owl occupancy was best predicted by soil type and water presence.

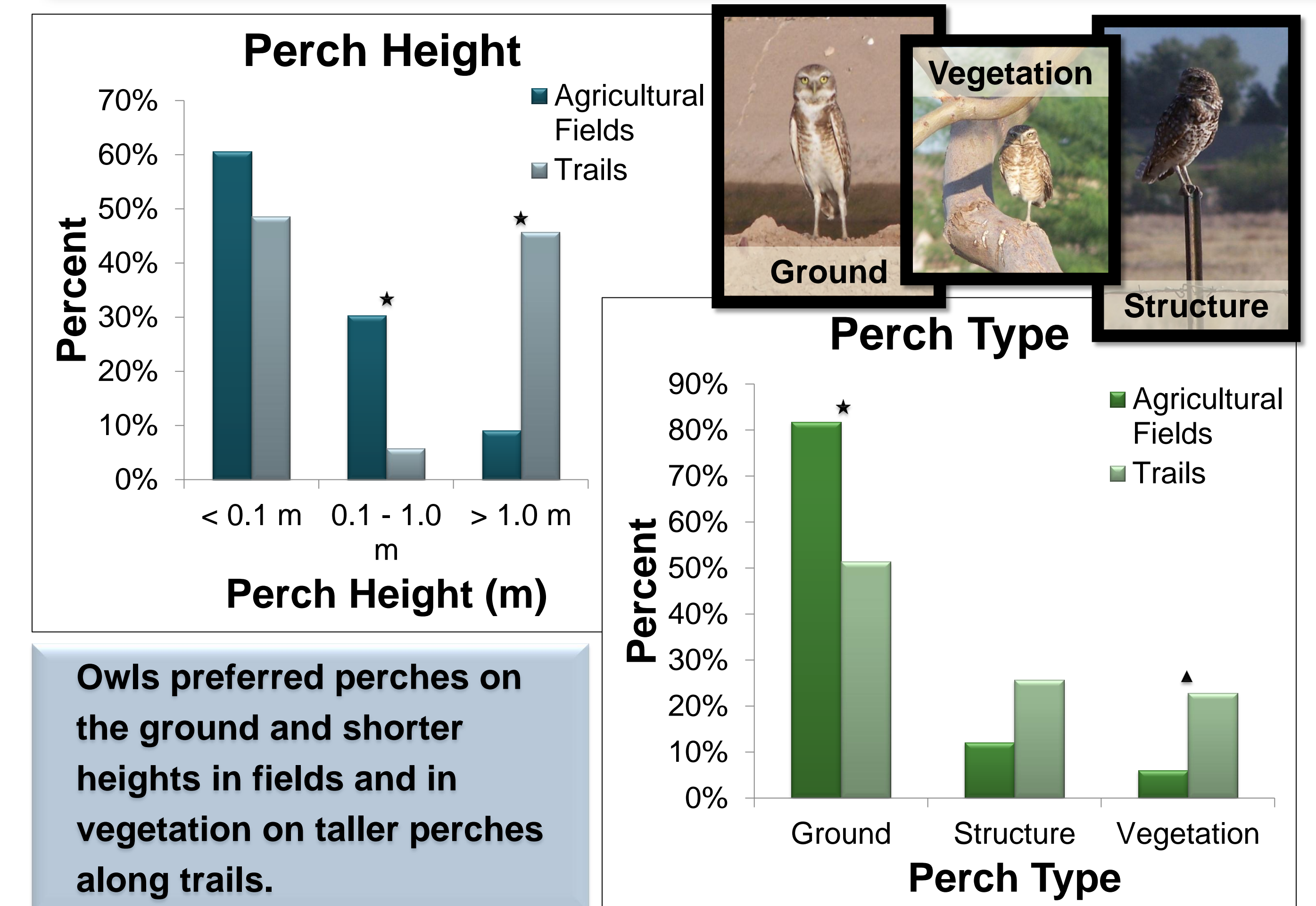


## Results: Landscape Attributes

Key (Figures): \*Significant Difference ( $P \leq 0.05$ ) ▲ Marginal Difference ( $P \leq 0.10$ )

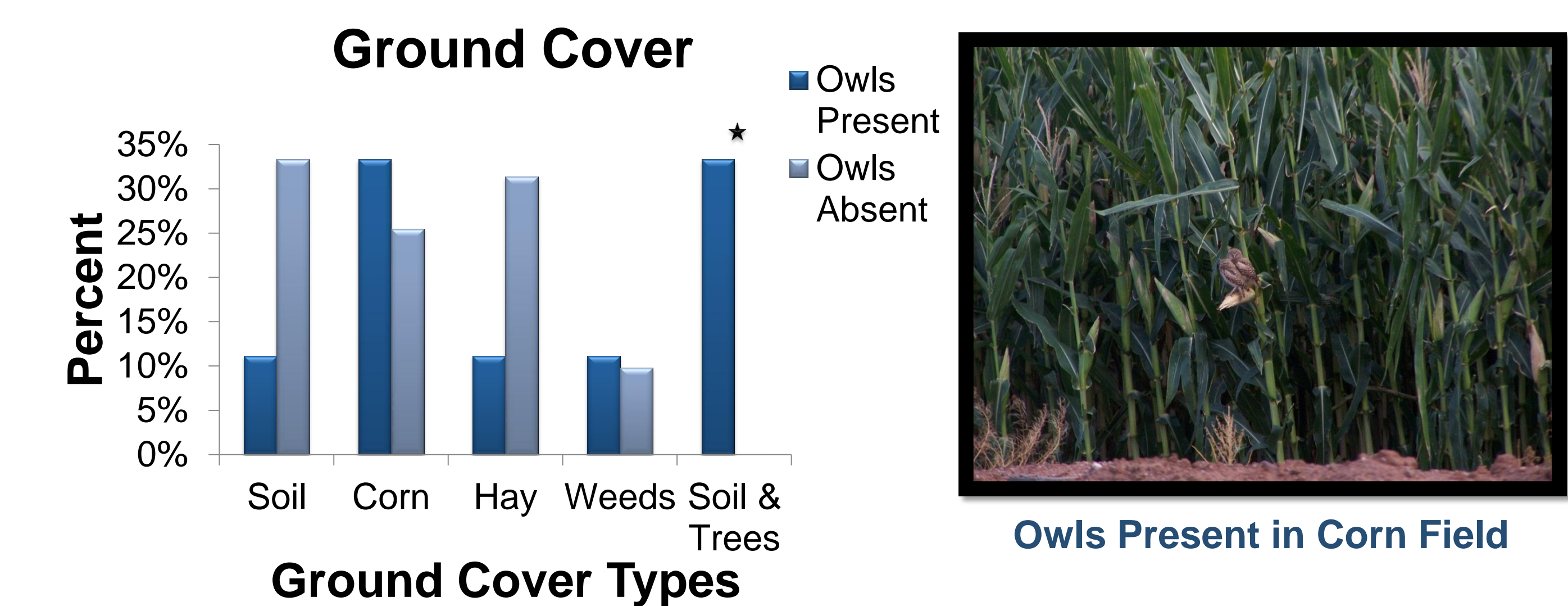


## Results: Feature Use



Owls preferred perches on the ground and shorter heights in fields and in vegetation on taller perches along trails.

## Results: Microhabitat



## Conclusion

- Burrowing Owls can persist in urbanized environments provided that suitable soil types and water are available.
- Additional research is needed to determine if these habitat criteria can be useful for owl translocation efforts.

