



Prevalence, impacts, and implications of odorous house ant colonies within active American robin nests



Danish Qazi (dqazi93@gmail.com)¹, Joshua Gibson², Andrew Suarez^{2,3} and Loren Merrill⁴

¹ School of Integrative Biology, University of Illinois at Urbana-Champaign (UIUC), Urbana, IL; ² Department of Entomology, UIUC, Urbana, IL; ³ Department of Animal Biology, UIUC, Urbana, IL; ⁴ Illinois Natural History Survey, UIUC, Champaign, IL

Introduction

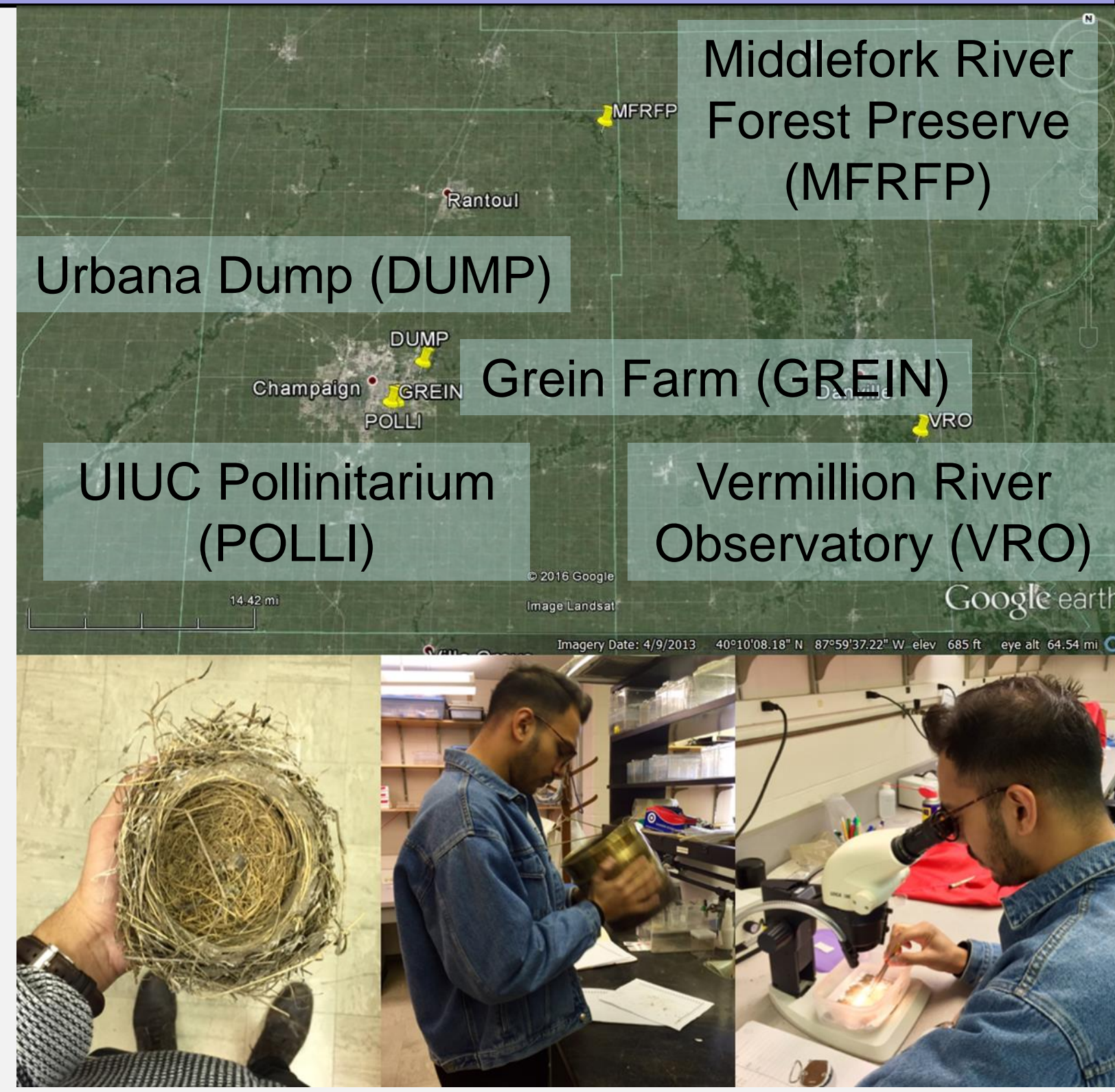
- Bird nests can be an attractive microhabitat for many groups of arthropods, including ants¹.
- Associations between ant presence in nests has typically been viewed to have negative impact on birds².
- Ants could also benefit bird nests by decreasing parasite load within nests and increase nestling success³.

Objectives

1. What species of ants colonize American robin nests from Midwestern Illinois?
2. How prevalent are ant colonies in American robin nests and how does occurrence vary with habitat?
3. How does presence of ant colonies influence fledging success of nestling birds?
4. Does a relationship exist between urbanization of landscape and nestling fledging success?

Materials and Methods

- 42 nests from 5 sites around Illinois were monitored from spring 2014 to fall 2015.
- Nests were checked every three days until fledged or failed, then collected and frozen.
- Land development was assessed using GIS.
- Nests were thawed and sieved for 30 sec. All ants were collected & ID'ed. Ant colonies were considered in bird nests if at least 2 (of larval, pupal, or adult) life stages were present in the nest.
- Prevalence of ant colonies assessed using chi squared analysis, fledging success and association with development compared using Fisher's exact test.



Results

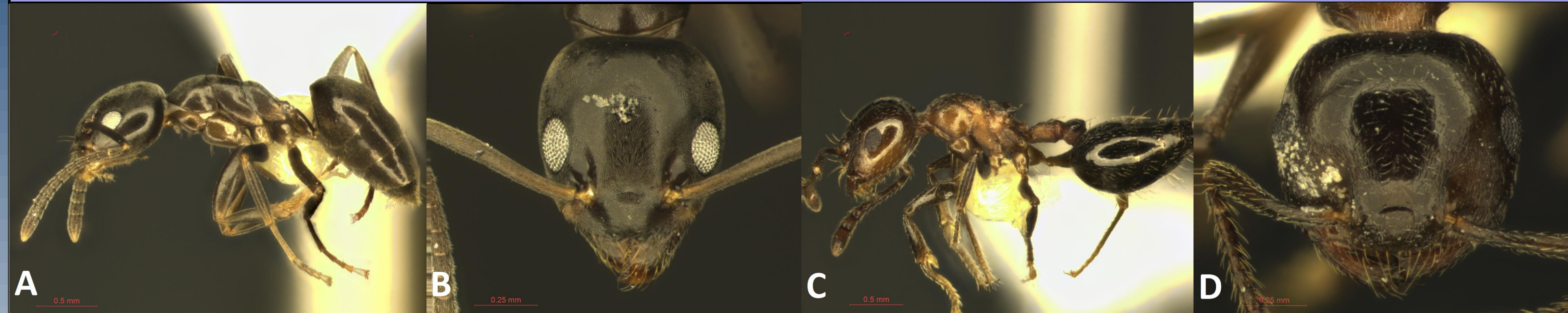


Figure 1: Two species of ants were identified in our samples. *Tapinoma sessile* [A-B] and *Crematogaster cerasi* [C-D]. Photos taken by authors.

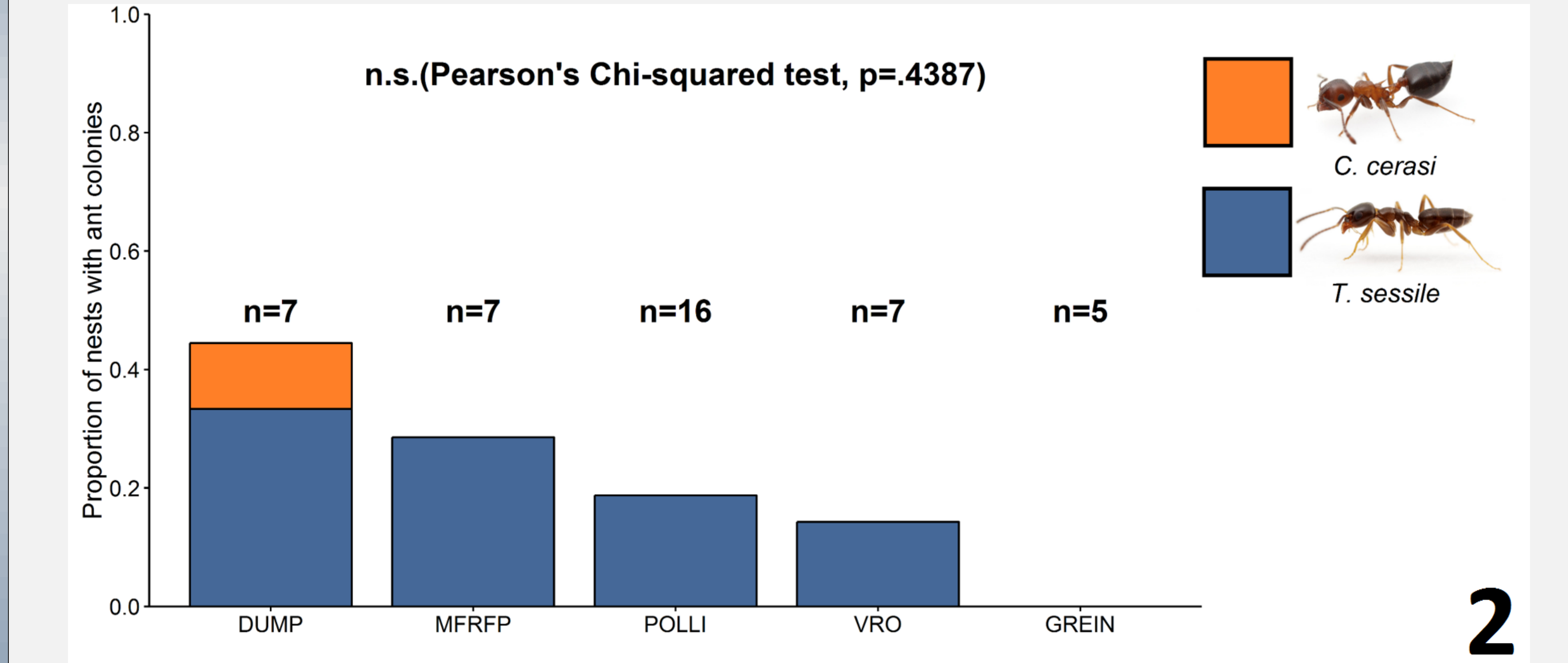


Figure 2: Prevalence of ant colonies varied between sites.

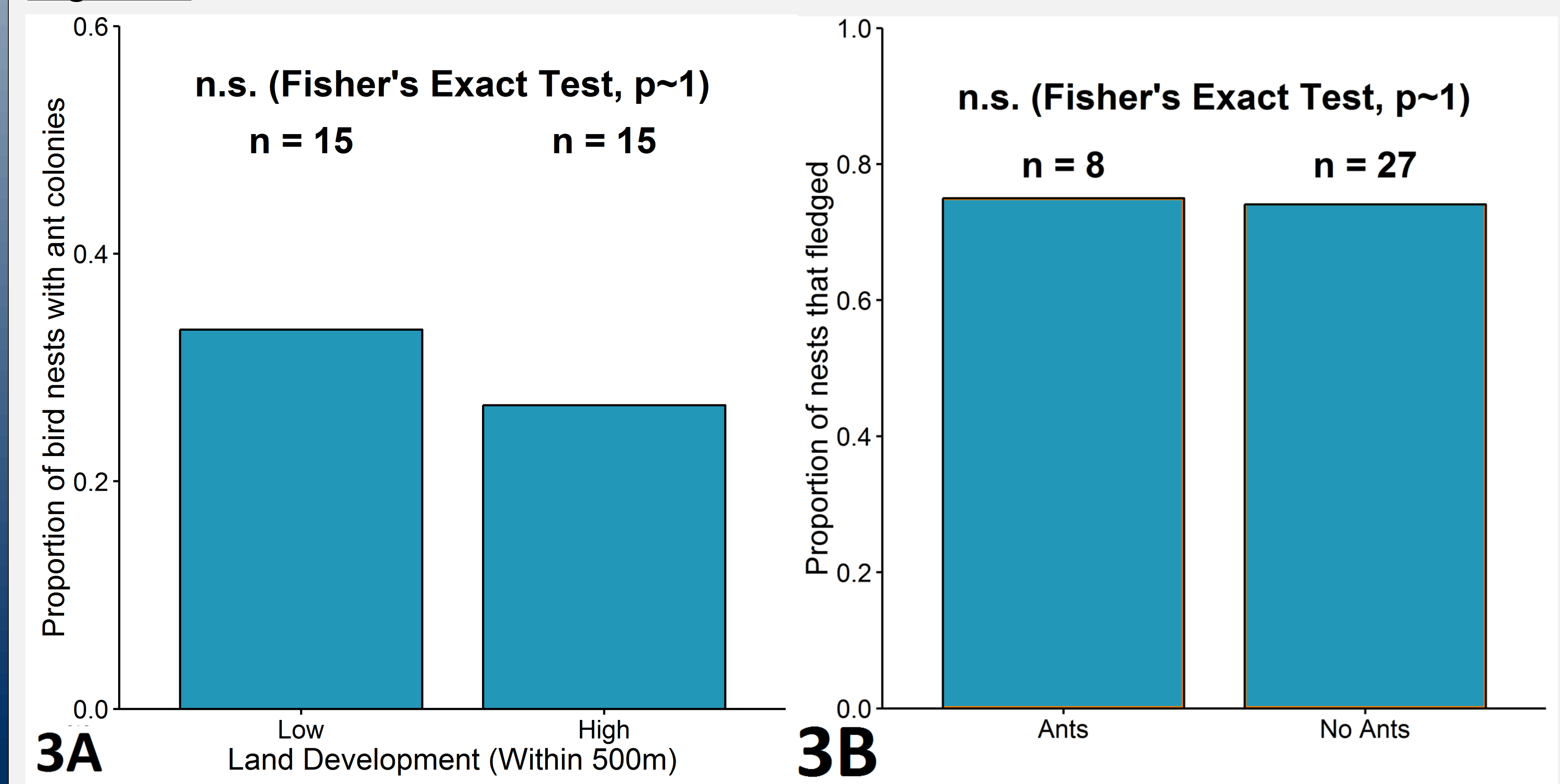


Figure 3A: There was no difference in prevalence of ant colonies between low & high land development nest sites. Figure 3B: There was no difference in fledging success of nests with & without ant colonies.

Discussion

- The most common ant species found was *Tapinoma sessile*, a polygynous and seasonally polydomous cosmopolitan species, which is known to associate with bird nests.
- Ants did not appear to influence fledging and may be living commensally within nests (Fig. 3B).
- Land development did not impact the distribution of ant colonies within bird nests (Fig. 3A).
- Future work will look for relationships between other insects in American robin nests and fledging success rate and assess additional factors that may influence fledging rates of nests with ant colonies.



Figure 4: Image of *Tapinoma sessile*

References

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 [2] Suarez, A.V., Yeh, P., and Case, T.J. 2005. Impacts of Argentine ants on avian nestingsuccess. *Insectes Sociaux* 52:378-382.
 [3] Young, Bruce E., Michael Kaspari, and Thomas E. Martin. "Species-Specific Nest Selection by Birds in Ant-Acacia Trees." *Biotropica* 22.3 (1990): 310. Web.

Acknowledgments

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 Bird photograph taken by Brian Kushner.
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