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

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Introduction

• Bird nests can be an attractive microhabitat for many groups of arthropods, including ants^1.
• Associations between ant presence in nests has typically been viewed to have negative impact on birds^2.
• Ants could also benefit bird nests by decreasing parasite load within nests and increase nesting success^3.

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 nesting 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.
• 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.

Acknowledgments

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References


Materials and Methods

Middlefork River Forest Preserve (MFRFP)
Urbana Dump (DUMP)
Grein Farm (GREEN)
UIUC Pollinariam (POLLI)
Vermilion River Observatory (VRO)

Ant photographs taken by Alex Wild.
Bird photograph taken by Brian Kushner.

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