

How are European Starlings (*Sturnus vulgaris*) impacting availability of nesting sites for native cavity nesters in Vermont?

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Background

- European Starlings were introduced to the U.S. from Europe in the late 1800's.
- Starlings are aggressive cavity nesters, and are known to take over occupied cavities.
- This means that Starlings potentially pose a threat to the breeding success of native cavity nesters.

Study Design

- A total of 15 nest boxes mounted on a tree or building will be utilized, with 5 being placed in Burlington (urban), 5 in the Williston/Essex Junction area (suburban), and 5 in the Stowe area (natural).
- The nest boxes will be set up late April and monitored once a week to note the species currently occupying the box.
- This project would be a manipulative field study.
- The use of nest boxes allows us to replicate the dynamics surrounding natural cavities while allowing a greater degree of control.

Hypothesis

- It is hypothesized that the percentage of nest boxes occupied by Starlings will be greatest in urban areas, and will decrease as habitat transitions from suburban to natural.
- Starlings likely do not have a significant impact on the populations of cavity nesting birds in Vermont.
- Given their strong association with human-altered habitats, Starlings are relatively restricted in VT, and their populations in the state have been declining in recent years (Vermont Center for Ecostudies 2003).
- Previous research has also failed to establish a significant negative relationship between Starlings and native cavity nesters (Barton et al. 2020; Ingold 1994; Koenig 2003).
- Some native species may also be adapting to better defend nests against Starling usurpation (Wiebe 2004).
- Therefore, their overall impact on native cavity nesters in VT is likely limited.

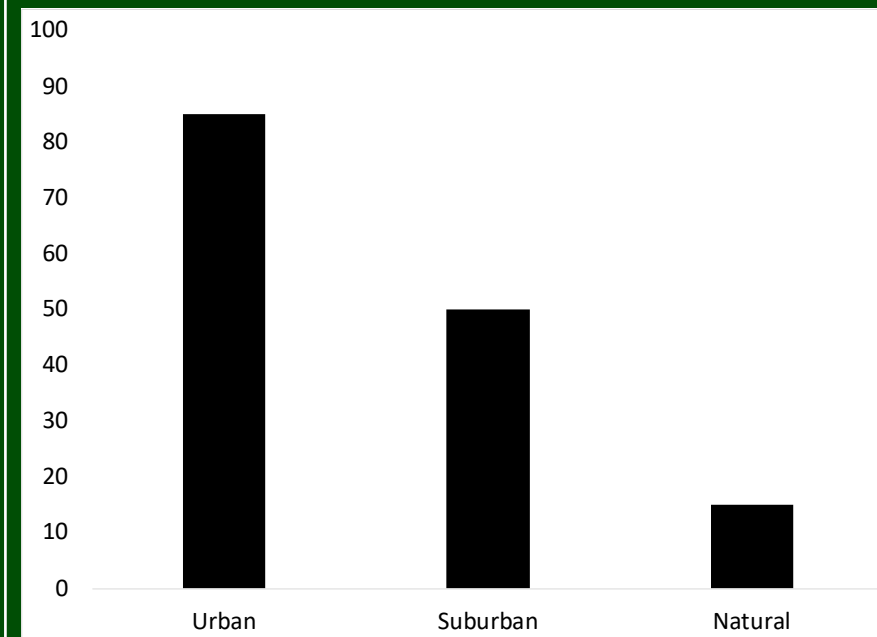


Figure 1. Percentage of nest boxes occupied by European Starlings in urban, suburban, and natural habitats.



Figure 2. European Starling, left, and Red-bellied Woodpecker (*Melanerpes carolinus*), a native cavity nester.

Intended Analysis

- The total percentage of nest boxes in each area that are occupied by Starlings will be recorded.
- An ANOVA statistical test will be used to analyze any significant differences in Starling occupancy across all three groups.
- The independent variable is habitat type (urban, suburban, natural) and the dependent variable is the percentage of boxes occupied by Starlings.
- The scope of this project is restricted to the state of VT, though similarities in regional habitat type, species composition, and timing of nesting means that this project could potentially be applied to New England as a whole.

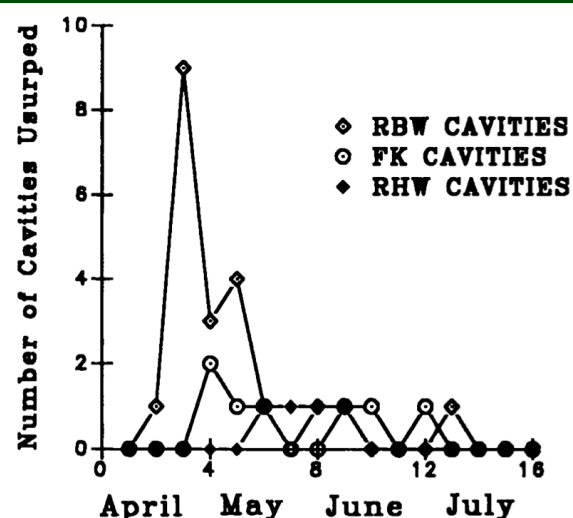


Figure 6 from Ingold 1994. Timing of cavity usurpations by European Starlings and Red-bellied Woodpeckers (RBW), Northern Flickers (NF), and Red-headed Woodpeckers (RHW) during 1990-1992 (weeks on x axis).

Literature Cited

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