American Robin Nesting Success in Suburban Areas of the Arkansas River Valley

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Introduction

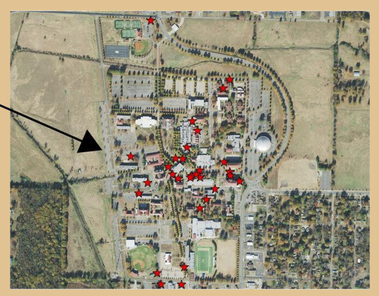
- Birds nesting in suburban areas face threats from increased predator densities and habitat fragmentation/isolation[1]
- The American robin (*Turdus migratorius*) is an abundant songbird species that thrives in suburban areas, with apparent nesting success as high as 90%[2]
- Little research has been done on the nesting biology of American robins, and robin nesting success is understudied in Arkansas
- Studying robin nesting biology may help us understand how other bird species succeed in developed areas

Research Objective

- Determine how nest characteristics influence robin nesting success and estimate overall nesting success

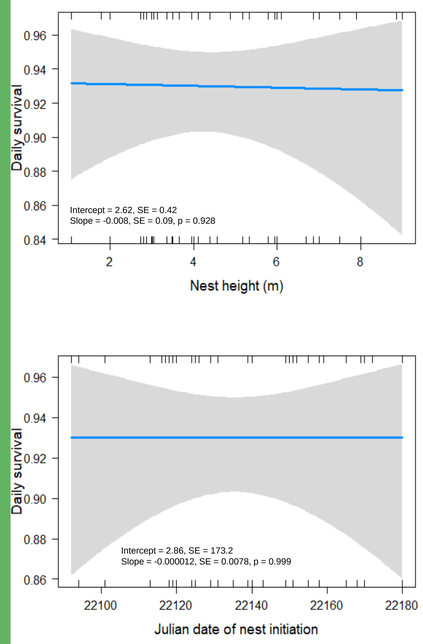
Methods

- Searched for nests at 7 study sites April – August 2022
- Nests were monitored every 2-3 days to track survival
- Recorded characteristics of nests (height, concealment, etc.)
- Used the logistic exposure method to estimate nest survival and model relationships between nest characteristics and survival



Results

- Located 44 nests. 30 on the ATU campus
- Found nests in 15 tree/shrub species and on campus buildings
- Nest height, age, concealment, and date do not have a significant relationship with nest survival
- Robin nesting success much lower than in other studies



Daily Survival and Nest Survival Estimates

Predictor	Logistic Exposure	Mayfield	Apparent
Mean nest height	0.930, 11.4%	0.928, 10.6%	27.7%
Mean nest age	0.930, 11.5%		
Mean concealment	0.933, 12.6%		
Mean julian date	0.930, 11.3%		

Discussion

- Predation pressure may be high enough that nest characteristics have little impact on nest survival
- Birds nesting in suburban areas may be able to cope with low individual nest success by having multiple broods in a breeding season[3]
- AR drought 2022, skewed fledgling sex ratio, low fledgling survival
- Robin reproductive success may be lower in suburban areas than previously documented
- 2023 goals: compare reproductive success and sex ratio between years, identify nest predators, track more fledglings

References and Acknowledgements

1. Marzluff, J. M., and K. Ewing. 2001. Restoration of fragmented landscapes for the conservation of birds: A general framework and specific recommendations for urbanizing landscapes. Restoration Ecology 9:280–292.
2. Morneau, F., C. Lépine, R. Décarie, M. A. Villard, and J. L. DesGranges. 1995. Reproduction of American Robin (Turdus Migratorius) in a suburban environment. Landscape and Urban Planning 32:55–62.
3. Reale, J. A., and R. B. Blair. 2005. Nesting Success and Life-History Attributes of Bird Communities Along an Urbanization Gradient. Urban Habitats 3.

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