

2024

Do nest box temperatures affect nest success and nestlings growth for Eastern Bluebirds?

Mathew Gordon
mathew.gordon@bobcats.gcsu.edu

Katie Stumpf
Georgia College & State University

Follow this and additional works at: <https://kb.gcsu.edu/grposters>



Part of the [Biology Commons](#), and the [Ornithology Commons](#)

Recommended Citation

Gordon, Mathew and Stumpf, Katie, "Do nest box temperatures affect nest success and nestlings growth for Eastern Bluebirds?" (2024). *Graduate Research Showcase*. 133.
<https://kb.gcsu.edu/grposters/133>

This Conference Proceeding is brought to you for free and open access by the Graduate Research at Knowledge Box. It has been accepted for inclusion in Graduate Research Showcase by an authorized administrator of Knowledge Box.

Do nest box temperatures affect nest success and nestlings growth for Eastern Bluebirds?

Rising global temperatures due to climate change have caused declines in many species. For birds, temperature is a primary factor in nest site selection and nest success, so successful management will require temperature mitigation techniques. Secondary cavity nesting birds such as the Eastern Bluebird are particularly vulnerable as common occupants of nest boxes, which are often warmer inside than the outside ambient temperature. Temperatures exceeding 42°C can have numerous negative consequences for Bluebirds, including reducing hatching success and nestling growth. We monitored 50 Eastern Bluebird nest boxes (25 are painted white and 25 are unpainted) at Panola Mountain State Park in central Georgia during the 2022 and 2023 breeding seasons. Each nest box contained two temperature data loggers that recorded temperatures every hour, one inside and one on the underside. The daily high temperature in control boxes remained approximately 2°C warmer than outside while the daily high temperature in painted boxes remained approximately 2°C cooler. Control boxes also experienced significantly more hours over 42°C than painted boxes. Only three of 17 nesting attempts were successful, though all successful nests were in painted boxes. While we did not detect a significant relationship between success and temperature, this was likely because of low statistical power from a small sample size. Our aim for this project is to determine if nests experiencing temperatures above 42°C have lower nestling growth rates and nest success rates than nests that are cooler by isolating the effects of temperature as much as possible in the wild.