

# GRADUATE EXIT SEMINAR

**BRIAN TSURU**

## Post-breeding Ecology in the Prothonotary Warbler: Evaluating Trade-offs between breeding, molt, and migration phenology



The post-breeding period is a transitional stage of the annual cycle of migratory birds, linking the breeding season with migration to the non-breeding grounds. In this short period of time, migrants must finish breeding, undergo feather molt, and prepare for migration. These events may impose competing demands on migrants, potentially forcing birds to make trade-offs among them.

I assessed evidence of such trade-offs in the Prothonotary Warbler (*Protonotaria citrea*), a long-distance migrant and species of conservation concern. I monitored color-banded Prothonotary Warblers breeding in central Ohio, recording the timing of major events such as spring arrival, nest fledging, and the end of post-fledging care. I deployed radio-transmitters on focal adults (n=40) to track them throughout the post-breeding period and determine the timing of their migratory departure from the site. I assessed the timing of molt in a smaller number of individuals (n=17), and

found that many birds overlapped molt with parental care (i.e., an energetic trade-off between breeding and molt), with some evidence that birds caring for their offspring later in the season were more likely to overlap these life history stages. I also found that later-breeding individuals showed delayed fall departure dates, evidence of an additional, phenological trade-off between breeding and migration; analysis of carry-over effect pathways also indicated that these trade-offs manifest differently in male and female warblers. These findings demonstrate that Prothonotary Warblers make multiple trade-offs between breeding, molt, and migration in the post-breeding period, and have implications for how breeding season events can produce individual-level carry-over effects in subsequent stages of the annual cycle.

Advisor: Dr. Christopher Tonra

**Wednesday, April 12, 2023**  
**11:00 A.M.**

**Location:** Heffner Wetland Research and Education Building, Room 128

**Join the seminar via Zoom:**

<https://osu.zoom.us/j/94476326625?pwd=bWZGVk1QZFVhcHRNamc3anQ2OWNsdz09>

Meeting ID: 944 7632 6625

Password: 332960

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