

GRADUATE EXIT SEMINAR

AARON SKINNER

Using GPS-Tracking to Fill Knowledge Gaps in the Full Annual Cycle of an Elusive Aerial Insectivore in Steep Decline



Migratory bird populations can be limited by events in disparate parts of the world. An understanding of basic migratory and winter ecology is critical for a full annual cycle approach to the conservation of rapidly declining species. The Eastern whip-poor-will (hereafter, whip-poor-will) is a rapidly declining (70% from 1966-2016) nightjar, yet data remains elusive for the species outside of the breeding season. We extracted data from 52 archival GPS tags and satellite imagery from individuals tagged across the Midwestern U.S. to understand large-scale migratory movements and space/land use on the wintering grounds. Whip-poor-wills from across a large latitudinal gradient came together in eastern Texas in early October, resulting in increasing spatiotemporal overlap throughout migration. Migratory connectivity was low ($MC = 0.22 \pm 0.12$), with core wintering areas located in southern Mexico and Guatemala. We also examined predictors of home range size at three spatial scales, and found that forest fragmentation in the site and the presence of agriculture in the home range were positively related to home range size. The fragmentation of forest (particularly by agriculture) may force whip-poor-wills to occupy larger home ranges, potentially limiting the carry capacity of winter habitat or reducing body condition as they prepare for spring migration and the breeding season. The high spatiotemporal overlap of geographically dispersed breeding populations during other phases of the annual cycle suggests that non-breeding season conditions regulating populations (both positively and negatively) will affect individuals from across the breeding range. This work fills important knowledge gaps regarding the whip-poor-will annual cycle, and highlights the importance of a full annual cycle approach to conservation of migratory species.

Advisor: Dr. Chris Tonra

**THURSDAY, JUNE 24, 2021
12:00 P.M.**

Join the seminar via Zoom:

<https://osu.zoom.us/j/92990891027?pwd=S1psLzB4dGF2VGF5WjJVcElrSFEyZz09>**senr.osu.edu****THE OHIO STATE UNIVERSITY**COLLEGE OF FOOD, AGRICULTURAL,
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