

Spatial Ecology of the Common Nighthawk (*Chordeiles minor*) in the Halifax Backlands

Madeleine Kurtz

Supervised by Dr. Cindy Staicer & Dr. Boris Worm
Department of Biology, Dalhousie University



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Motivation

- The Common Nighthawk is migratory bird Species at Risk that has historically been observed in the Halifax Backlands.
 - Federally listed as 'Special Concern'.
 - 68% decline in Canada since 1970¹.
- The Halifax Backlands hosts a post-fire landscape and numerous wetlands, providing ideal breeding and foraging grounds for the species. However, it faces persistent threat of encroachment by development.
- Improved knowledge on the Backland's nighthawk population is important for the conservation and management of both the land and the species.

Research Objectives

- Examine **seasonal** and **diurnal** trends in nighthawk activity.
- Determine the **spatial distribution** of nighthawk activity and investigate how it is influenced by habitat characteristics.
- Develop Beneficial Management Practices (BMPs) for local nighthawk conservation in the Halifax Backlands.

Field Methods

Autonomous Recording Units (ARUs)

- Detect nighthawk vocalizations and 'wing-booms'.
- Deployed at 3 season-long sites and 18 short-term sites.

Visual Surveys

- Conducted at 39 stratified-random sites across the Backlands.
- Count nighthawks, map locations, record behaviour.



Spatial Distribution



Fig. 1. Visual nighthawk observations. Kernel density of nighthawk observations collected from visual surveys.

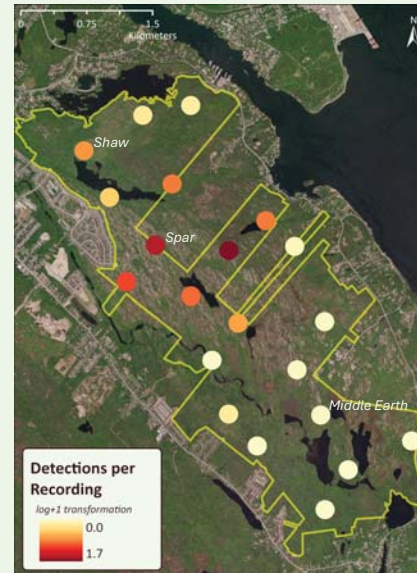


Fig. 2. Auditory nighthawk observations. Average detections per 10 min recording (log+1 transformed), collected with ARUs.

Diurnal Trends

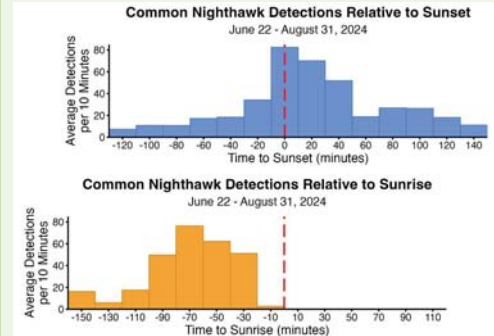


Fig. 4. Diurnal nighthawk trends. Average nighthawk detections relative to sunset and sunrise. Collected with ARUs at site Spar.

Summary

- Both visual and auditory observations indicate that nighthawks are most frequent in the northern Halifax Backlands.
- Nighthawk breeding season occurred from mid-May to late-August.
- Nighthawk vocal activity peaks at sunset and an hour before sunrise.
- Information on spatial distribution and duration of breeding season is important for informing BMPs.

In Progress

- Examine 'wing-boom' auditory detections to estimate breeding grounds.
- Investigate the influence of environmental characteristics on nighthawk spatial distribution using a GLMM.
- Develop BMPs in collaboration with the Backlands Coalition.

Seasonal Trends

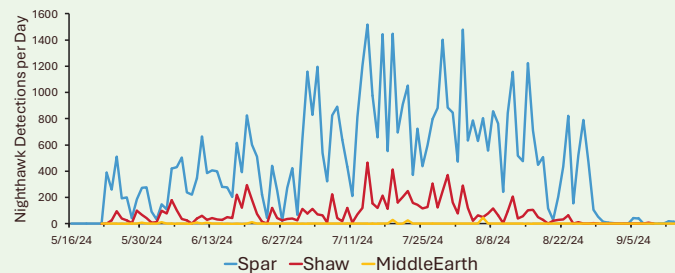


Fig. 3. Seasonal nighthawk trends. Daily nighthawk detections at the season-long sites, collected with ARUs.

Literature Cited

¹ COSEWIC. 2018. COSEWIC Assessment and Status Report on the Common Nighthawk (*Chordeiles minor*) in Canada 2018. Committee on the Status of Endangered Wildlife in Canada.

Acknowledgments

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