



Sarah Fensore  
Maine, USA

# Identifying Key Roost Sites & Their Connectivity for Swallows

Aerial insectivores, a guild of birds that forage for insects on the wing, are experiencing severe population declines in North America. To address these declines, key habitat like roost sites must be identified for conservation.

## STUDY OBJECTIVES

My study will explore the roosting ecology of two species of aerial insectivore that are experiencing severe population declines in northeastern Canada: Barn Swallow (*Hirundo rustica*) and Bank Swallow (*Riparia riparia*).

Roost sites are important habitat areas for these communally roosting species, but little is known about movement between roosts. Identifying key roost sites and understanding how swallows use them is a high conservation priority.

I will use automated radio telemetry to gather movement data during the breeding and post-breeding seasons in eastern New Brunswick.

I plan to analyze the movement data to 1) identify roost sites within the study area, 2) use graph-theory based social network analysis to determine whether the roost sites form a network, and 3) analyze the potential roost site network to determine which sites are most important to the integrity of the network.

## METHODS & TIMELINE

In the spring/summer of 2021 and 2022 I will radio-tag Barn and Bank Swallows around the wetlands of eastern New Brunswick. Signals from the tags will be picked up by an array of stationary receiver towers in the area.

I will then analyze these data using social network analysis (SNA) to determine which nodes (roost sites) have the most links to other nodes in the network. I will also experiment with analytically removing nodes from the network to determine the significance of their loss on the roost network as a whole.

I expect to complete my thesis by fall/winter of 2022.



Supervisor: Dr. Joe Nocera

Advisory committee: Dr. Graham Forbes (UNB), Dr. Laura Tranquilla (Birds Canada), and Dr. Tara Imlay (Environment and Climate Change Canada)

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