

Goals & Hypotheses

- Compare seasonal and daily differences in whip-poor-will (*Antrostomus vociferus*) calling patterns during the breeding season on sandstone pavement barrens.
 - We predicted whip-poor-will calling would peak during early June and in late evening hours. Calling patterns would be similar on both barrens.
- Use passive acoustics to evaluate differences in avifaunal diversity differences within the Altona Flat Rock and Gadway barrens.
 - Avifaunal communities would be similar at both barrens.



Whip-poor-will (*Antrostomus vociferus*)

- Whip-poor-wills belong to the Nightjar family and are nocturnal insectivores.
- Reproduction is closely tied with the lunar cycle, so eggs are hatched days before a full moon making foraging easier for adults.

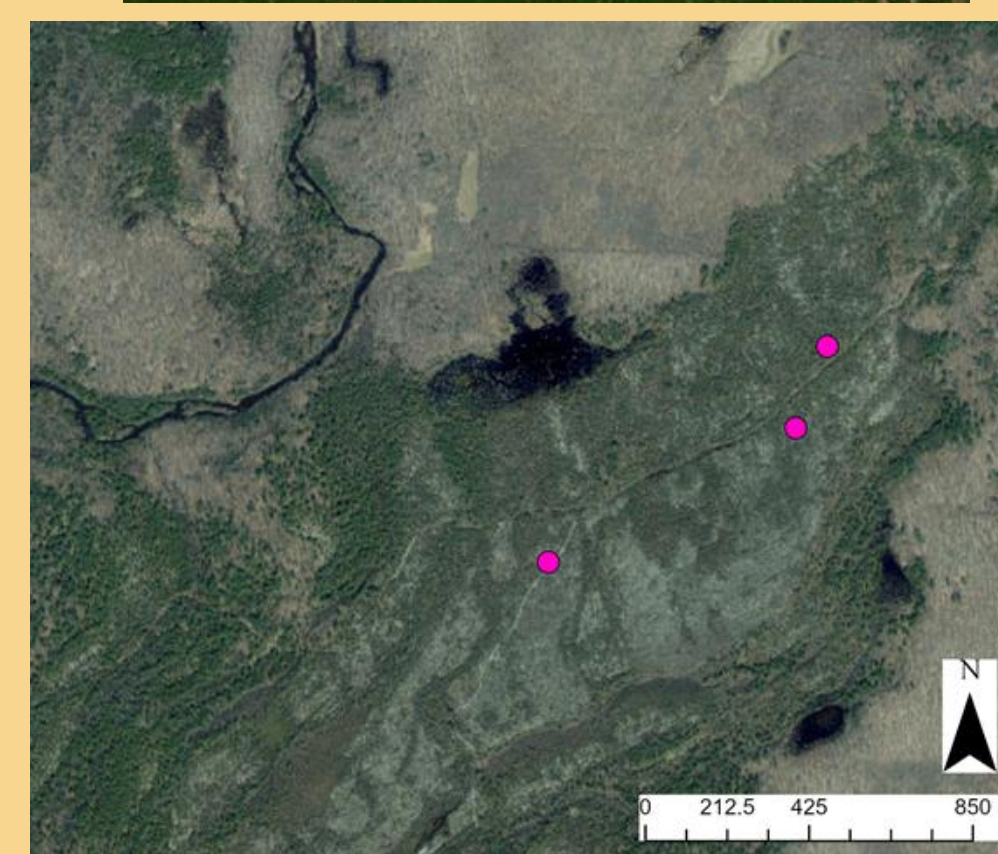
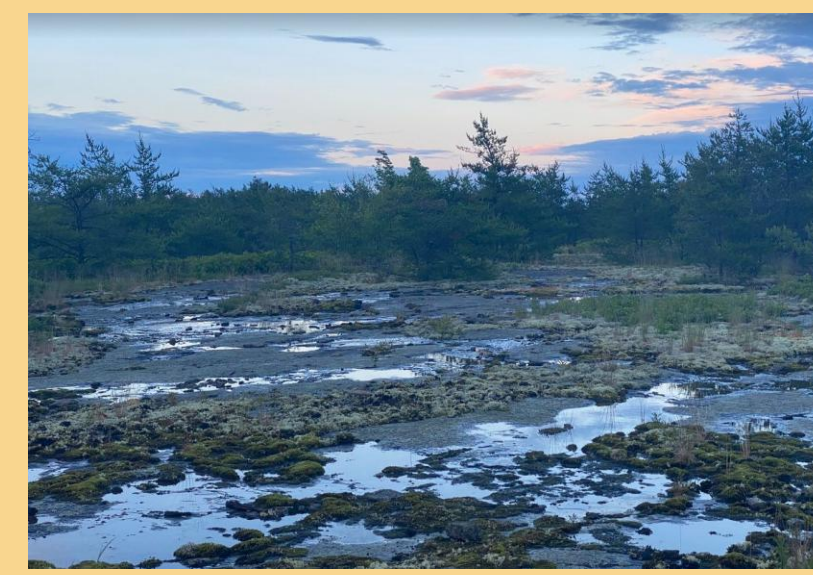
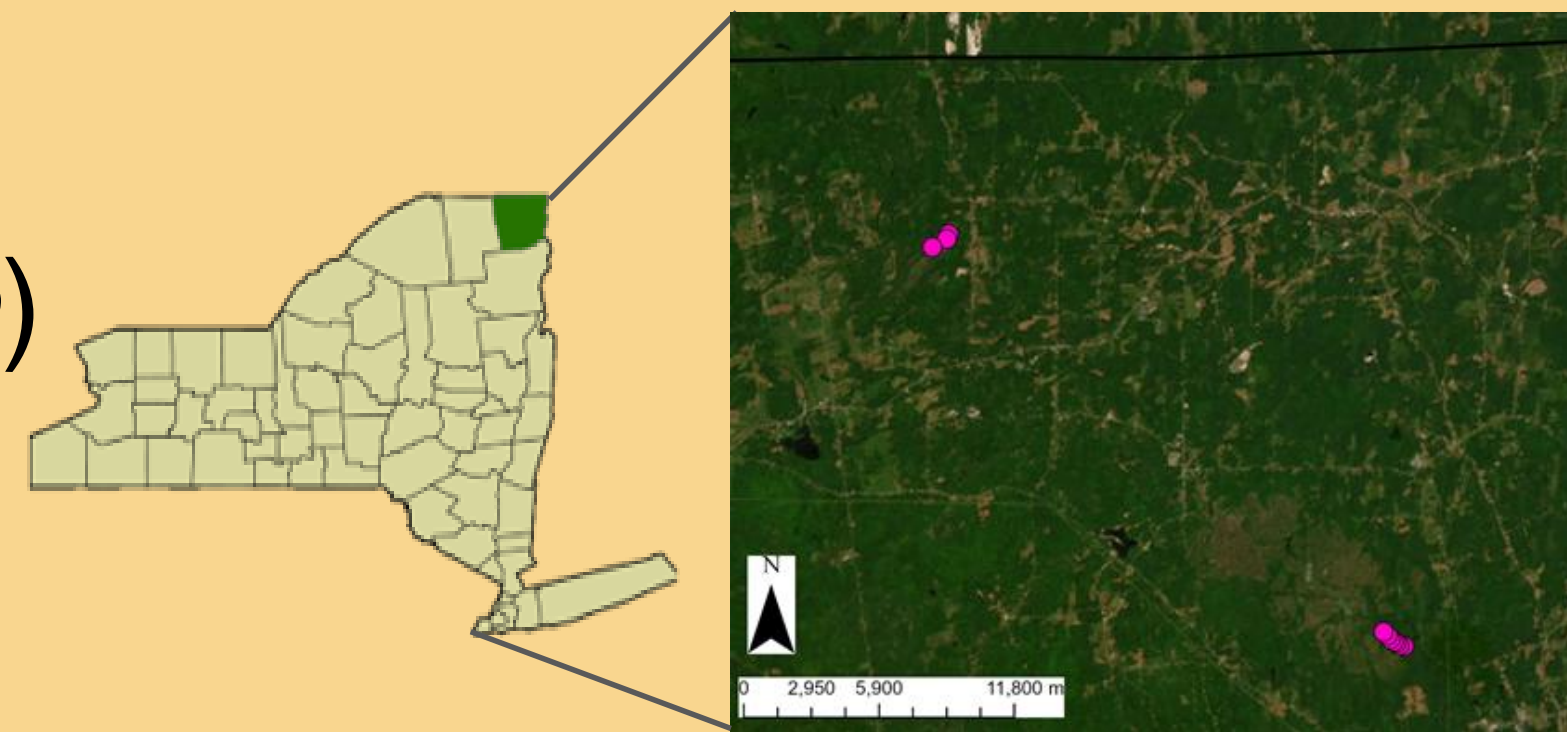
Study Impetus:

- Since the 1970s, this species has been declining and is listed as a species of special concern (IUCN Red List). Threats include land-use change and insect decline.



Study Areas

Sandstone pavement barrens are rare
Shallow soils, jack pine (*Pinus banksiana*)
dominated
<20 globally
5 or less in NY



Methods

Duration: May-July 2025

- 10 autonomous recording units (ARUs) (Audiomoth, Open Acoustic Devices)
- Recording period 7:00pm-9:00am

Soundscape Analysis:

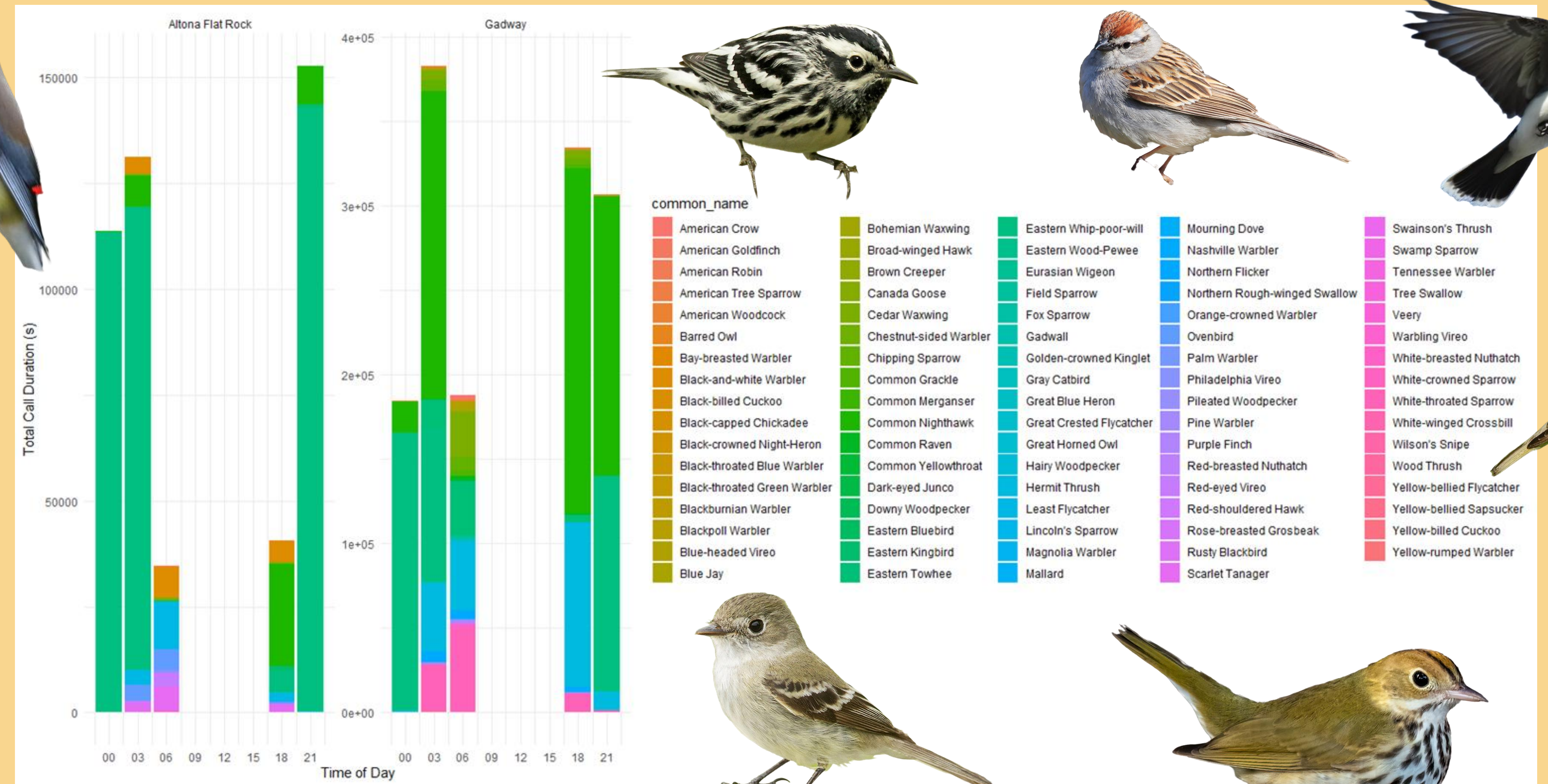
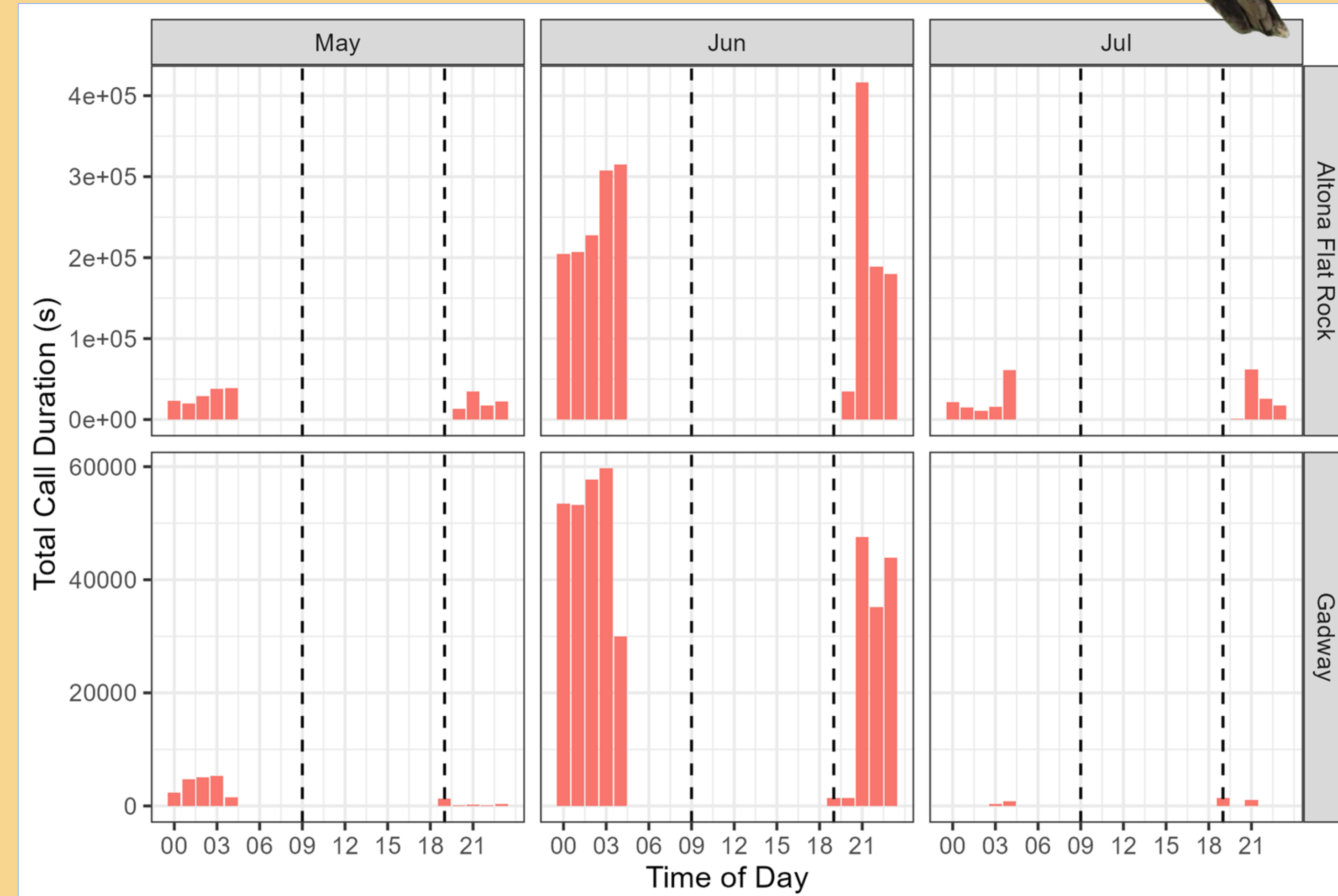
- BirdNet Analyzer algorithm to ID birds with 0.7-0.8 confidence to minimize false calls



Findings

- Whip-poor-will call duration was greater at the Flat Rock than Gadway barrens during the breeding season.
- Patterns of calling are similar at both barrens.
- Bird call durations:
 - longer in June than May or July.
 - peak at 9pm and 3-4am
- Bird diversity was similar at both barrens.
- Common nighthawks are as active as whip-poor-wills

Soundscape



Altona Flat Rock Birds

- Black-and-white warbler
- Least flycatcher
- Ovenbird
- Scarlet tanager
- Red-eyed vireo
- Eastern kingbird



Key habitat: Mature forest, water source

Gadway Birds

- Chipping sparrow
- White-throated sparrow
- Eastern towhee
- Hermit thrush
- Nashville warbler
- Cedar waxwing



Key habitat: Understory with patchy dense shrub and edge

Take Homes & Future Studies

- Compare duration of calling as it relates to moon phase and sunrise/sunset.
- Compare barrens whip-poor-will calling patterns to those at agricultural and recently disturbed (e.g., logging, fire) habitats.
- Explore if population estimates are possible by calibrating point counts to simultaneous soundscape recordings.
- Evaluate diel activity of common nighthawks at the barrens.
- We hope to better inform future researchers planning to continue monitoring this species so they can achieve greater capture success.



Listen to a call

