

# Tracking birds across the full annual cycle



Emily Shertzer and Katie Schabron  
Cheyenne-High Plains Audubon Society, October 2023







# Historically, it's been difficult to study the full annual cycle



Scott Altenbach



Gail Hampshire



Charles Sharpe



Mdf



Donald Eff



US Fish and Wildlife Service



# Why study the full annual cycle?

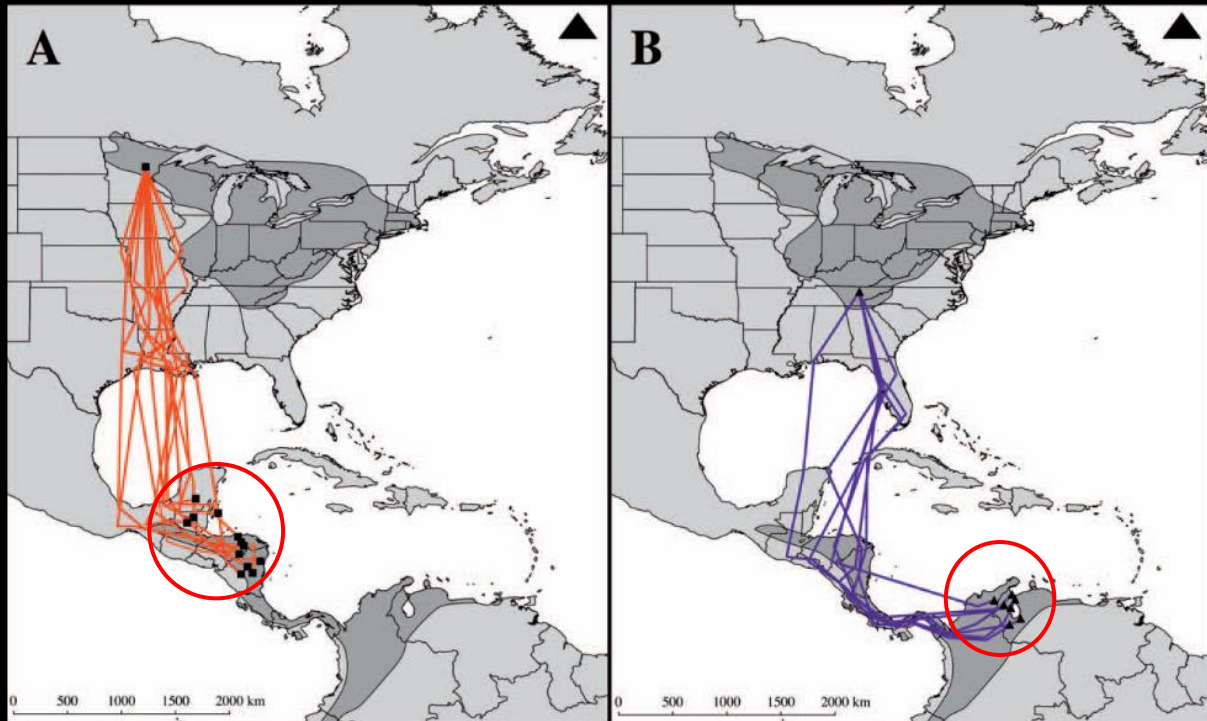


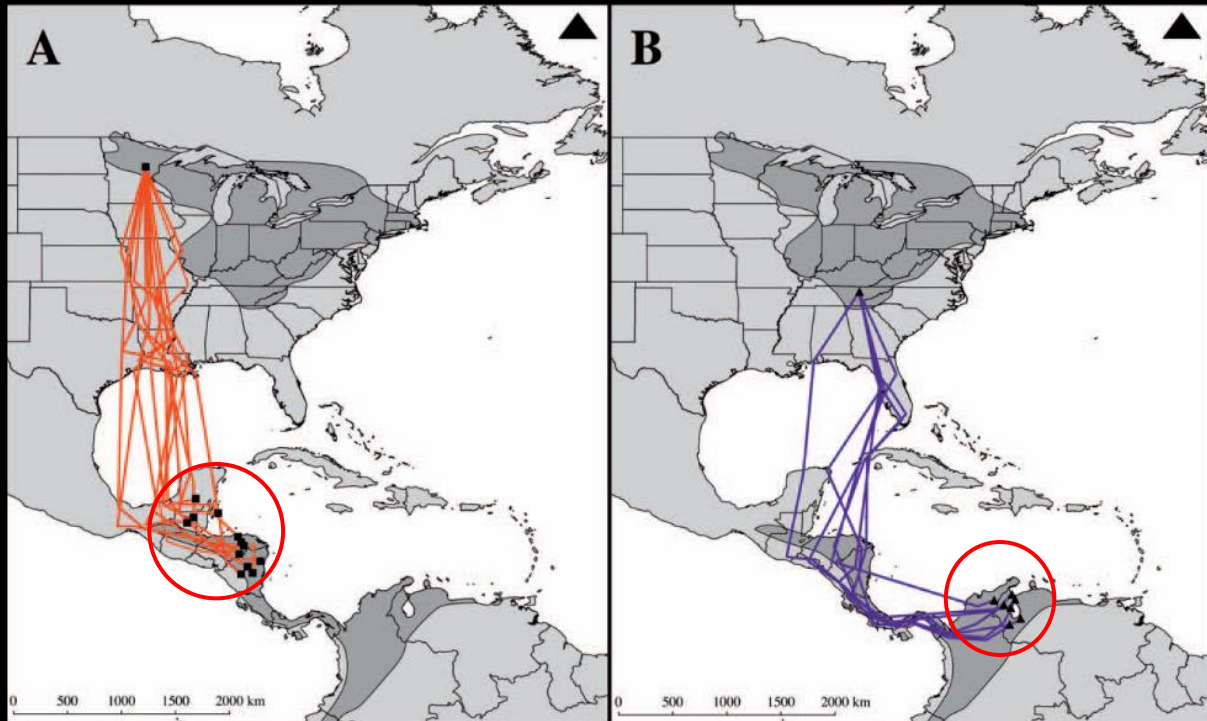


Figure 1 consists of two panels, A and B, and a photograph. Panel A is a map of the Great Lakes region with a black dot in the western part of Lake Michigan and several red lines radiating from it. Panel B is a similar map but with a black triangle in the upper right corner. The photograph on the right shows a Yellow-rumped Warbler perched on a branch, with its beak open as if singing. The bird has a yellow crown, a black throat, and yellow and black plumage on its back and wings.





# Why study the full annual cycle?





A close-up photograph of a young bird, possibly a sparrow or similar small species, nestled within a dense thicket of dry, brown twigs and branches. The bird has brown and white streaked plumage and a large, dark, prominent eye. The text "Study System" is overlaid in white, sans-serif font across the center of the image.

# Study System



# Study System



Brewer's sparrow



Sagebrush sparrow

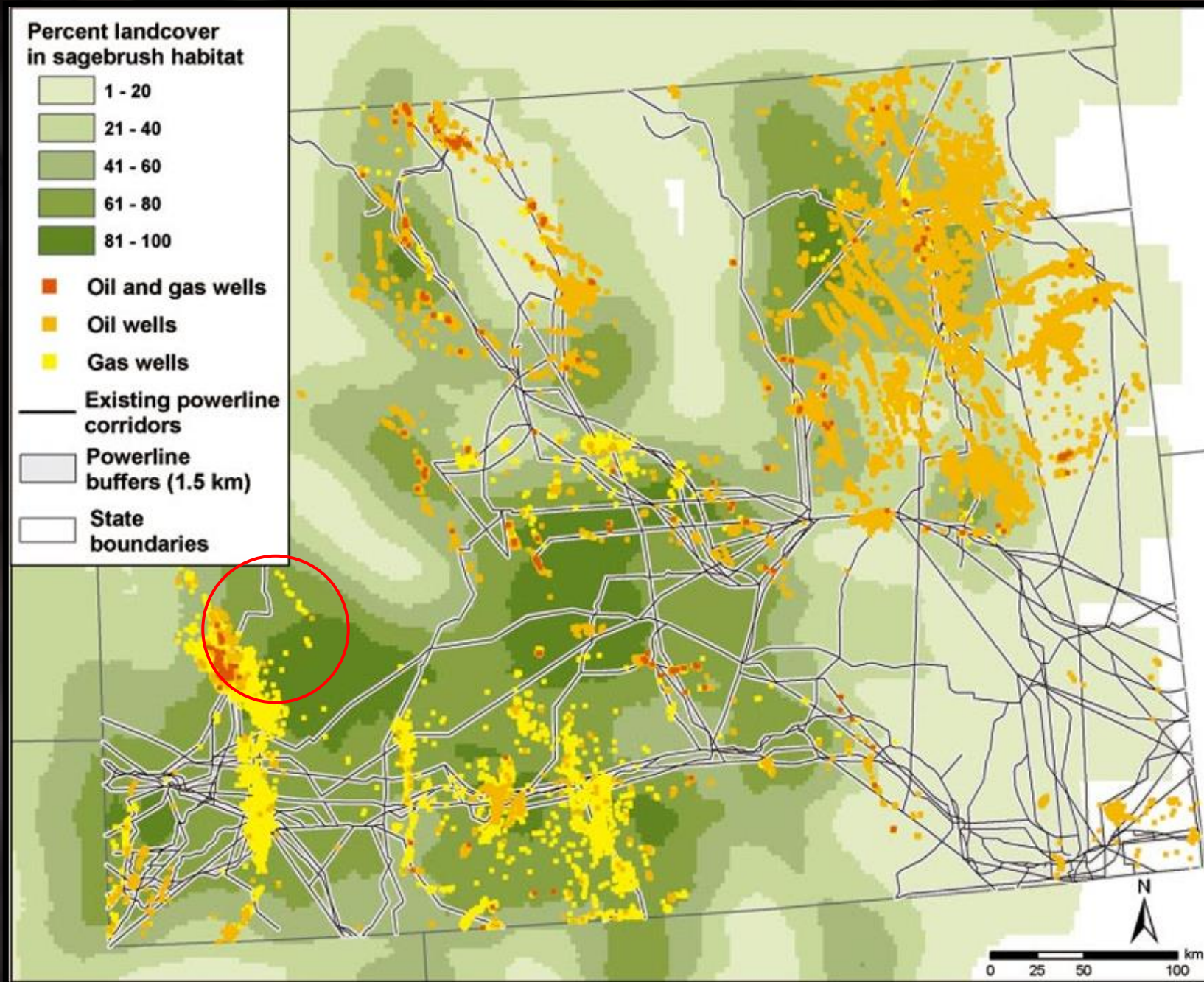


Sage thrasher

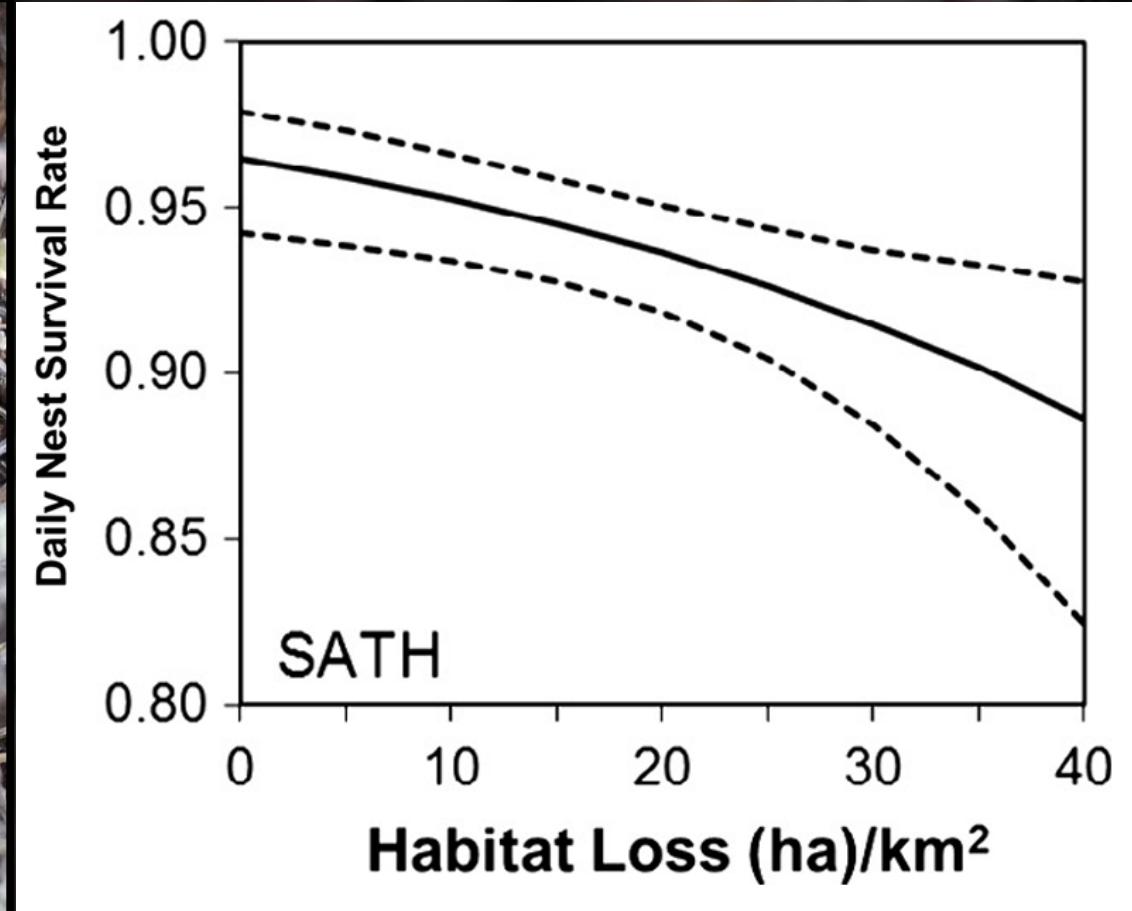




# Study System



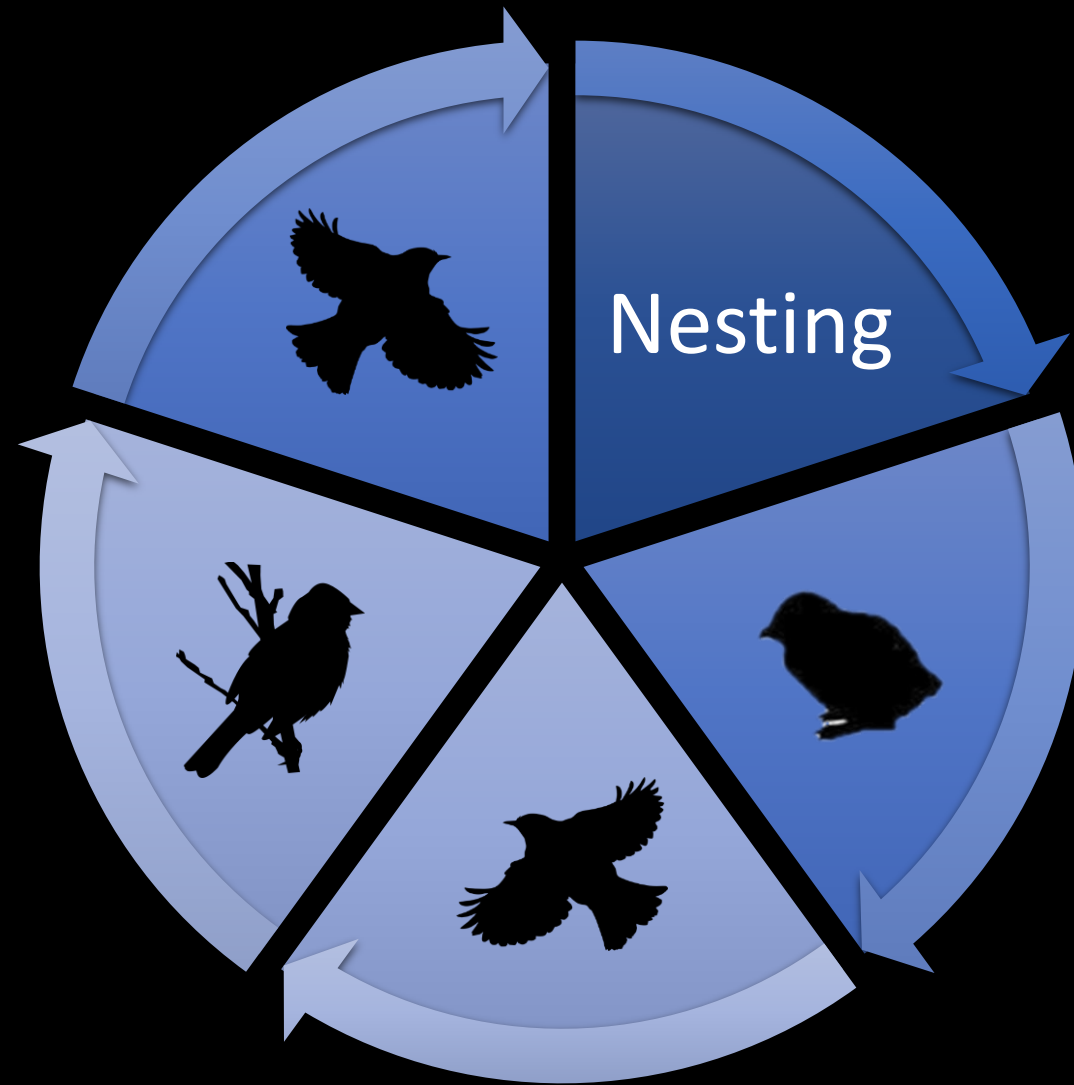




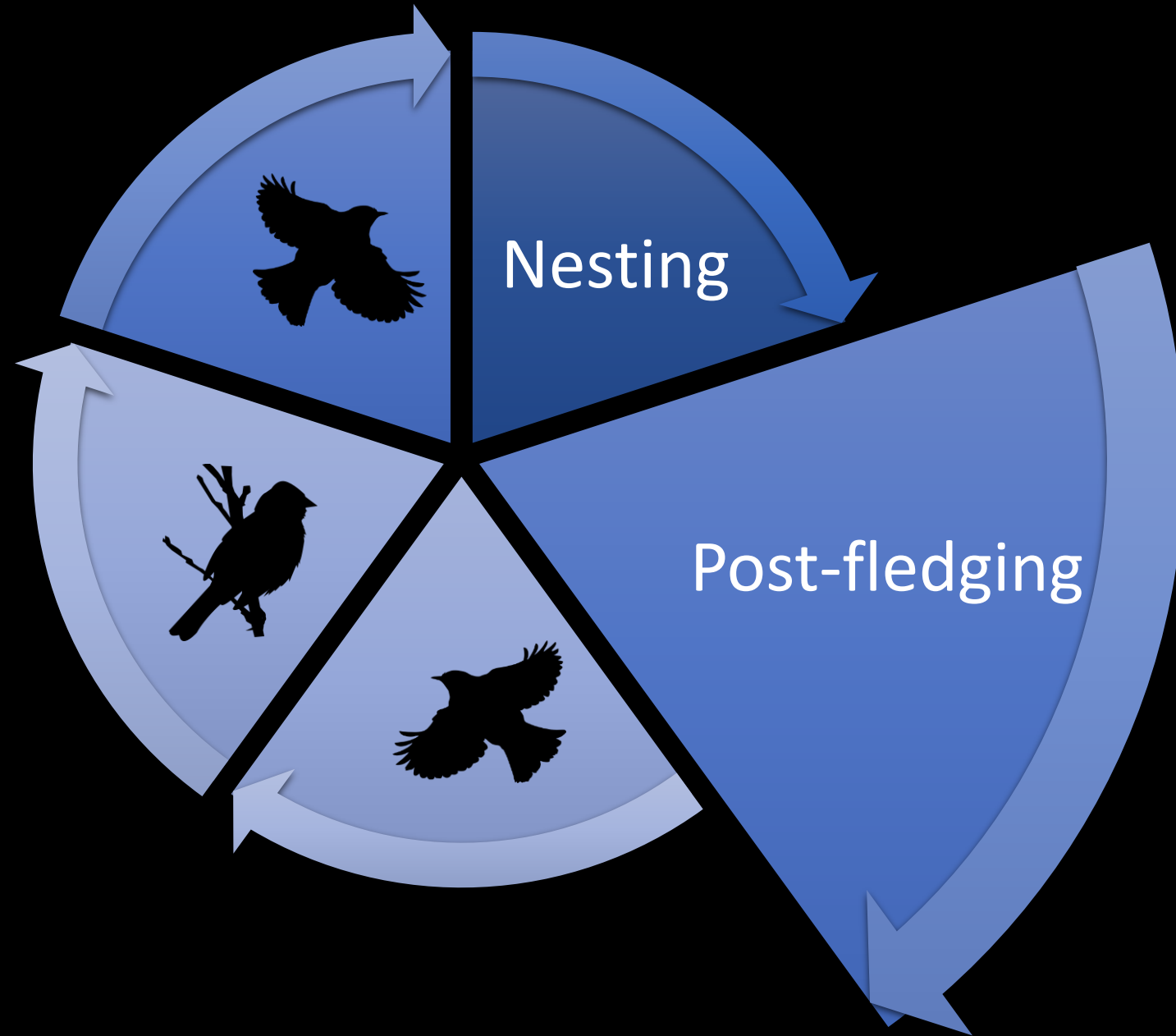


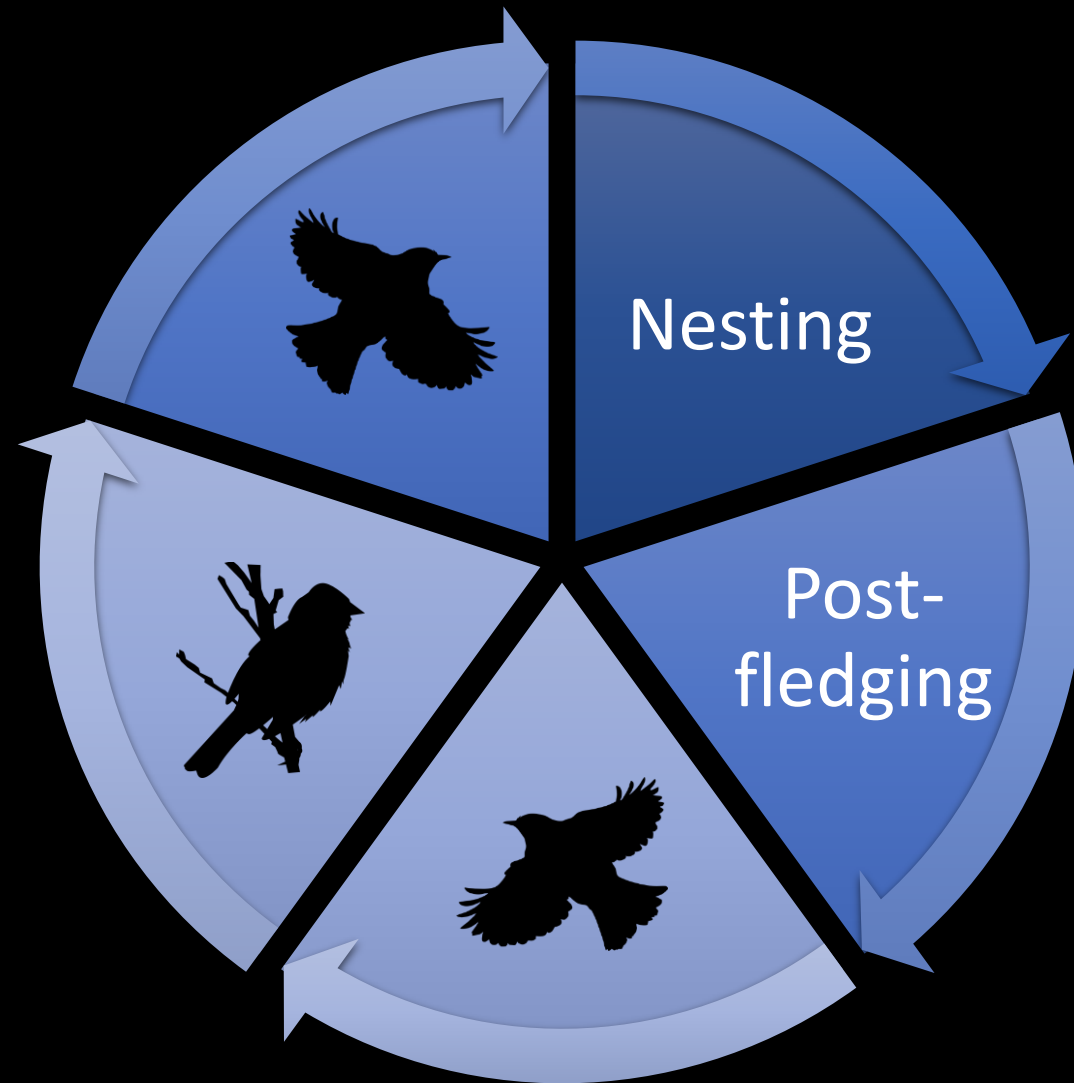


26/5/86/26  
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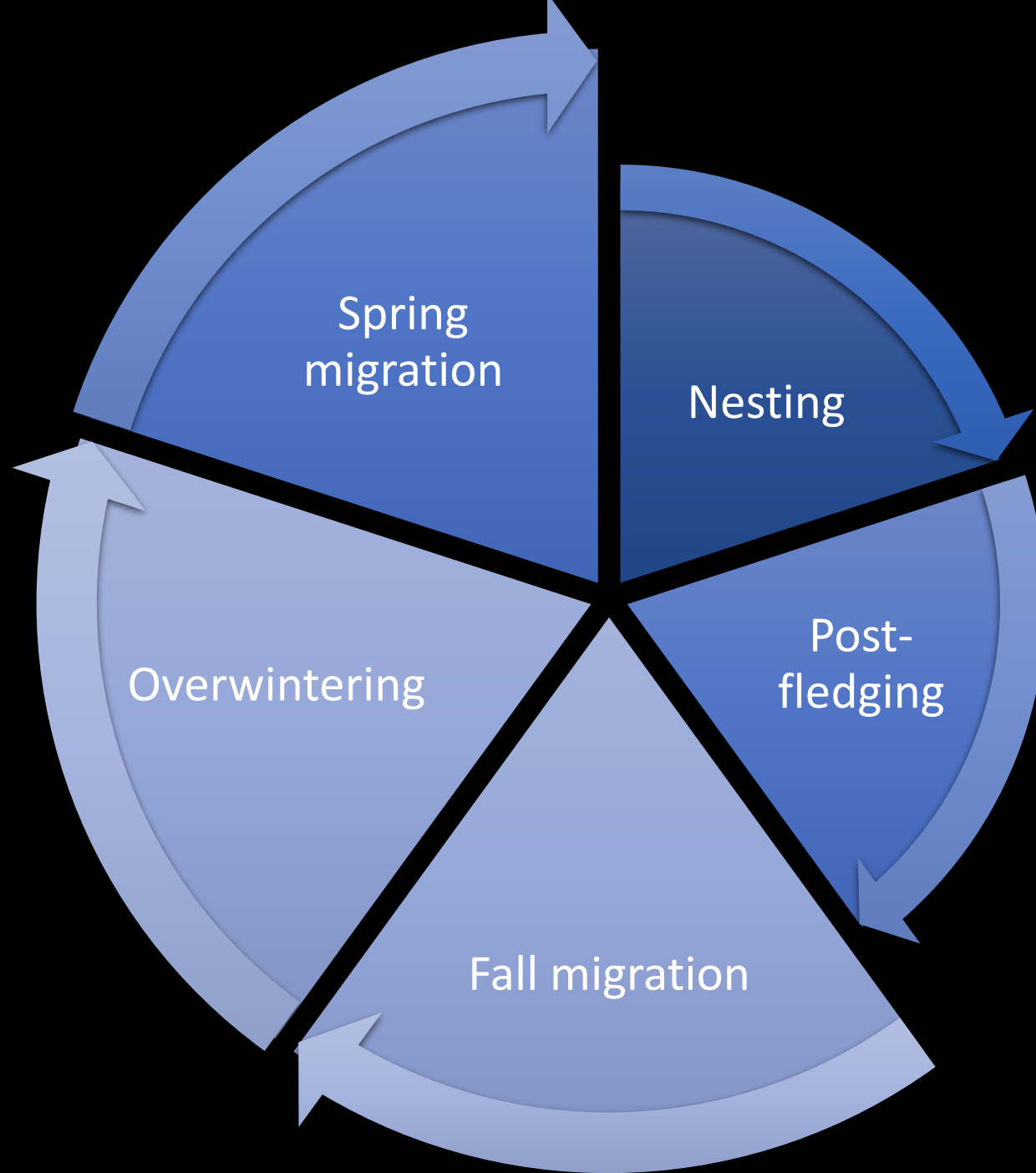








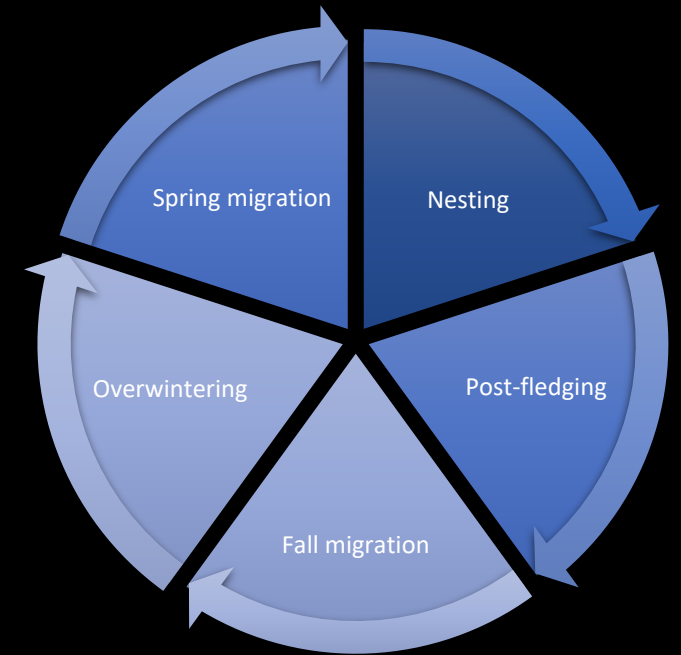




1) Use radio telemetry to investigate mortality during the post-fledging period

2) Track birds during and outside of the breeding period using a collaborative automated radio telemetry network

3) Document migratory routes and overwintering sites with light-level geolocators























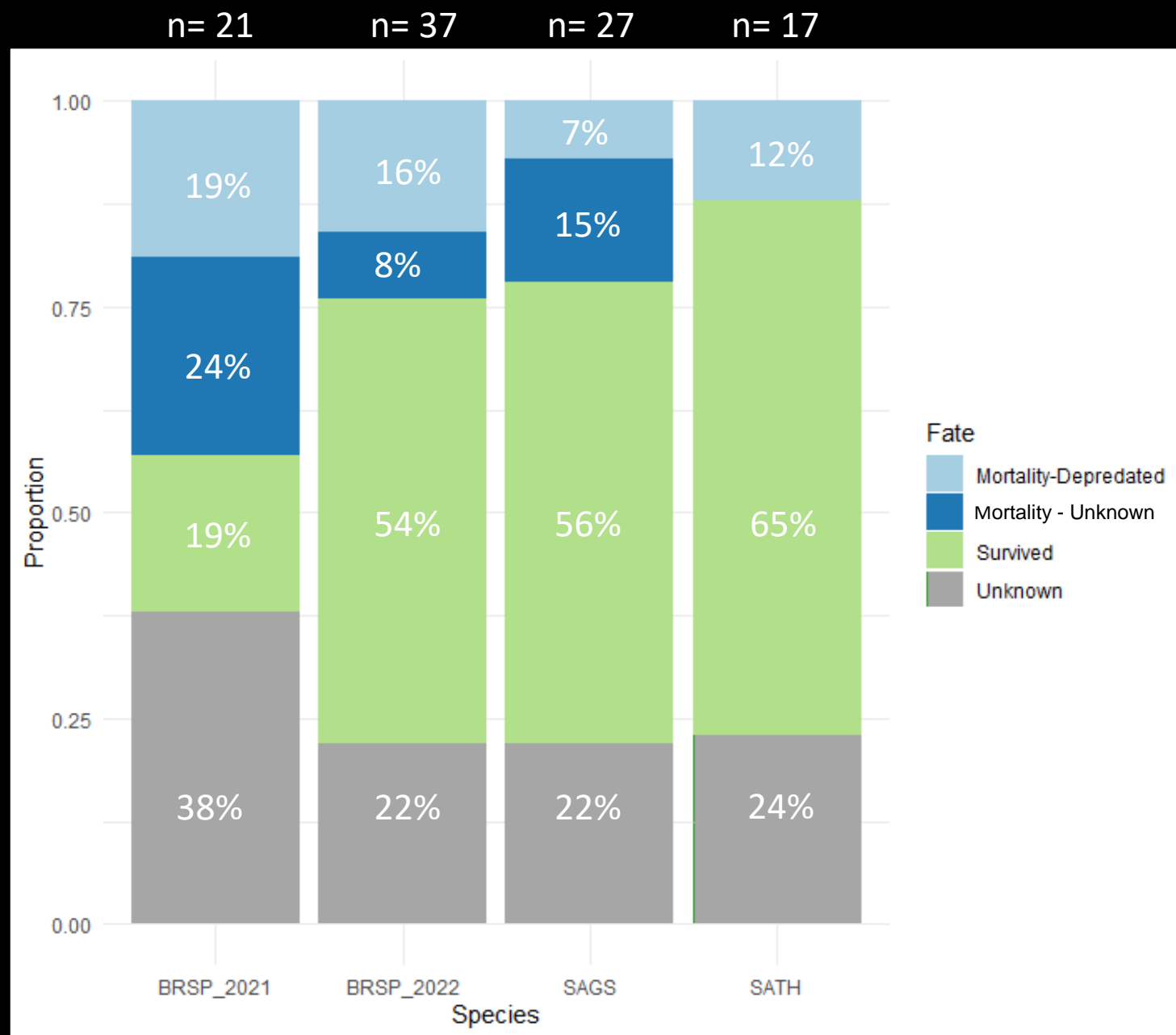


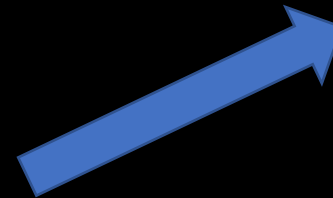
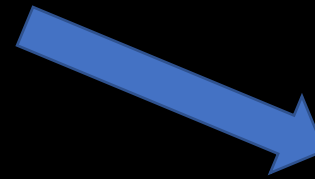




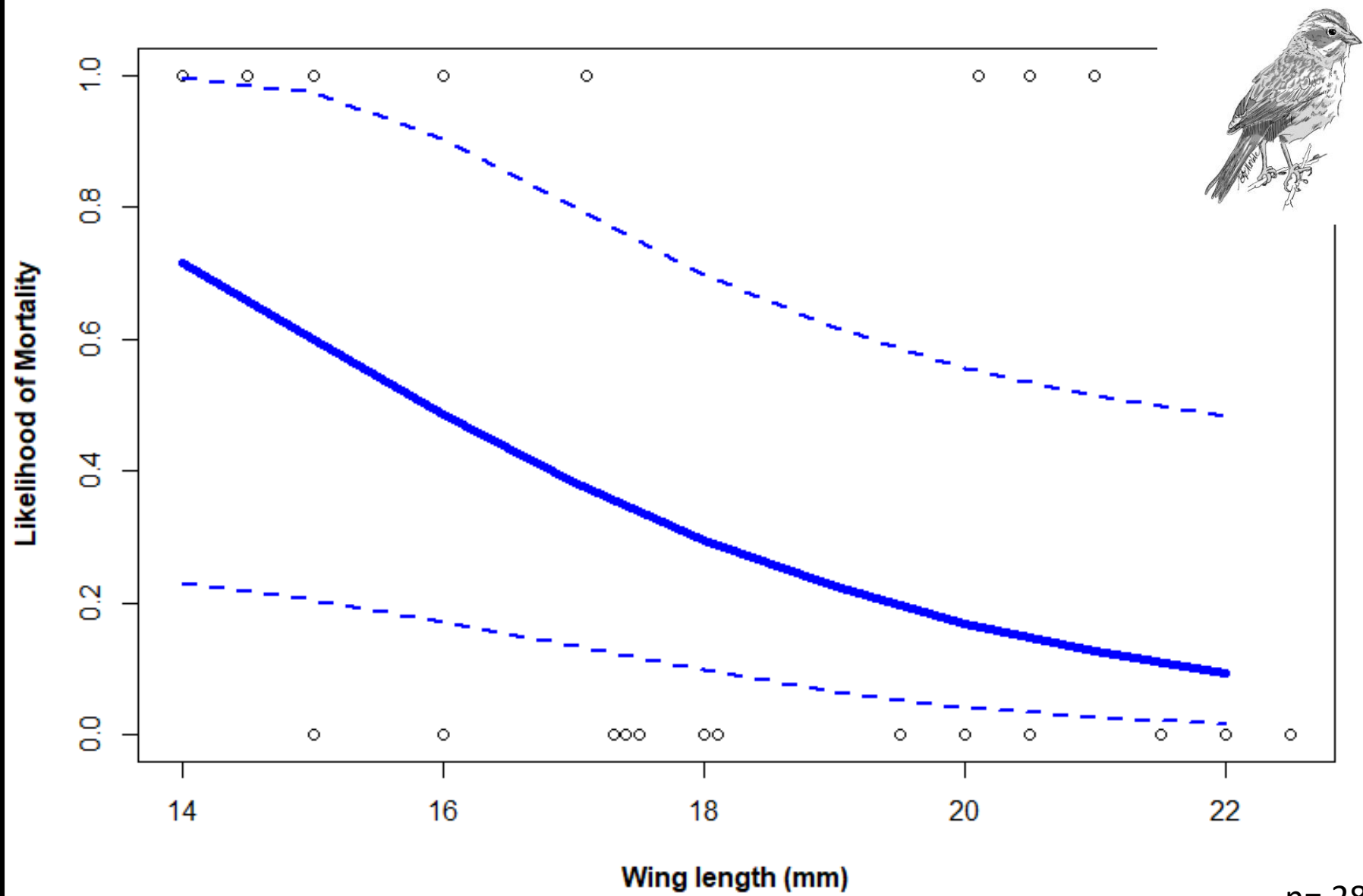






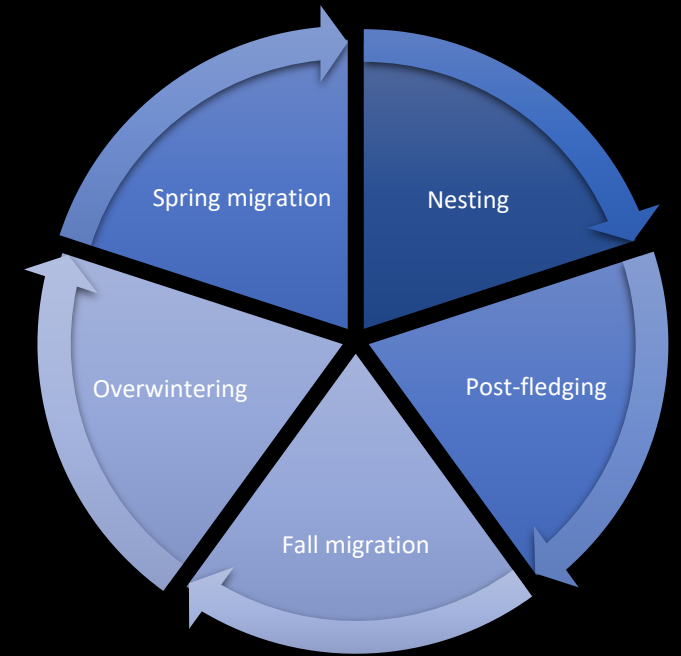






n= 28

- 1) Use radio telemetry to investigate mortality during the post-fledging period
- 2) Track birds during and outside of the breeding period using a collaborative automated radio telemetry network
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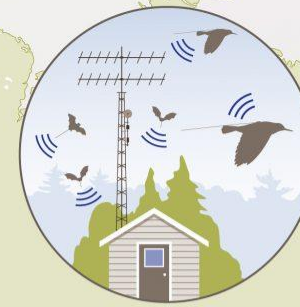




# A collaborative research network tracking wildlife movement for conservation



Radio tags are put on animals.



Stations collect data from tags.



Data are processed and used for research and conservation.



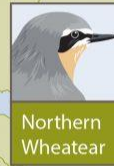
Red Knot



Monarch Butterfly



Silver-haired Bat



Northern Wheatear



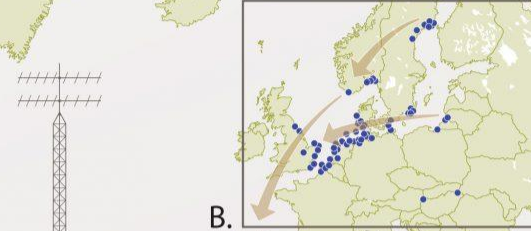
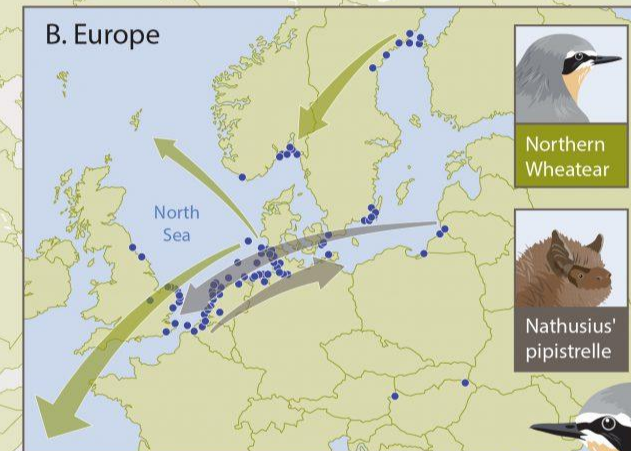
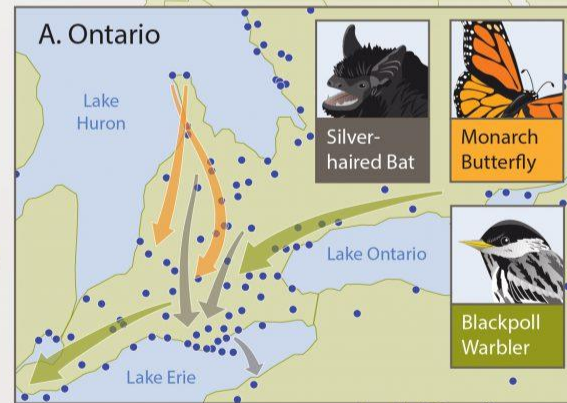
Nathusius' pipistrelle



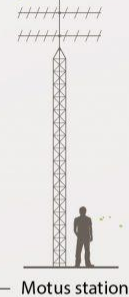
Darner



Northern Wheatear

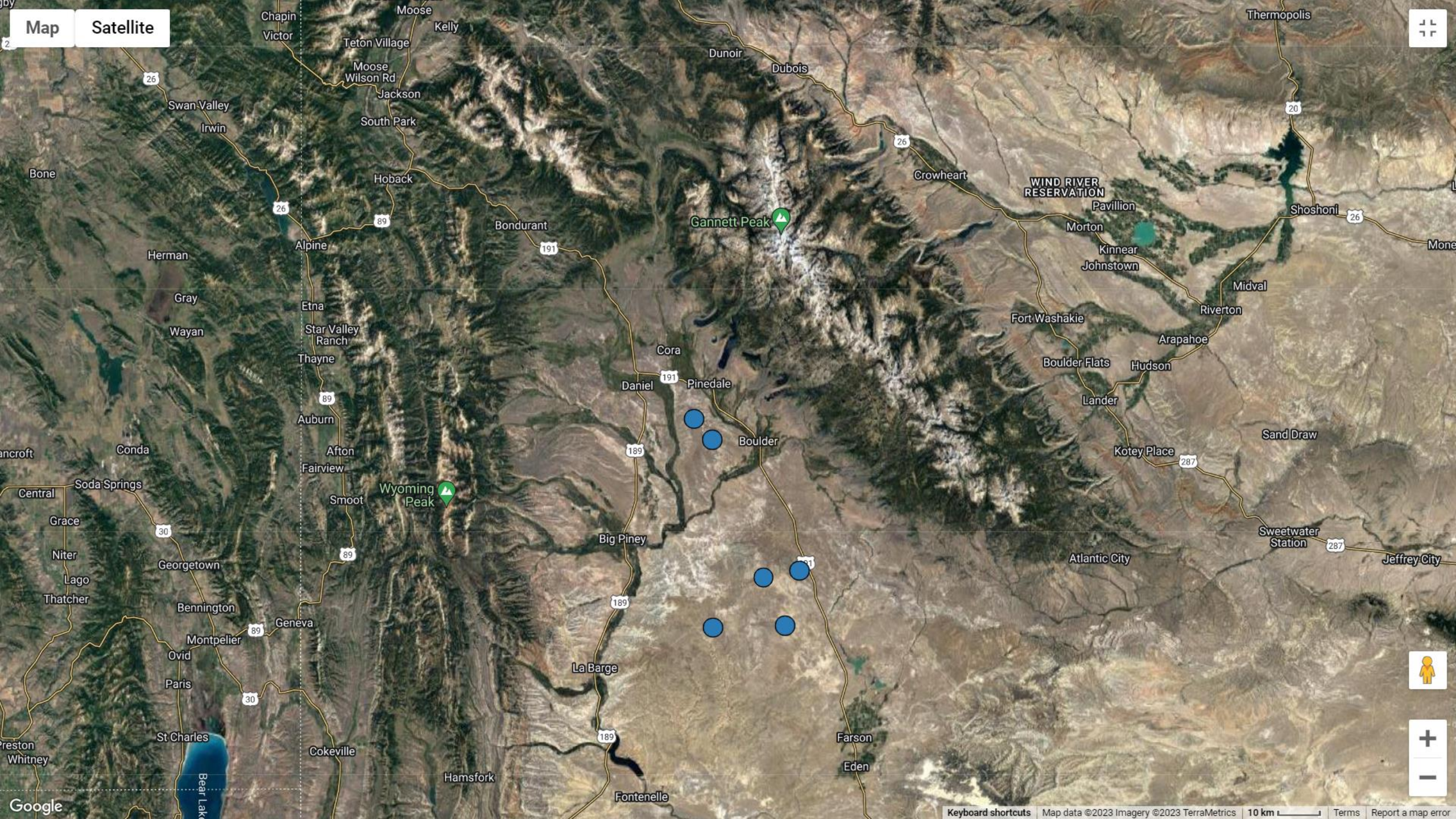


B.

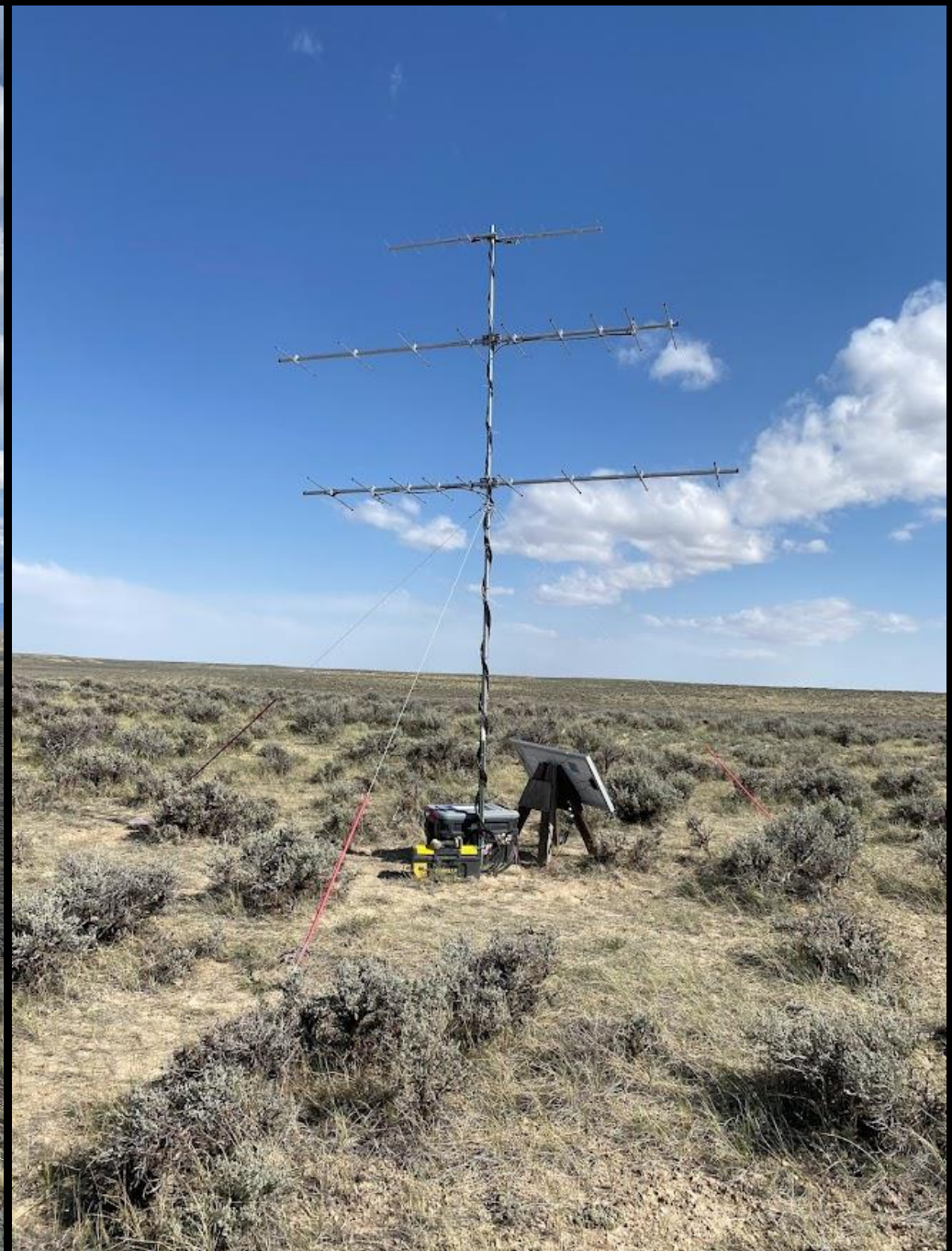


Motus station









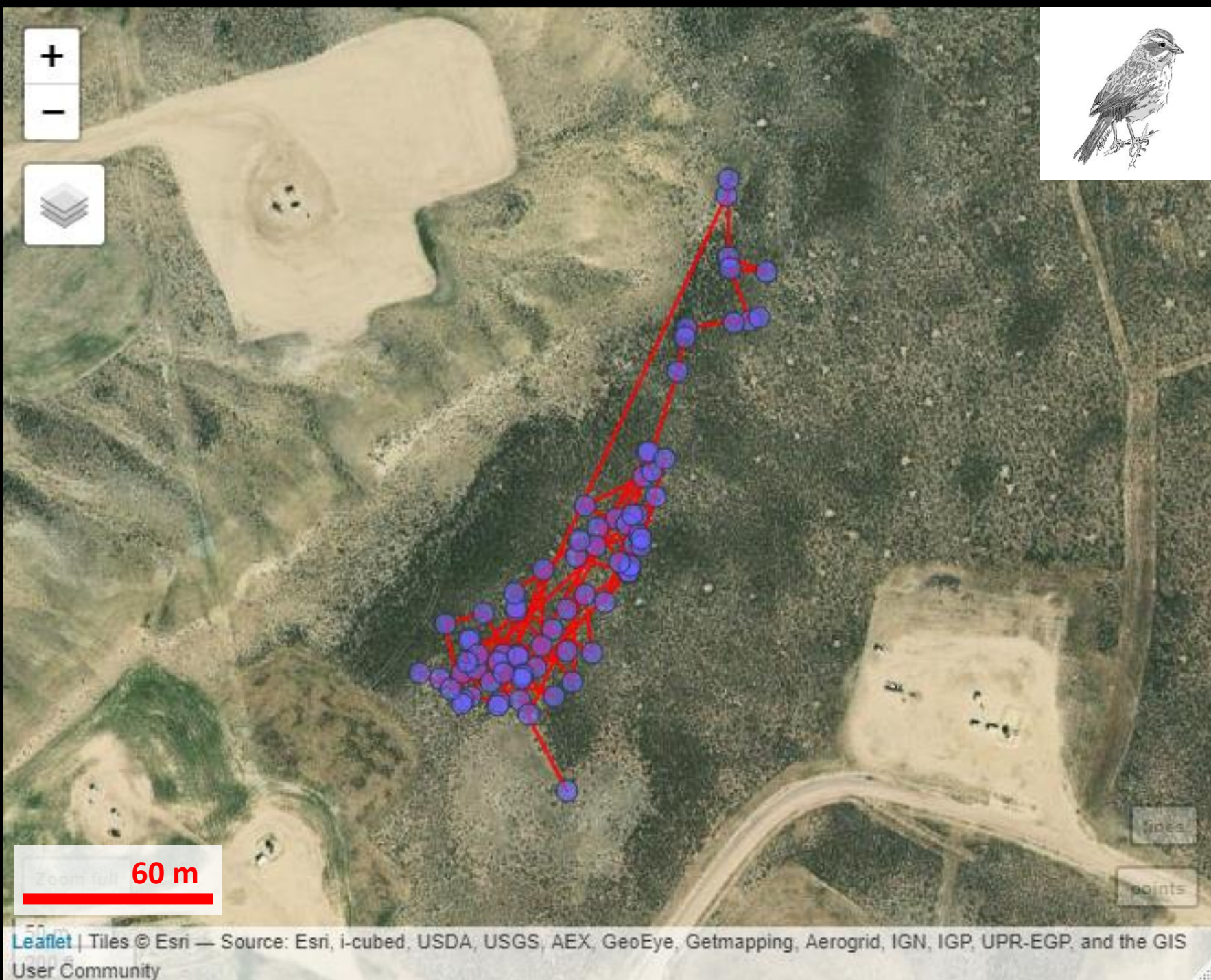






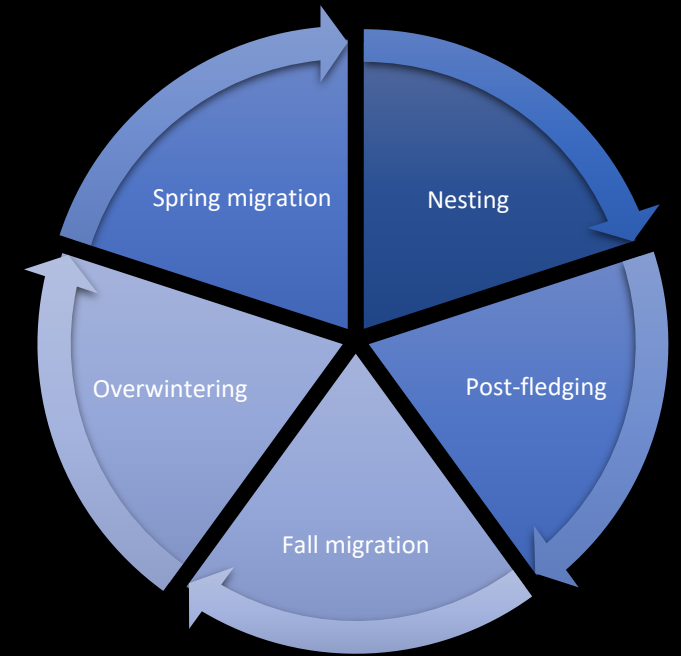








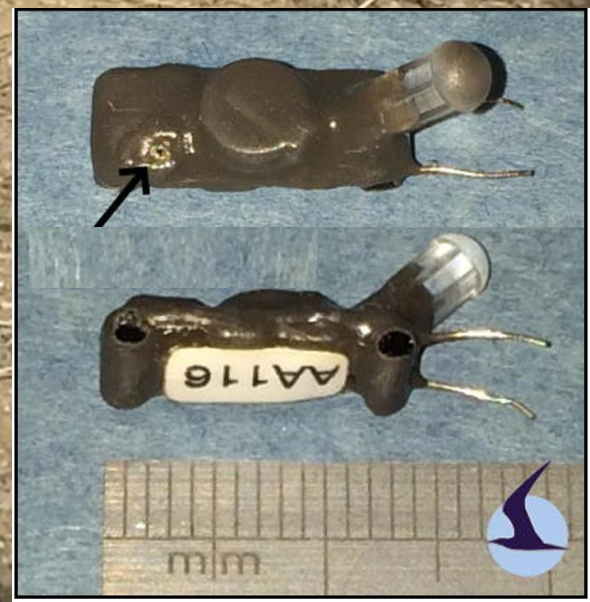
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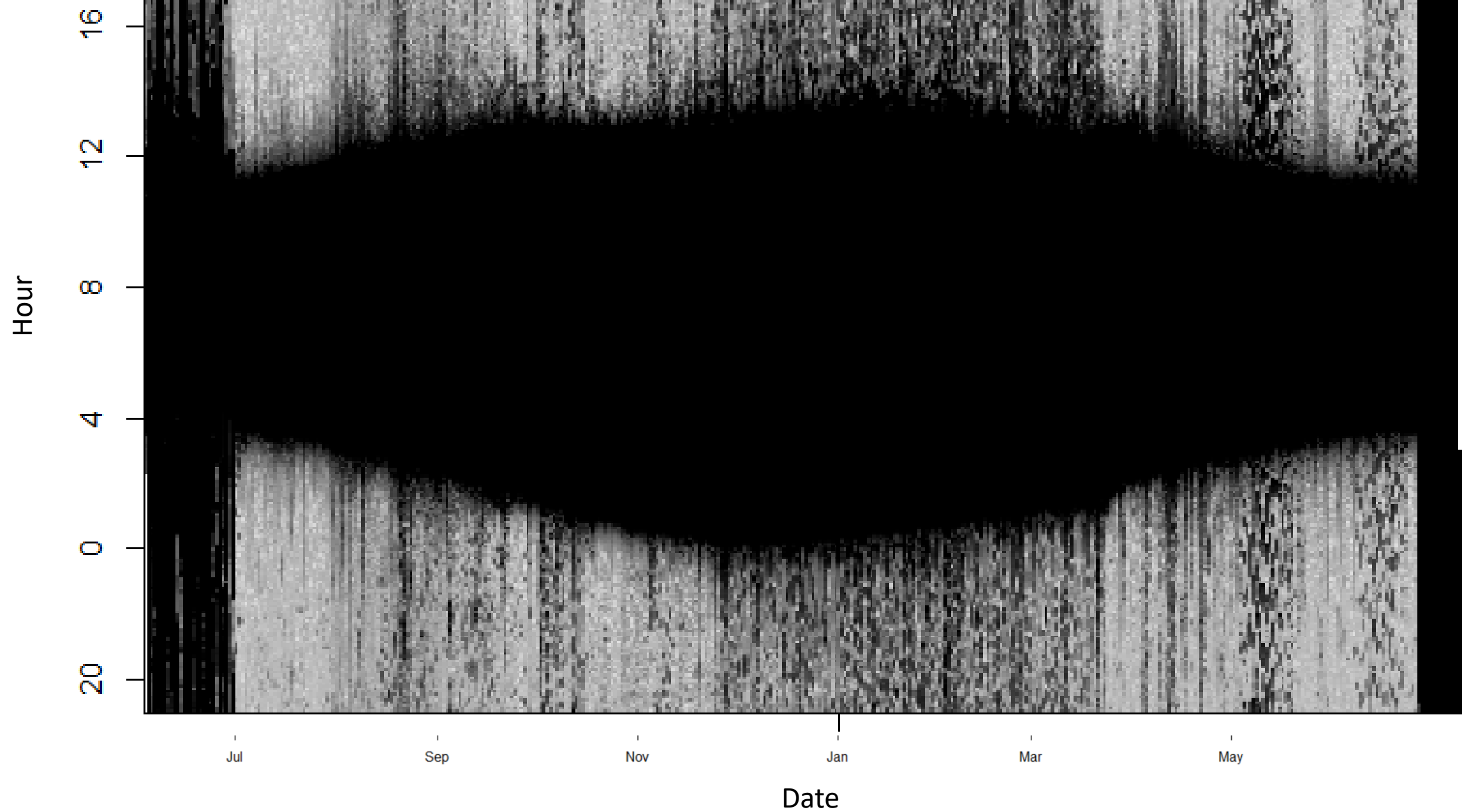




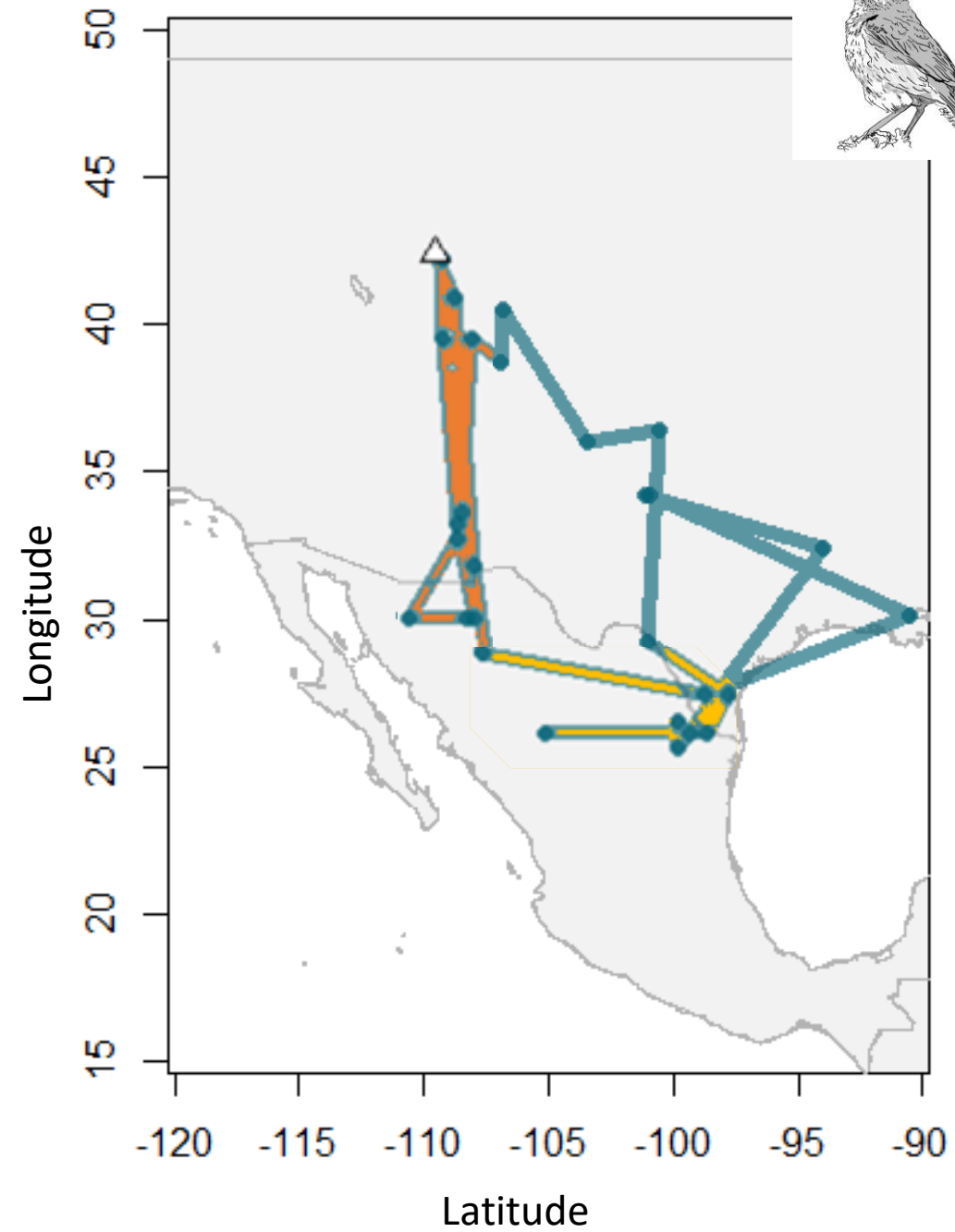


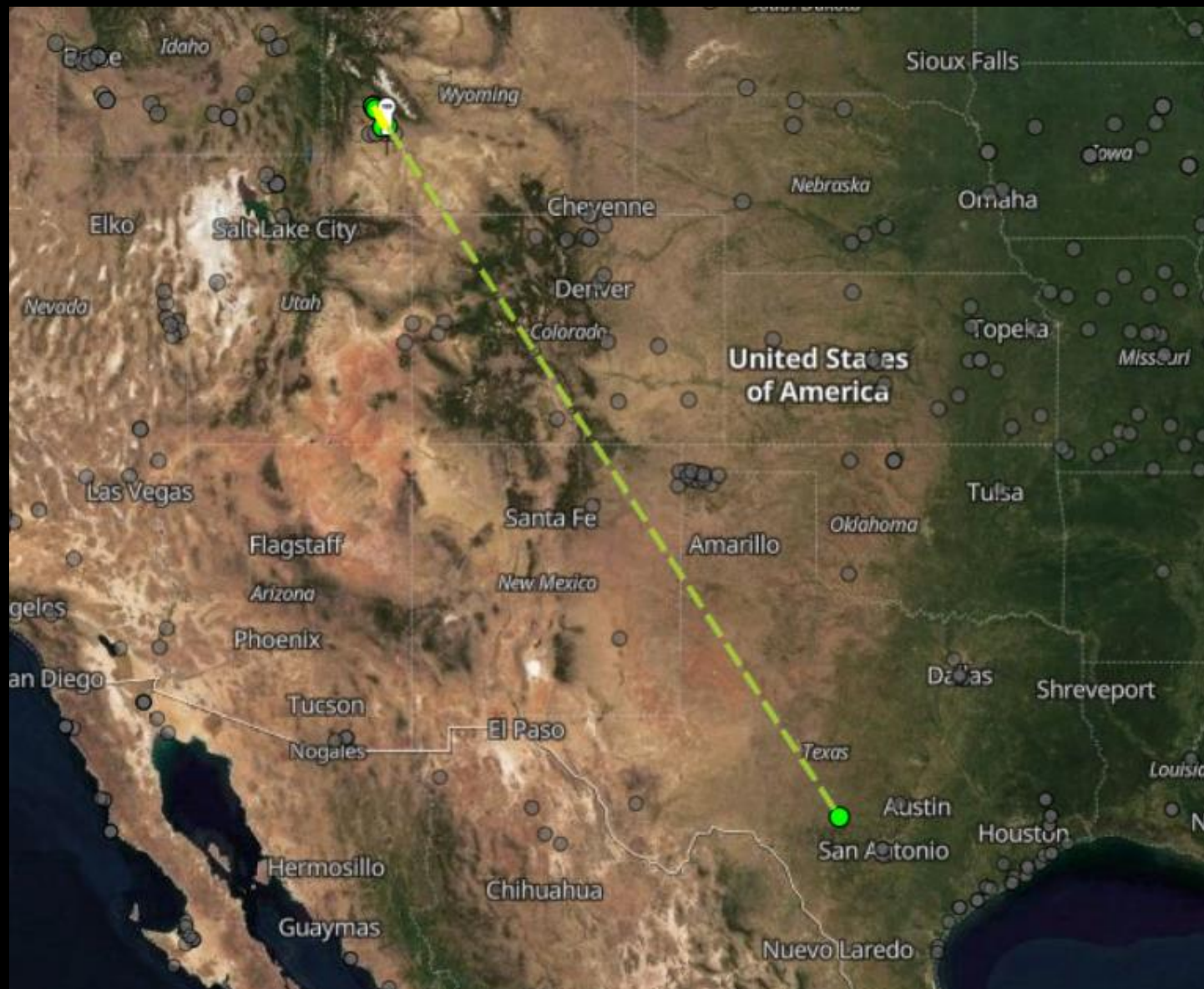
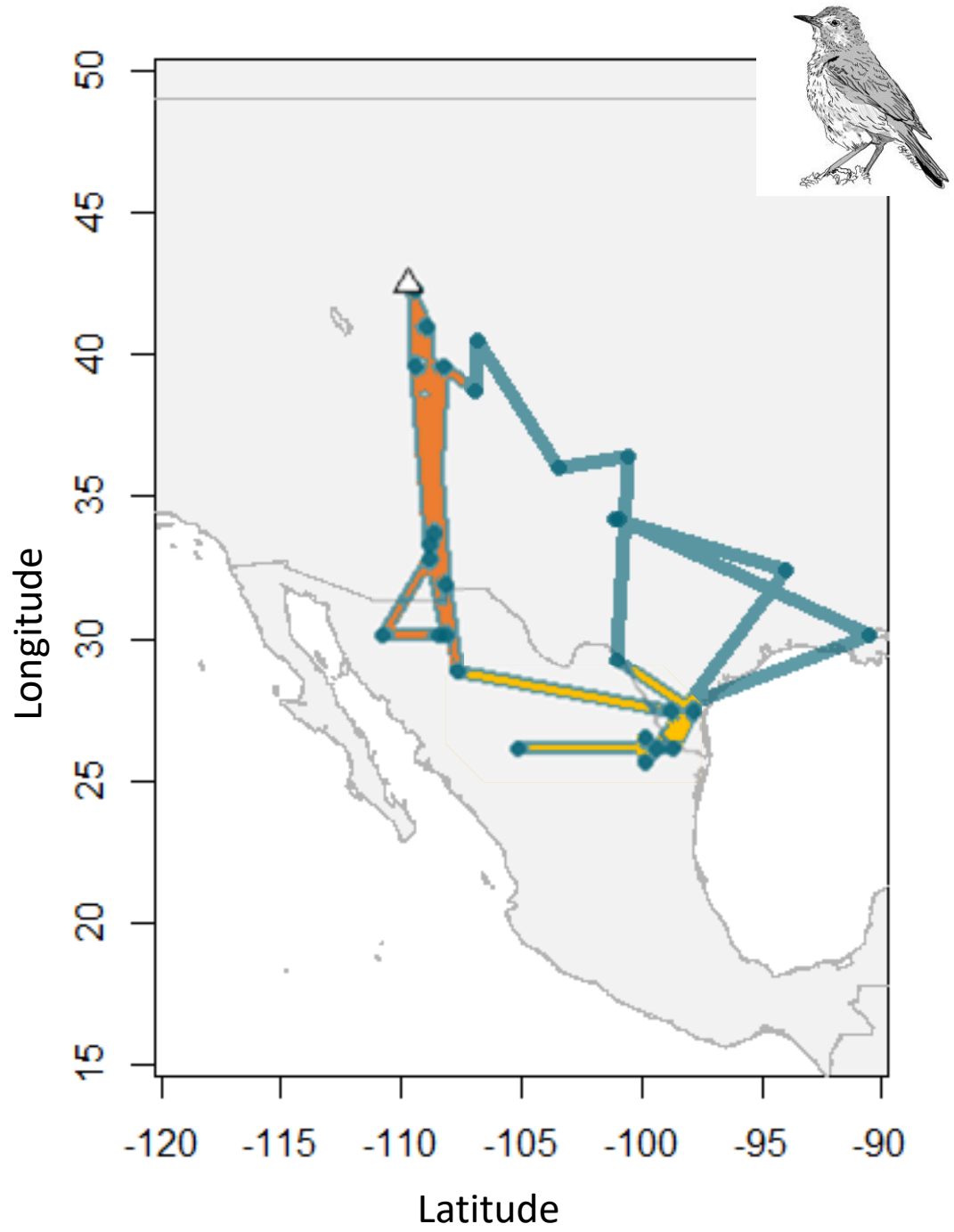








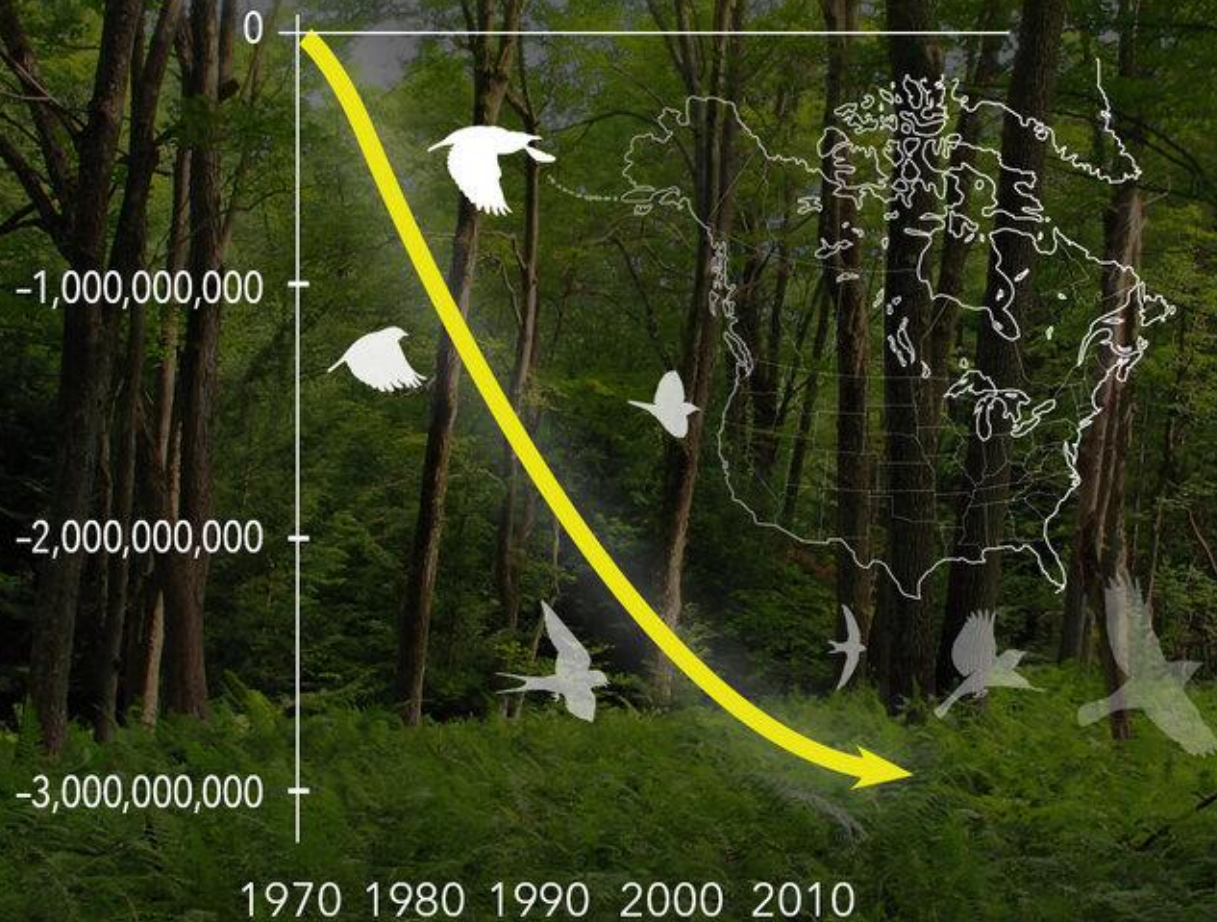






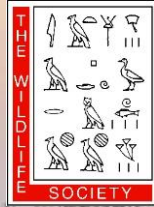
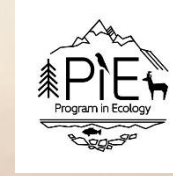
# 2.9 billion

birds gone since 1970





# Acknowledgements



## Dissertation Committee

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Dr. Corey Tarwater  
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## Chalfoun Lab

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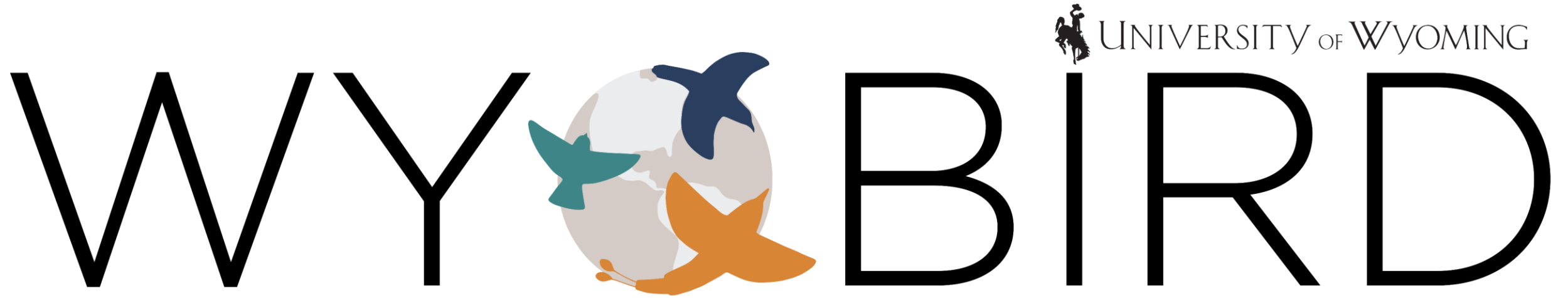




# Questions?

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Wyoming Bird Initiative for Resilience and Diversity



Our mission is to advance knowledge, appreciation, and conservation of birds locally and globally and we achieve this by conducting novel research on birds, training a new generation of scientists, and sharing science through public outreach.





# The value of hands-on field experience





# WYOBIRD bird banding station in Laramie



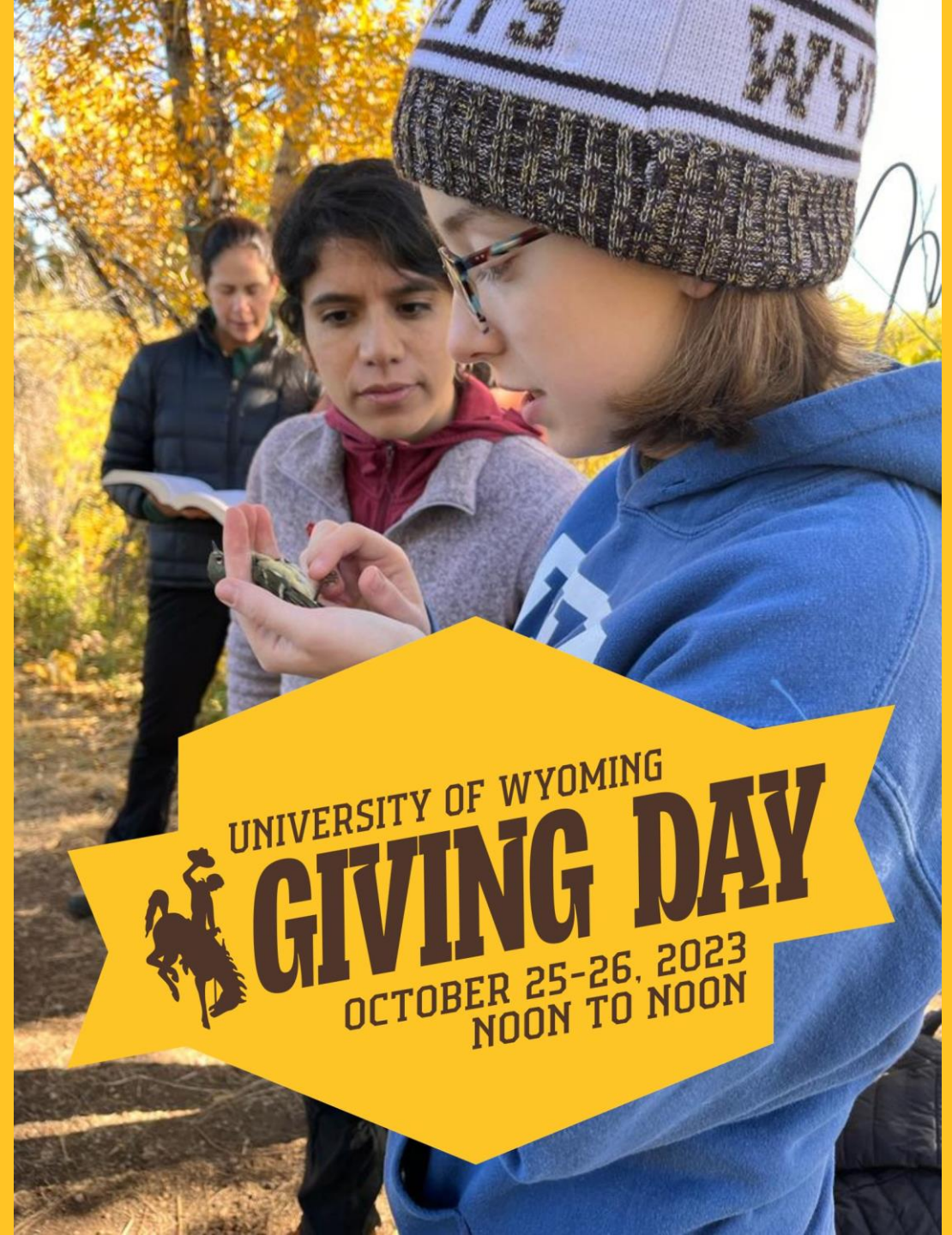


# Networking and quantitative skill development





**Support  
WYOBIRD  
during UW's  
2023 Giving Day!**



UNIVERSITY OF WYOMING  
**GIVING DAY**  
OCTOBER 25-26, 2023  
NOON TO NOON



This internship absolutely positively impacted my university experience because it not only gave me hours of field experience required for other classes and added experience to my resume, but also gave me excitement for my major that sitting in a class lecture simply can't achieve.

- Kylie Shelhaas, UW Junior  
Bird Banding Intern Fall 2023

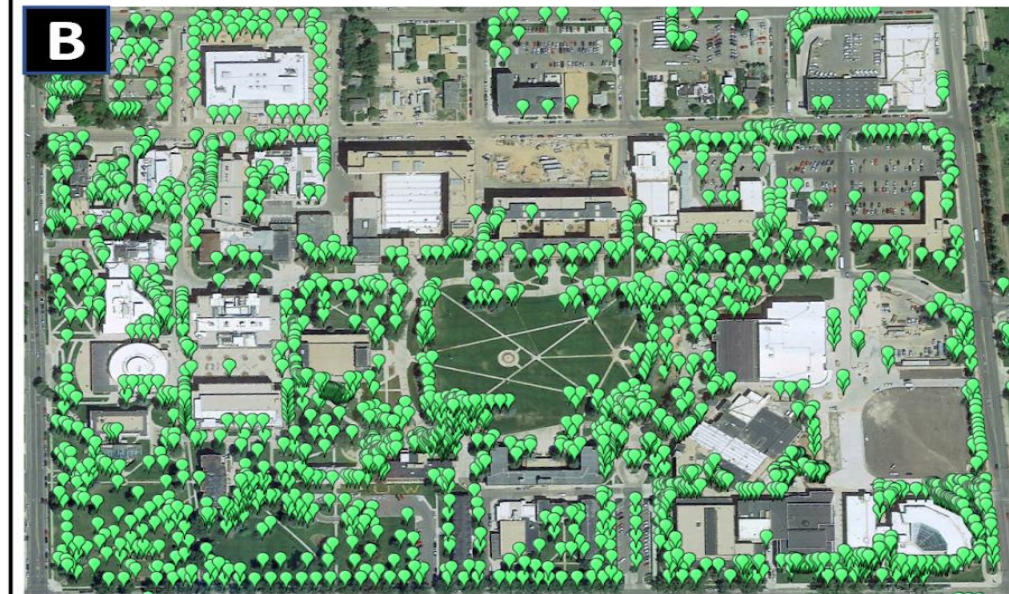
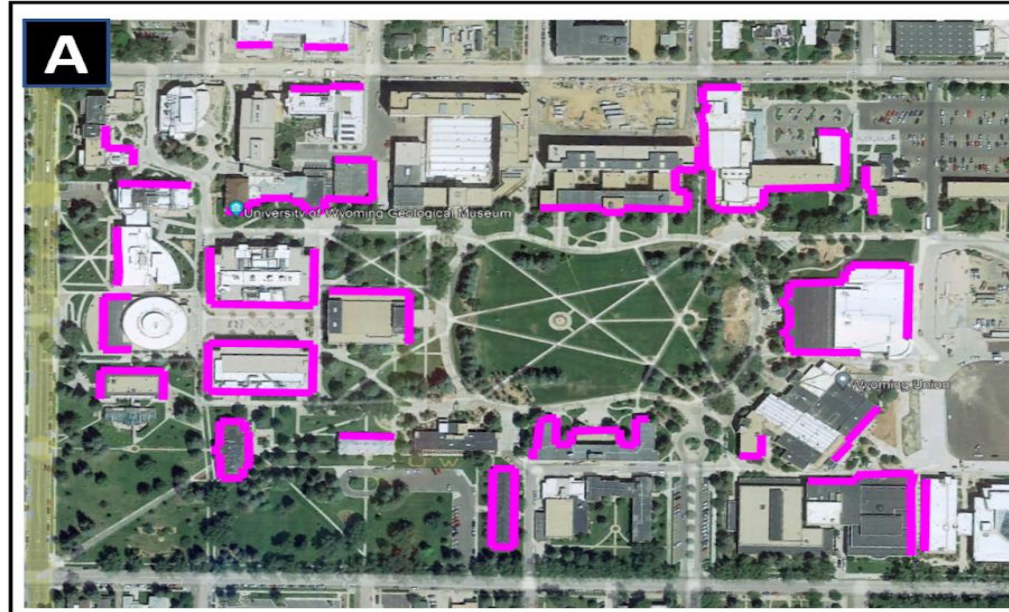




# Predicting bird-window collisions on the University of Wyoming campus (and beyond)

## Objectives

- Understand the factor impacting bird window strikes (and mortality)
- Create a sustainable project infrastructure for the BWCP



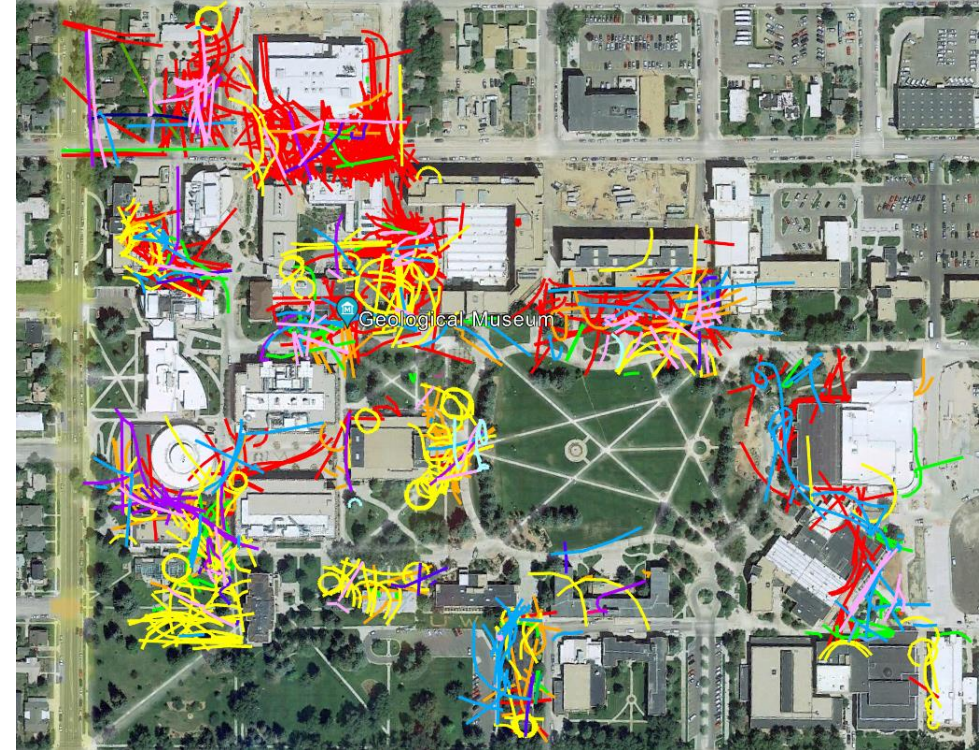
**(A) Map of the 25 buildings** with 82 facades (pink lines) to be monitored. **(B) Map of the trees & shrubs** (from WyGISC) to be used as covariates in the models of bird mortality.



# Predicting bird-window collisions on the University of Wyoming campus (and beyond)

## Data

- Behavioral data (top)
- Mortality data (bottom)



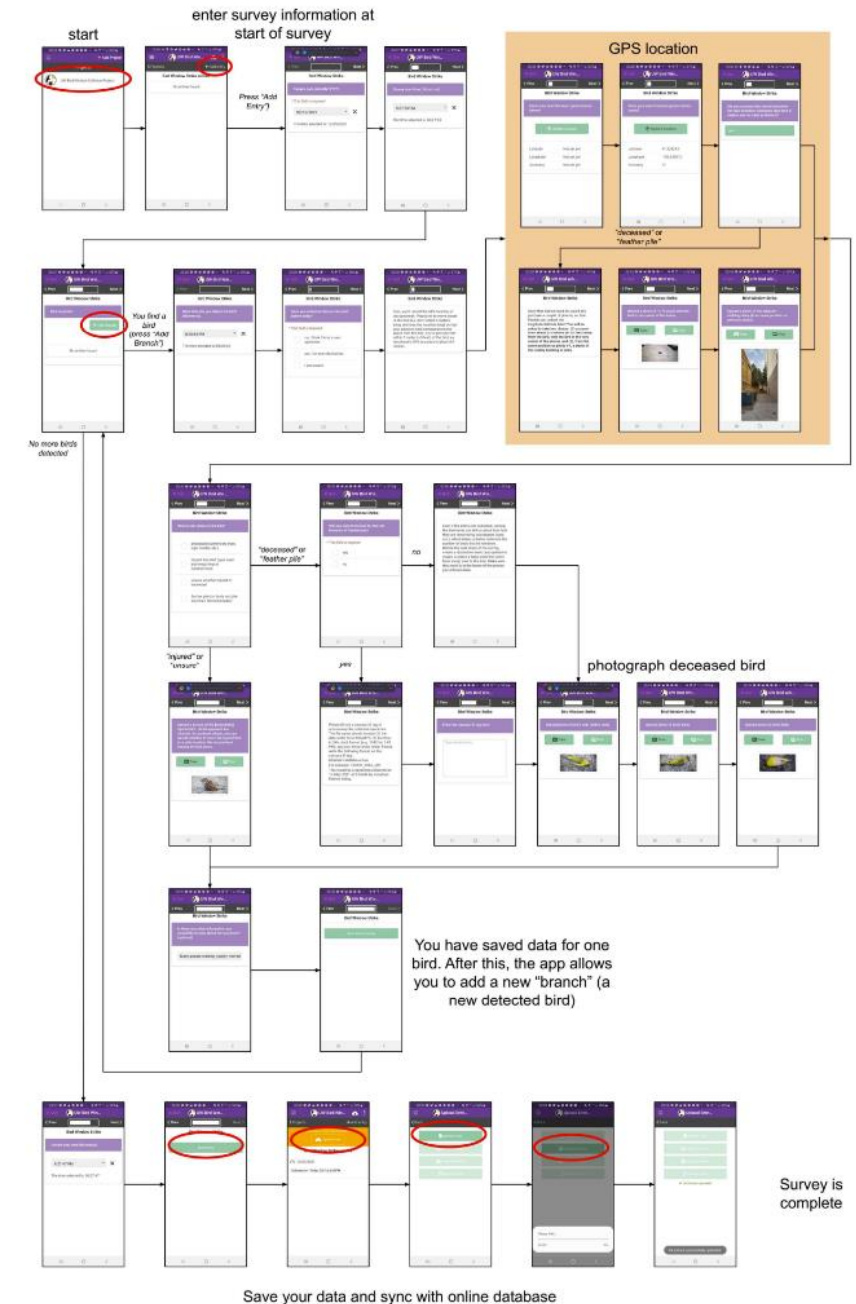




# Predicting bird-window collisions on the University of Wyoming campus (and beyond)

## Citizen Science

- Using epicollect5, Students and Laramie residents can participate in data collection





# Learn more about WYOBIRD:



WYOBIRD.org



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