

What's up with Uplands in Alaska?

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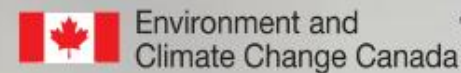
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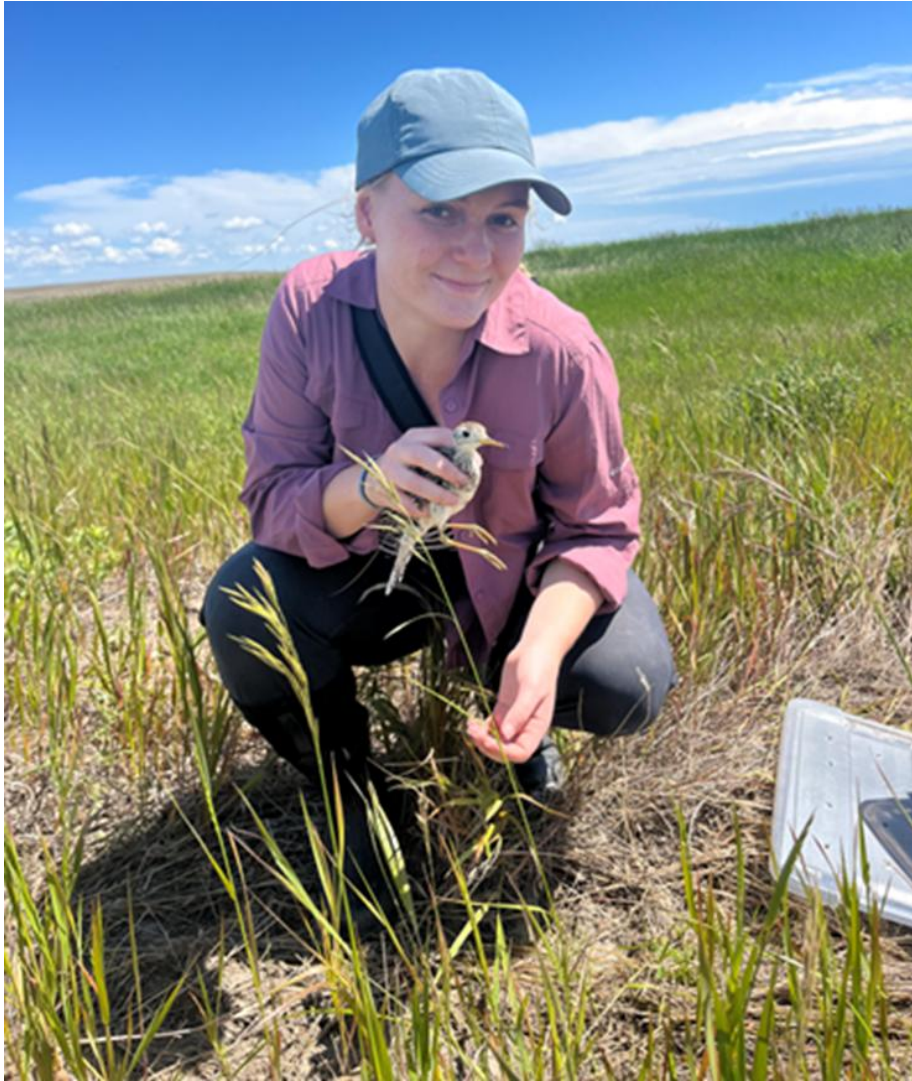


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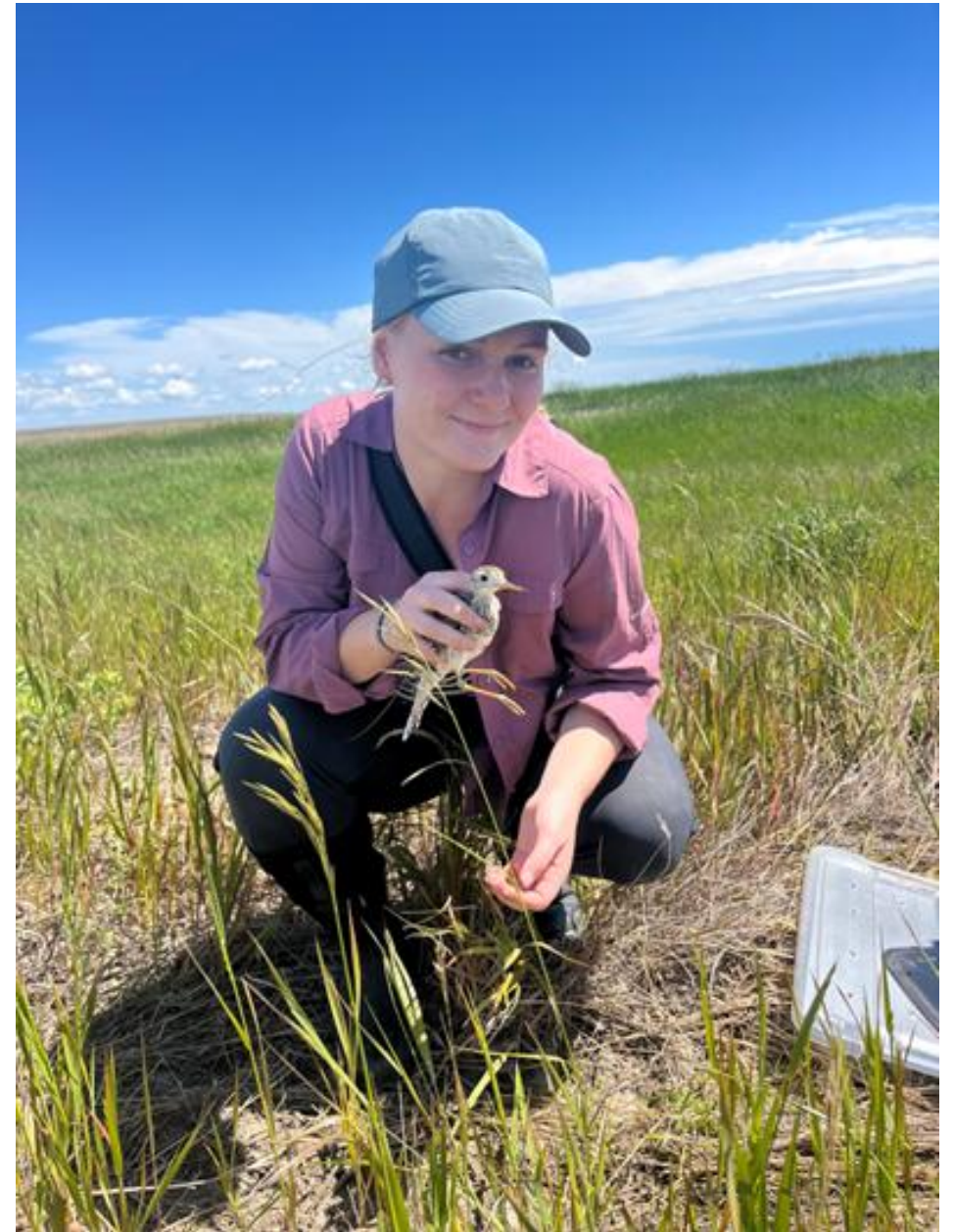


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Investigating
and genetic p
the Upland S

Sydney Marie Jon
University of Sask



- How do breeding populations segregate during the nonbreeding season?
- Are breeding populations genetically distinct?

METHODS

Movement Analysis

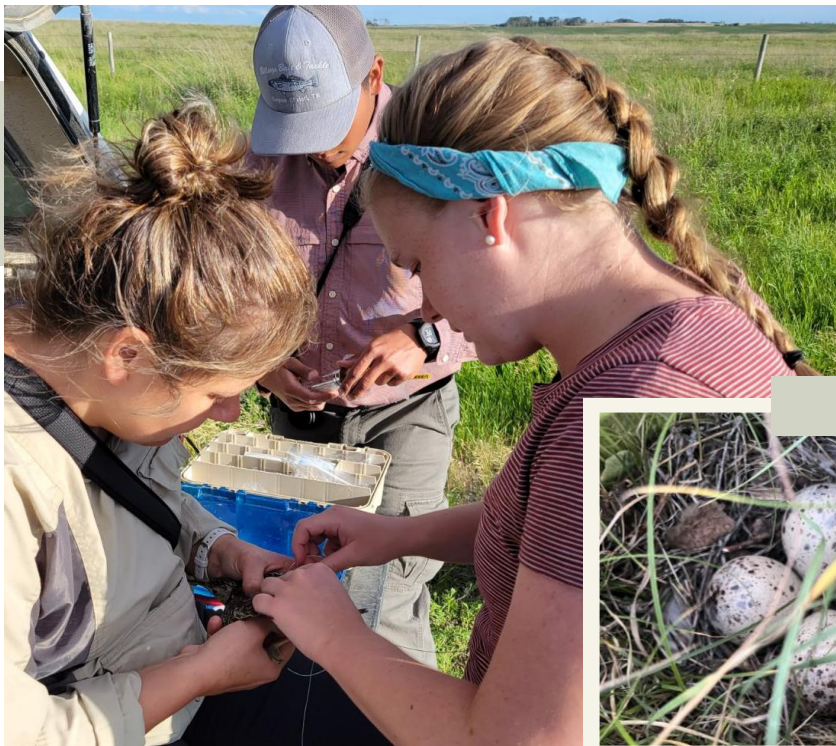
PinPoint Argos Tag (GPS)
Sunbird Solar Argos Tag (PTT)

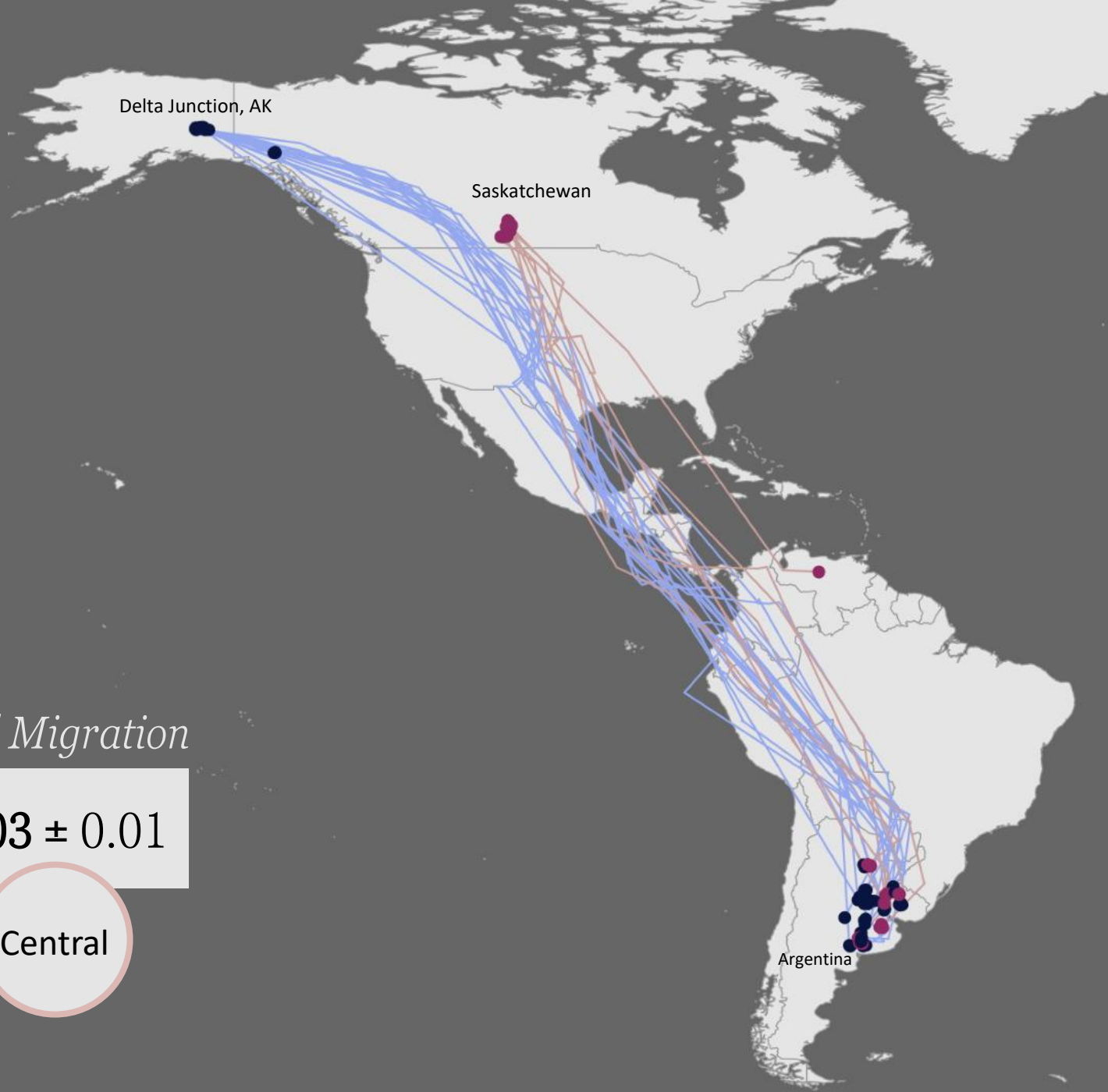
n = 41 tracks

Genetic Analysis

Blood samples
ddRAD sequencing

n = 121 individuals





Delta Junction, AK

Saskatchewan

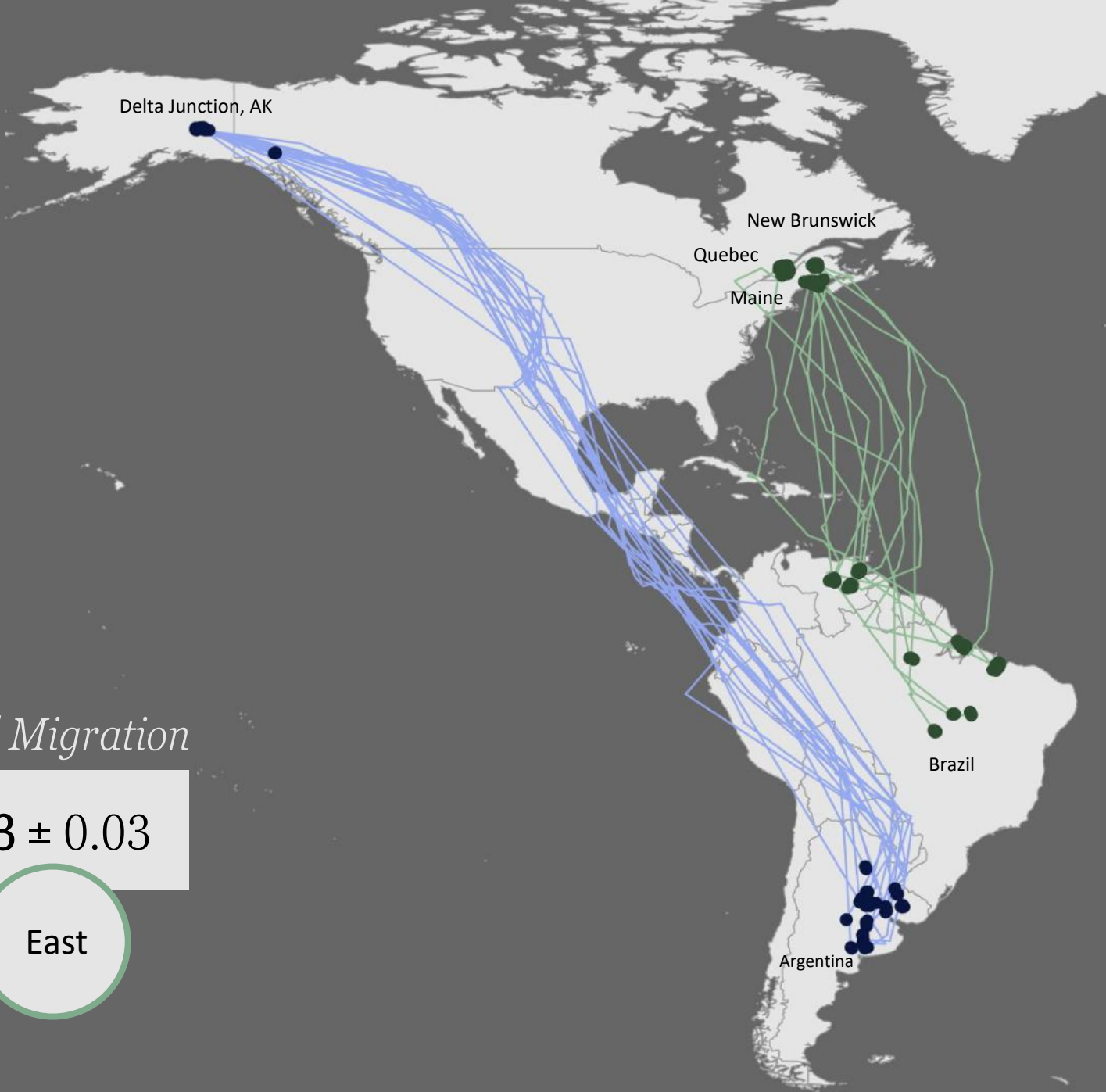
Argentina

Southbound Migration

MC= -0.03 ± 0.01

West

Central



Delta Junction, AK

New Brunswick

Quebec

Maine

Brazil

Argentina

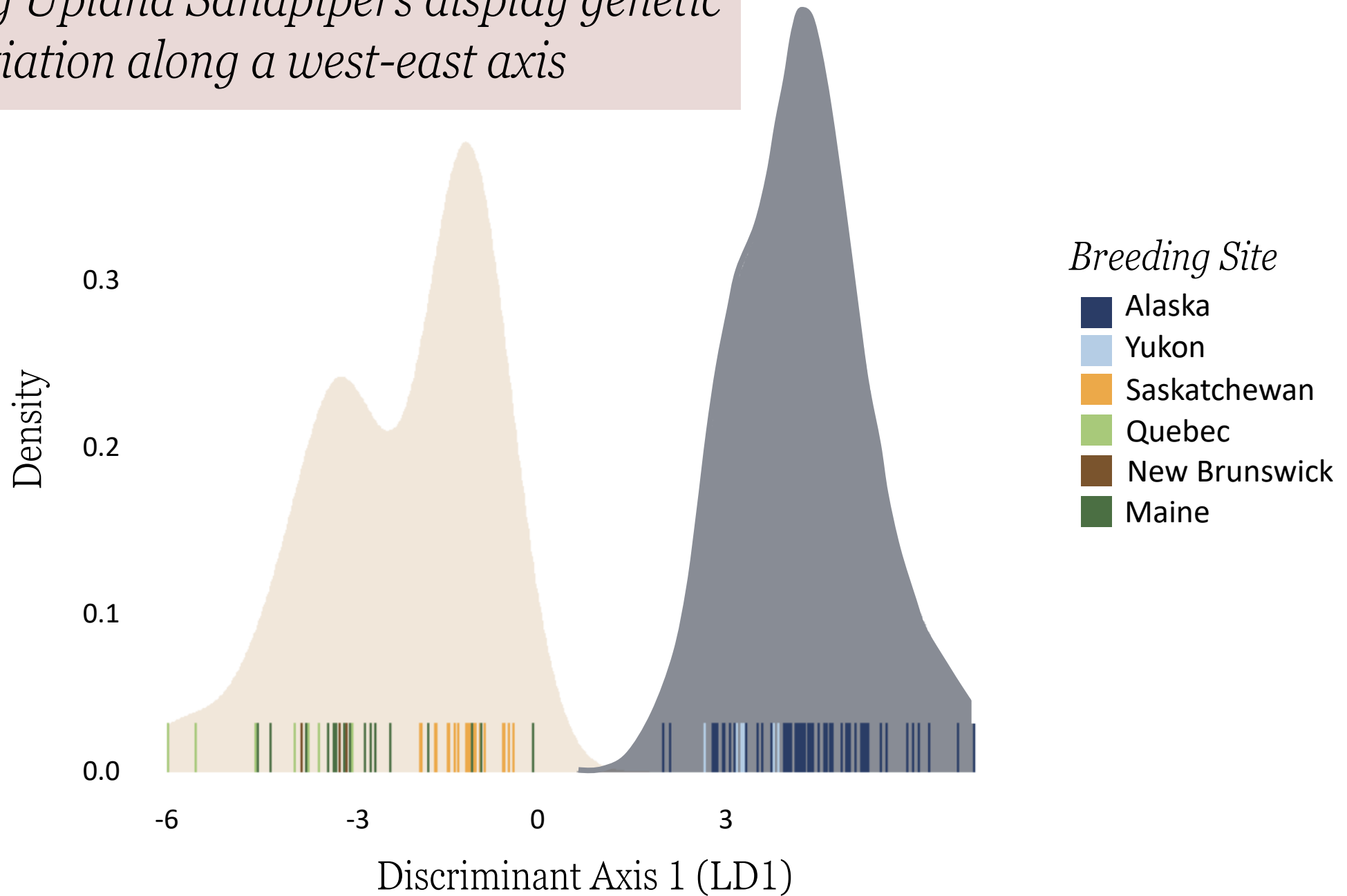
Southbound Migration

MC= 0.83 ± 0.03

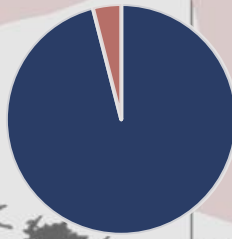
West

East

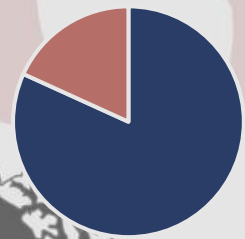
Breeding Upland Sandpipers display genetic differentiation along a west-east axis



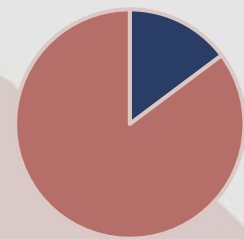
Alaska
 $n = 61$



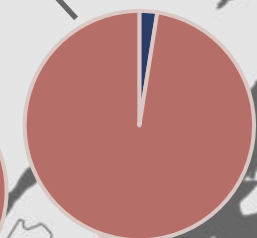
Yukon
 $n = 6$



Saskatchewan
 $n = 27$



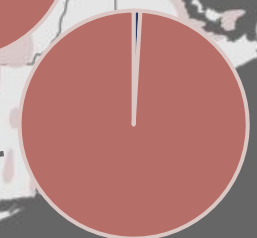
New Brunswick
 $n = 3$



Quebec
 $n = 7$



Maine
 $n = 17$

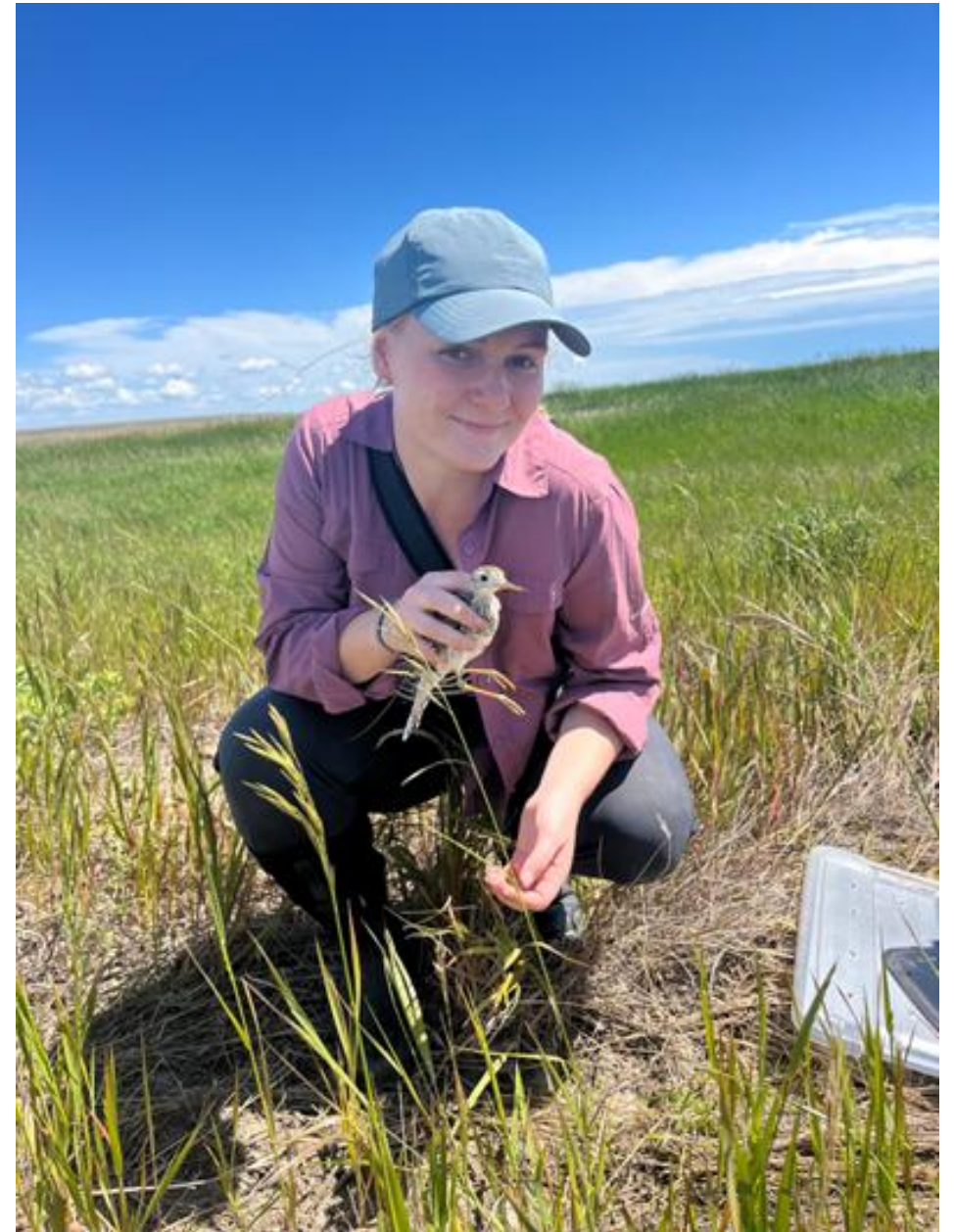


*Mean Ancestry
Proportion by Population*

Two inferred genetic
clusters (K=2)

Investigating migratory connectivity and genetic population structure in the Upland Sandpiper

Sydney Marie Jones, M.Sc. Candidate
University of Saskatchewan



- Connectivity is stronger than expected.
- Modest, but significant genetic structure.



- How are trends in breeding abundance related to changes in land cover?
- What determines exposure to agrochemicals?

Regional Variation in Landscape Change and Agroecosystem Resilience in Grassland

December 2014



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Partnership

- 2023-2024 breeding seasons (May-July)

- Collect blood (plasma / red blood cells)

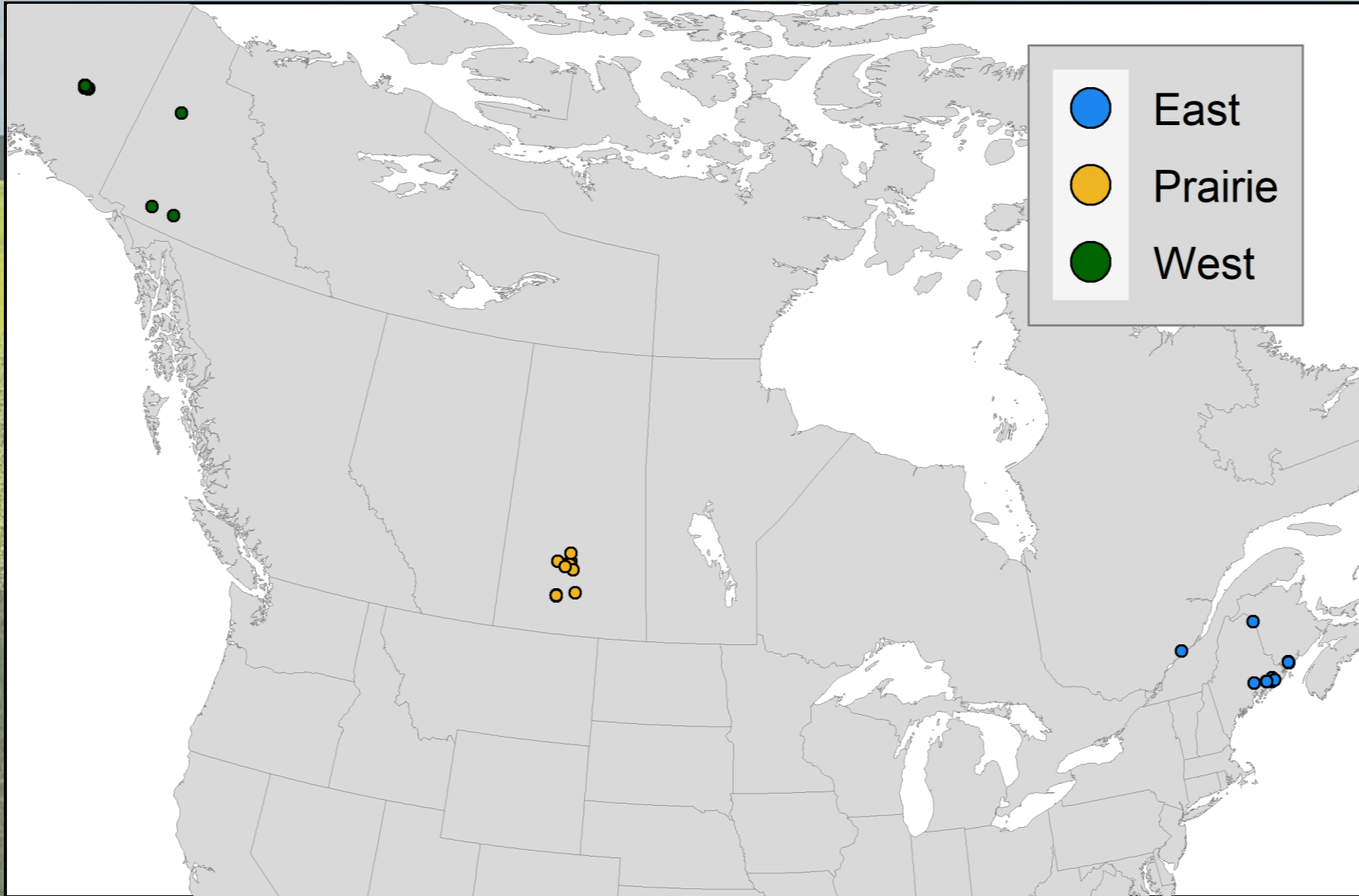
n = 79 individuals

Delta Junction, AK



Allan,
SK





Alaska
N = 33

Yukon
N = 6

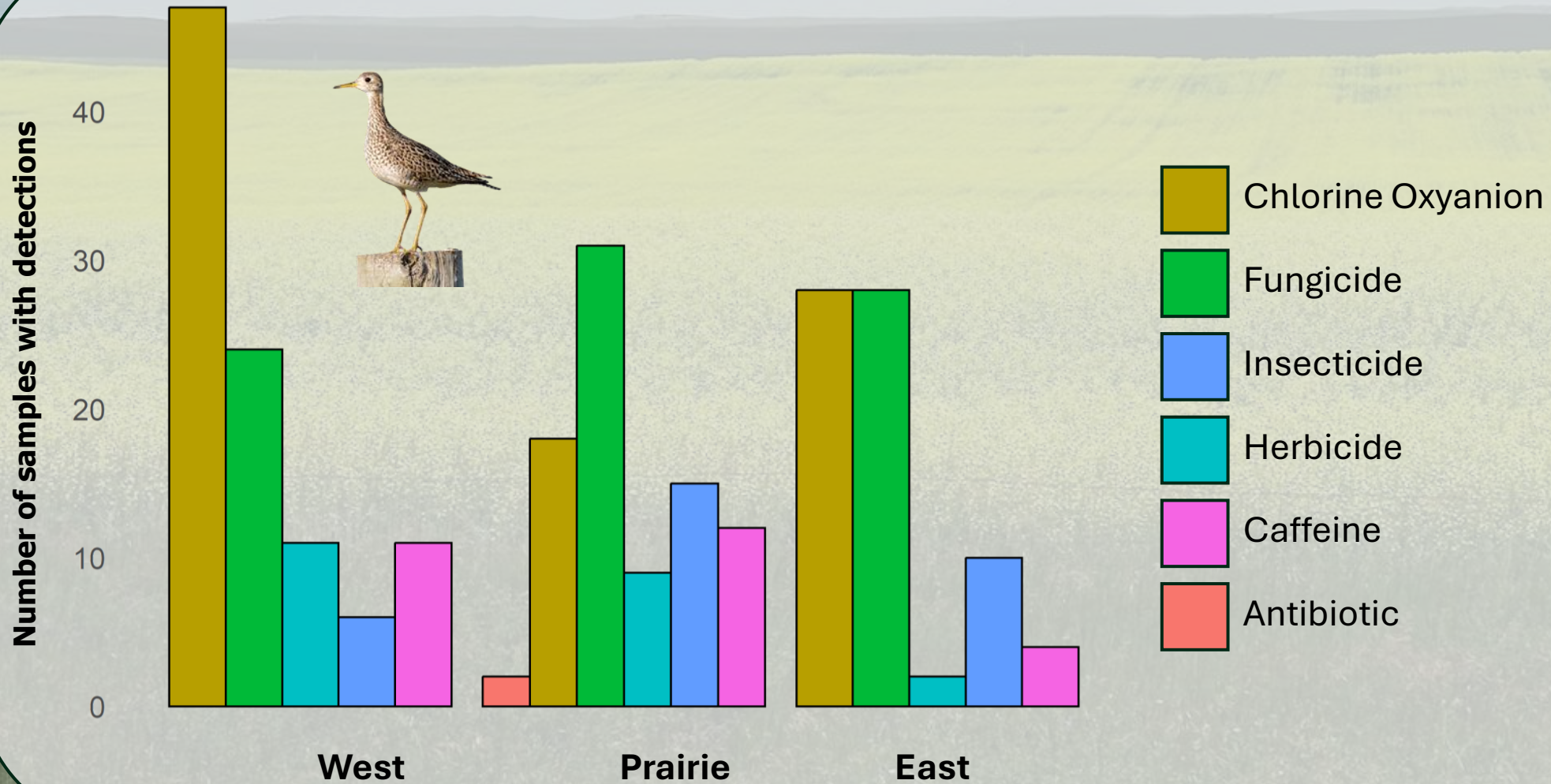
Saskatchewan
N = 21

Quebec
N = 1

New Brunswick
N = 5

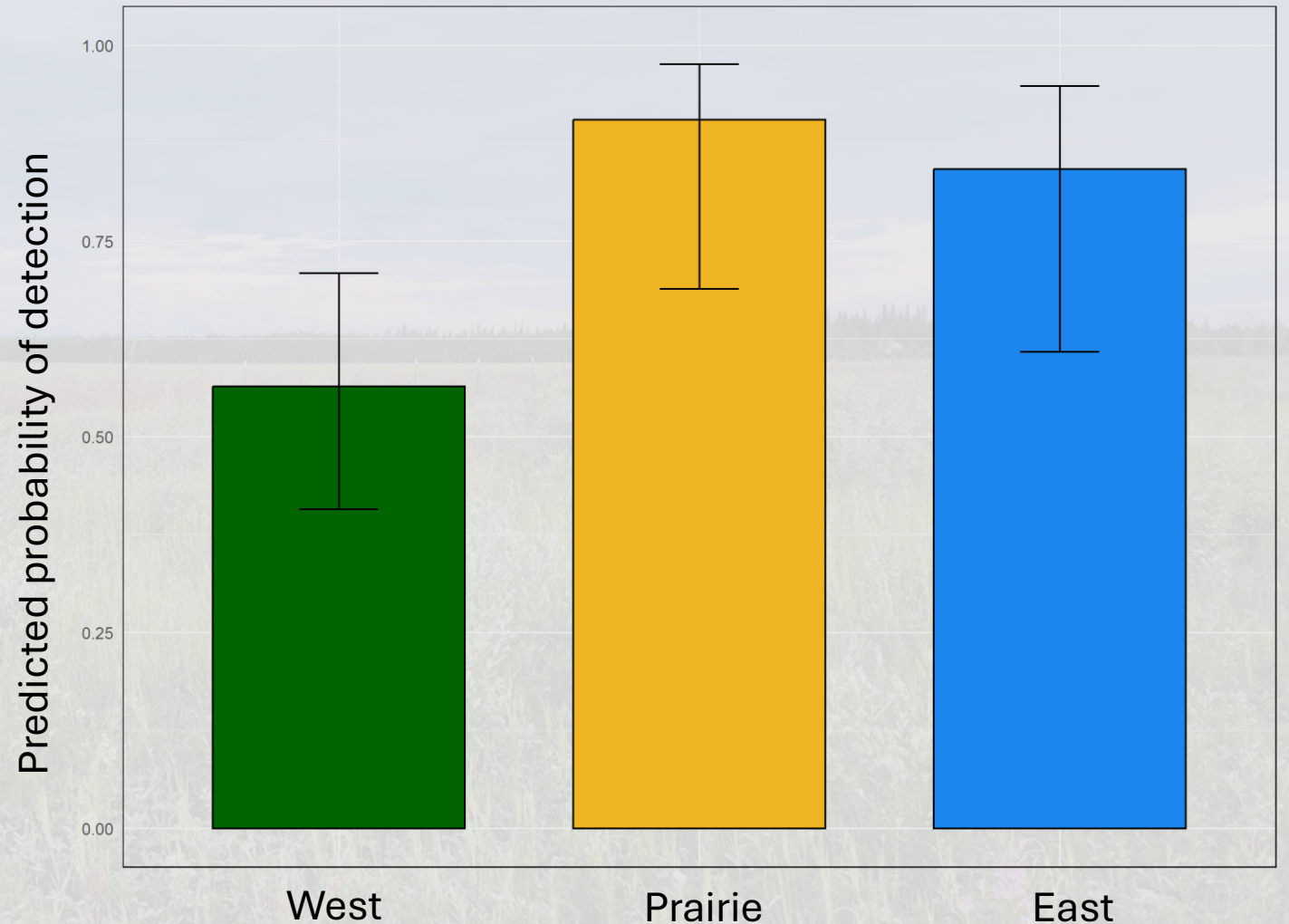
Maine
N = 13

All samples had at least one chemical detected.



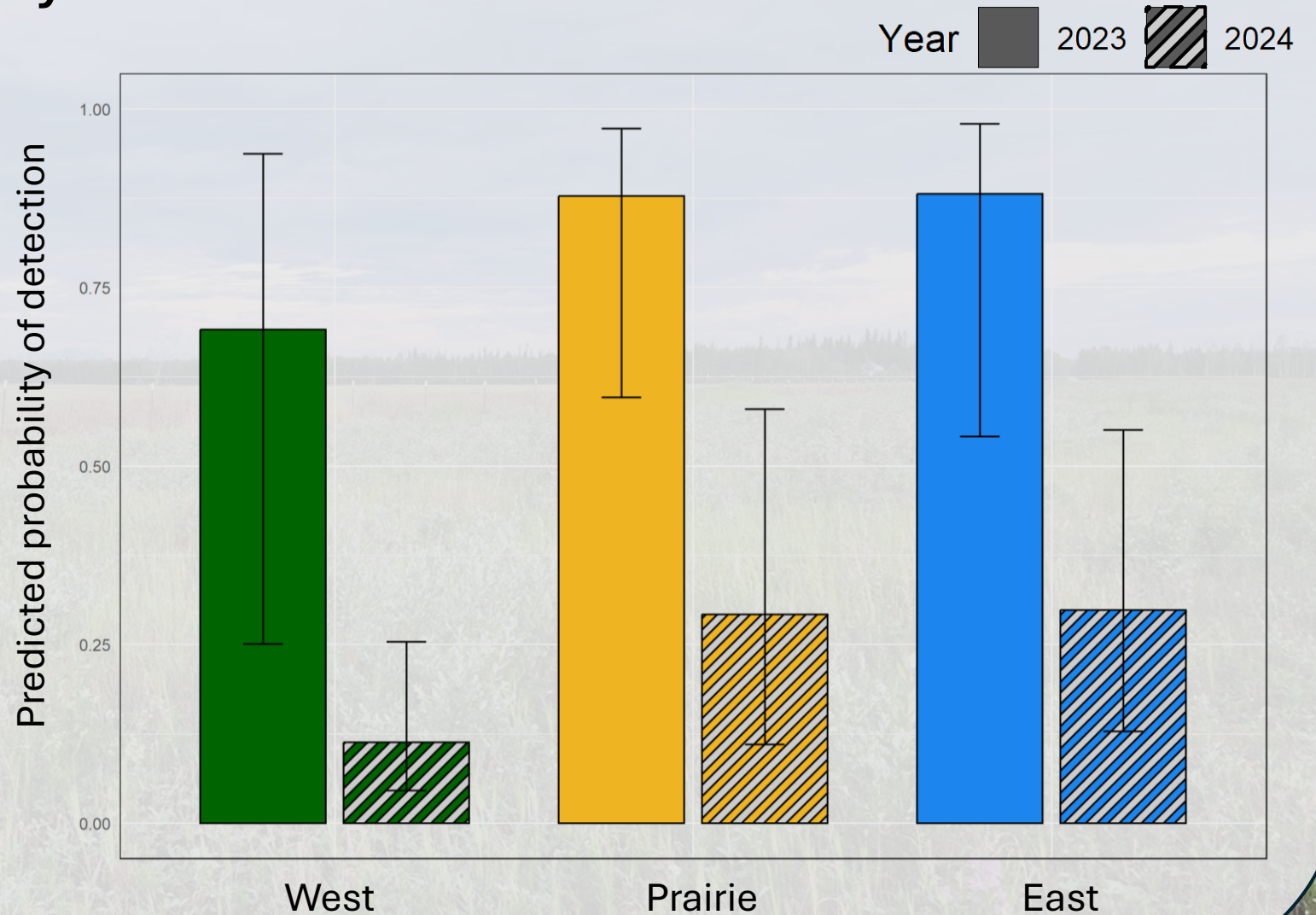
Probability of Fungicide Detection

- Significant regional difference
- Highest detections in Prairie; **lowest in West**



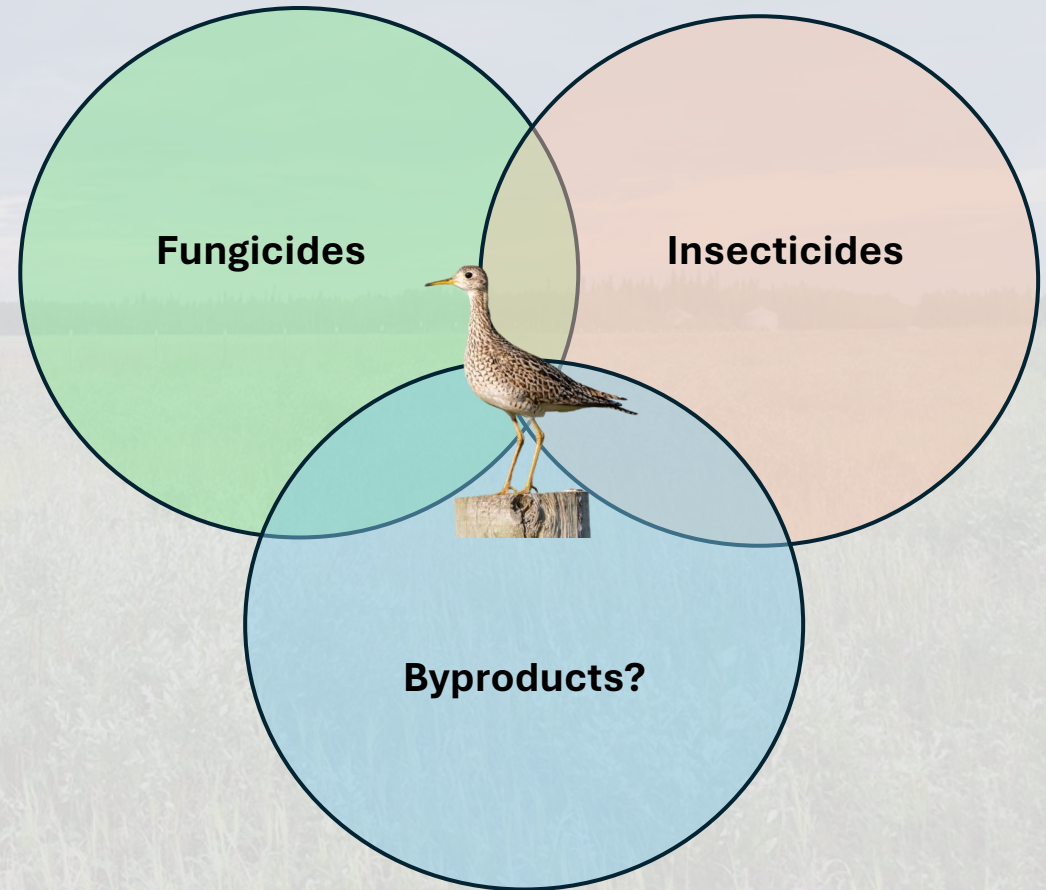
Probability of Insecticide Detection

- Significant year effect: detections lower in 2024
- **No regional differences** (Prairie \approx East \approx West)



Compound Mixtures

- Co-detections of multiple chemicals
- “Cocktail Effects”?
 - Difficult to predict
- Highlights need for mixture focused risk assessments





- How are trends in breeding abundance related to changes in land cover?
- Some evidence of regional variation, **more work needed...**

Regional Variation in Landscape Change
and Agrochemical Exposure in a
Grassland Breeding Shorebird across
North America

Andres N. Rosales

MSc. Thesis Defense

December 22, 2025 10:00 am CST



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Alberta
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Partnership



Thank you!

