

Nestbox Academy - Purple Martins



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Volunteer organization for
education & outreach of
Natural Resources

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Uncovering the Mystery of Purple Martin Migration

Presented to the Nestbox
Academy

February 1, 2026

Bill Warnes, EMN - 2021



Credit to the Purple Martin Conservation Society and Joe Siegrist, President of PMCA



**Tom Ridge Environmental Center
301 Peninsula Dr., Suite 6
Erie, PA 16505**

Outline

1. Basics Facts of the Eastern Purple Martin
2. Migration of Songbirds
3. Breeding Range of Purple Martins
4. Banding - How We Know Migration Destiney

Outline (Continued)

4. Studying the Journey Not Just the Destination
5. Take Home Points
6. Challenges to Songbirds in South America
7. Hope for the Future

1. Purple Martins in Adult Plumage



Interesting Facts About **Purple Martins**

- Likes People
- Largest of the Swallow Family
- **Totally Dependent** on
Manmade Housing to Nest



A Bird That Winters in The Amazon

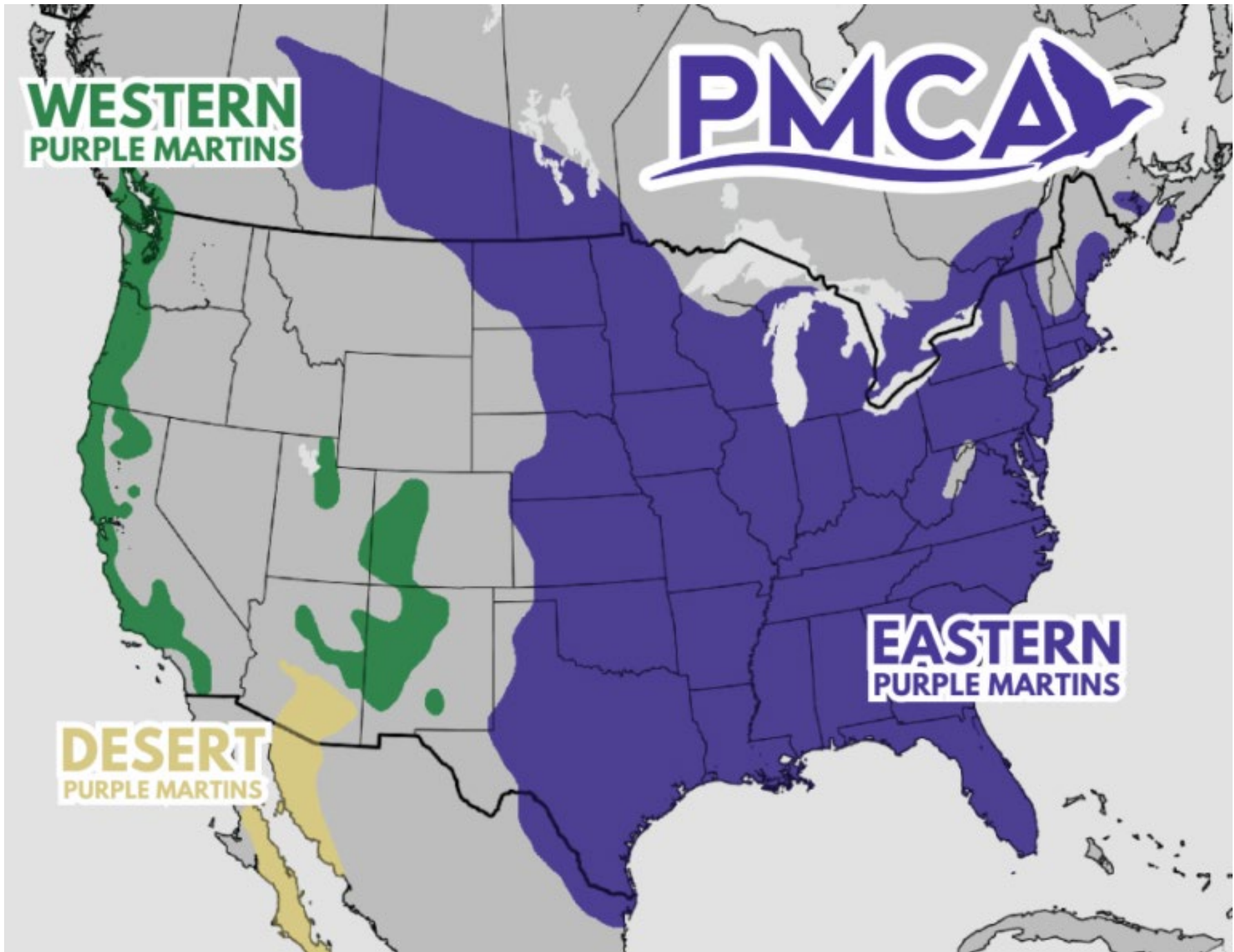


- But Nests and Breeds in North America — and Johnson County, Kansas



There are three subspecies of Purple Martins in the United States:

- Eastern: **Progne subis subis** nests solely in made housing
- Western: **Progne subis arboricola** nests in natural tree cavities
-
- Desert Southwest: **Progne subis hesperia** nests in Saguaro cacti



Provinces of Canada



Since 1966,
Purple Martin
populations
have decreased

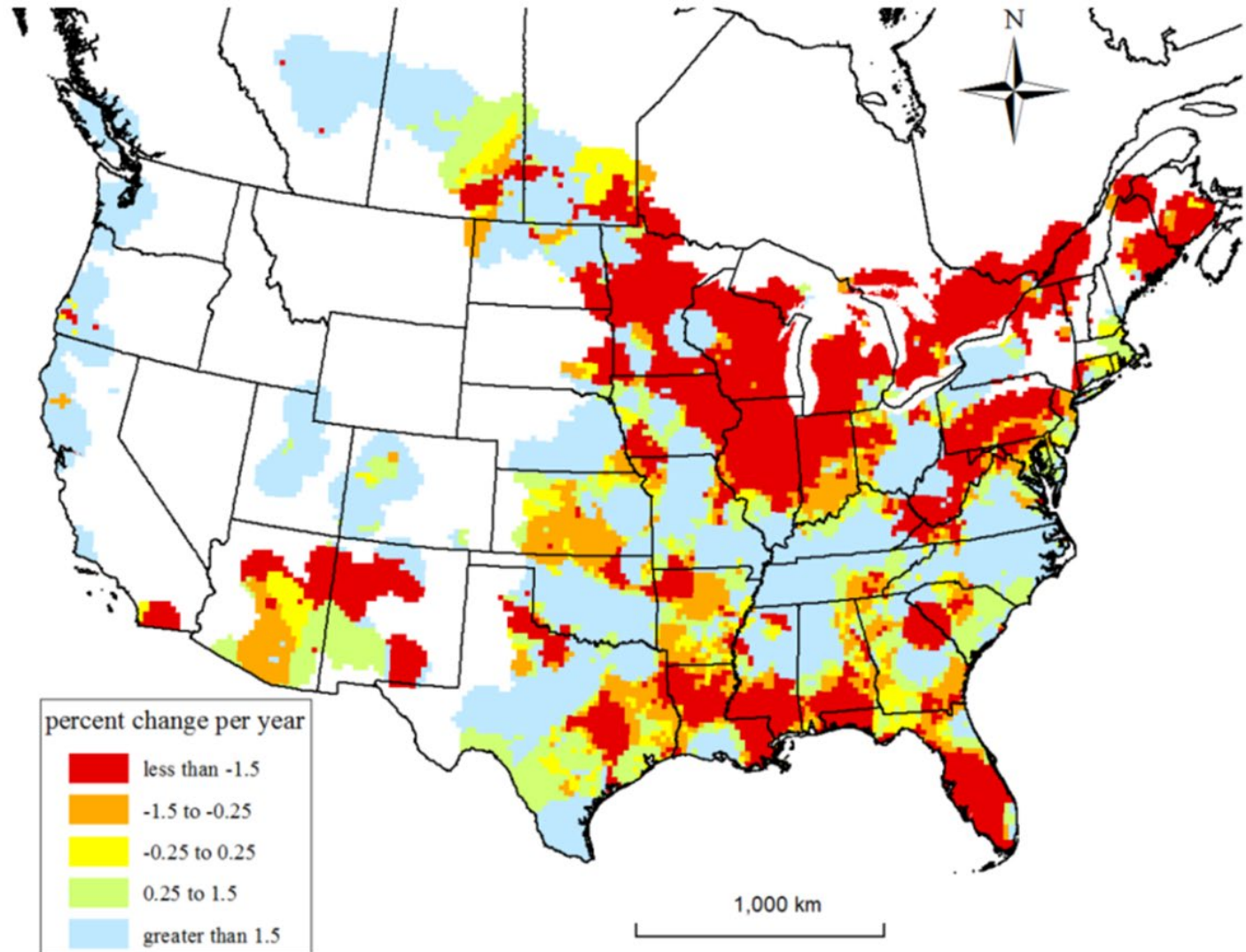
0.87%/yr range wide
Loss of 1/3 of all martins

Source: Breeding Bird Survey



Photo by Jonathan Spangler

Change of Population



2. Why Do Birds Migrate

- Environmental Changes
- Melting and Retreat of Glaciers about 15,000 years ago
- Simply put – Access **More Readily Available Food**
- **Better Nesting Habitat**

THE MISSISSIPPI FLYWAY



Other Birds that Migrate South

Scarlet Tanager

Indigo Bunting



shutterstock.com · 2379952819



Scarlet Tanager

Cornell Lab



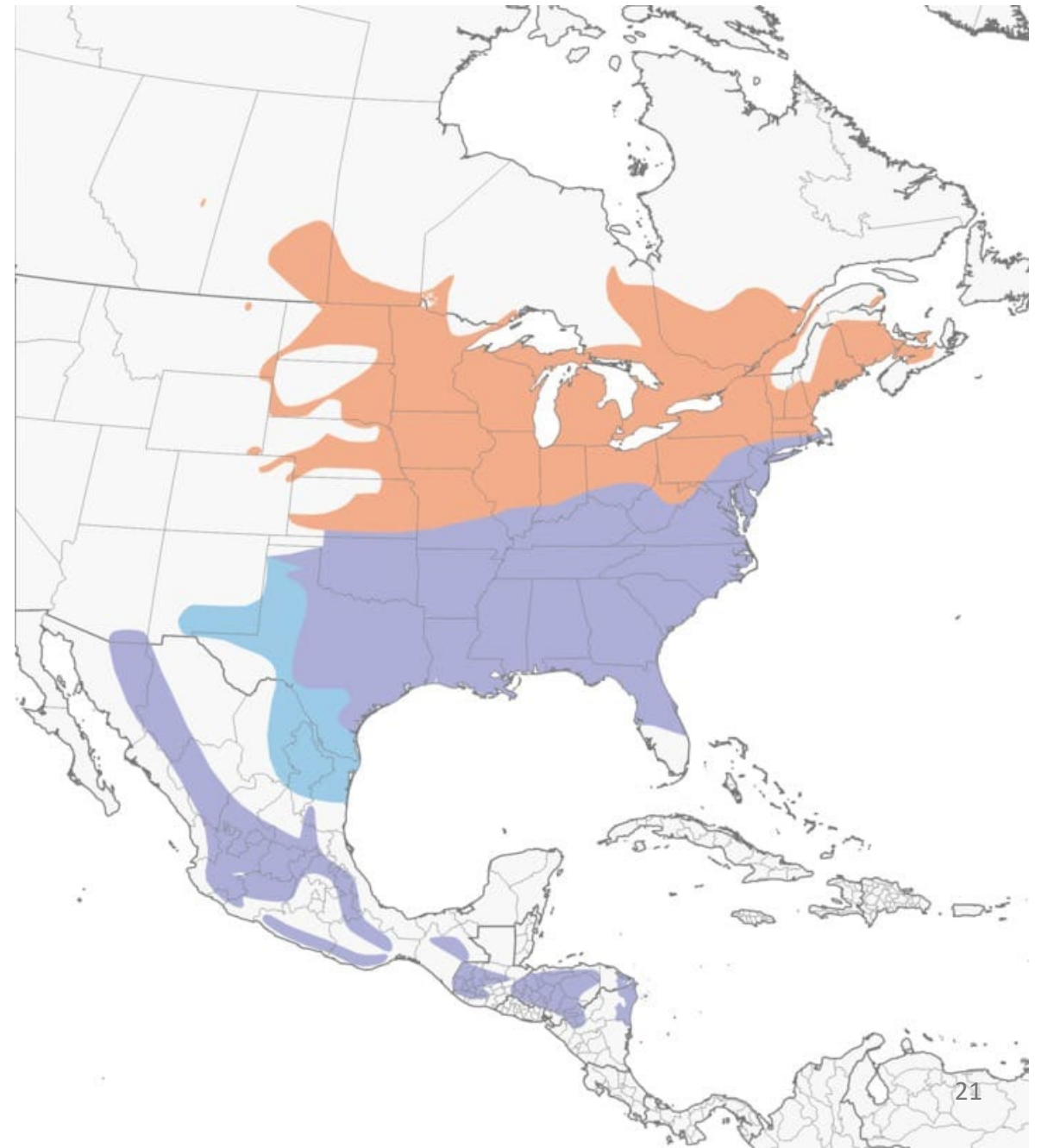
Indigo Bunting



Prothonotary Warbler



Eastern Bluebirds



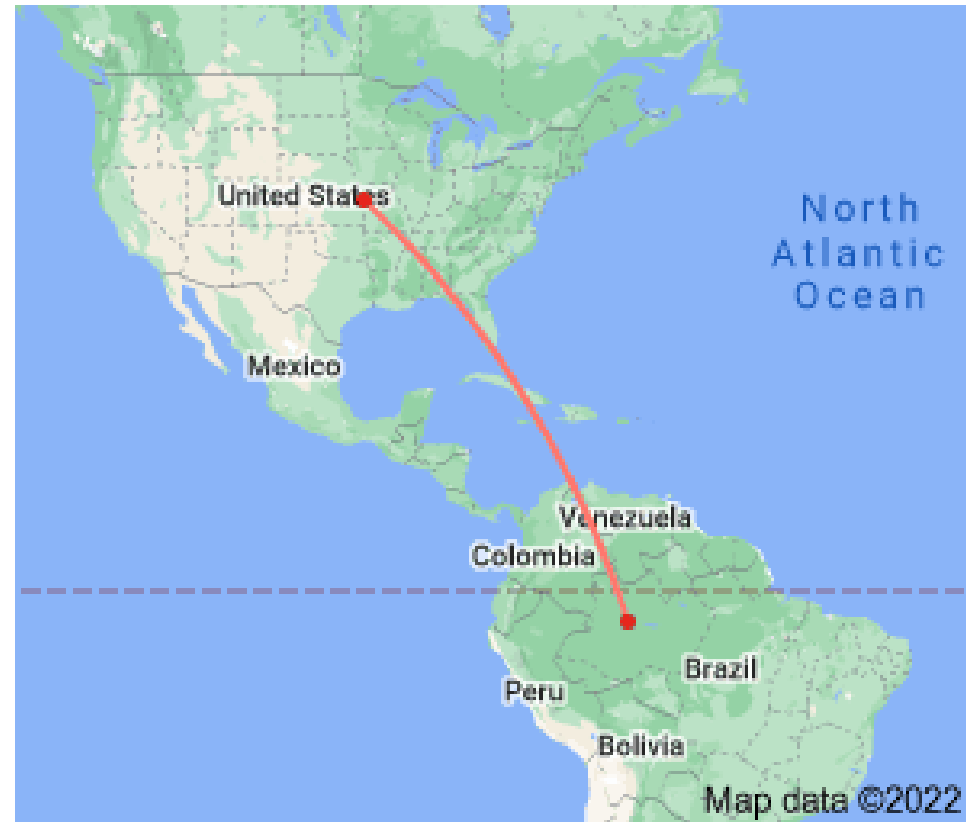
3. Migration of the Purple Martin

Spends Majority of Year In South America



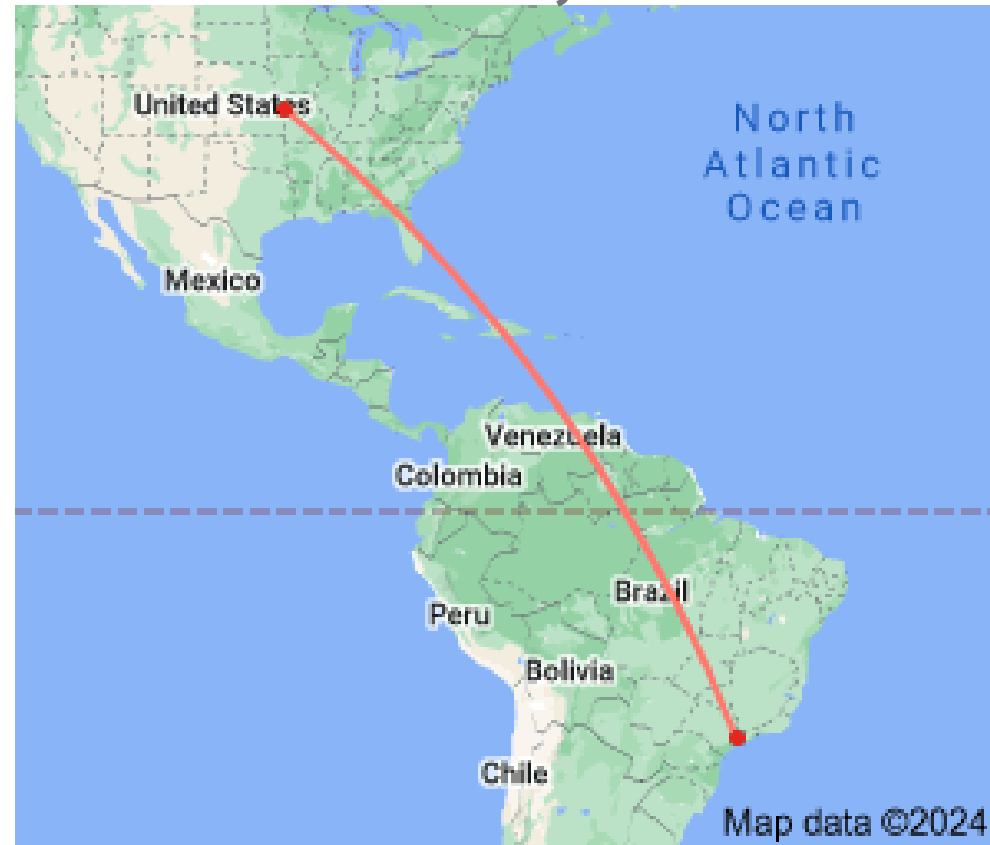
3,458 mi

Distance from Kansas City International Airport to State of Amazonas



5,334 mi

Distance from Kansas City International Airport (MCI) to São Paulo, Brazil



4. Banding of Songbirds

Banding Types

1. Actual Bands
2. Geo Locators (for smaller birds, lighter, cheaper
Light Level, Barometric, Satellite, GPS
3. Motus Wildlife Tracking System

Federal Bird Bands

Butt-end Bands (most common).

Lock-on Bands.

Rivet Bands



1902: scientific bird banding
began in the United States

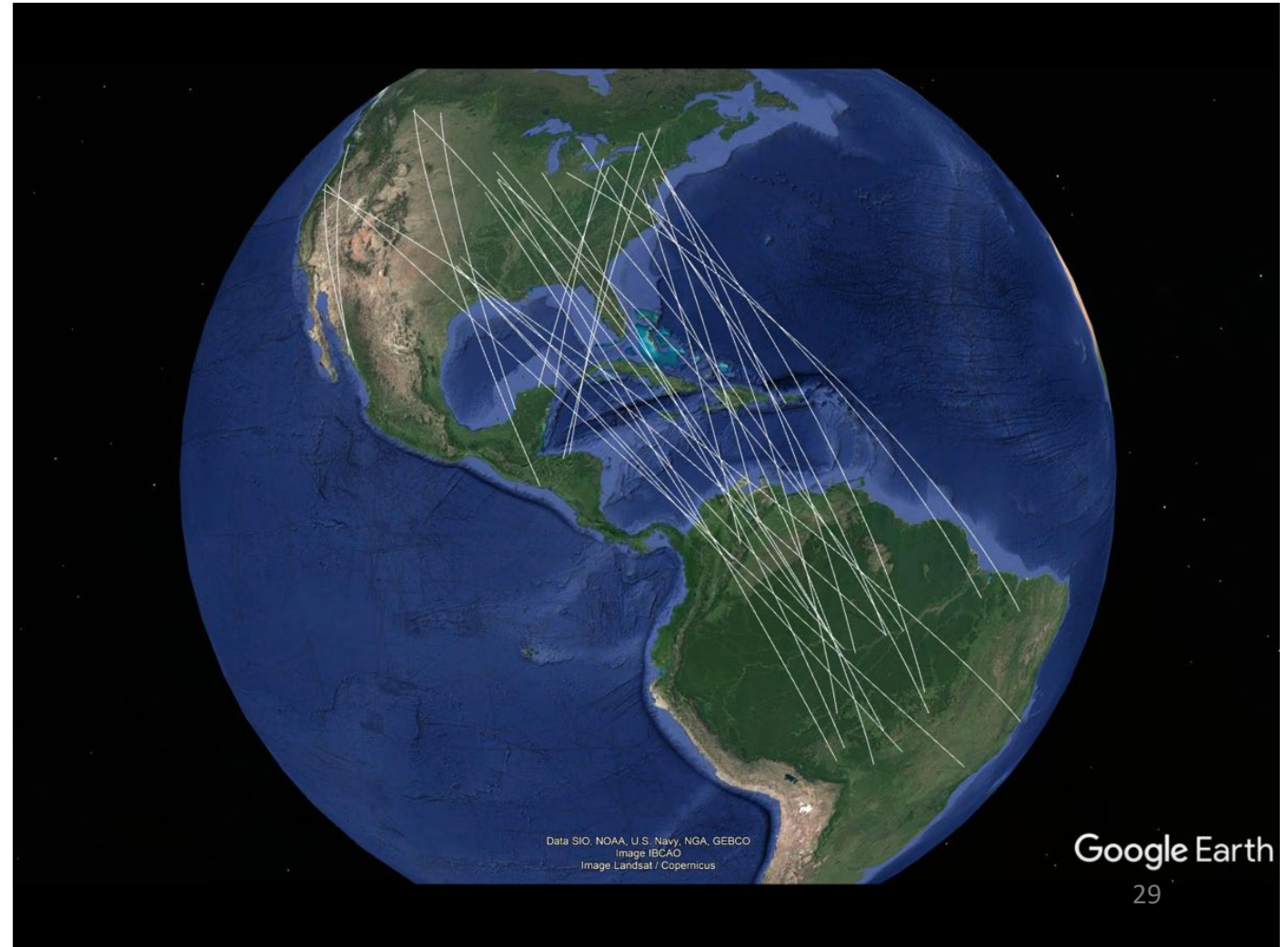
Since then: 539,139 Purple
Martins have been banded

Number of band encounters
outside of the USA and Canada?

Number of Banded Birds Found



Where Banded PMs Were Found

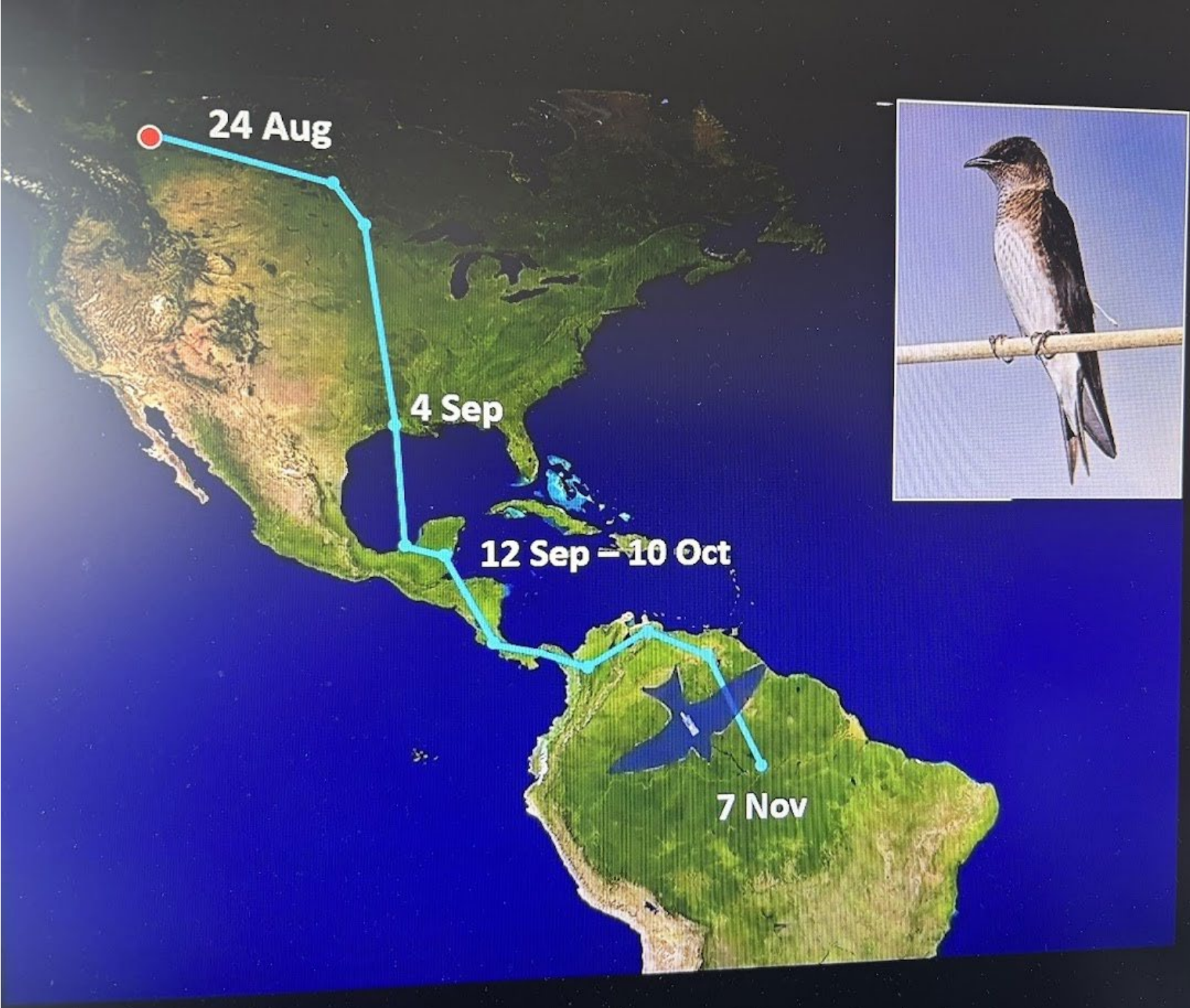


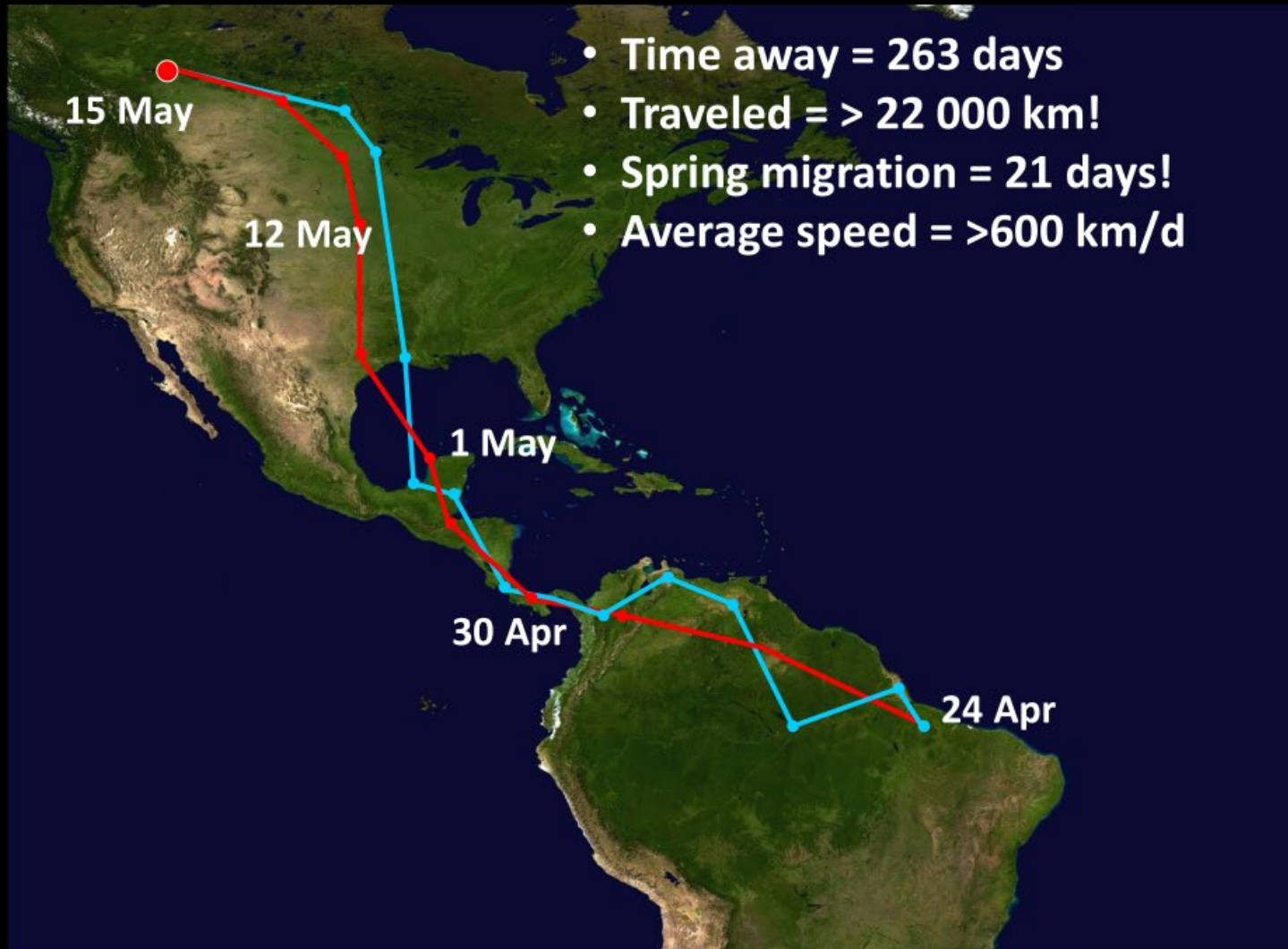
Most Earlier Banding Requirements

- Capture Bird to Band
- Finding the Banded Bird
- Capturing the Banded Bird to Download Recorded Info
- Most Geo Locators Only Give General Locations – Accurate to Within 100 miles (Bridget J. M. Stutchbury York University, Toronto ON)

Light Level Geo Locator

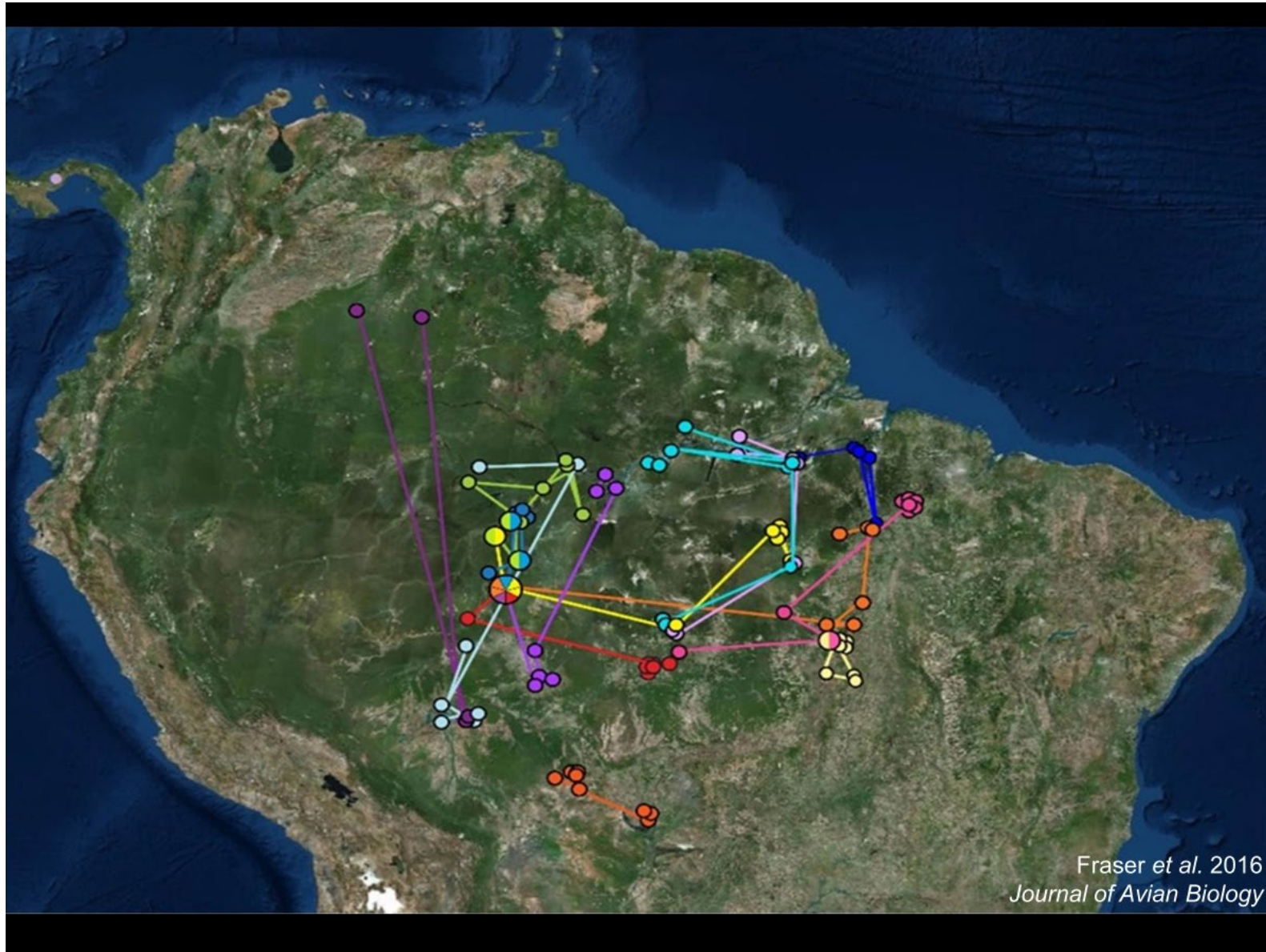




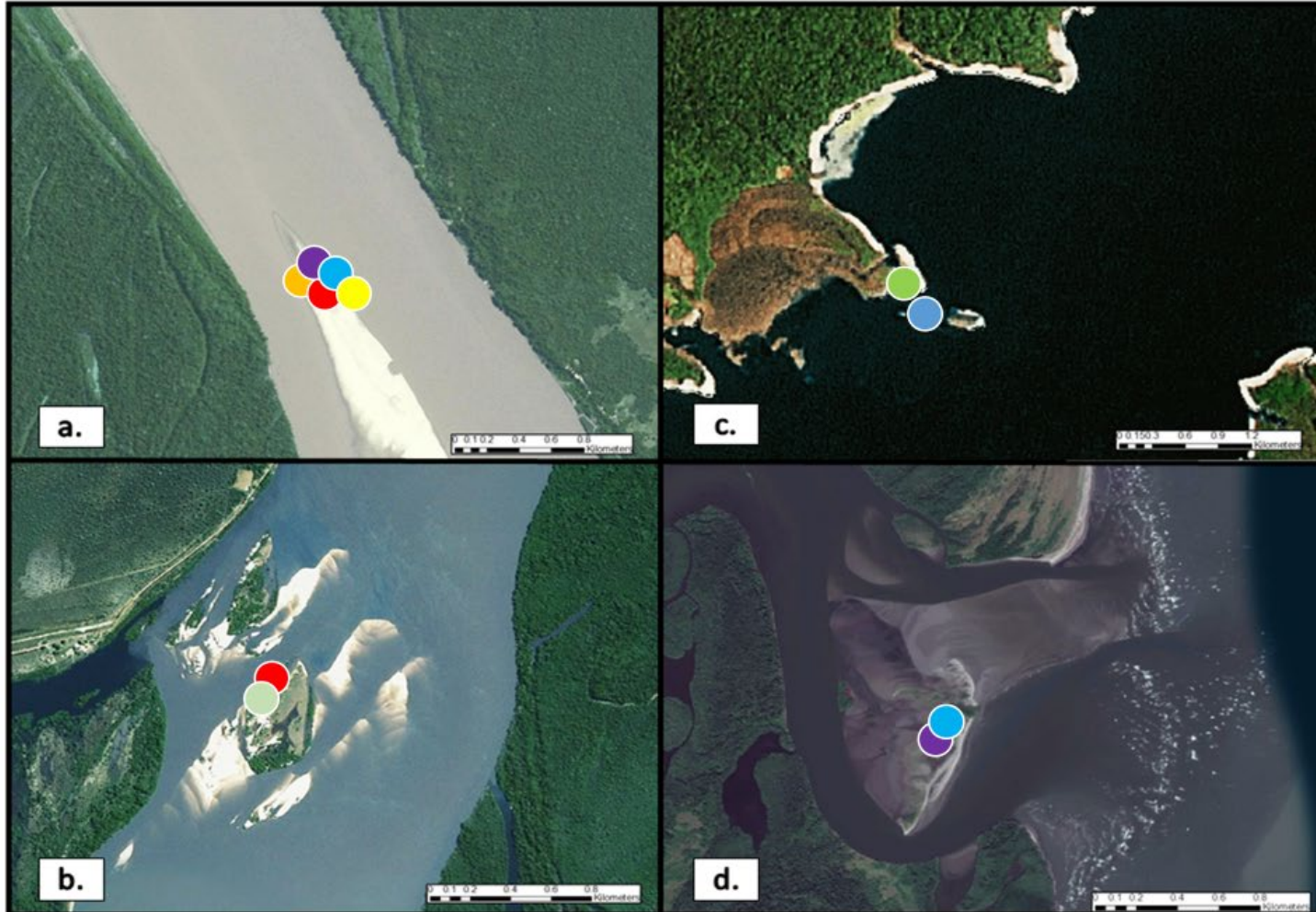


GPS Band





Birds from distant breeding sites share the same overwinter roosts



Fraser *et al.* 2016 *Journal of Avian Biology*

Motus Wildlife Tracking System

- Motus – Latin Word for **“Movement”**



Motus tower in a grassland by Smithsonian's National Zoo & Conservation Biology Institute |

Motus Tag



Location of Motus Tower Locations

as of May 2023



5. Studying the journey, not just the destination, provides new insight into songbird migrations

(US National Science Foundation, August 12, 2024)

- Same Stopover Points for Migrating Songbirds Creates Meaningful social relationships among songbirds

(Researchers from the University of Maryland Center for Environmental Science)



Secret sites where America's migrating songbirds stop to rest and refuel

Cape May Warblers resting on a coniferous tree during spring migration.

Princeton University

Photo Credit: Ian Davies

Bing Lin, STEP Ph.D.

Cara Clase, Ph.D., Center for Policy Research on Energy and the Environment

Dec. 12, 2023



Migrating Songbirds Need Healthy Stopover Areas – “HotSpots”

Blackburnian Warbler

Cornell Lab of Ornithology

Photo by Benjamin Skolnik



Important Facts About Hotspots

- Two Thirds of Identified Hotspots Lack Any formal Protection
- Substantial Seasonal Differences Where Hotspots Were Located
Only 17% Of Hotspots Shared in Both Seasons
- Higher Stopover Densities in Protected areas in Both Seasons

6. Take-Home Points

- Sustaining Healthy Populations of Migratory Landbirds **Requires -**
- **Network of Well Protected Stopover Areas**
Both To the Breeding and Wintering Grounds

7. Challenges to Our Songbirds

Deforestation

(foothills of the Sierra Nevada de Santa Marta,
Columbia) *Photo by Larry Thompson,*



Illegal Gold Mining - (Mercury)

in the Amazon – Eastern Peru

Photo taken December 2020

Photo taken by An astronaut on the International Space Station (ISS)

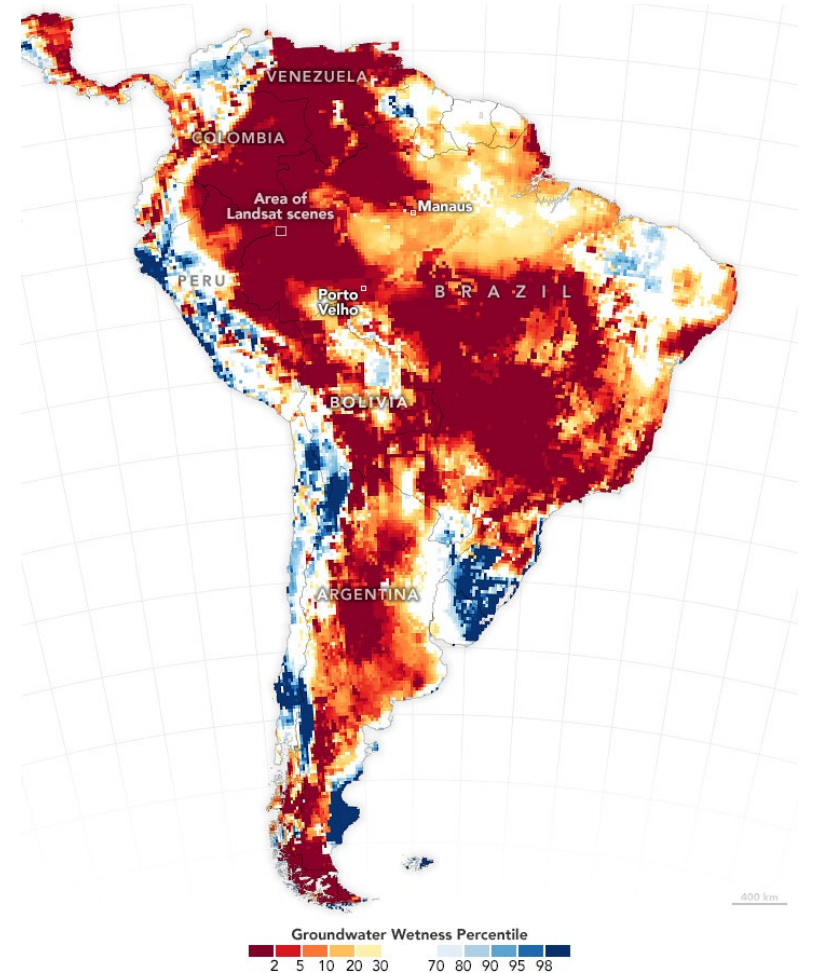


Draught

September 3, 2024

October 7, 2024

NASA earth observatory



Drought on the Amazon – Manaus

June 19, 2024

September 25, 2024

AP BY EDMAR BARROS AND [DAVID BILLER](#) Updated 11:39 AM CST, September 26, 2024



8. There is Hope – Johnson County EMN

Kill Creek Park, Johnson County, Kansas 2024



KSU Johnson County Purple Martin Program 2024 Kill Creek Park



Heritage Park 2024



Results of 2024 Season – Fledglings Raised By EMNs

- Kill Creek Park - 102
- Heritage Park – 513
- Additional Fledglings
Warnes – 161, Reed/Miller – 190
- **Total Fledglings Raised – 966**



Disney World





Won't You Promote Purple Martins ?



- Join Other PM Enthusiasts
- If interested, contact **Bill Warnes**, EMN, 2021
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402-677-3871