



Connecting your backyard
to the rest of the Western
Hemisphere through
migratory birds

Bill DeLuca, PhD
Senior Migration Ecologist
National Audubon Society



BILL DELUCA, PHD SENIOR MIGRATION ECOLOGIST



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Audubon

Migratory Bird Initiative

Across the Americas, we will work with partners to:

Identify and **protect** the most important places

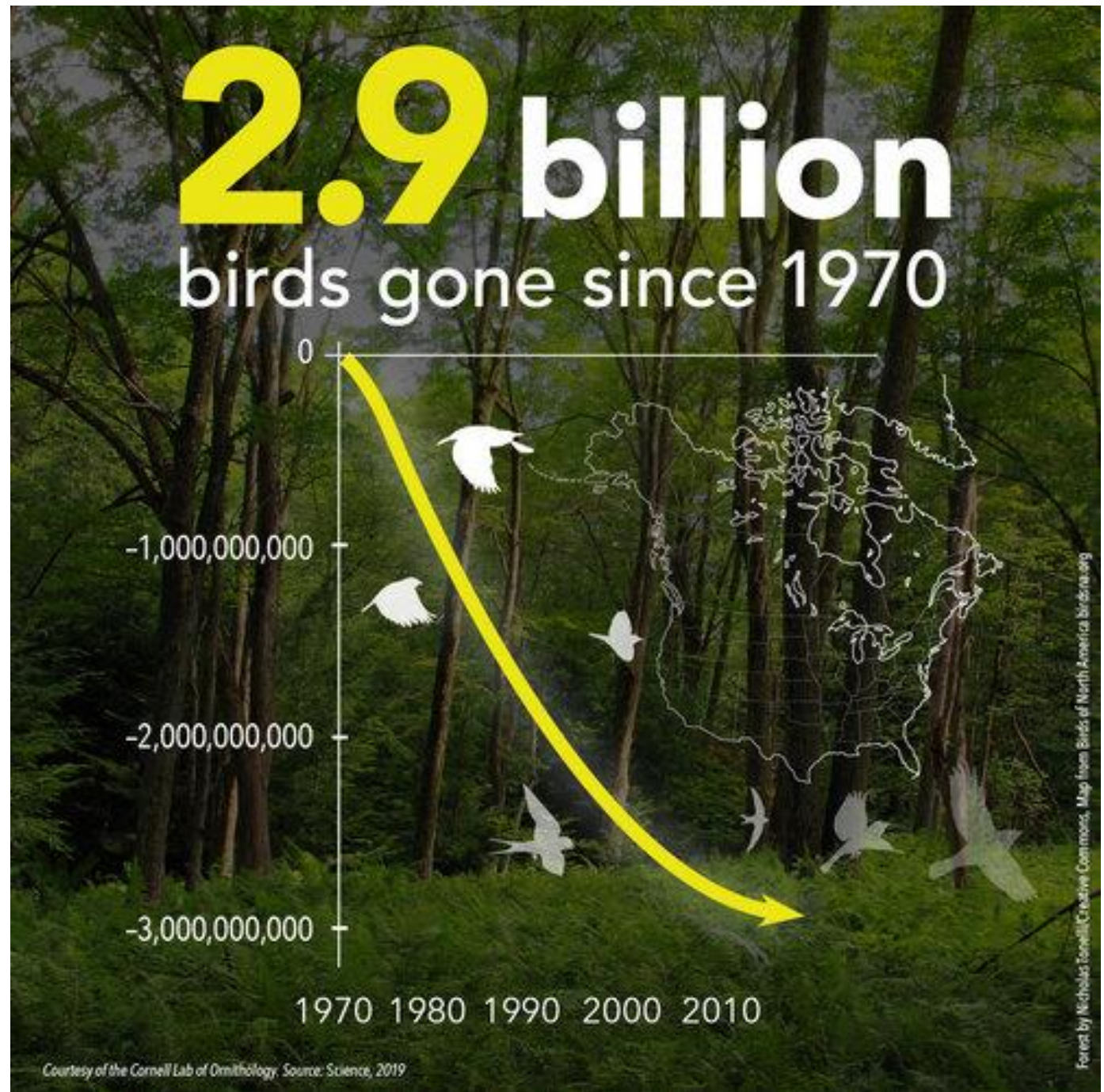
Reduce threats

Engage people in the wonder of migration



BIRDS ARE BEING
LOST AT
AN ALARMING
RATE

3 Billion Birds
lost in 50 years



70% OF NORTH
AMERICAN BIRDS
MIGRATE

>50% OF THE YEAR
MIGRATING &
OVERWINTERING



Photo: Shirley-Donald/Audubon Photography Awards

MIGRATORY BIRDS ARE THE MOST VULNERABLE

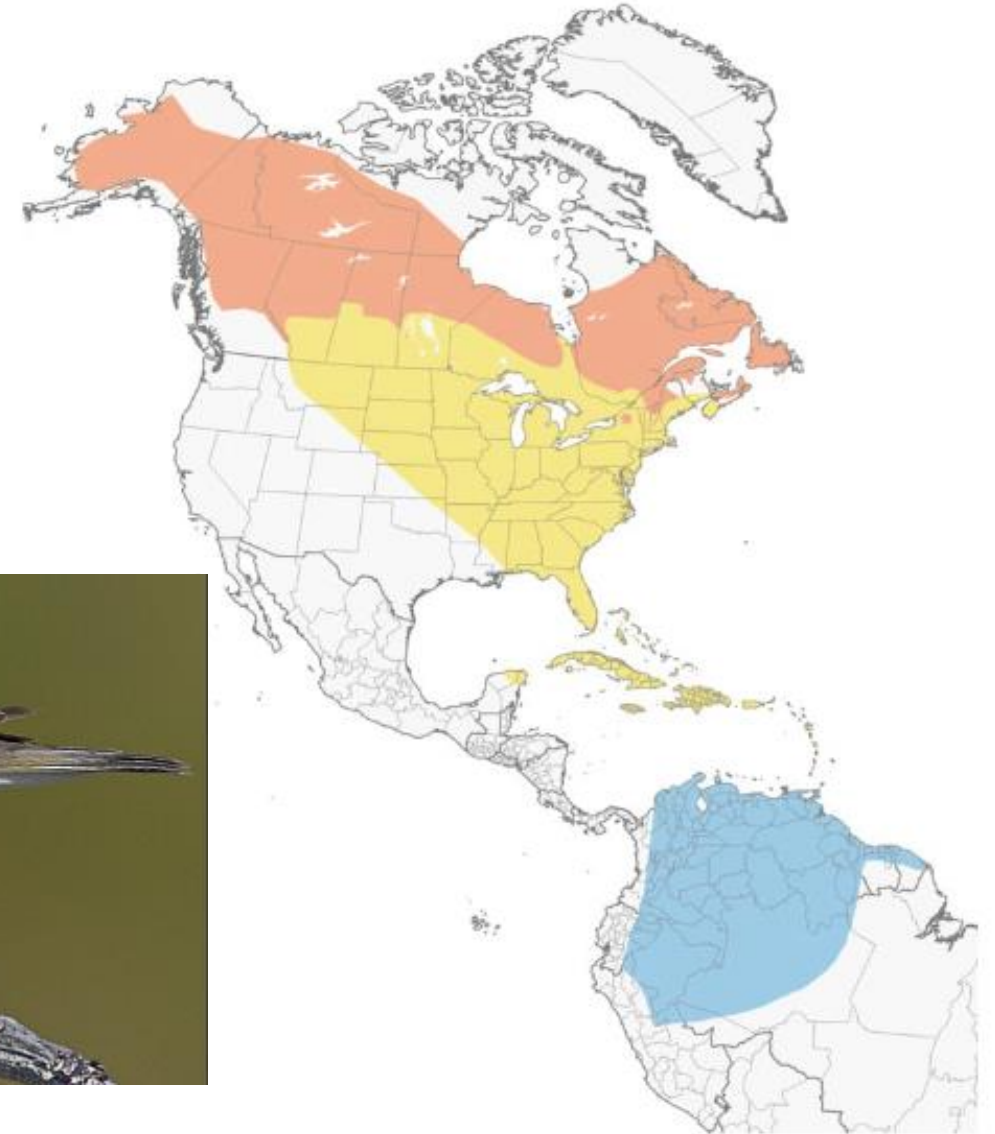


12% OF THE 2.5
BILLION MIGRATORY
BIRDS LOST
ARE BLACKPOLL
WARBLERS

350,000,000 Blackpolls
lost in 50 years



BLACKPOLL WARBLER (*SETOPHAGA STRIATA*)



■ Year-round
■ Migration
■ Breeding
■ Nonbreeding

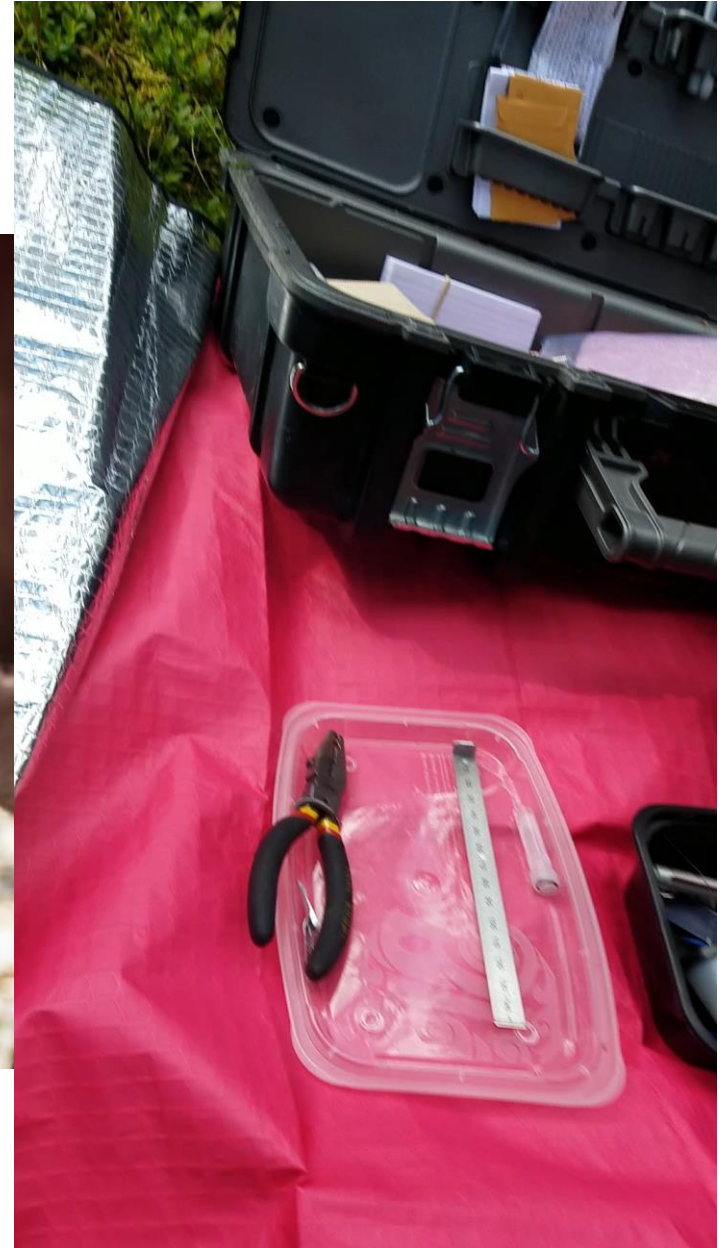
Range map provided by [Birds of the World](#)

LIGHT-LEVEL GEOLOCATORS

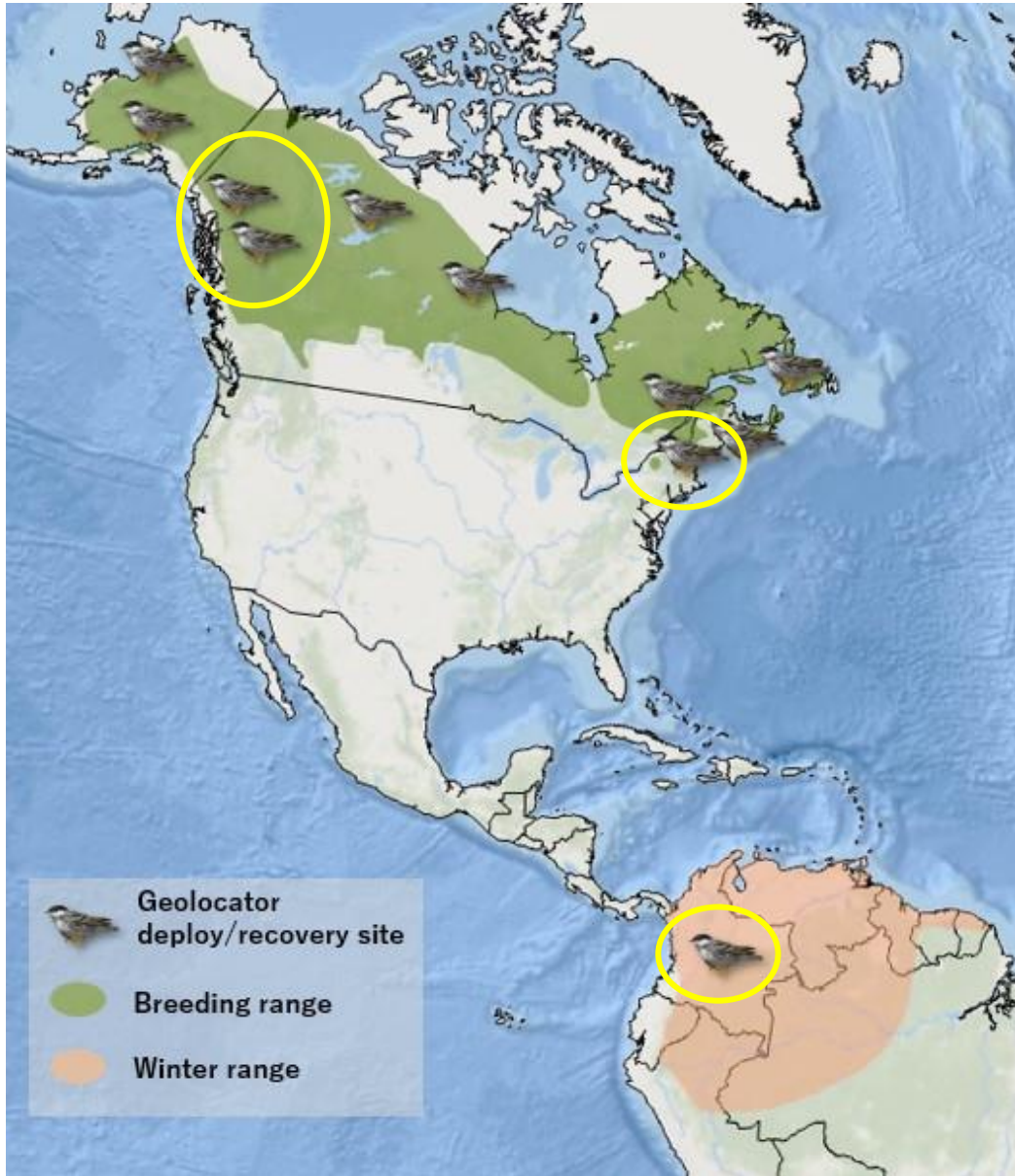


Blackpoll Warbler. Mike Fernandez

LIGHT-LEVEL GEOLOCATORS

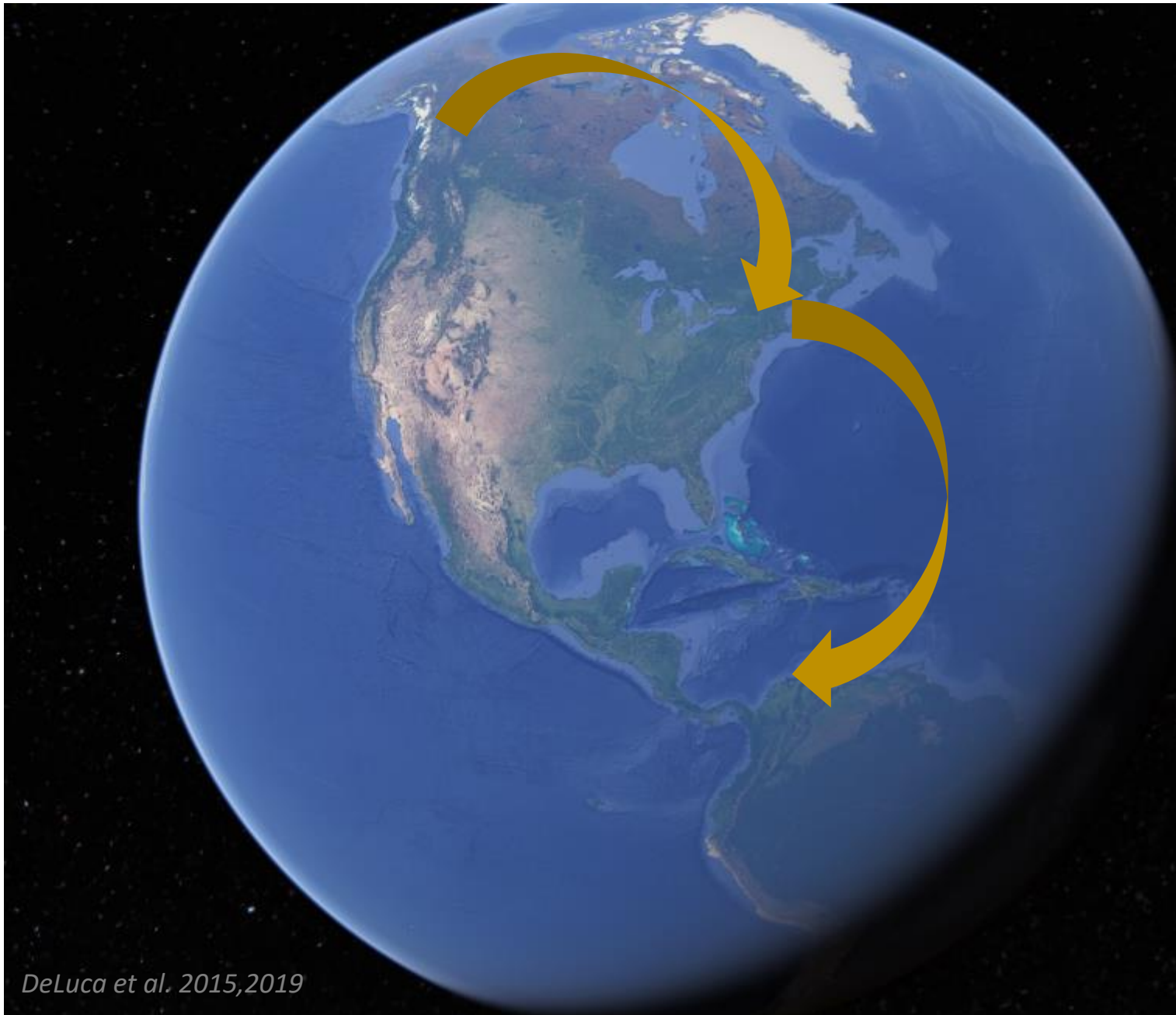


LIGHT-LEVEL GEOLOCATORS



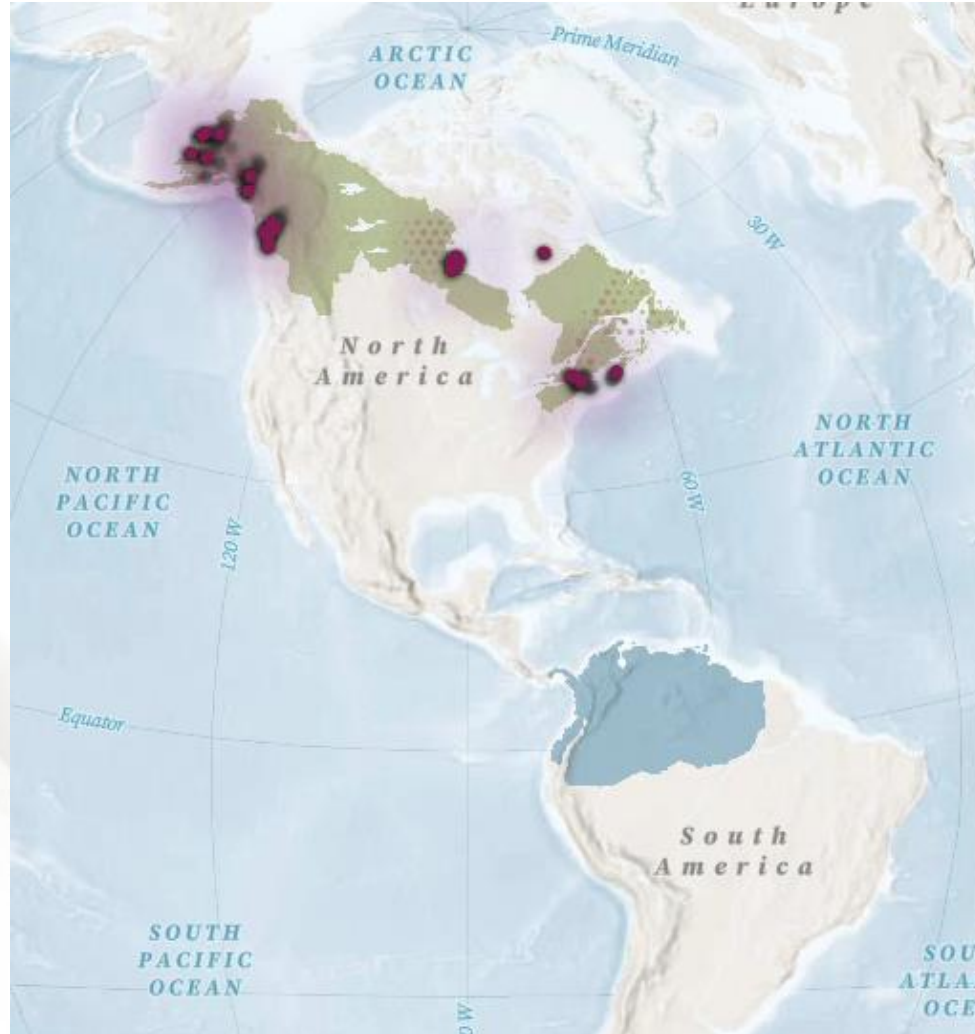
- 10 SITES NORTH AMERICA
- 1 SITE IN COLOMBIA
- >300 ATTACHED
- ~50 RECAPTURED

LIGHT-LEVEL GEOLOCATORS



- 3,400 KM
- 3 DAYS
- DOUBLE BODY WEIGHT
- ABSORB DIGESTIVE ORGANS





ADVANCES IN
MIGRATION
TECHNOLOGY
HELP US
UNDERSTAND
BIRD MIGRATION
FOR BETTER
CONSERVATION

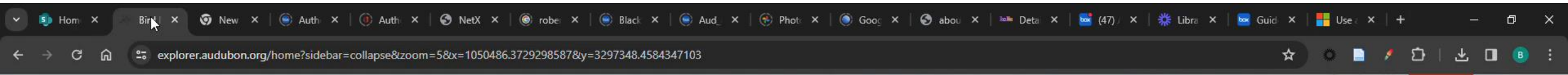
Blackpoll Warbler. Mike Fernandez

- Landbirds
- Raptors
- Shorebirds
- Waterbirds
- Waterfowl

180 SPECIES
9,600 MIGRATION
TRACKS
400 RESEARCH
PROJECTS

BIRDMIGRATIONEXPLORER.ORG

BIRDMIGRATIONEXPLORER.ORG



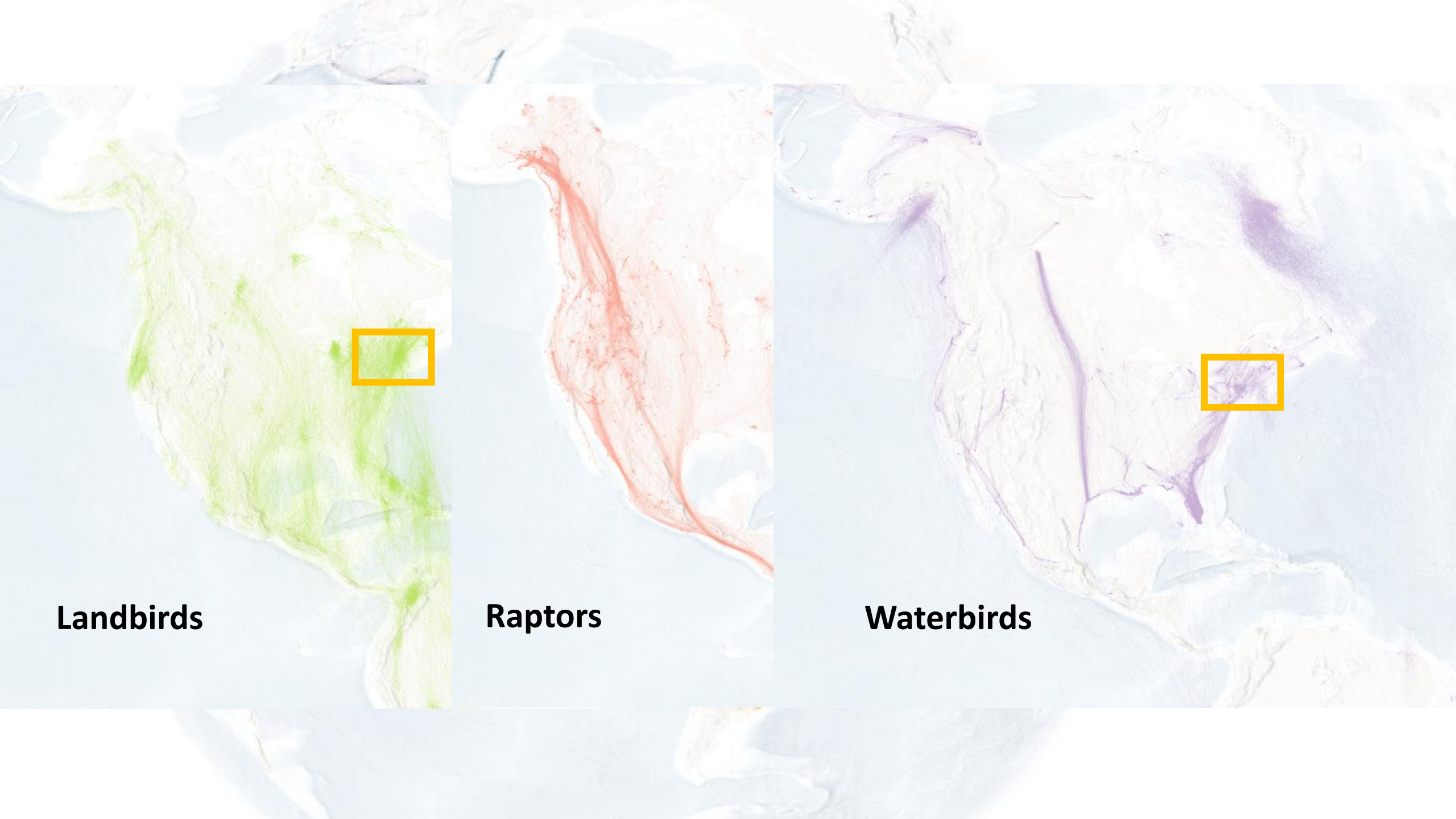
The **Bird Migration Explorer** is your guide to the heroic annual journeys made by over 450 bird species, and the challenges they face along the way.

Learn more about a species, the migratory birds at a specific location, or a conservation challenge birds face.

- [Bird Species](#)
- [Locations](#)
- [Conservation Challenges](#)
- [Take a tour](#)

Supported by Barbara and Earl Doolin

The Bird Migration Explorer is made possible by the generous contribution of data and expertise from our partners and the research community. [Learn more about the Explorer.](#)

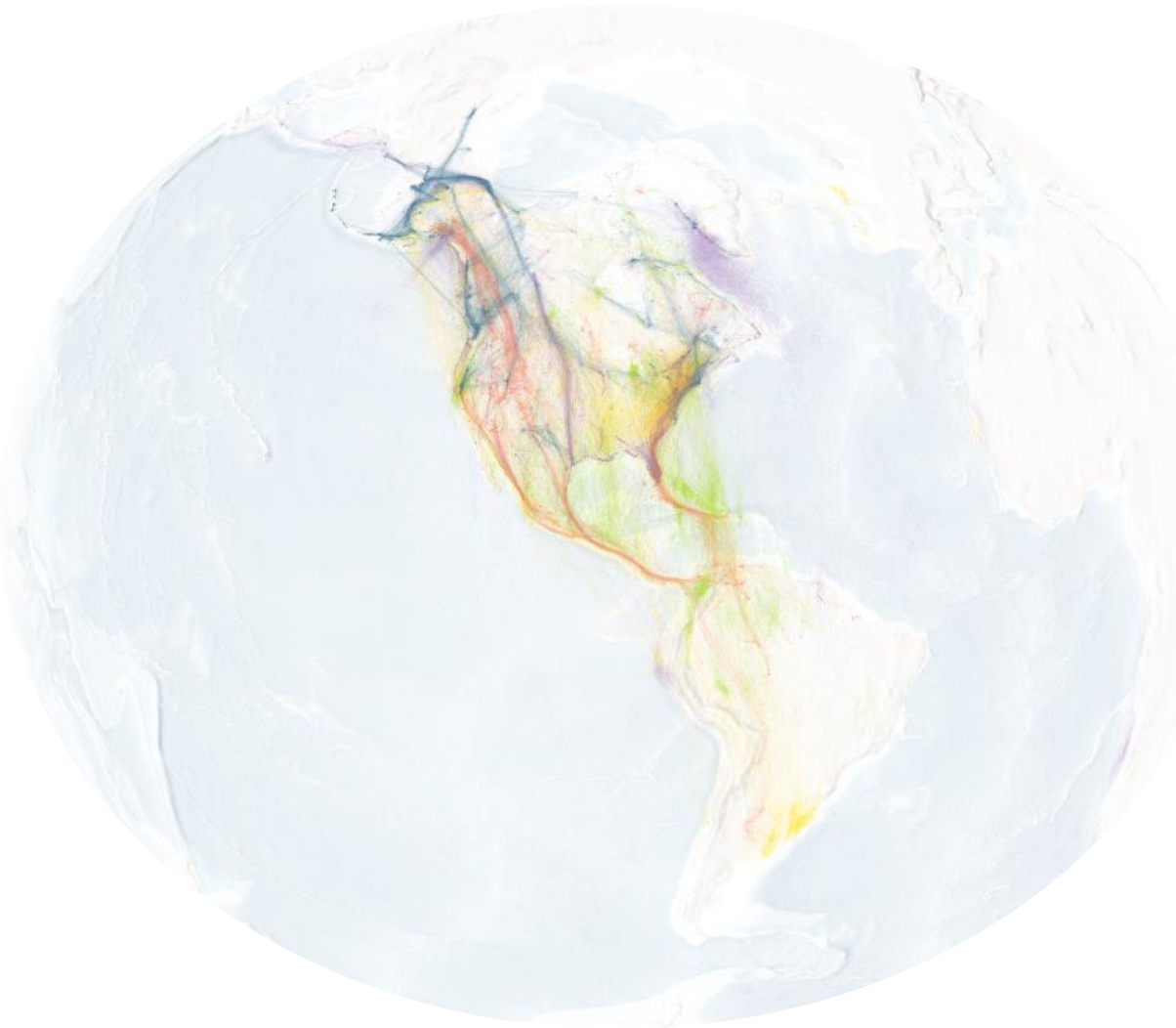


Landbirds

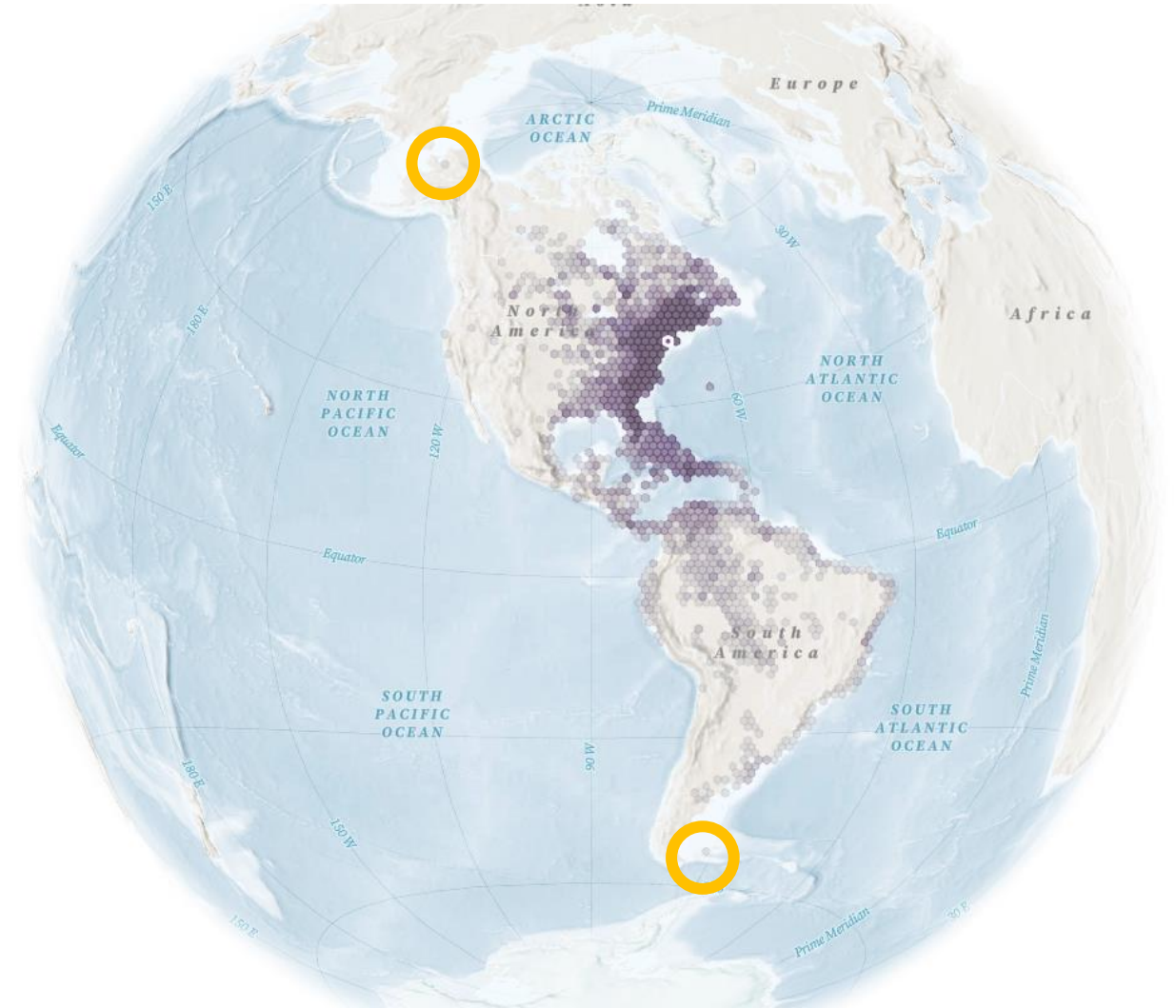
Raptors

Waterbirds

BIRDMIGRATIONEXPLORER.ORG

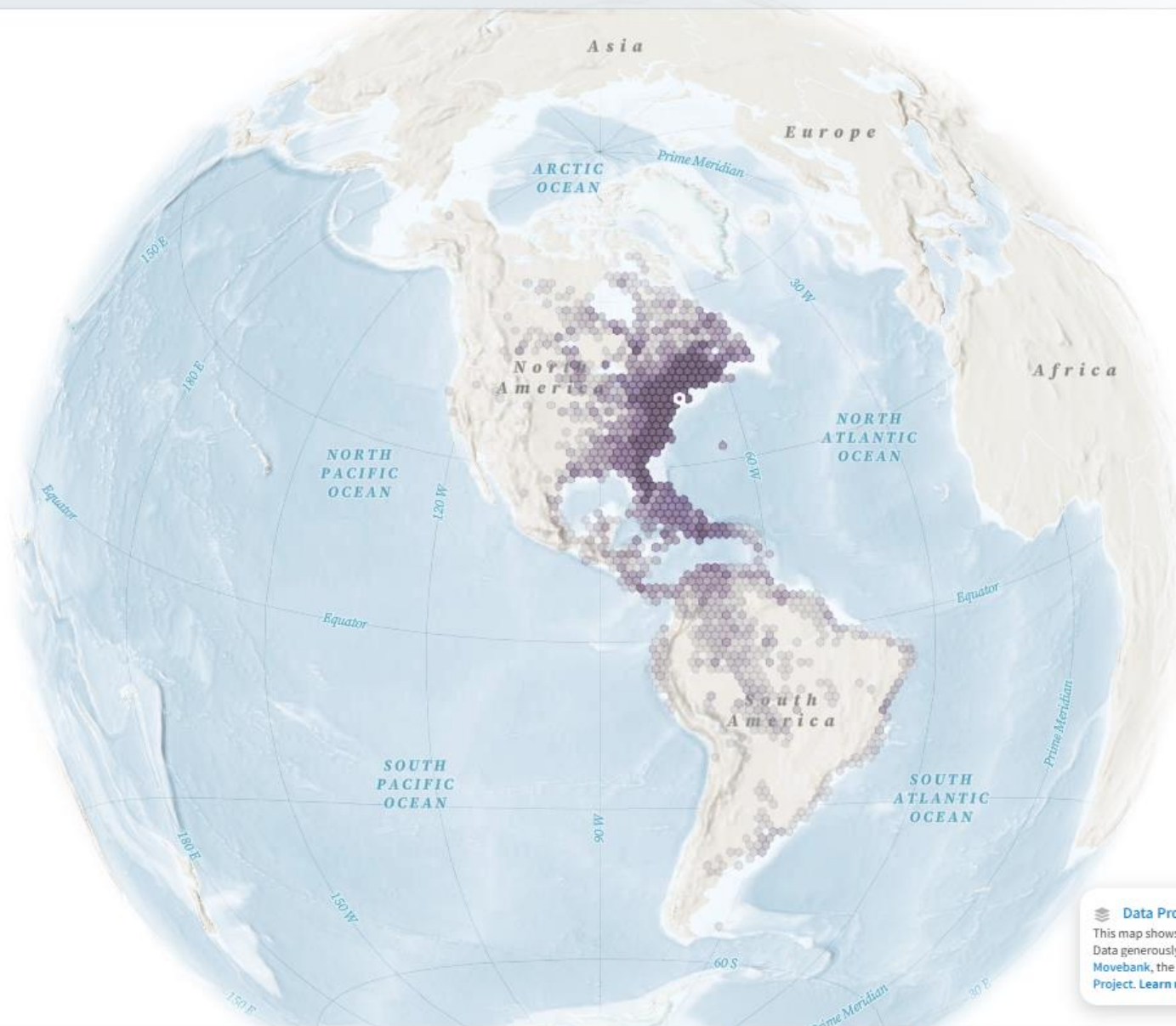


9,600 BIRD MIGRATION
TRACKS



OF BIRDS CONNECTED
TO SOUTH HADLEY

Country	Species	Birds
United States	164	25830
Canada	102	5587
Cuba	16	153
Bahamas	15	134
Dominican Republic	13	158
Colombia	13	92
Jamaica	12	50
Venezuela	11	108
Haiti	10	117
Puerto Rico	10	44
Turks and Caicos Islands	9	44
Honduras	9	15
Brazil	8	668
Costa Rica	8	12
Mexico	8	11
Aruba	7	22
Panama	7	20
Saint-Pierre and Miquelon	7	13
Nicaragua	6	11
Guyana	5	531
Bonaire, Sint Eustatius, and Saba	5	9
Peru	5	7
Bermuda	5	6
Guatemala	5	6
Cayman Islands	4	14
Curaçao	4	10



Map Layers

Location Connections

Choose any location across the hemisphere, and see where else its migratory birds go.

Number of Tagged Species That Connect Locations

1 2 3-5 6-10 >10

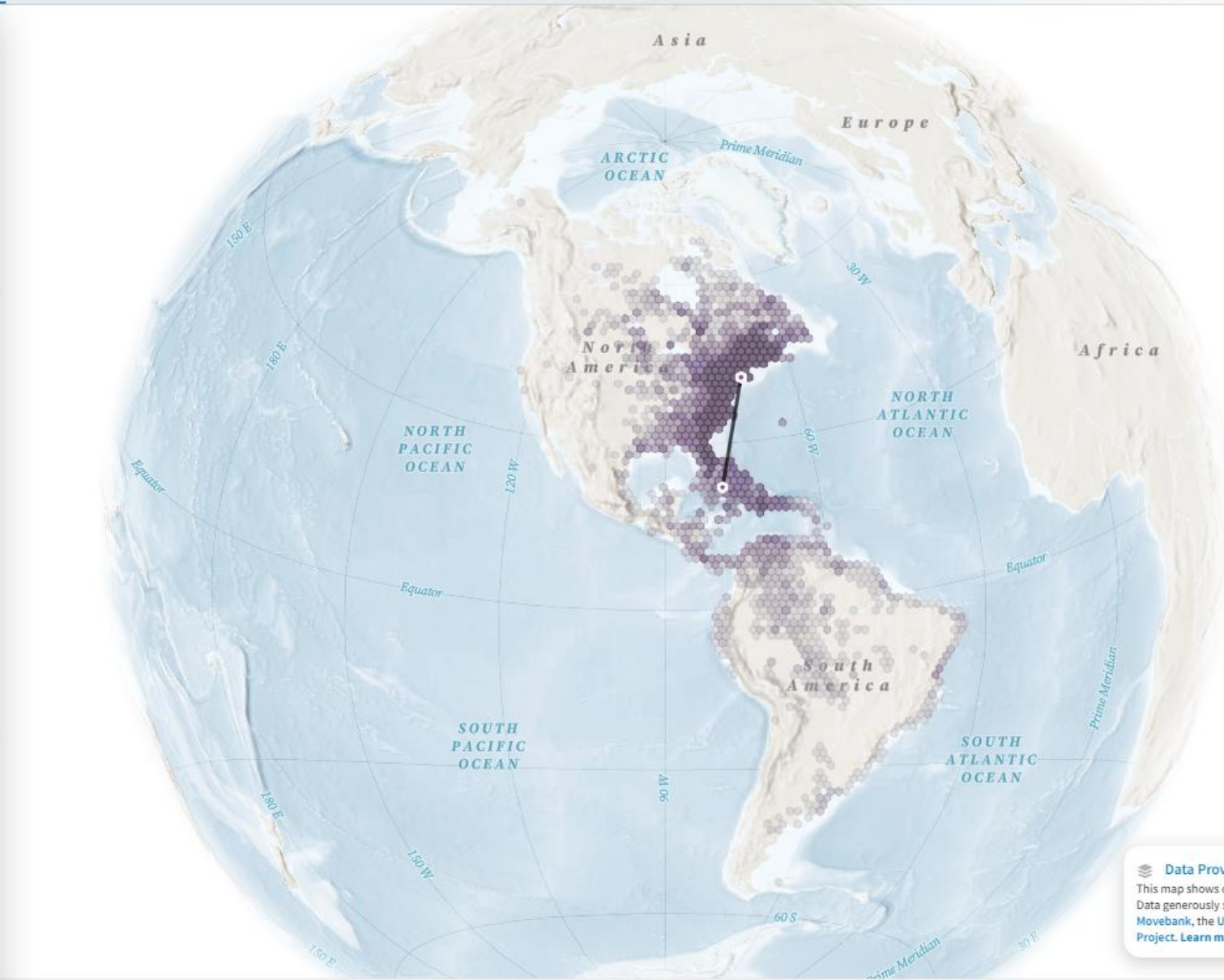
[Show Descriptions](#)

50 countries!

Data Providers

This map shows connections for 33088 individual birds from 170 species. Data generously shared by researchers from 237 studies, stored on Movebank, the USGS Bird Banding Lab, Motus, and the Bird Genoscape Project. [Learn more](#)

- Grasshopper Sparrow
Ammodramus savannarum
- TRACKED
Osprey
Pandion haliaetus
- TRACKED
Prairie Warbler
Setophaga discolor
- TRACKED
Great Blue Heron
Ardea herodias
- TRACKED
Tree Swallow
Tachycineta bicolor
- TRACKED
Great Egret
Ardea alba
- TRACKED
Black-throated Blue Warbler
Setophaga caerulescens
- TRACKED
Blackpoll Warbler
Setophaga striata



Map Layers

Location Connections

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1	2	3-5	6-10	>10
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[Show Descriptions](#)

Data Providers

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Explore Locations →

South Hadley, MA, USA

is connected to...
Atlantic Ocean

...through 1 bird of 1 species

Connected Bird Species

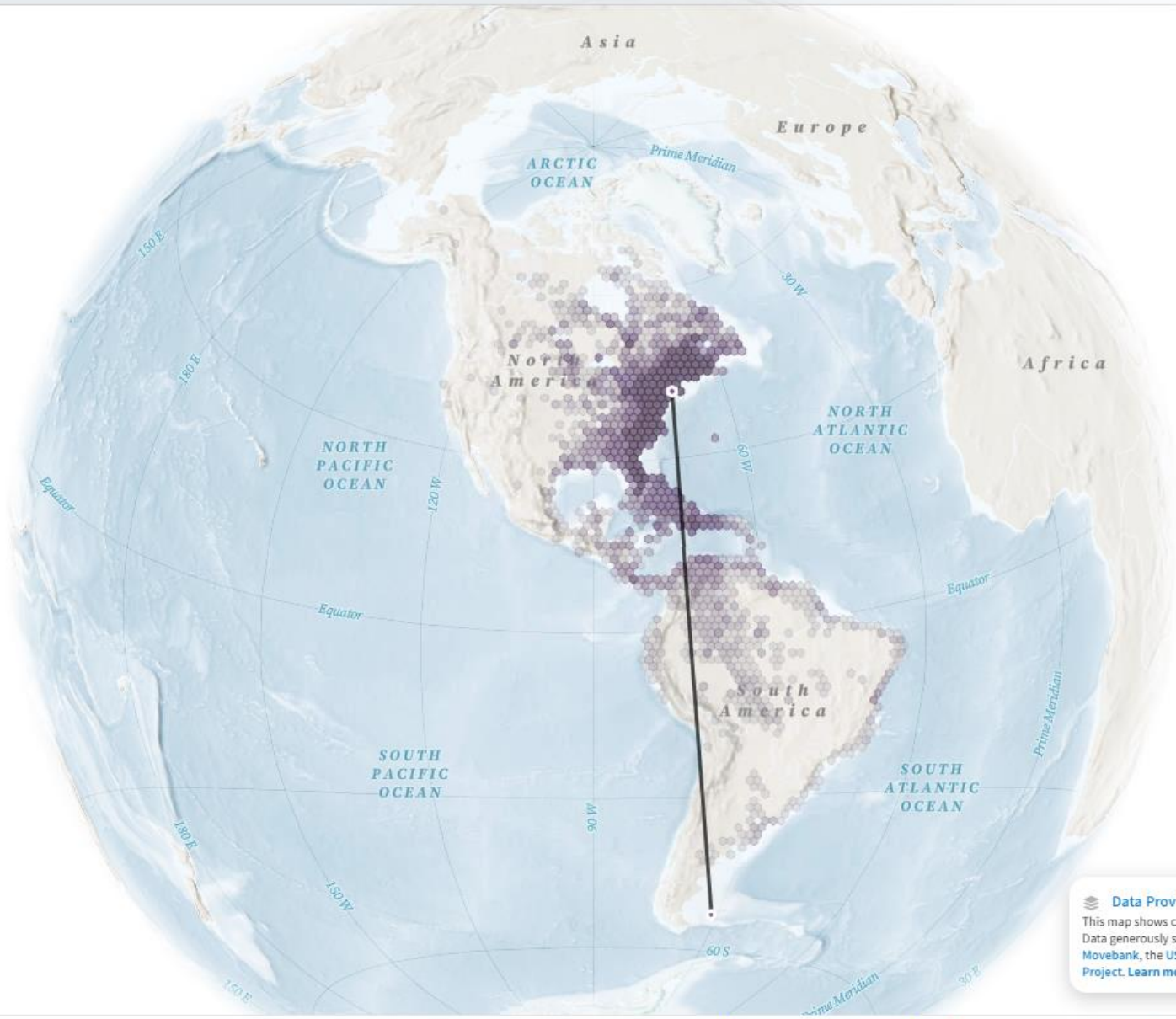
TRACKED

Arctic Tern

Sterna paradisaea



1 Available Map



Map Layers

Location Connections

Choose any location across the hemisphere, and see where else its migratory birds go.

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1	2	3-5	6-10	>10
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Show Descriptions

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v2.1-99183e12

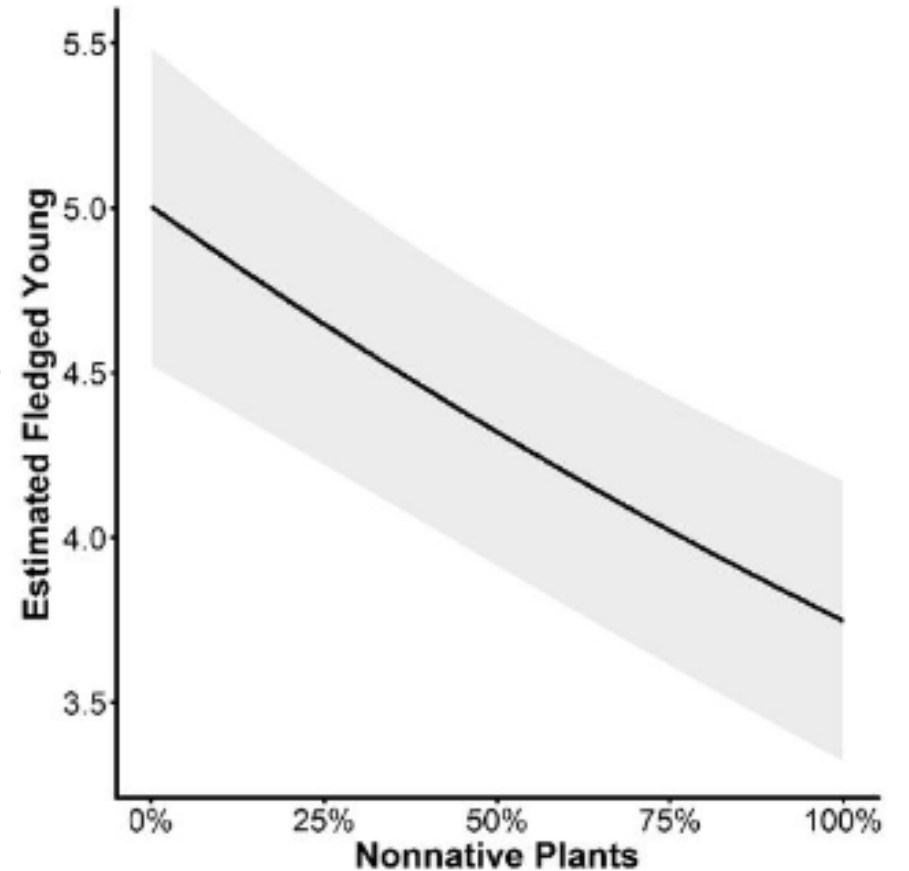
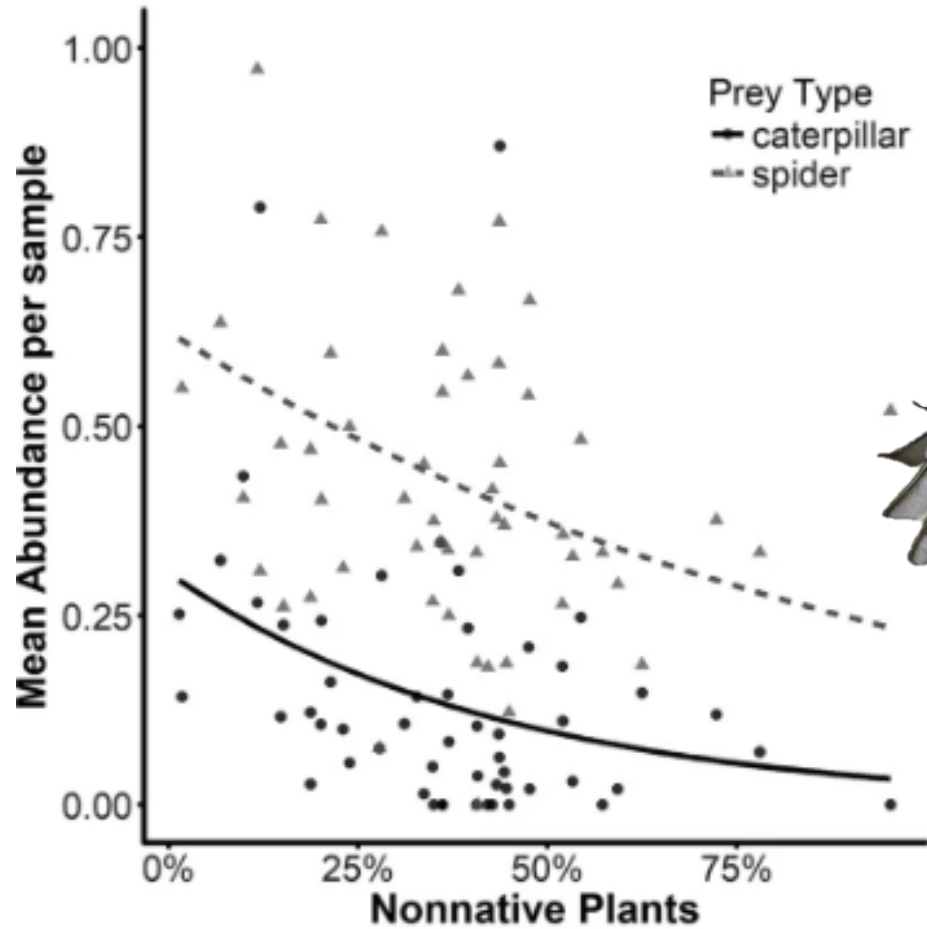


MIGRATORY BIRDS
NEED A
CONNECTED
NETWORK
TO COMPLETE
THEIR ANNUAL
CYCLES

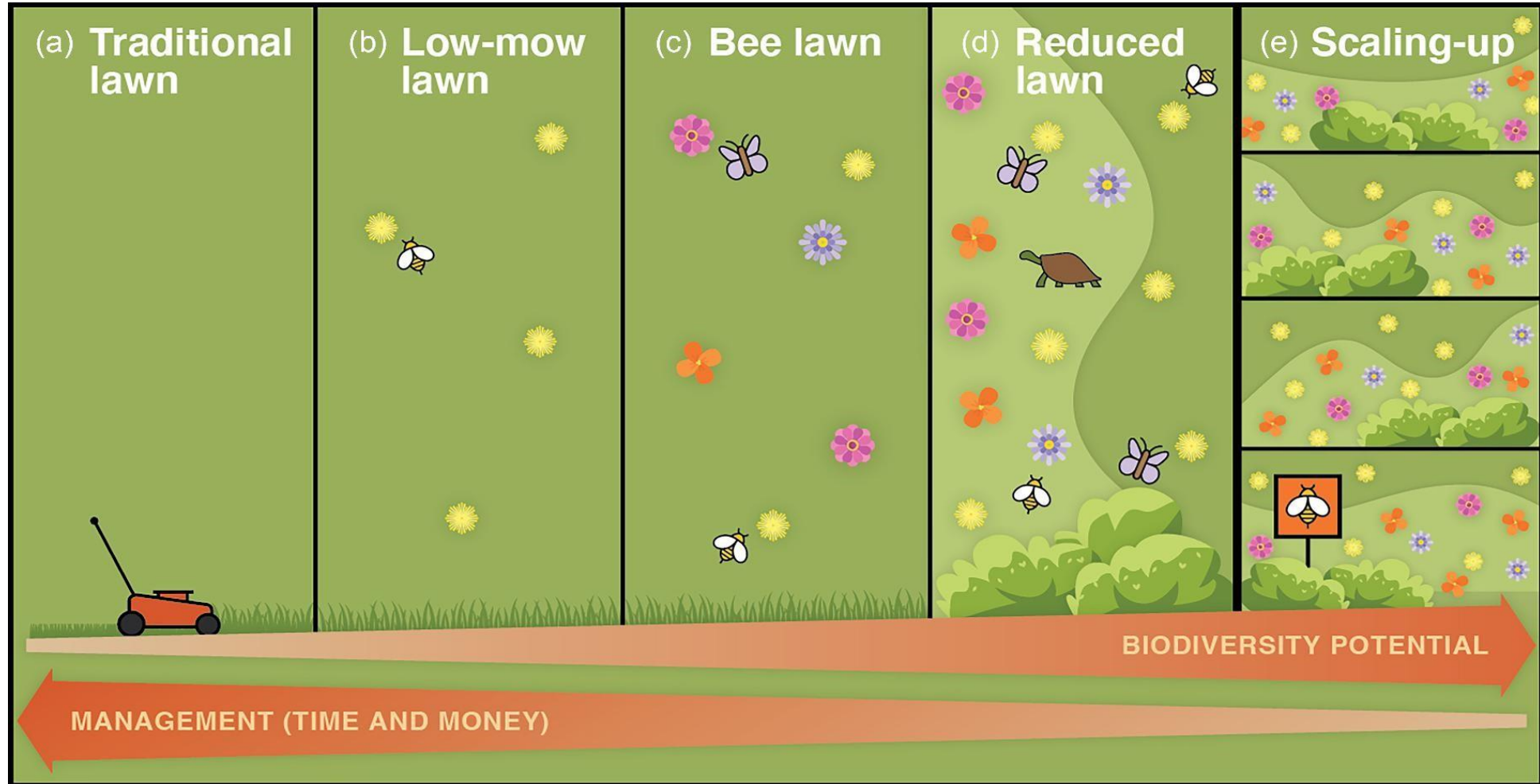


Robert Royse

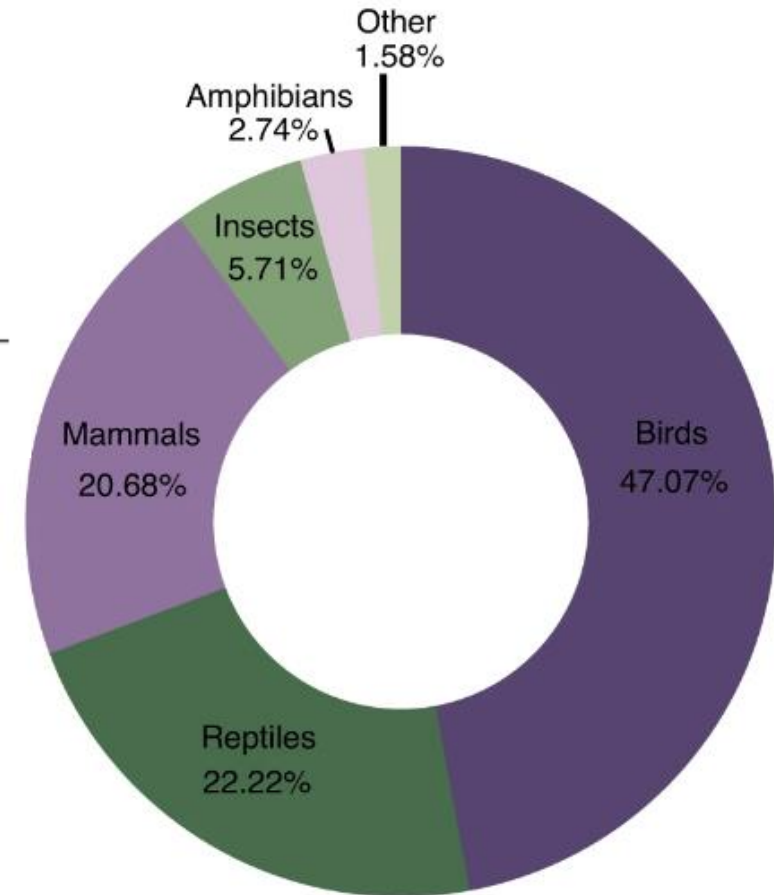
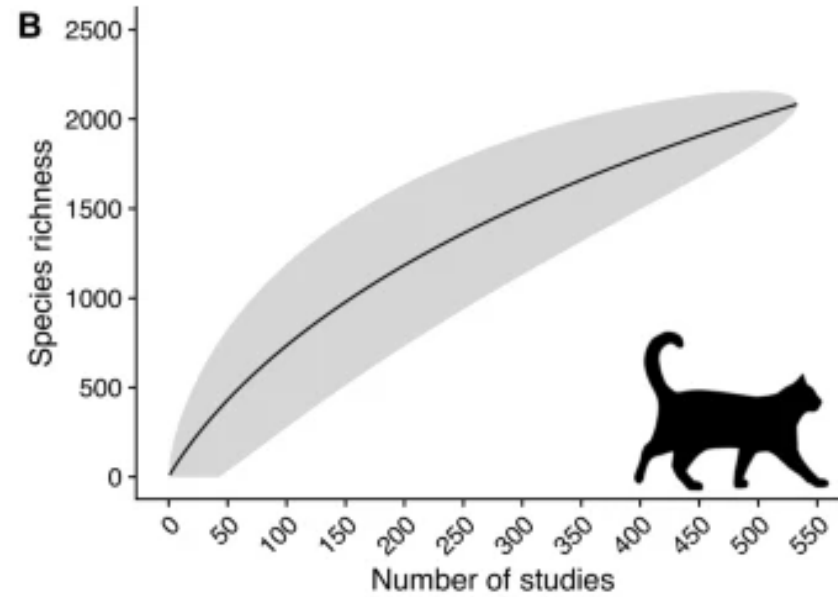
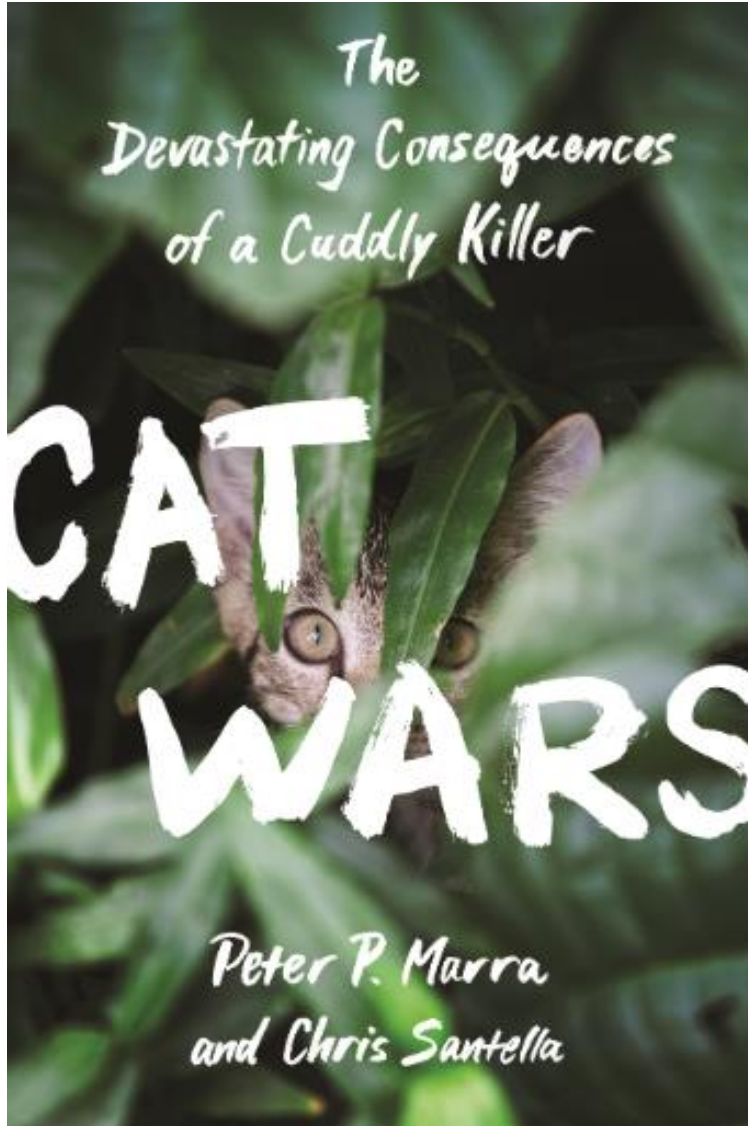
ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – NATIVE PLANTS



ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – REDUCE LAWN



ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – CATS



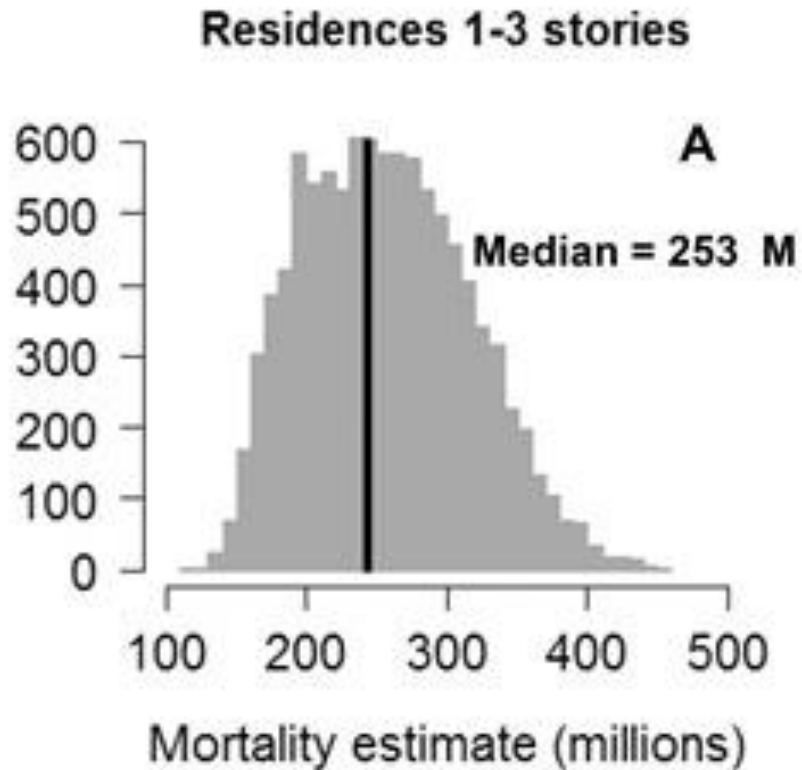
ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – CATS

LIFESPAN OF AN
INDOOR CAT =
10-20 YEARS

LIFESPAN OF AN
OUTDOOR CAT IS
2-5 YEARS



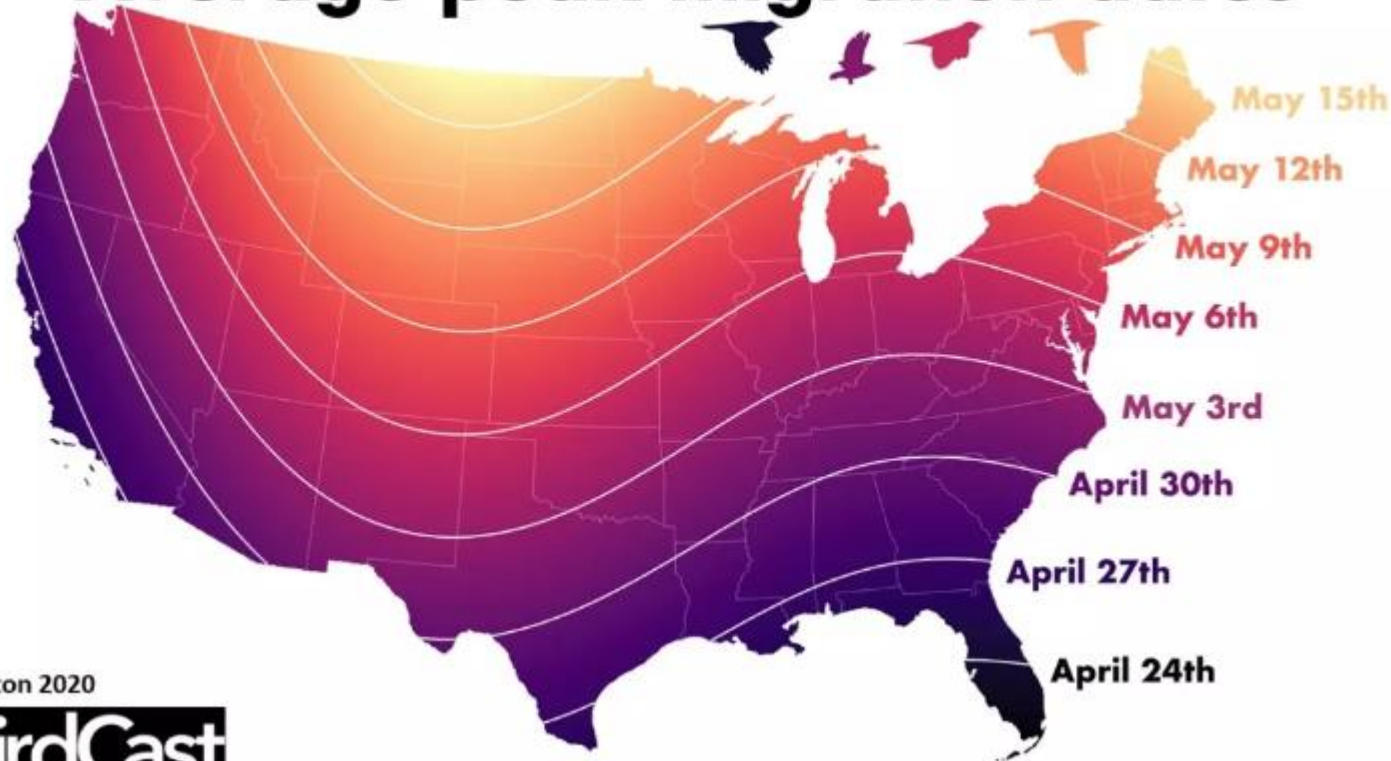
ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – WINDOWS



Featherfriendly.com

ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – LIGHTS

Average peak migration dates



Horton 2020

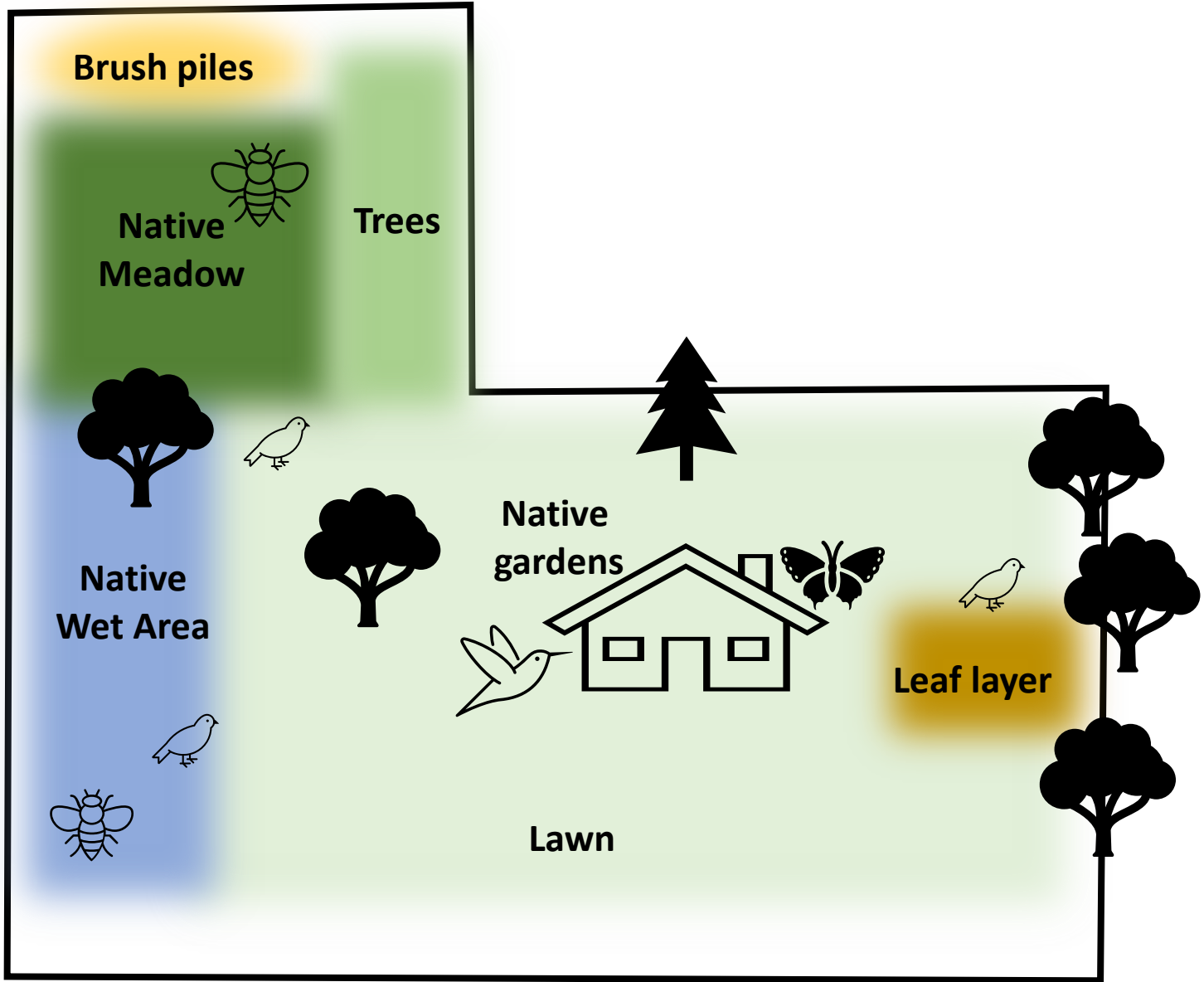
BirdCast

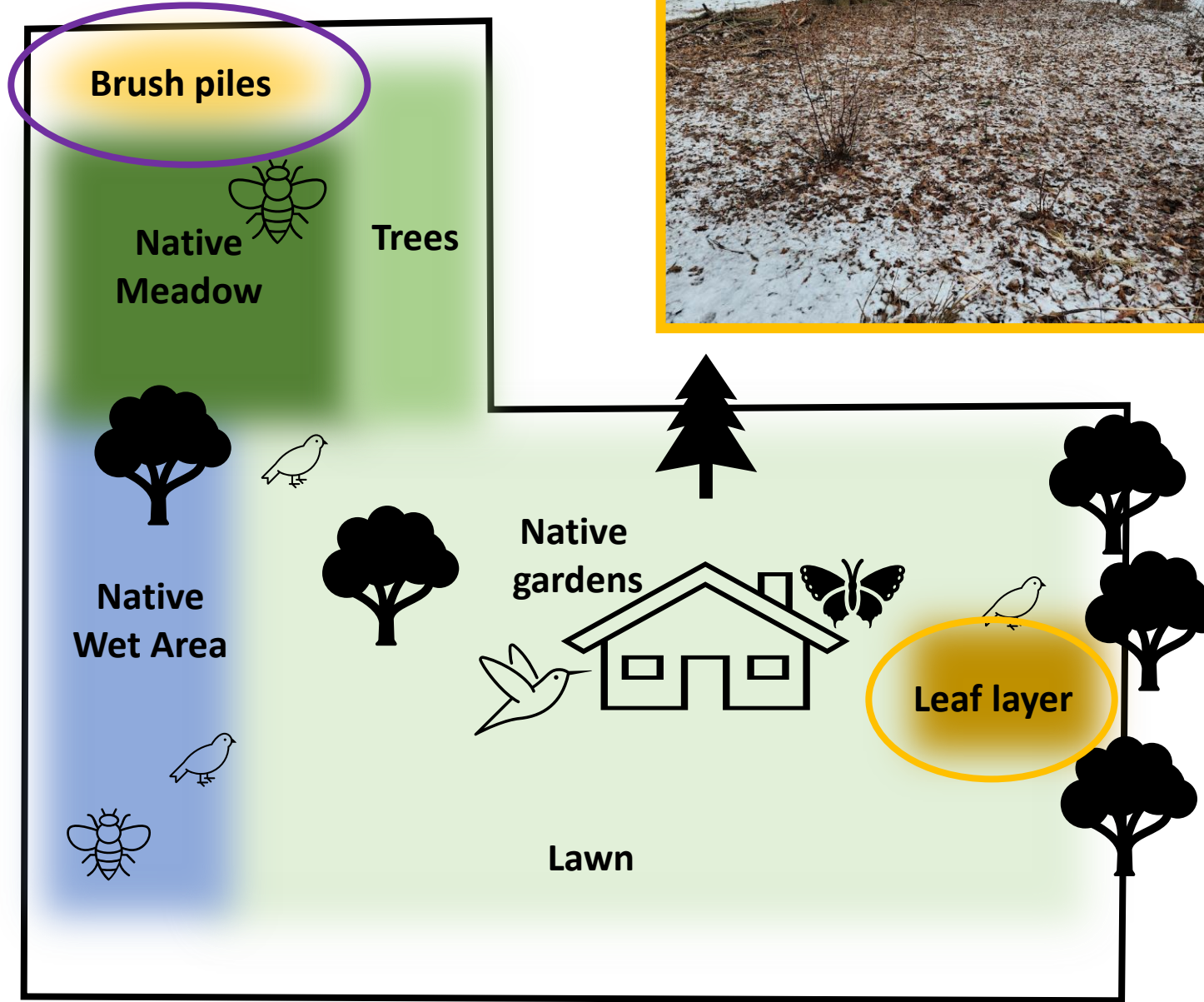
BIRDS USE THE STARS TO NAVIGATE

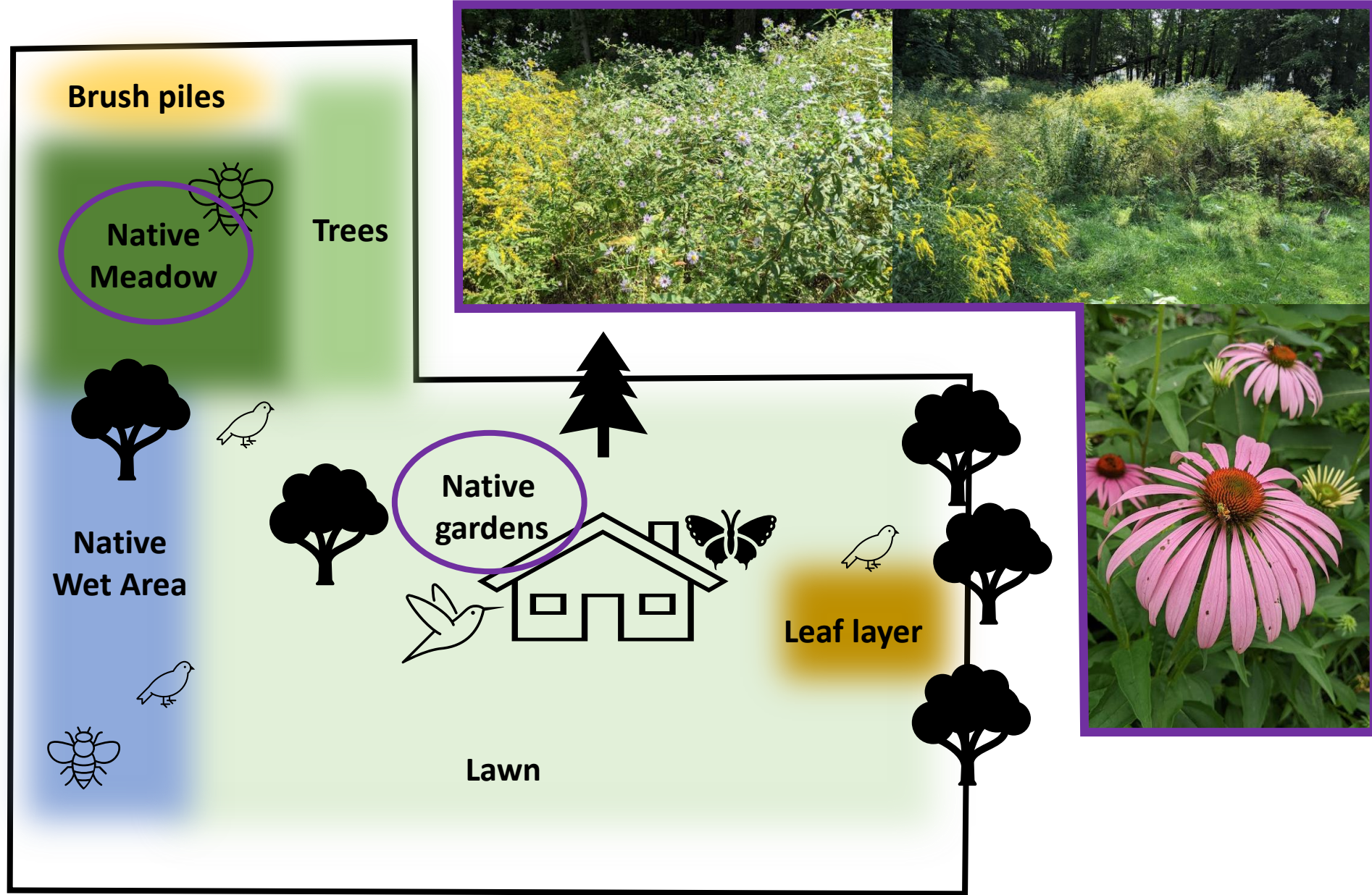
LIGHTS CAN CAUSE DISORIENTATION DURING MIGRATION

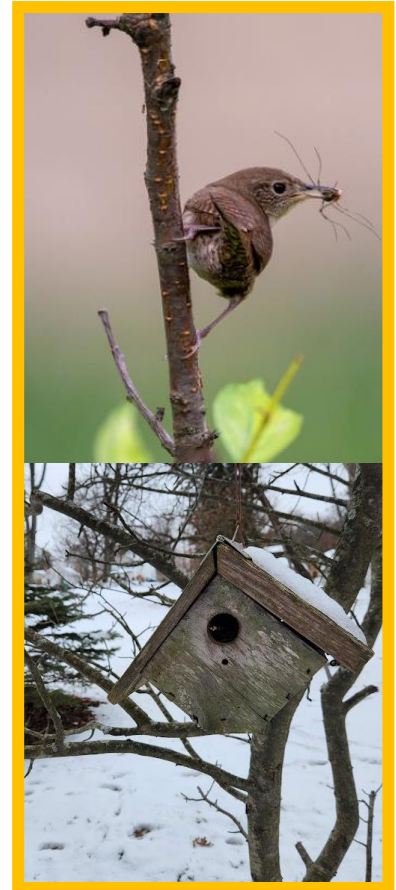
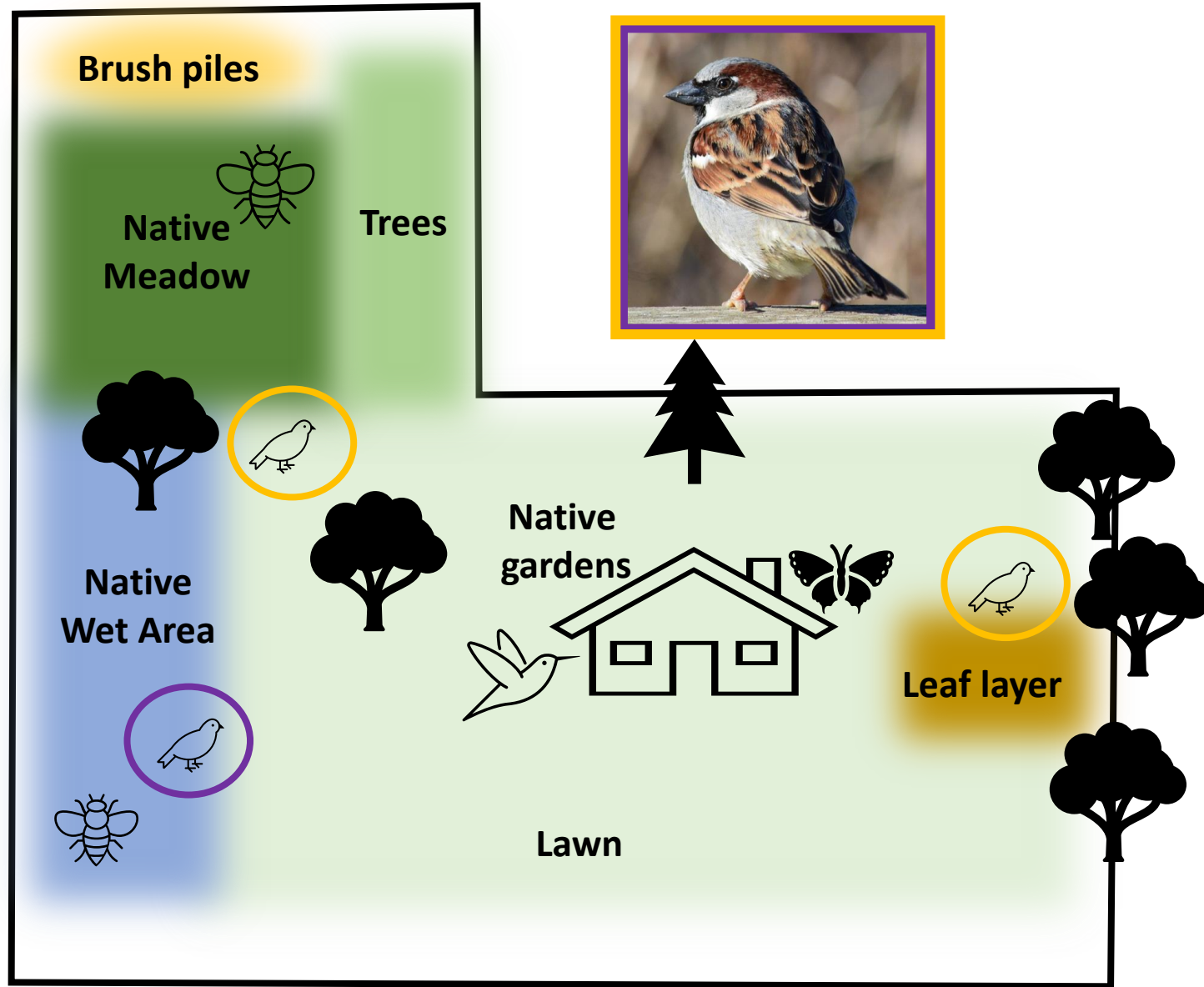
ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – LIGHTS

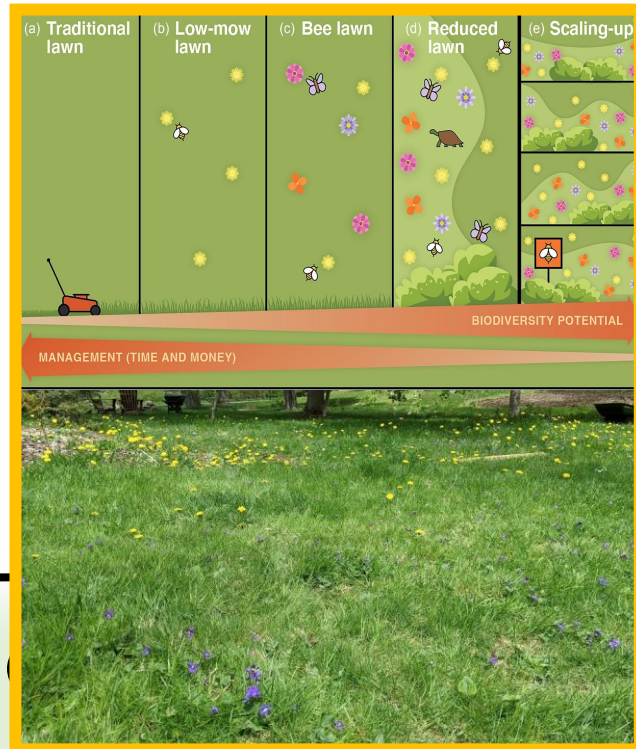
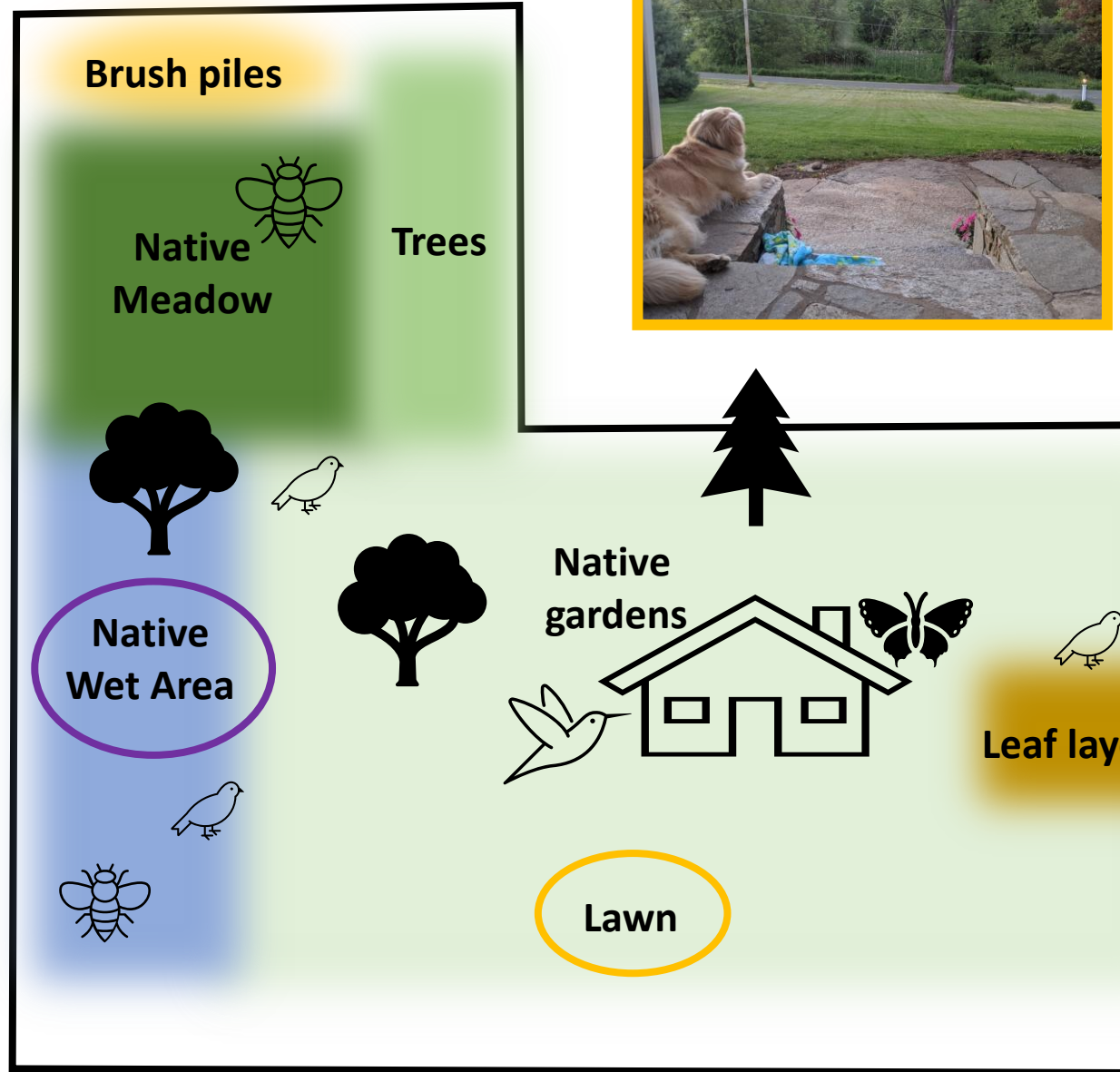


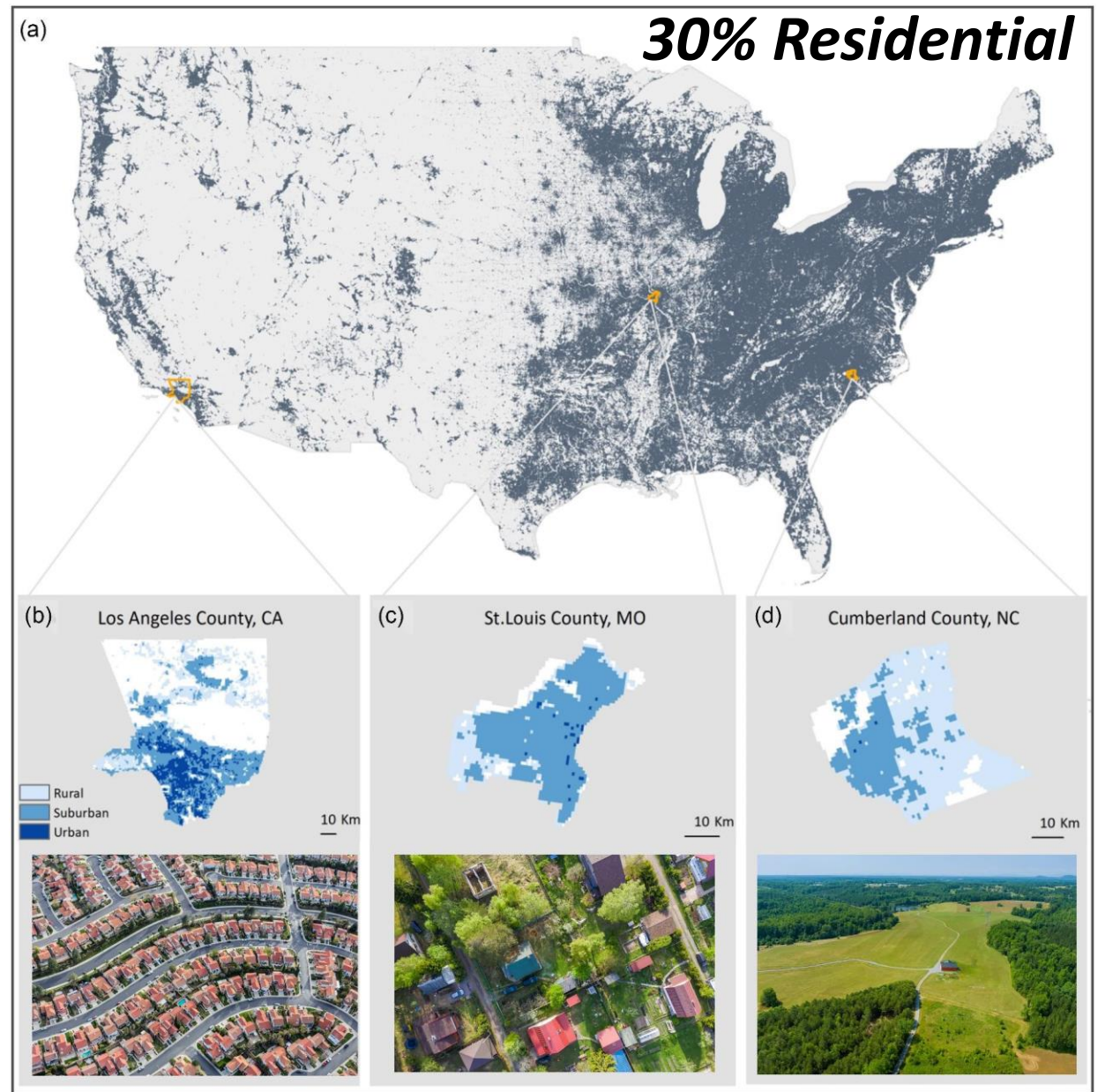






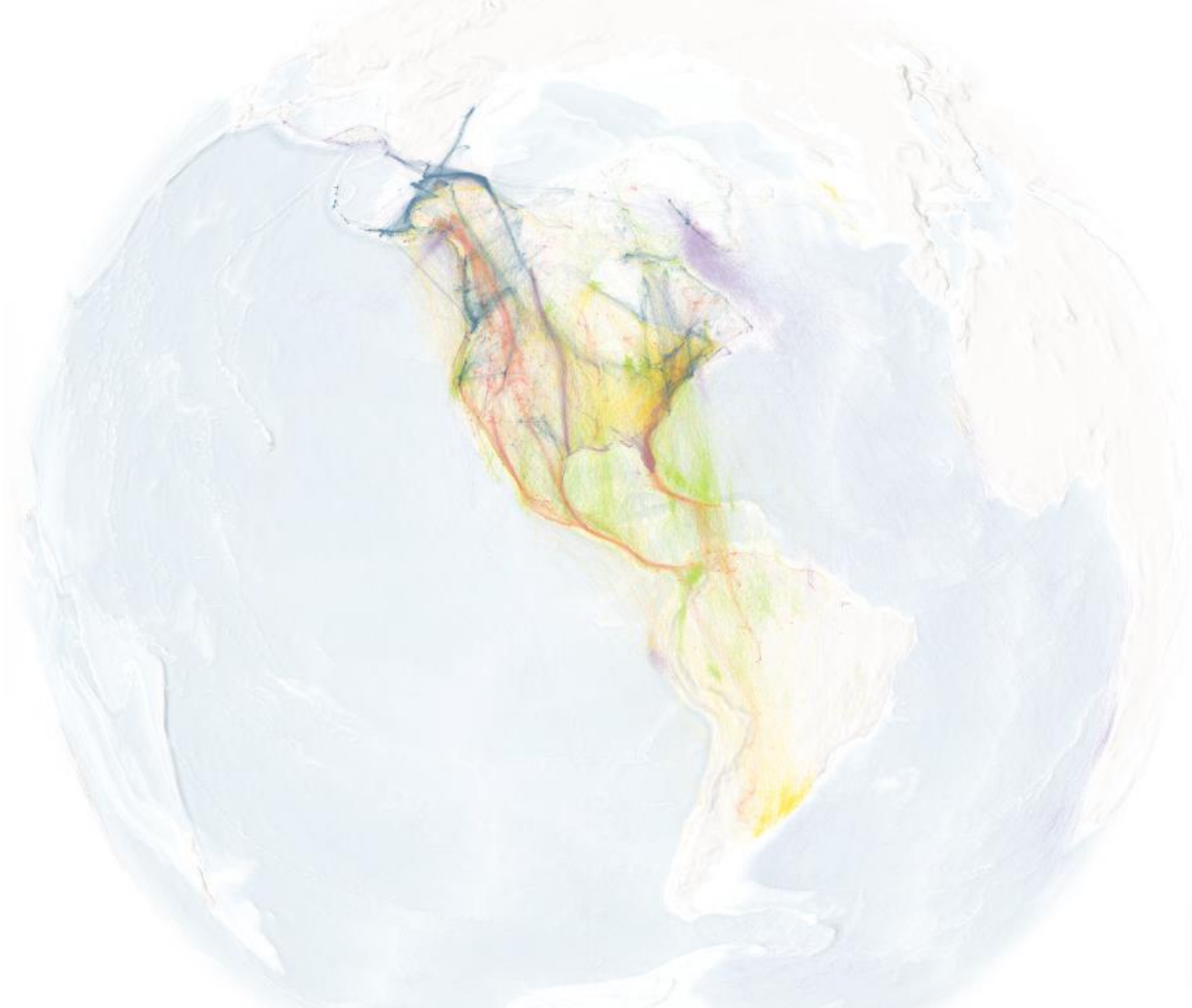






BACKYARD BIRDS IN SOUTH HADLEY





Landbirds

Raptors

Shorebirds

Waterbirds

Waterfowl



BIRDMIGRATIONEXPLORER.ORG

William.deluca@audubon.org



**CLIMATE CHANGE
THREATENS
EXTINCTION FOR
MANY BIRDS OVER
THE NEXT 100 YEARS**

SURVIVAL BY DEGREES:

389 Bird Species
on the Brink

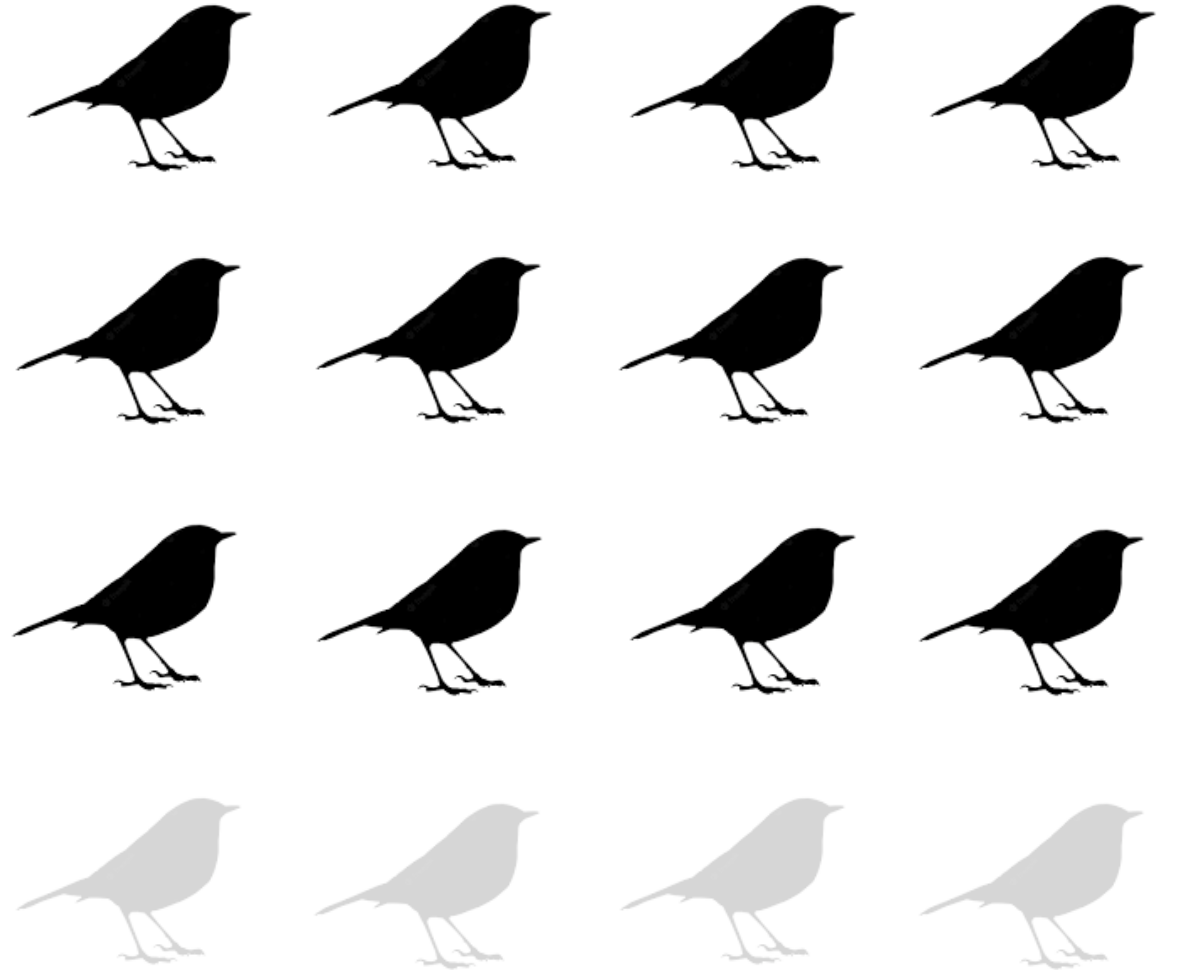


 Audubon

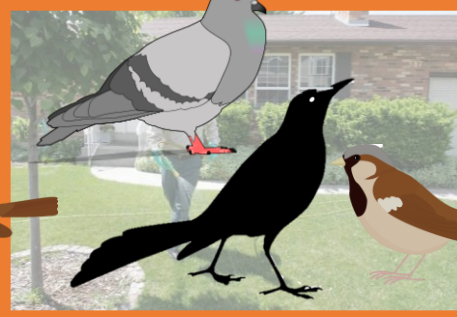
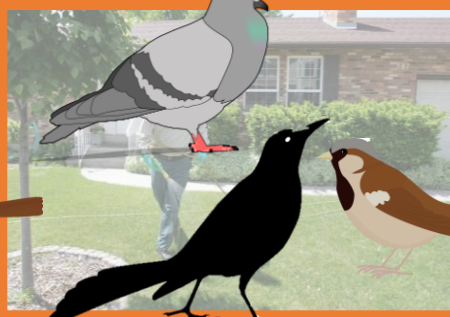
NATIONAL AUDUBON SOCIETY, 2019

BIRDS ARE BEING
LOST AT
AN ALARMING
RATE

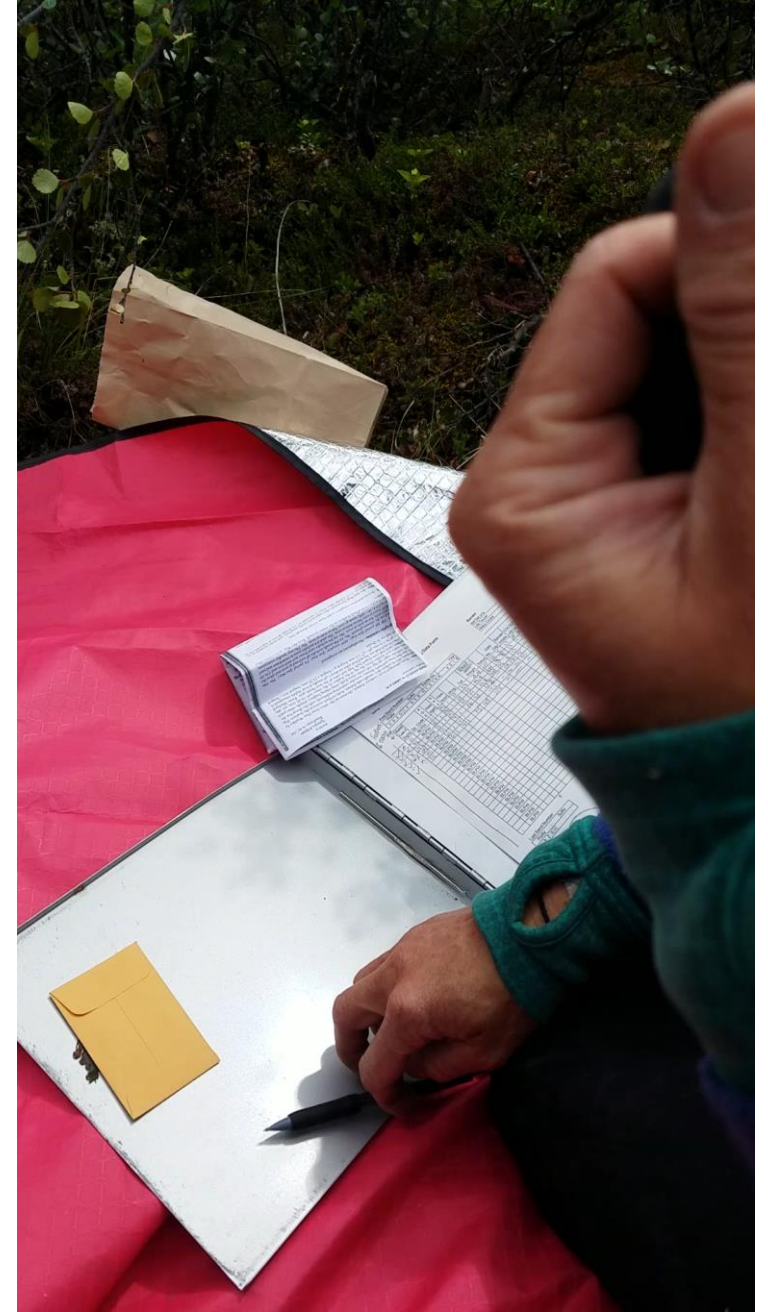
1 in every 4 birds are gone
>25% lost in 50 years

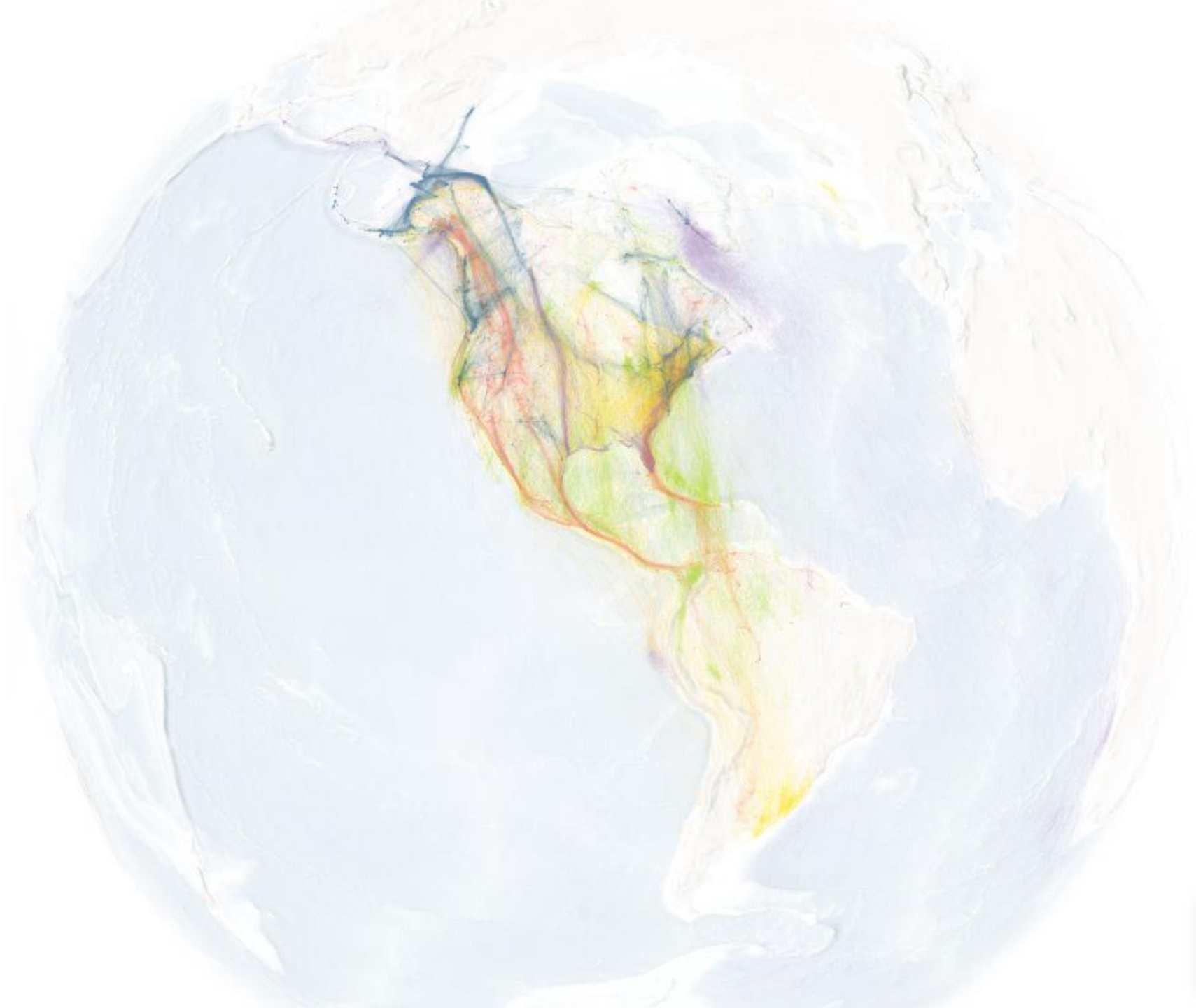


ENSURING YOUR YARD IS FRIENDLY TO MIGRATORY BIRDS – NATIVE PLANTS



1. Intro about me and me at audubon
2. 3bb birds
3. 2.5 migratory birds lost
4. % that is blackpoll
5. What are blackpolls
6. Geolocators and how we describe their migration in CA and CO
7. Scale up to BME across species with Erika's map
8. Somewhere here a few BME slides
9. Connections map for South Hadley
10. BME connecting our yards to the rest of the hemisphere
11. Science behind working in your yards
 1. Cats
 2. Natives
 3. Susannah's work – lawn graph
 4. other
12. What you can do in your, use my yard as an example
 1. Brush piles
 2. Water
 3. Natives/remove invasives
 4. Leaves
 5. Good lawn
 6. Others??
13. Close with something cool and positive video of a bird taking off?





Migration Pathways

Landbirds

Raptors

Shorebirds

Waterbirds

Waterfowl