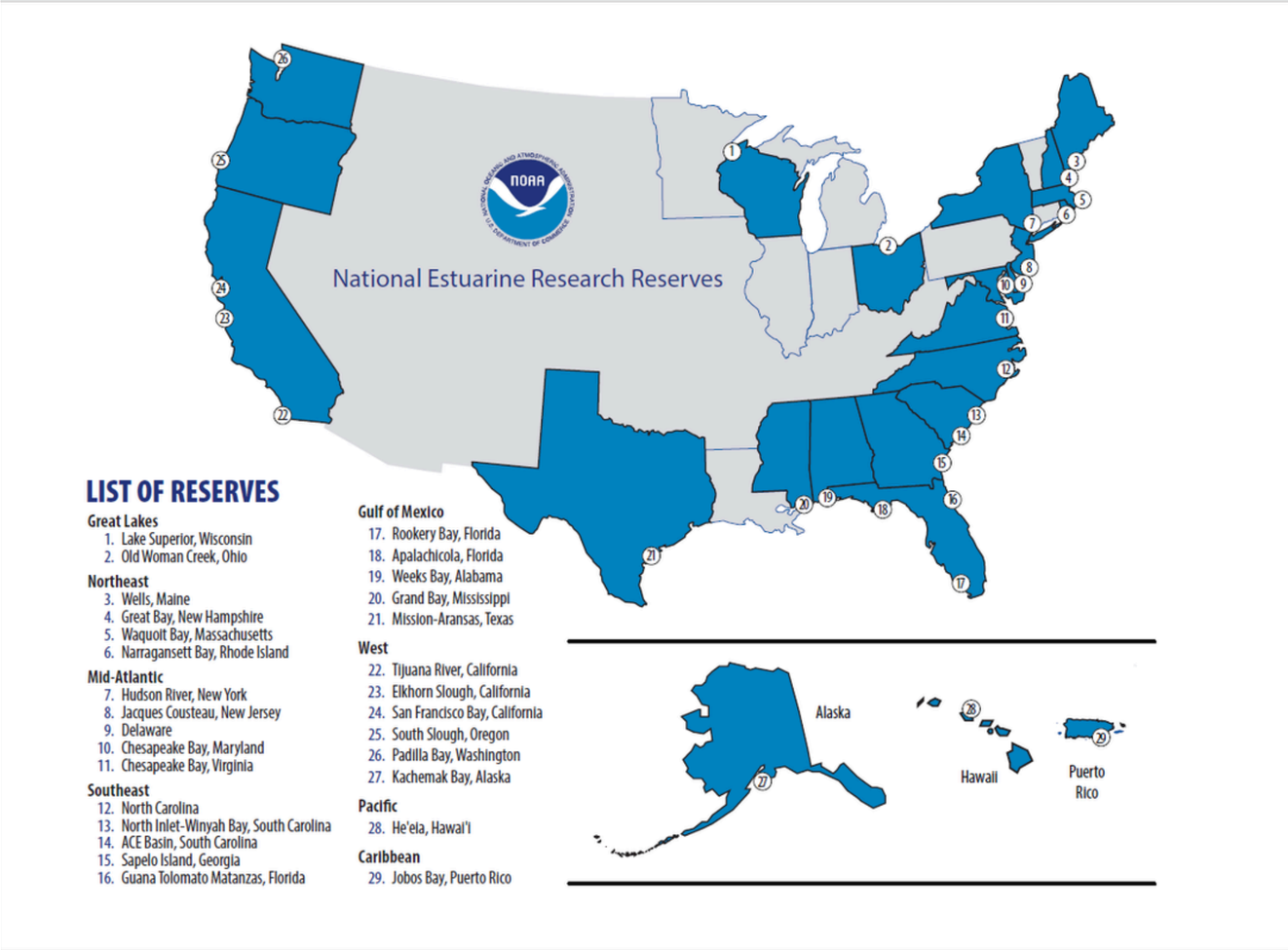
MIGRATION AND MOTUS WILDLIFE TRACKING ACROSS THE NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM

Moving From Place To Place

LEARNING OBJECTIVES

- Learn about the Motus Wildlife Tracking System and its connection to the National Estuarine Research Reserve System (NERRS)
- Engage with hands-on, creative, and collaborative activities to enhance the learning experience.
- Develop scientific skills such as data analysis, critical thinking, and applying knowledge to make educated predictions in response to posed questions.

WHAT IS THE NERRS



LIST OF RESERVES

Great Lakes
1. Lake Superior, Wisconsin
2. Old Woman Creek, Ohio

Northeast
3. Wells, Maine
4. Great Bay, New Hampshire
5. Waquoit Bay, Massachusetts
6. Narragansett Bay, Rhode Island

Mid-Atlantic
7. Hudson River, New York
8. Jacques Cousteau, New Jersey
9. Delaware
10. Chesapeake Bay, Maryland
11. Chesapeake Bay, Virginia

Southeast
12. North Carolina
13. North Inlet-Winyah Bay, South Carolina
14. ACE Basin, South Carolina
15. Sapelo Island, Georgia
16. Guana Tolomato Matanzas, Florida

Gulf of Mexico
17. Rookery Bay, Florida
18. Apalachicola, Florida
19. Weeks Bay, Alabama
20. Grand Bay, Mississippi
21. Mission-Aransas, Texas

West
22. Tijuana River, California
23. Elkhorn Slough, California
24. San Francisco Bay, California
25. South Slough, Oregon
26. Padilla Bay, Washington
27. Kachemak Bay, Alaska

Pacific
28. He'eia, Hawai'i

Caribbean
29. Jobos Bay, Puerto Rico

The National Estuarine Research Reserve System is a network of 30 coastal sites designated to protect and study estuarine systems in collaboration with and service to surrounding communities. Established through the Coastal Zone Management Act, this partnership program between NOAA and the coastal states supports ecosystem health and the interconnectedness of people and the environment.

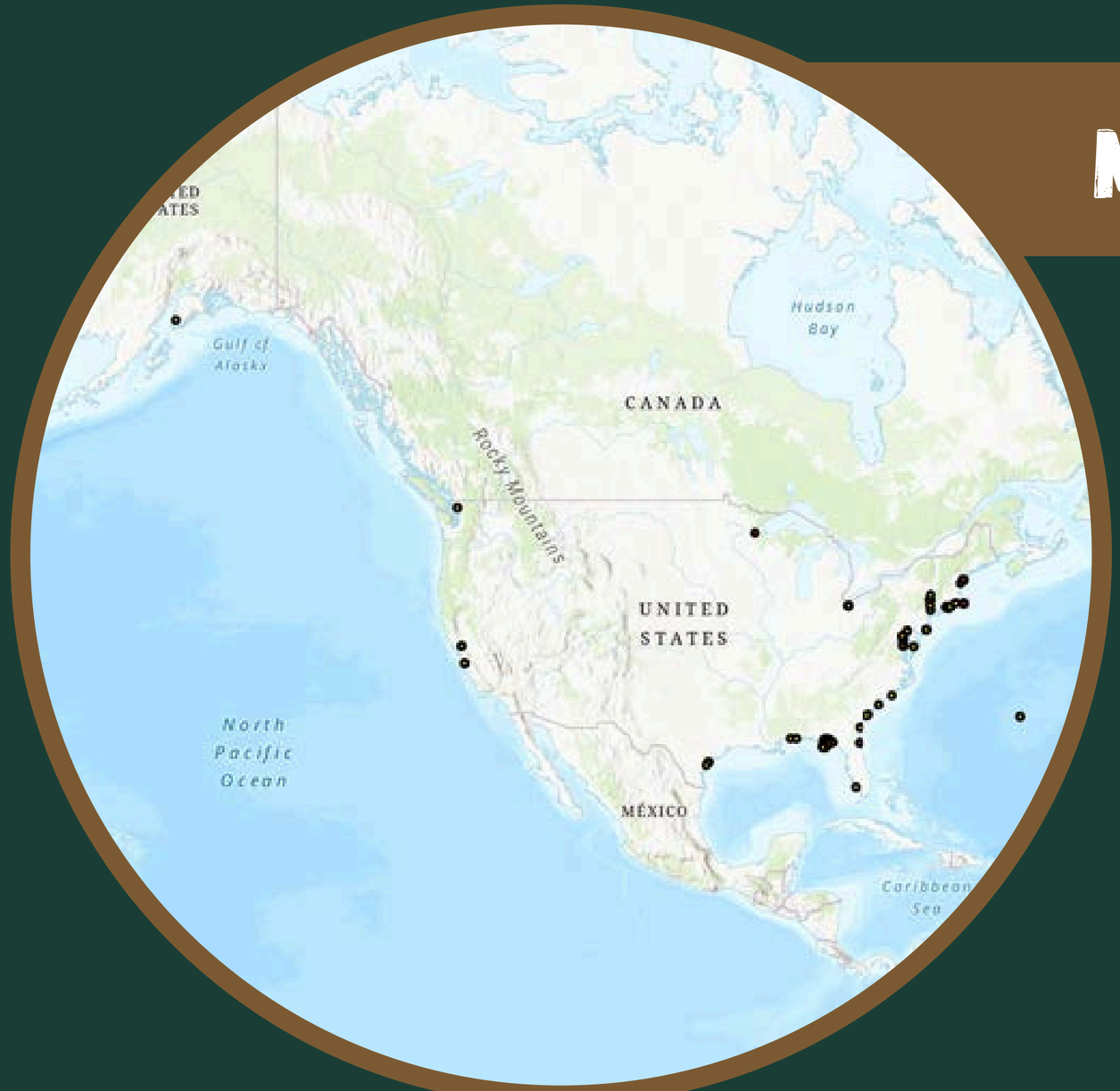
WHAT IS MOTUS ?

The Motus Wildlife Tracking System is a radiotelemetry-based system used to detect tagged animals and track their locations and times of detection

- How does it work?
- Who can use the data?

Motus
Wildlife Tracking System

MOTUS AND THE NERRS



The NERRS use the Motus system to study topics like migration patterns and flight speeds. Due to the significance of estuaries in the breeding and migration of coastal birds, Motus has greatly helped understand bird populations in the reserves. Knowledge gathered through Motus can then inform the NERRS to improve management and conservation practices!

MIGRATION

- What is migration?
- When does it occur?
- What types of animals migrate?

MIGRATION ?

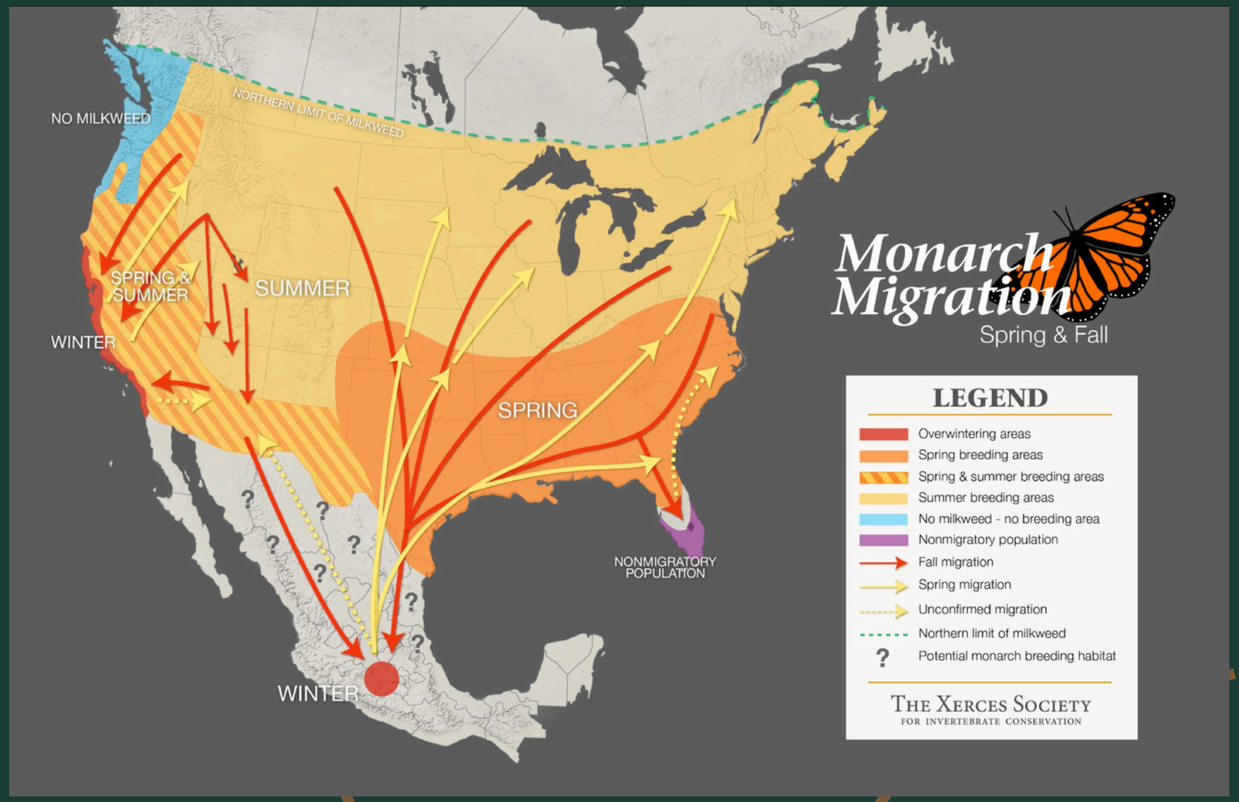
- What are the benefits of migration to birds?
- What could be potential challenges with migration?

RANGE

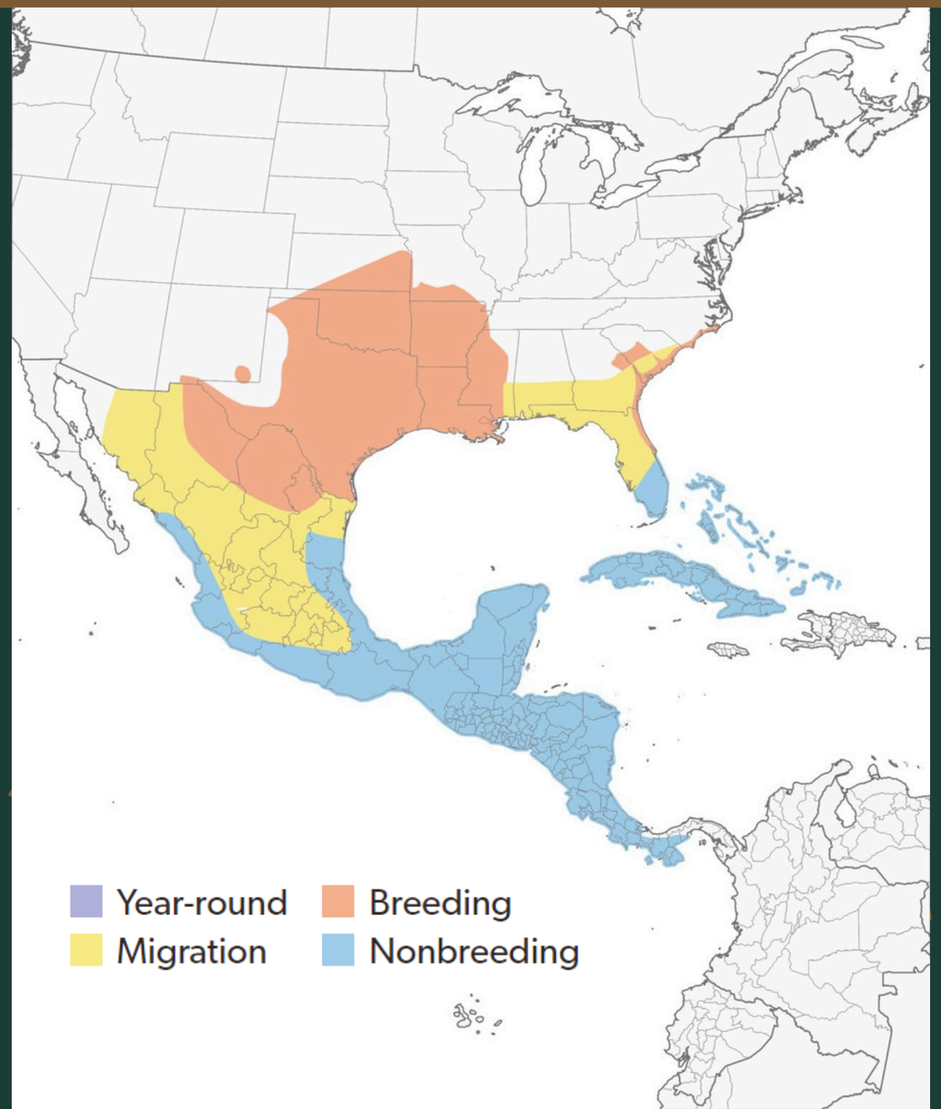
- What is a species range?
- How is range different for migratory species?

RANGE EXAMPLE

- Monarchs



RANGE EXAMPLE



Painted Bunting

CONSERVATION

Studying animal migration can help us better understand the natural world and inform conservation efforts to protect vulnerable species.Wildlife reserves and protected areas can provide safe havens for migrating animals to rest and feed along their journey.

CONSERVATION

How does Motus help conserve species?

How do NERRs help conserve bird species?

CONSERVATION

- Conventions for the Protection of Migratory Birds
- North American Waterfowl Management Plan
- Partners in Flight
- U.S. Shorebird Conservation Plan

CONSERVATION

What can you do to help conserve migratory species?

MOTUS MYSTERIES

MOTUS MYSTERIES

- What surprises or interests you about this species?
- Did you expect the species' range to look like this? Why or why not?
- Do you think the individual stayed in the area or moved on after detection?
- Motus tracks are dependent on where towers are located. If you wanted to help elucidate more about this individuals migratory path, where would you suggest more towers be built?
- What stands out about the individual's flight path?
- Do you believe the detections are accurate?

WORKING WITH MOTUS DATA

Lets use the Motus dashboard to explore how Motus data is processed and presented on an open-source platform

CREATE YOUR OWN STORY AND PRESENT MOTUS DATA

- Select an individual animal to investigate.
- Create a presentation (PowerPoint, poster, or map) that tells a narrative similar to "Motus Mysteries."
  - Essential Information to Include:
  - Picture of the species
  - Range of the species
  - Typical migration pattern (space and time)
  - Significant detections
  - Errors or unusual detections
- Present to the group!