



# Ecology and connectivity of migrating Surfbirds

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ECCC: Scott Flemming, Sydney Bliss, Chloe Boynton

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USFWS: Rick Lanctot, Vanessa Loverti, Tracy Borneman, Robin Corcoran

University of Alaska Fairbanks: Sam Simon

Simon Fraser University: Paige Monteiro

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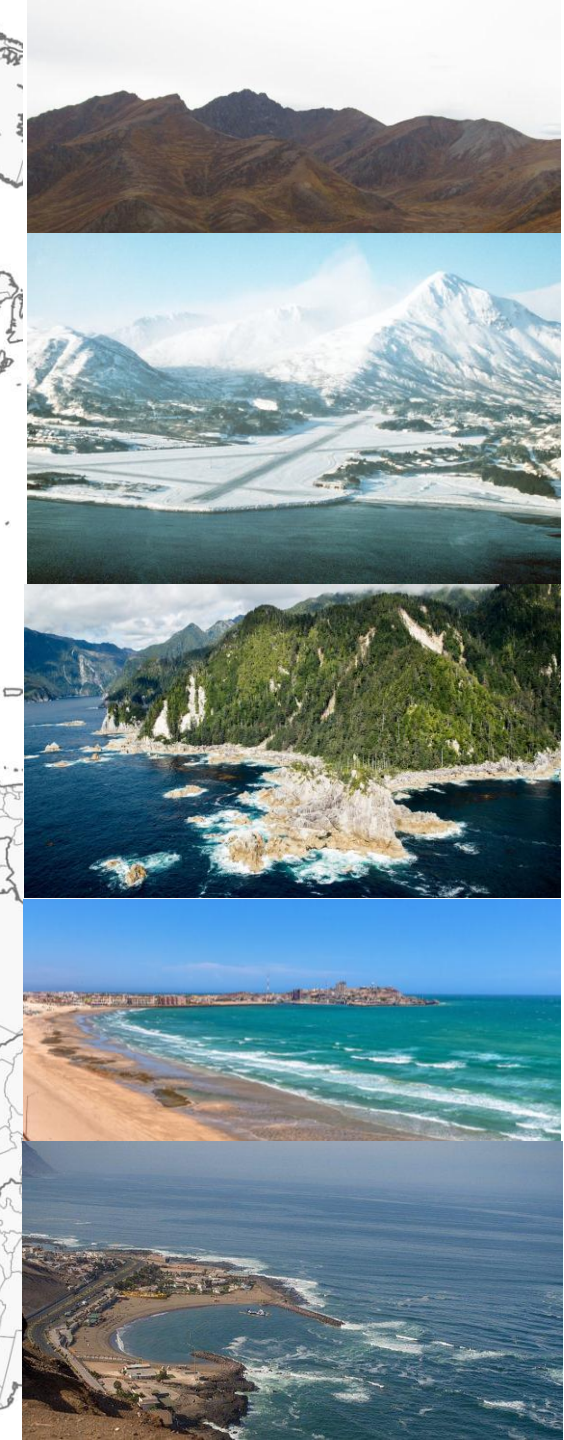
ROC: Ivo Tejeda, Fernando Medrano, Sarah Saldanha

Universidad Austral de Chile: Juan Navedo

Adriana Hernandez

Kachemak Bay Birders

Kachemak Bay Shorebird Festival

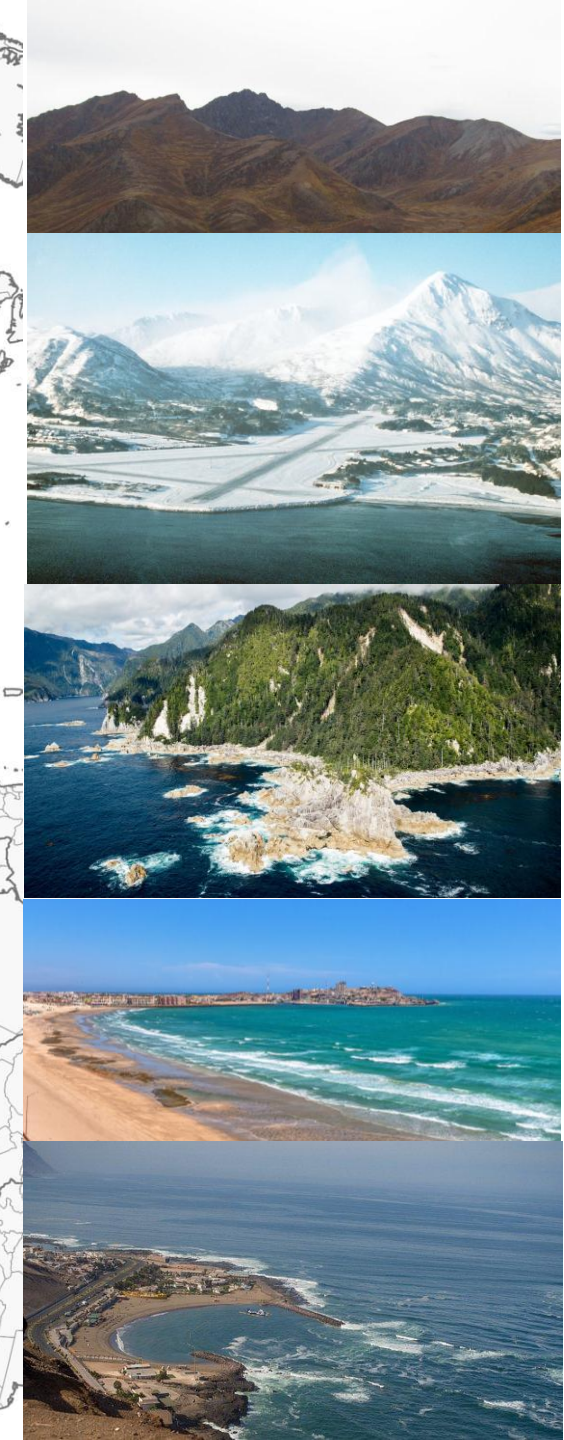
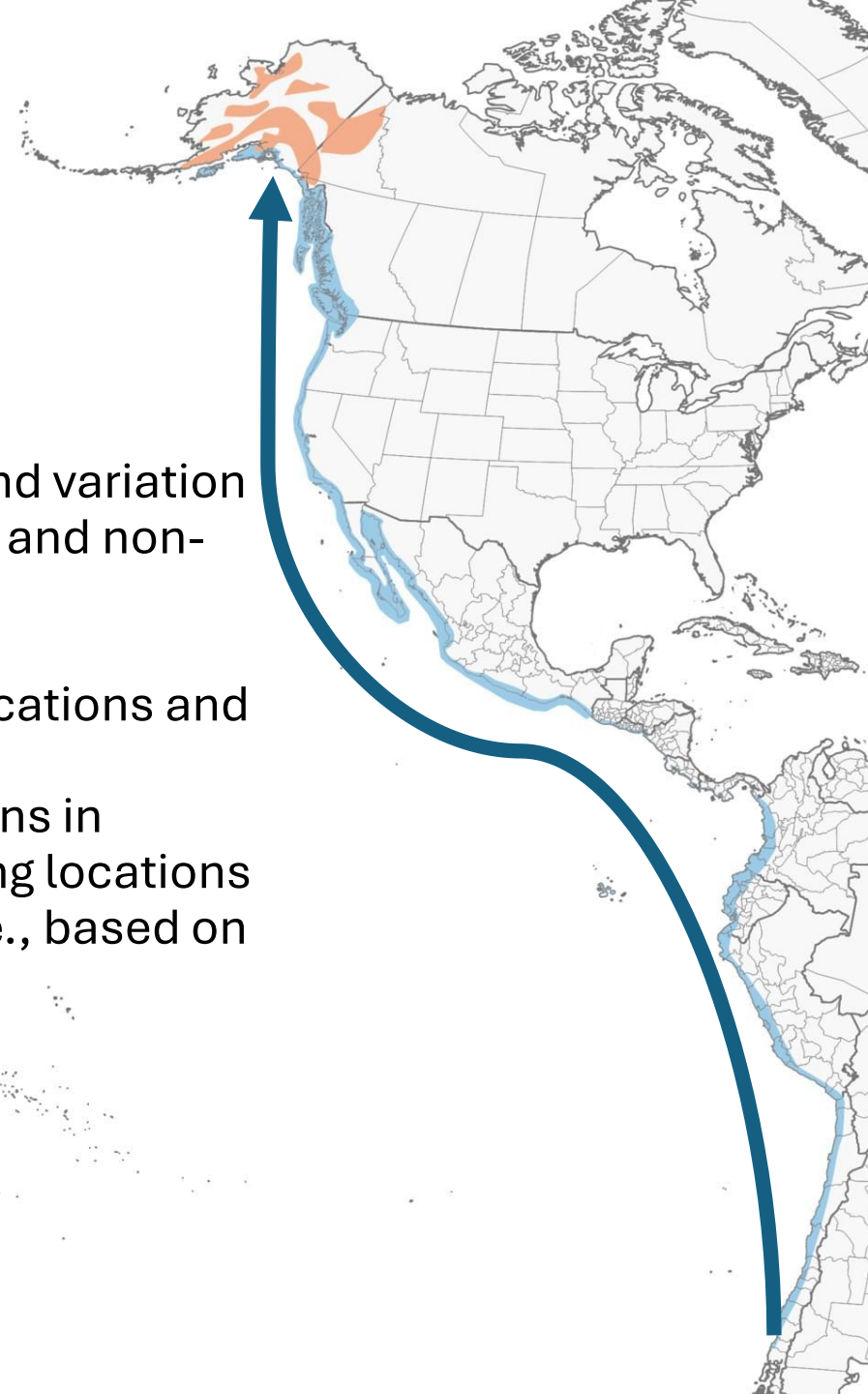




# Objectives

Determine overall migratory connectivity and variation in movement patterns of different breeding and non-breeding populations

- Movements between non-breeding locations and eventual breeding locations
- Movements between breeding locations in Alaska and their eventual non-breeding locations
- Identify presence and significance (i.e., based on duration of stay) of key stopover sites





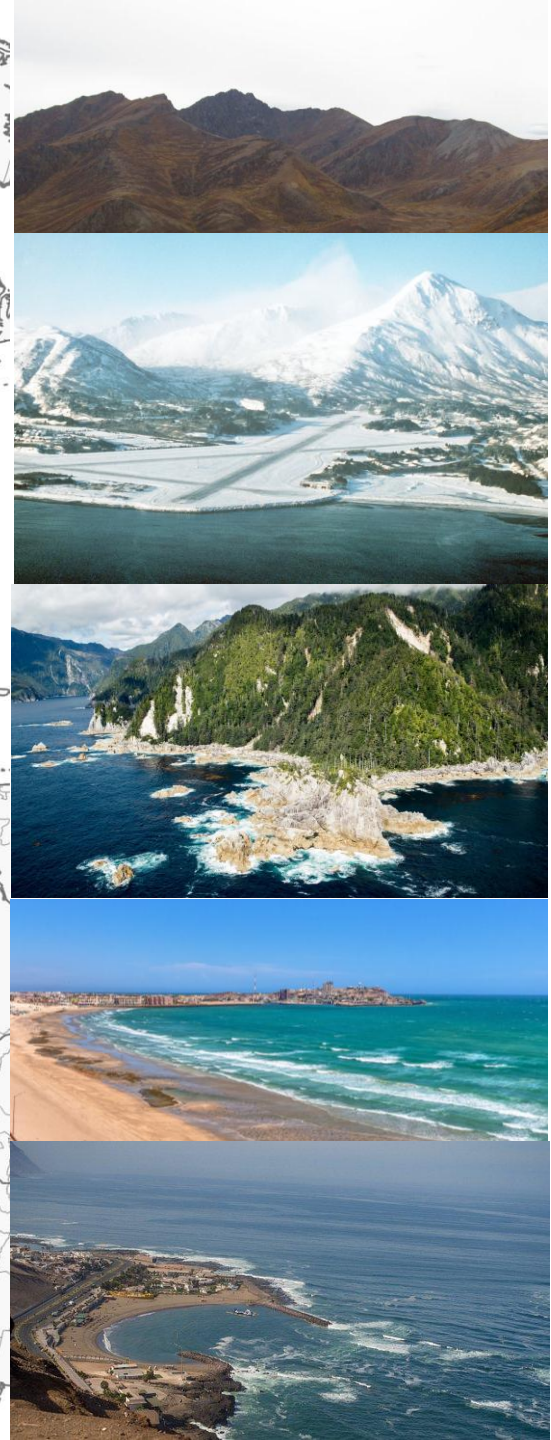
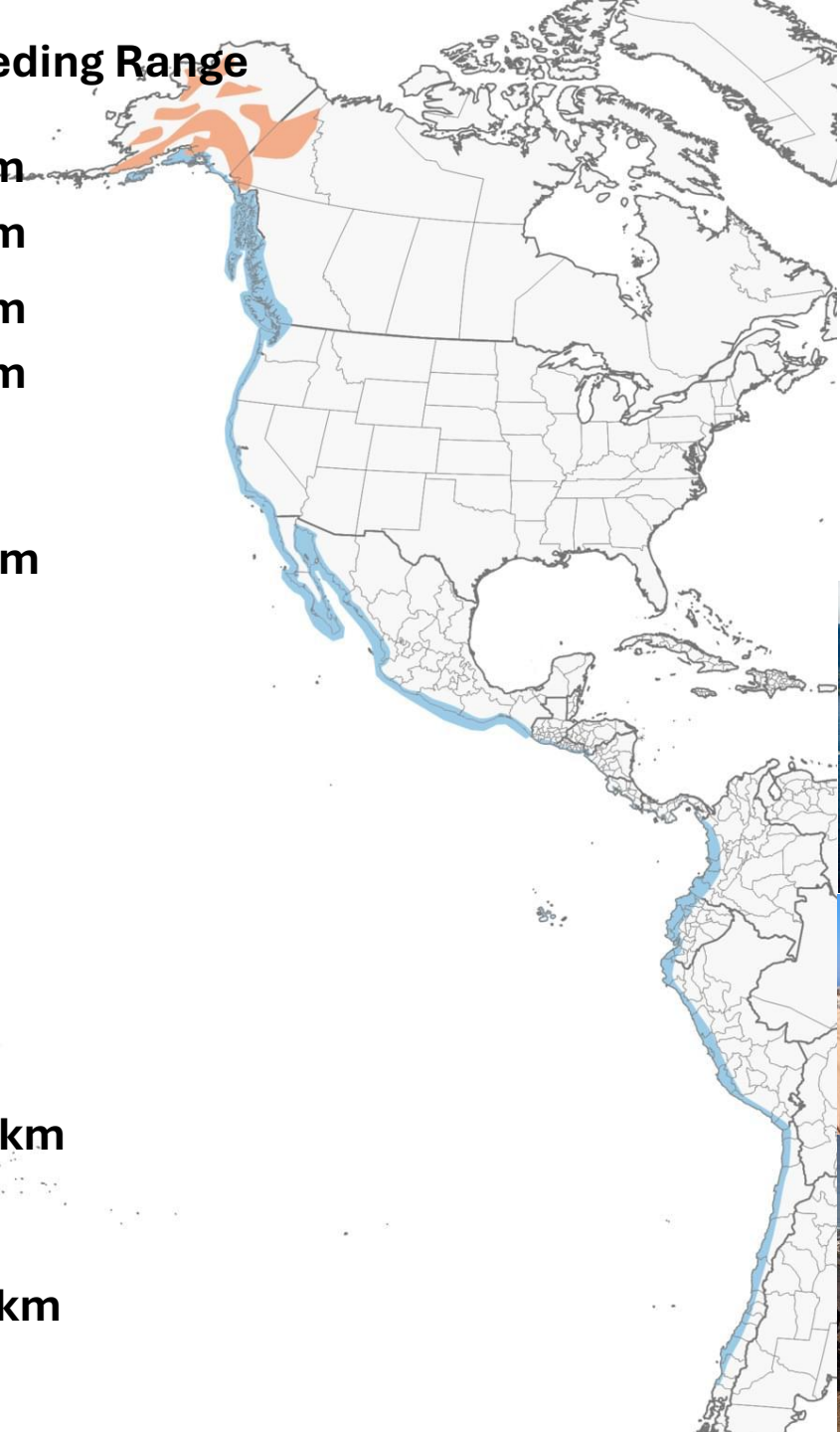
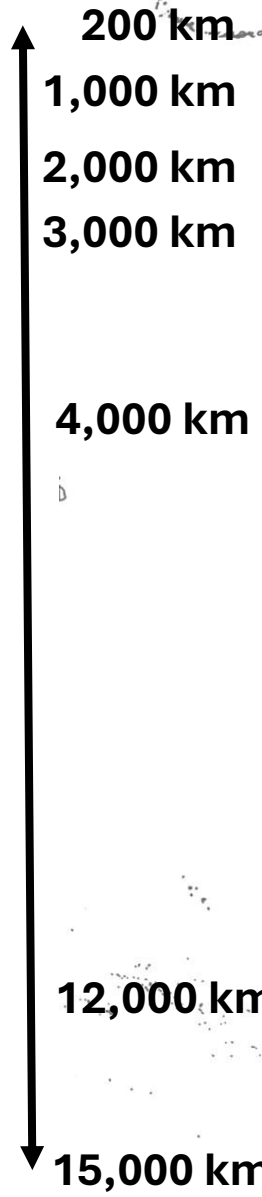
**Kodiak, AK**  
**Sandspit, BC**  
**Sechelt, BC**  
**Seaside, OR**

**Puerto Penasco/Ensenada, Mex**

**Arica, Chi**  
**Valdivia, Chi**



**Distance to Breeding Range**





# Methods

- Capture using noose lines or netguns
- Leg-loop harness with Lotek Sunbird or Solar Pinpoint

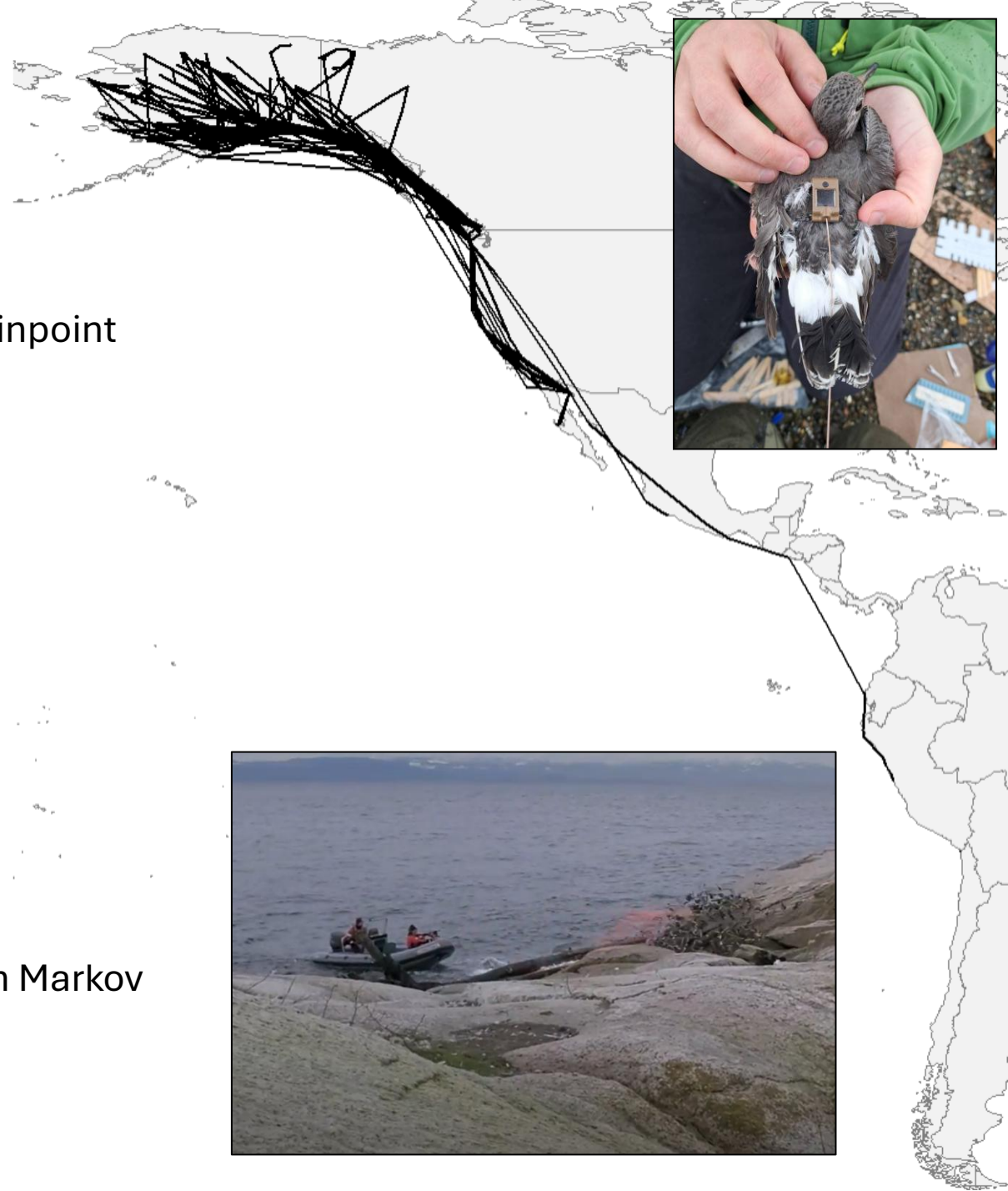
Tags deployed with some migration tracks (~40)

- Kodiak: 3
- Homer: 4
- Steese NCA: 4
- Haida Gwaii: 6
- Salish Sea: 11
- Oregon: 1
- Northern Mexico: 7

Tags deployed and waiting to migrate

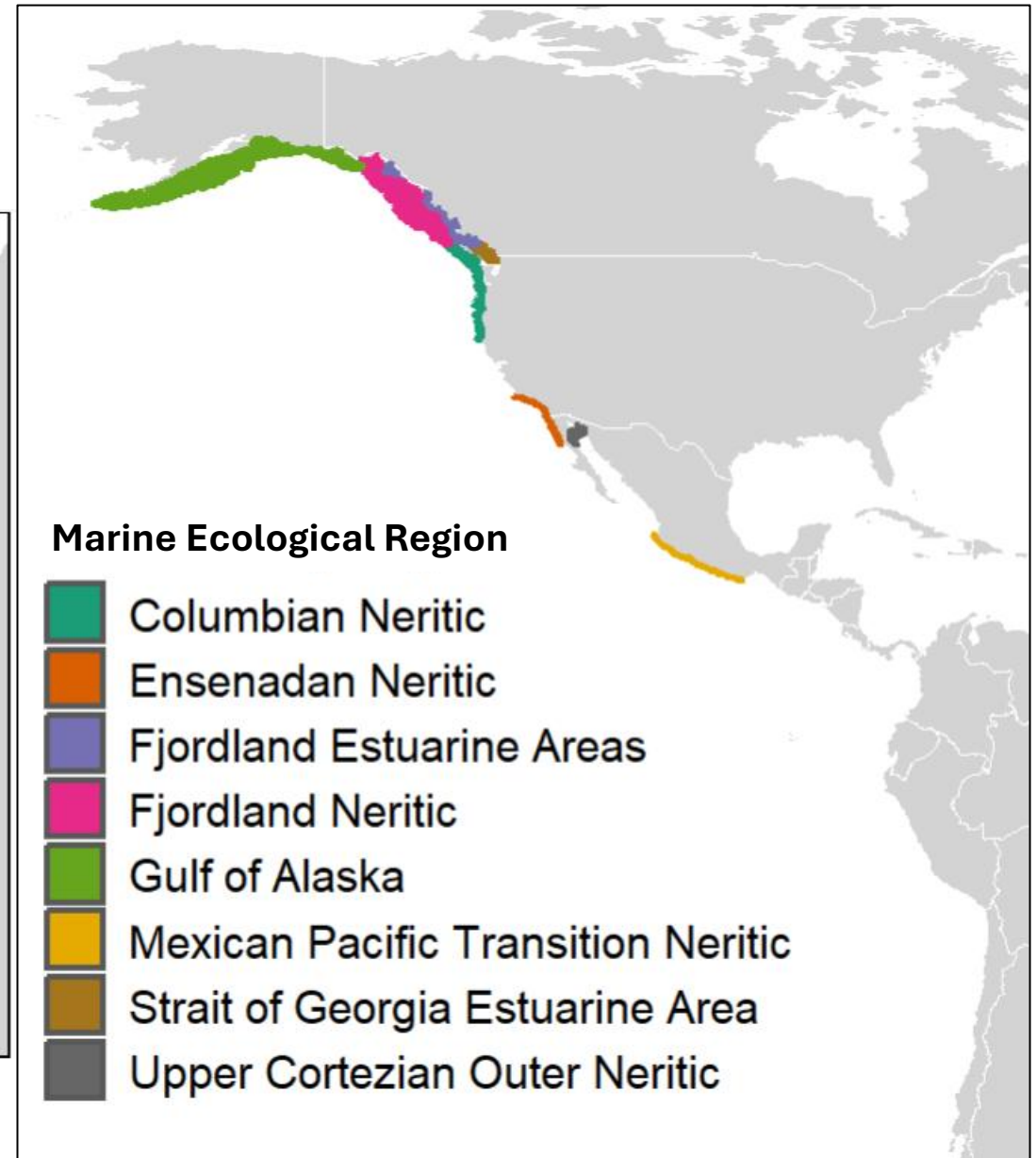
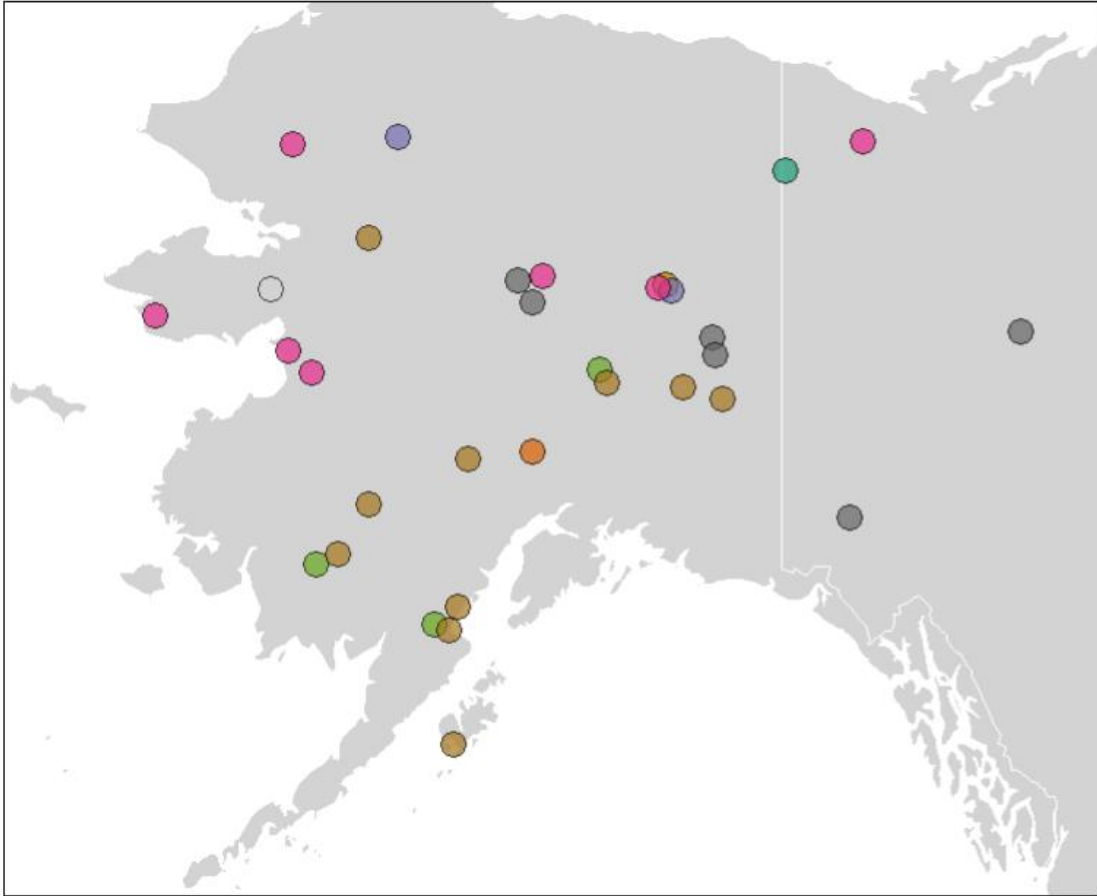
- Arica, Chile: 5
- Valdivia?

Data analysed using State-Space Models and Hidden Markov Models (migrating vs. non-migrating)



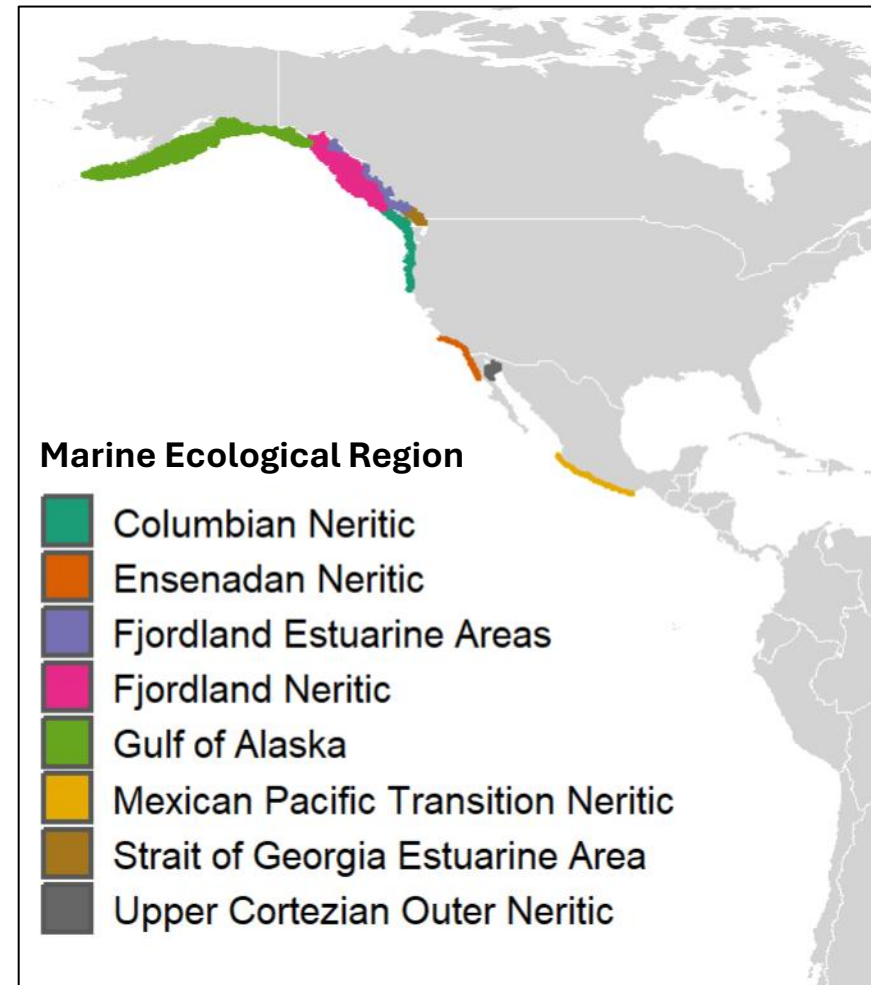
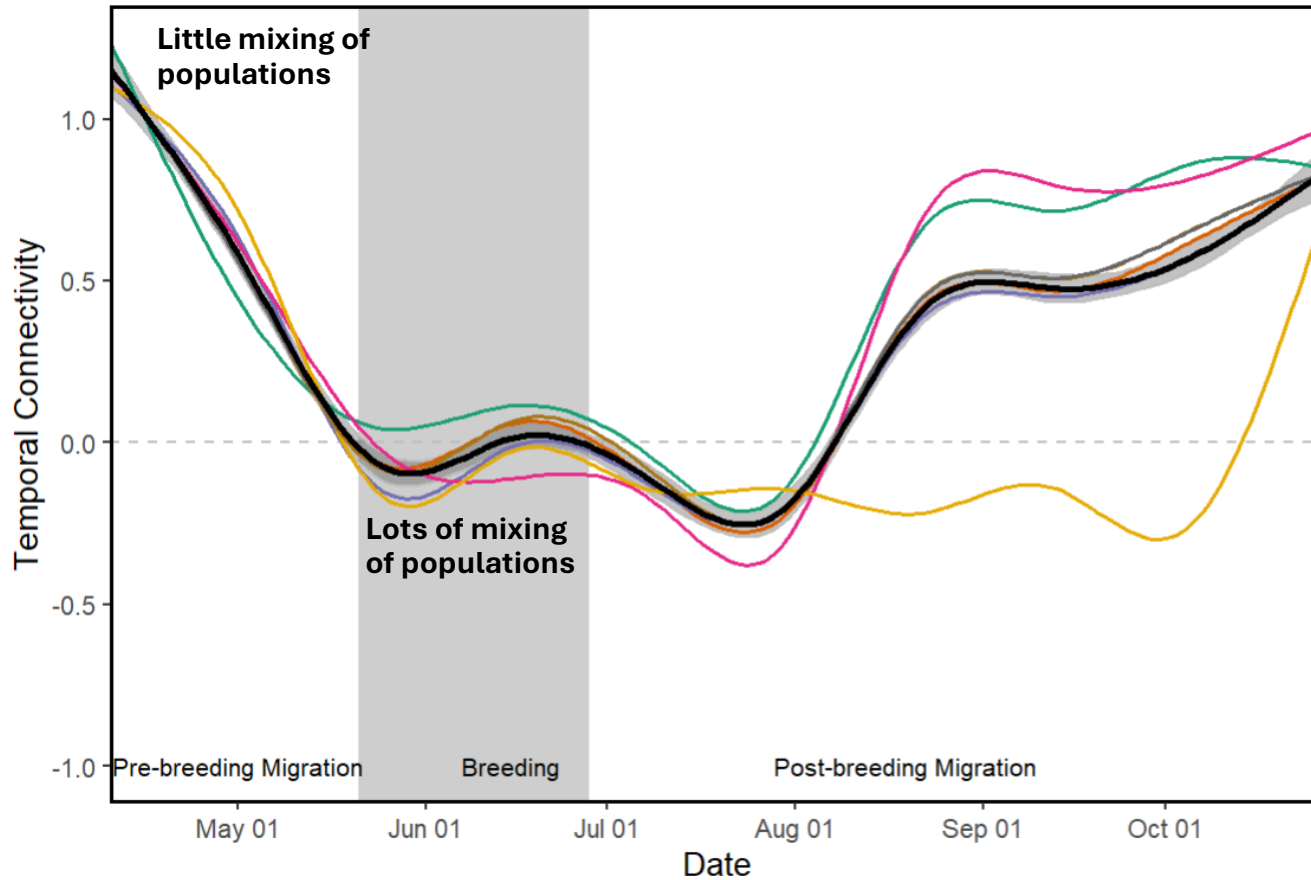


# Connectivity





# Connectivity



Non-breeding population left out





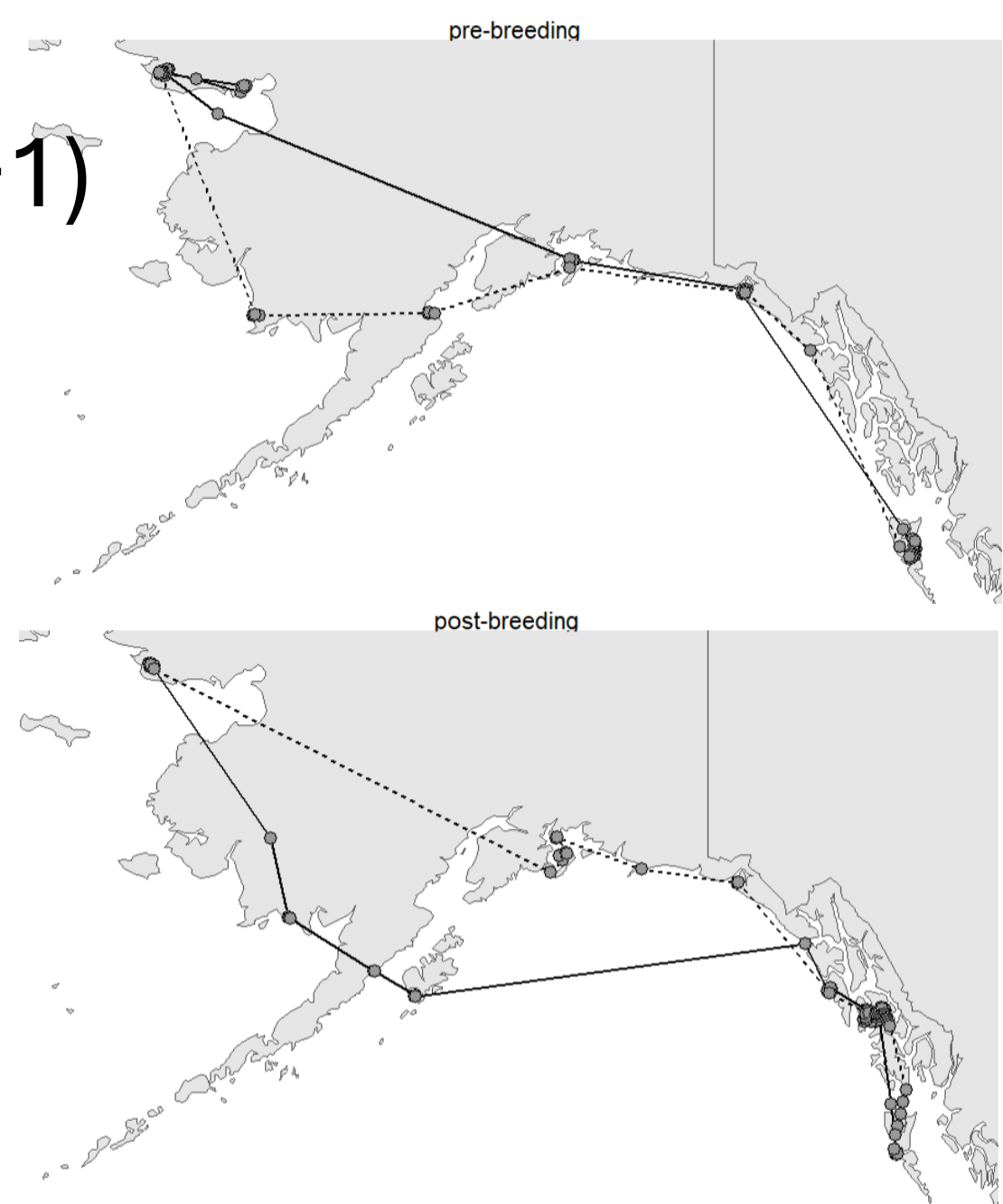
# Site fidelity (year x to x+1)

## Home range overlap

- Breeding: 88% (n = 7/8)
- Non-breeding: 100% (n = 21/21)

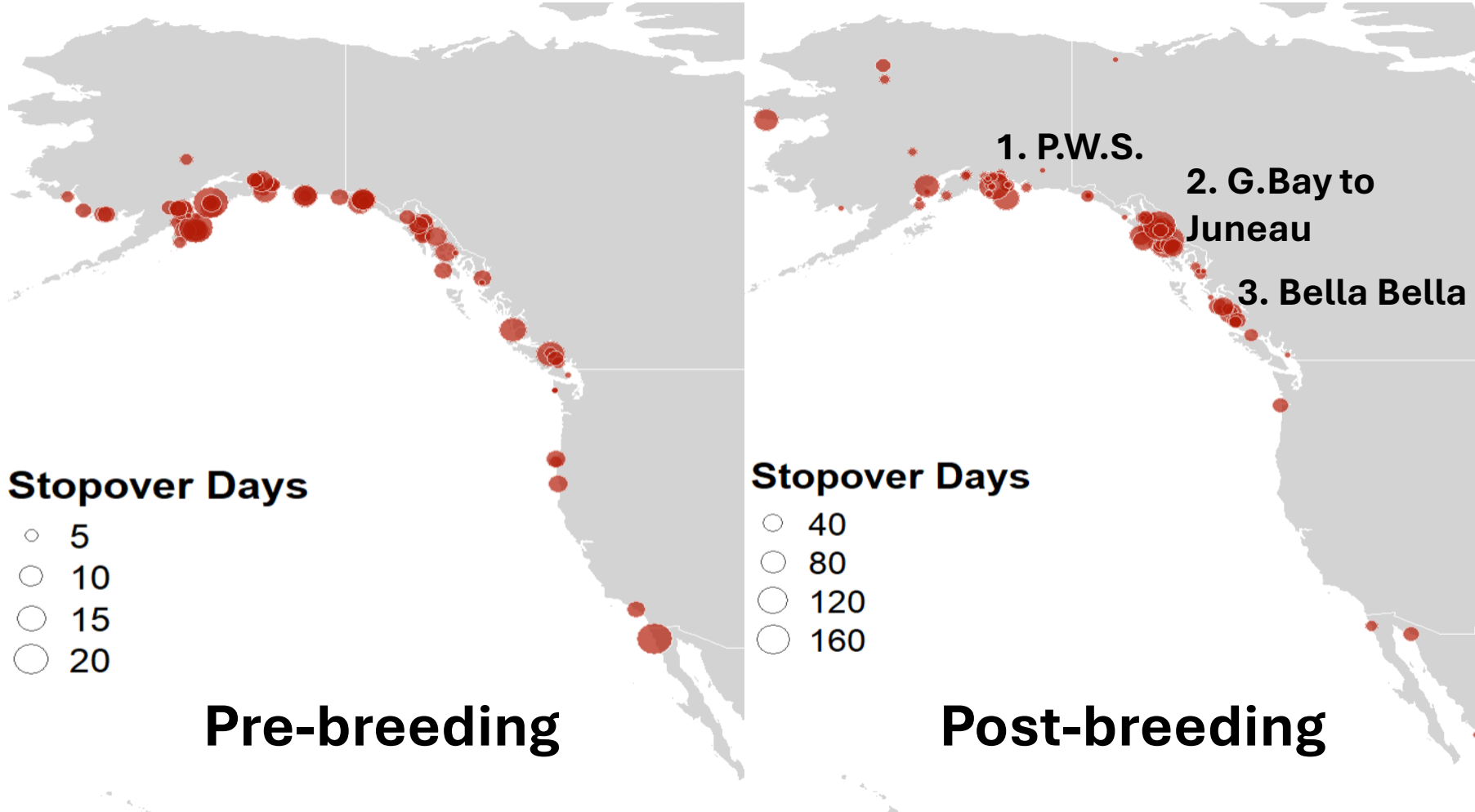
## Distance between centroid

- Breeding: 60km (sd = 101km)
- Non-breeding: 19km (sd = 33km)





# Stopover sites



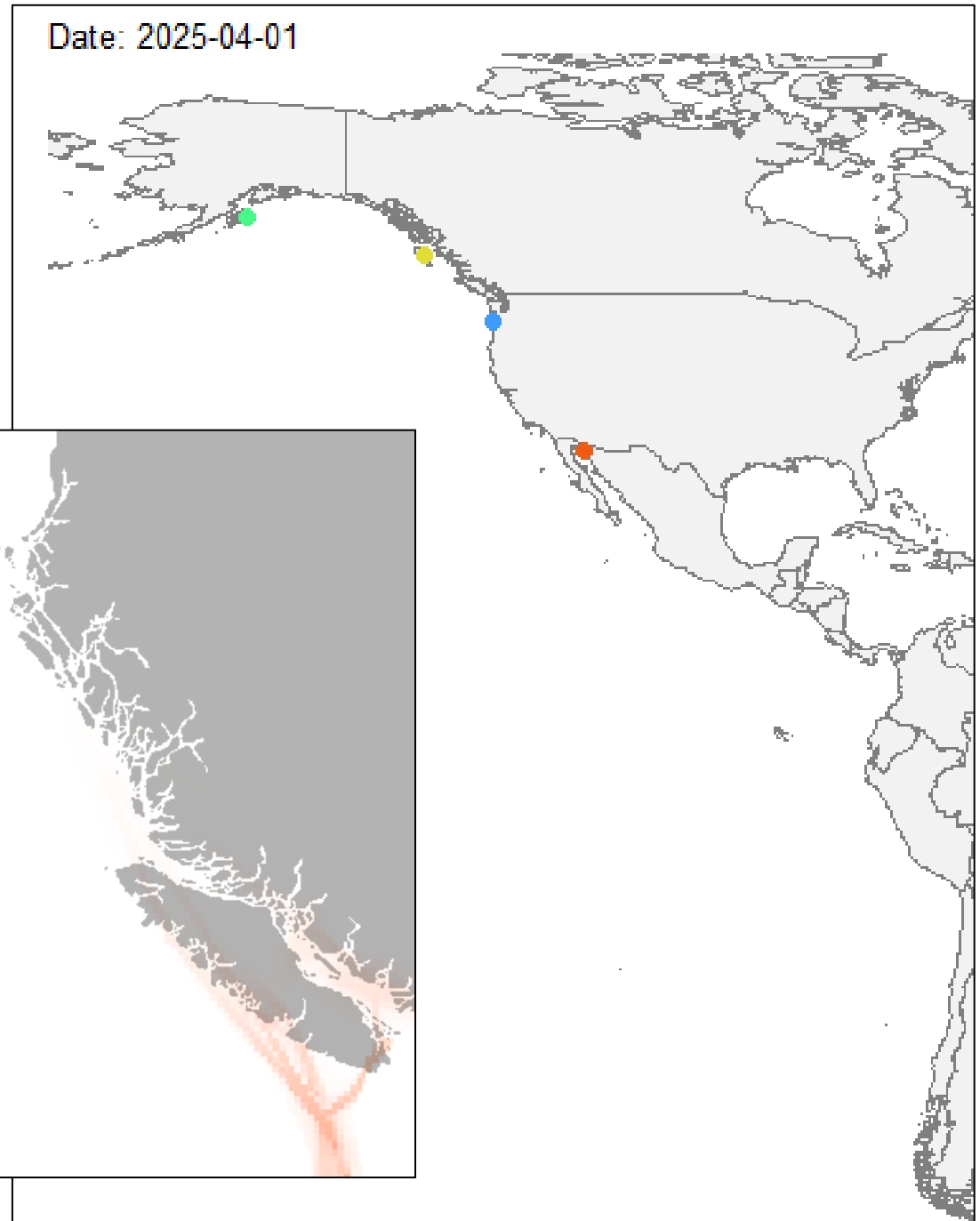


# Summary

- End May: Arrive breeding grounds
- Mid-July: Depart breeding grounds
- August:
  - “Southern” birds keep going south and arrive non-breeding grounds Sep-Oct
  - “Northern” birds stopover ~Juneau for 2-4 months and non-breeding grounds in early Dec

## Next Steps

- Sex or Age differences?
- Repeatability in migration routes?





# Thanks!

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