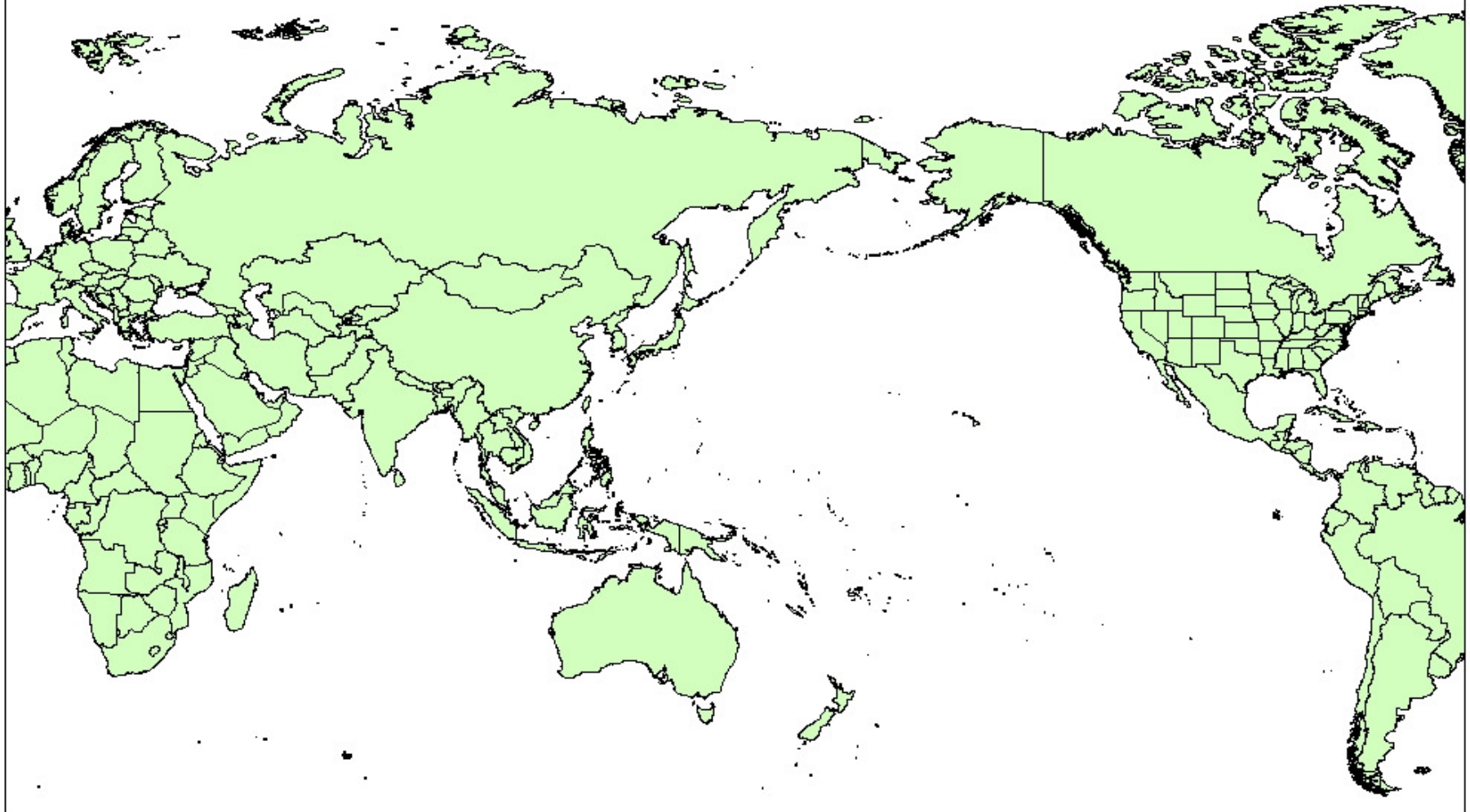


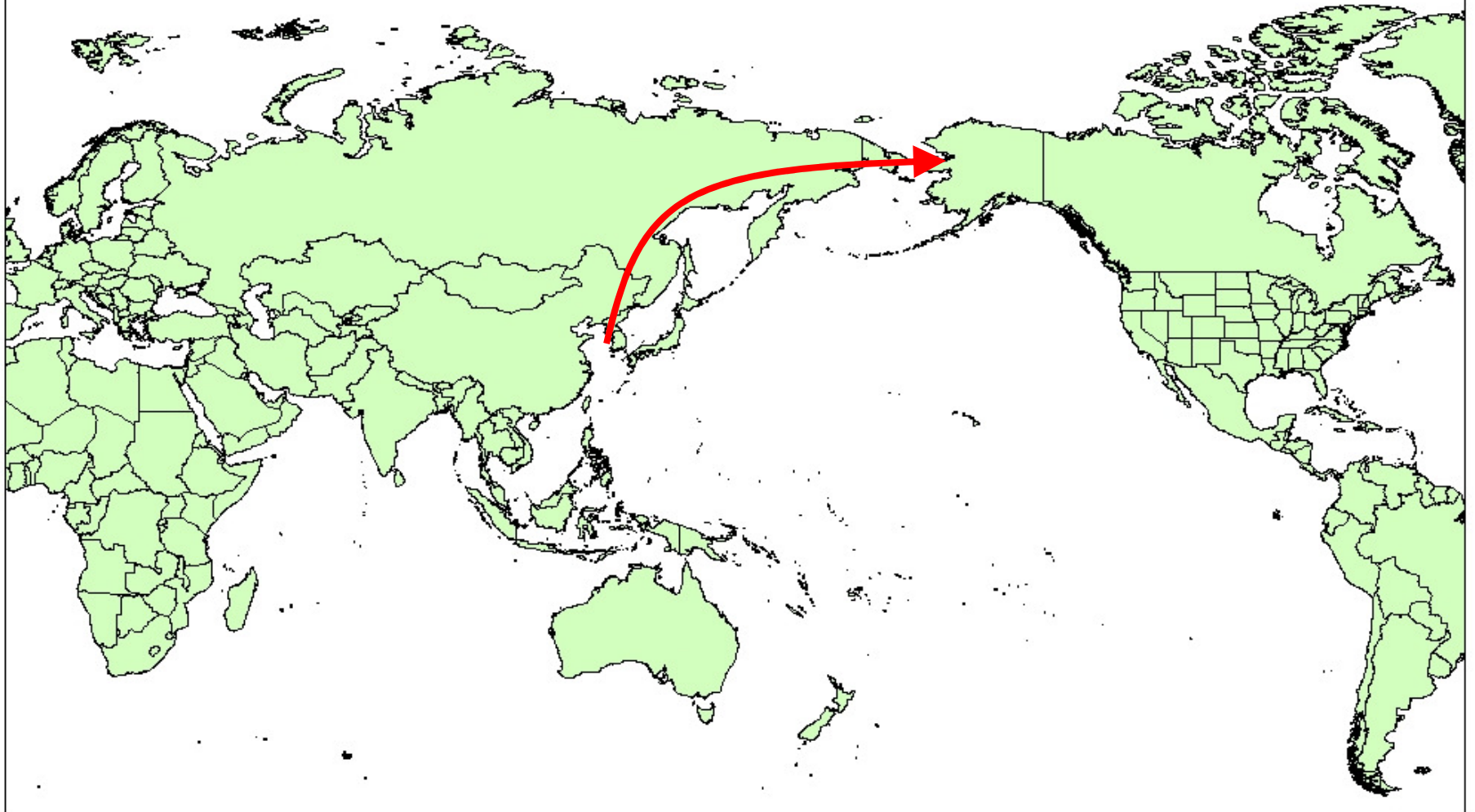
DRAFT

Review of loon, waterfowl and crane migratory patterns and associated priority scores



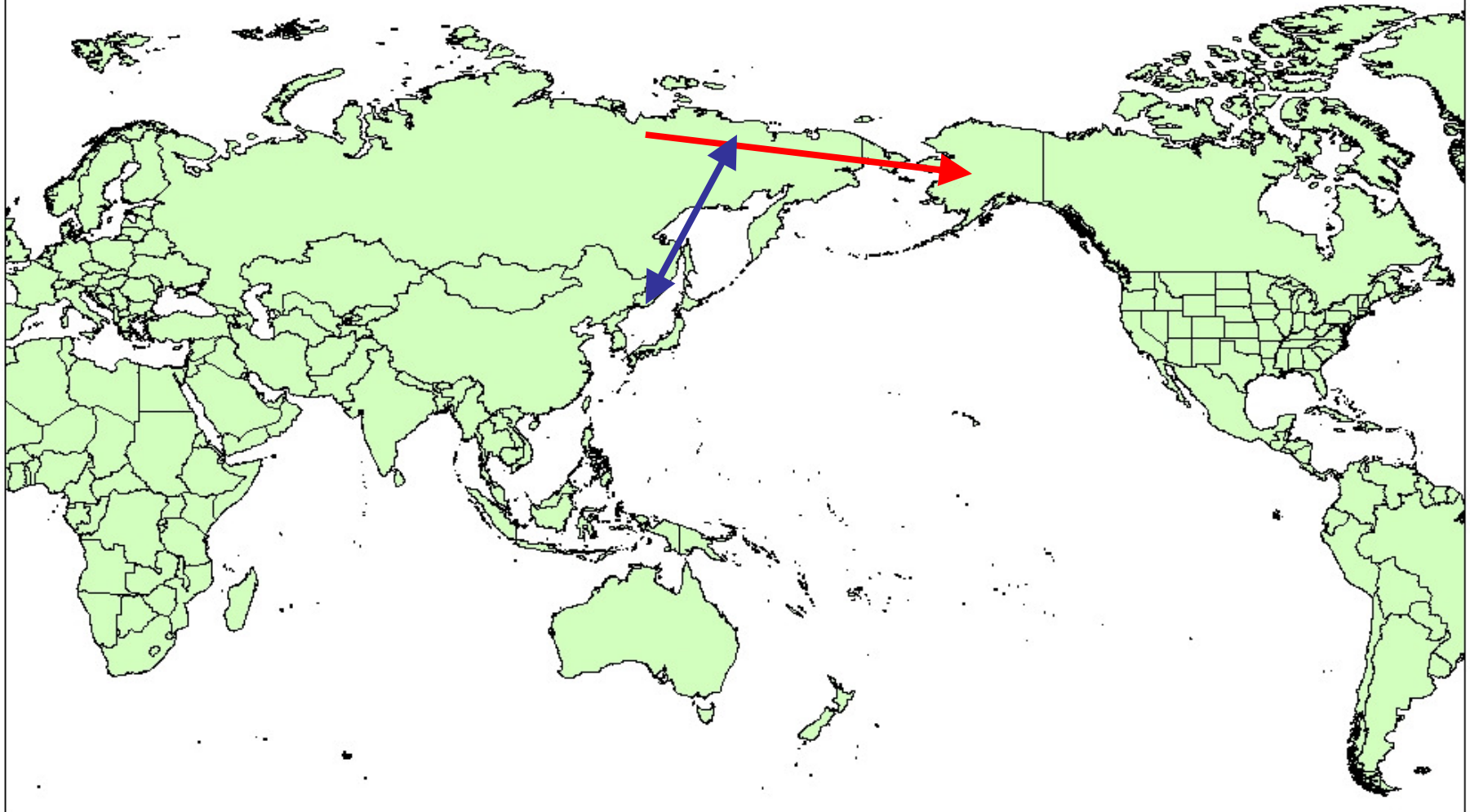
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Winter migrants



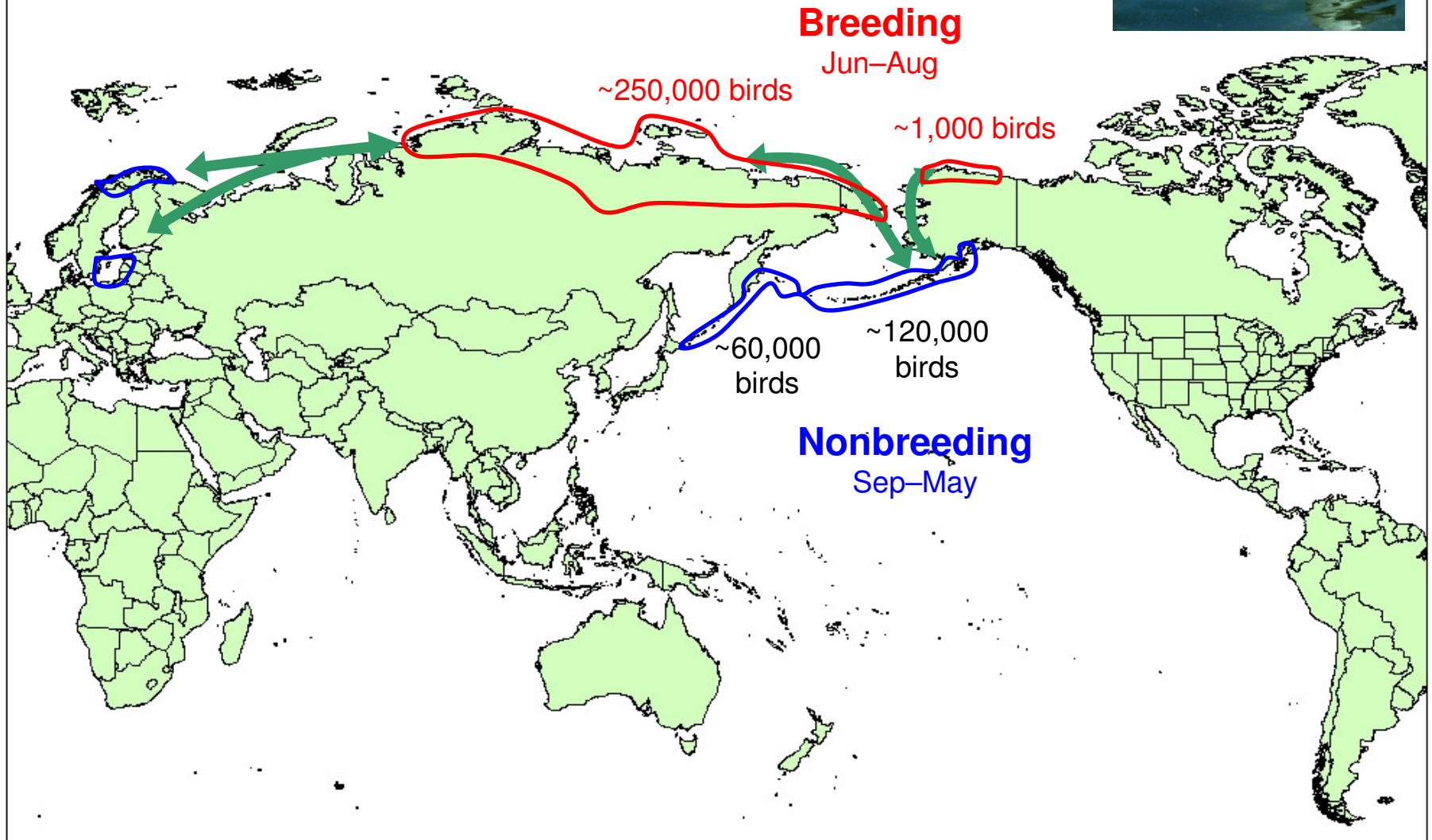
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Fall migrants



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Steller's Eider

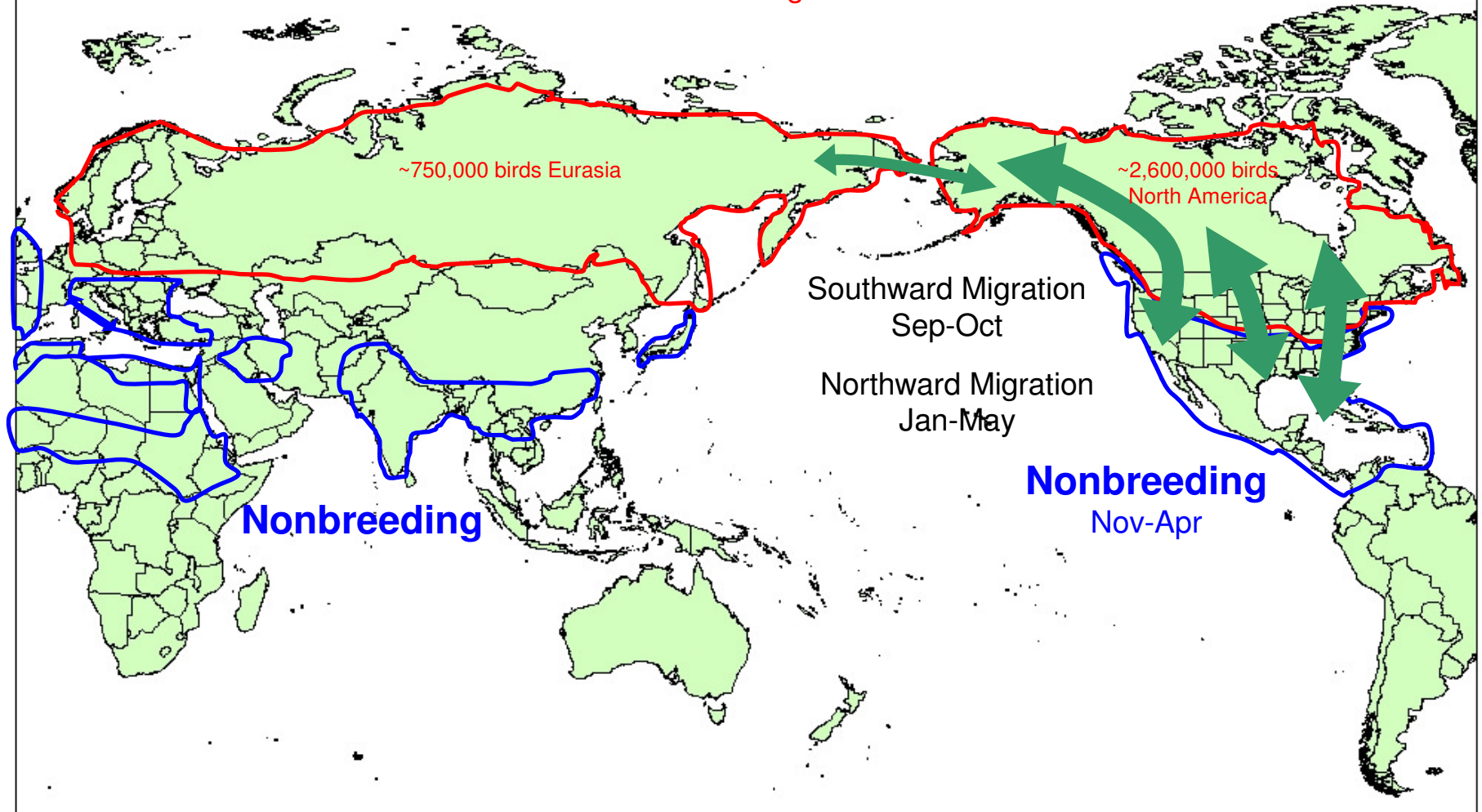


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Northern Pintail



Breeding
Jun-Aug



~750,000 birds Eurasia

~2,600,000 birds
North America

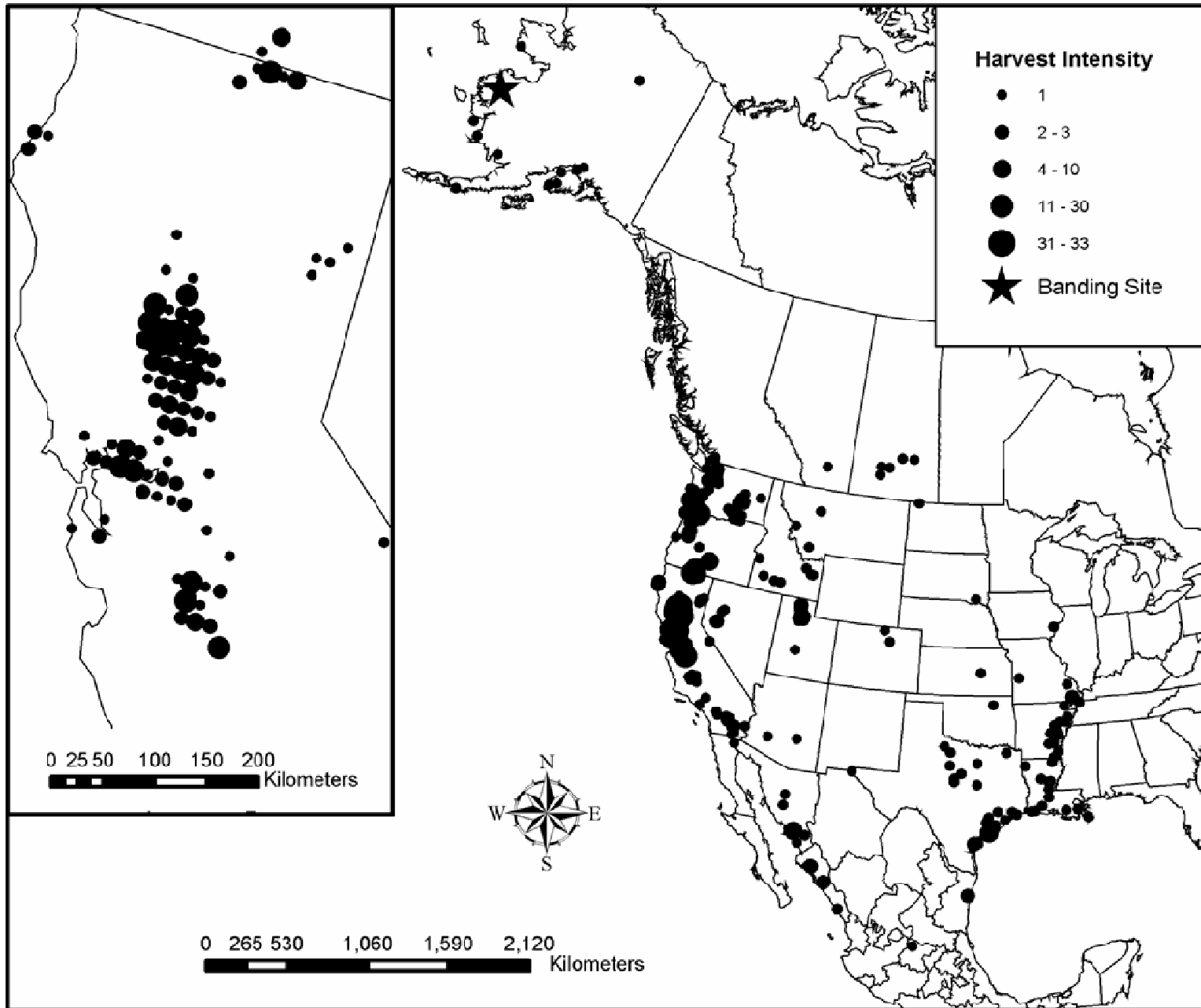
Southward Migration
Sep-Oct

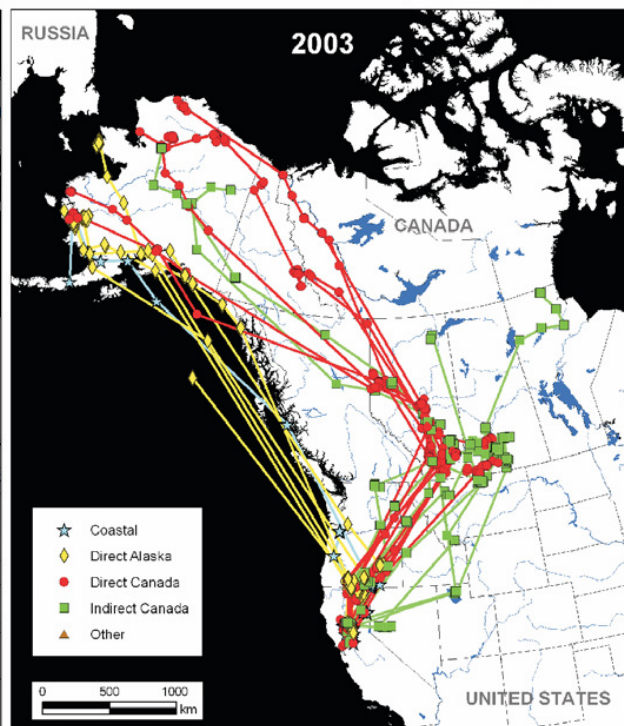
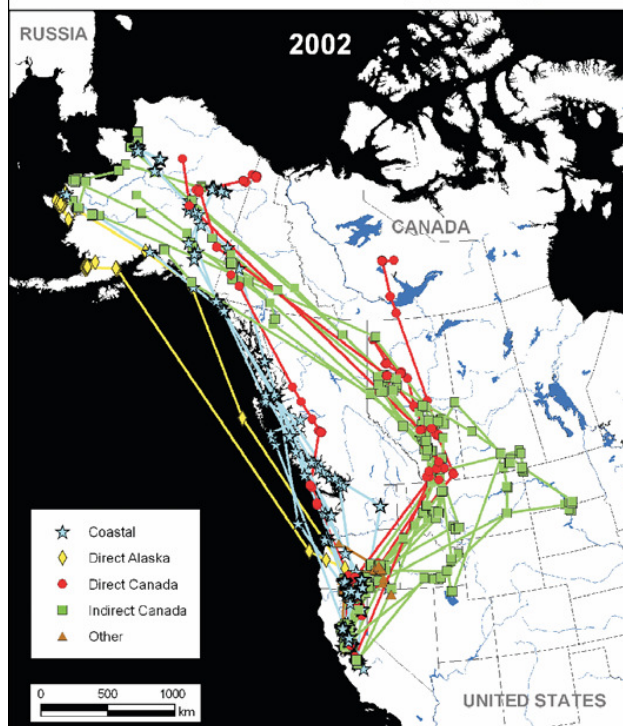
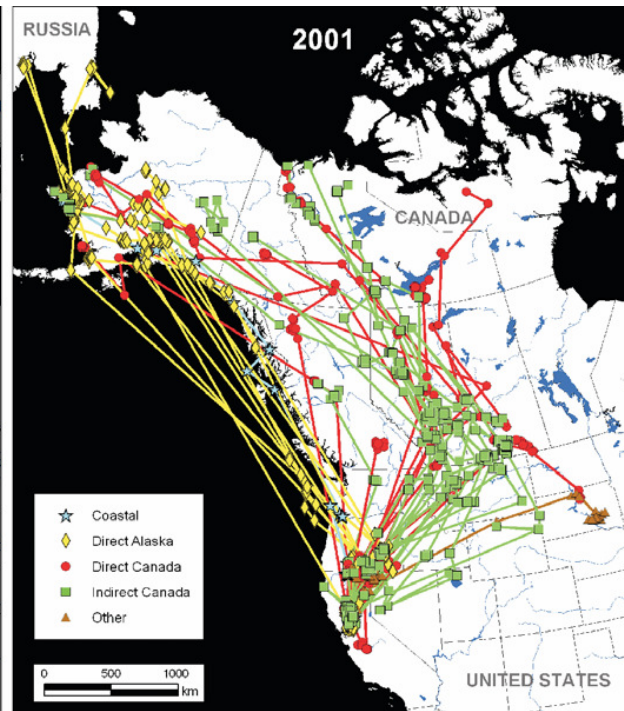
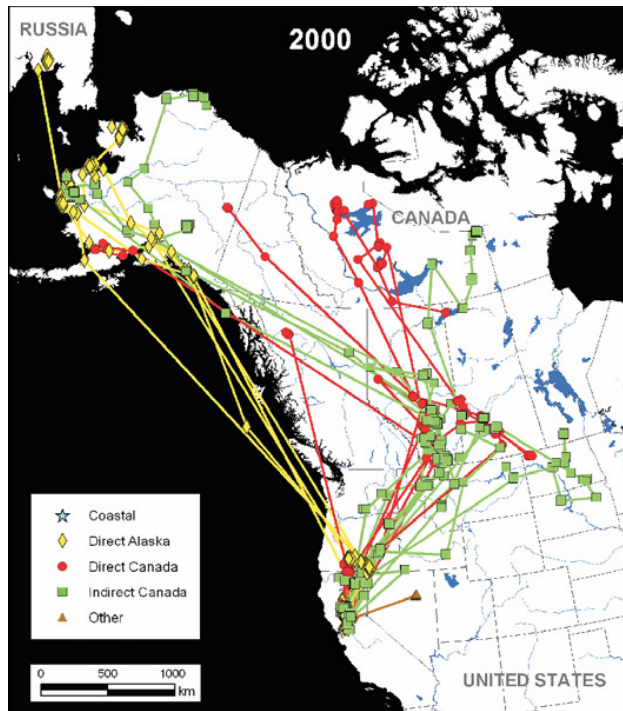
Northward Migration
Jan-May

Nonbreeding

Nonbreeding
Nov-Apr

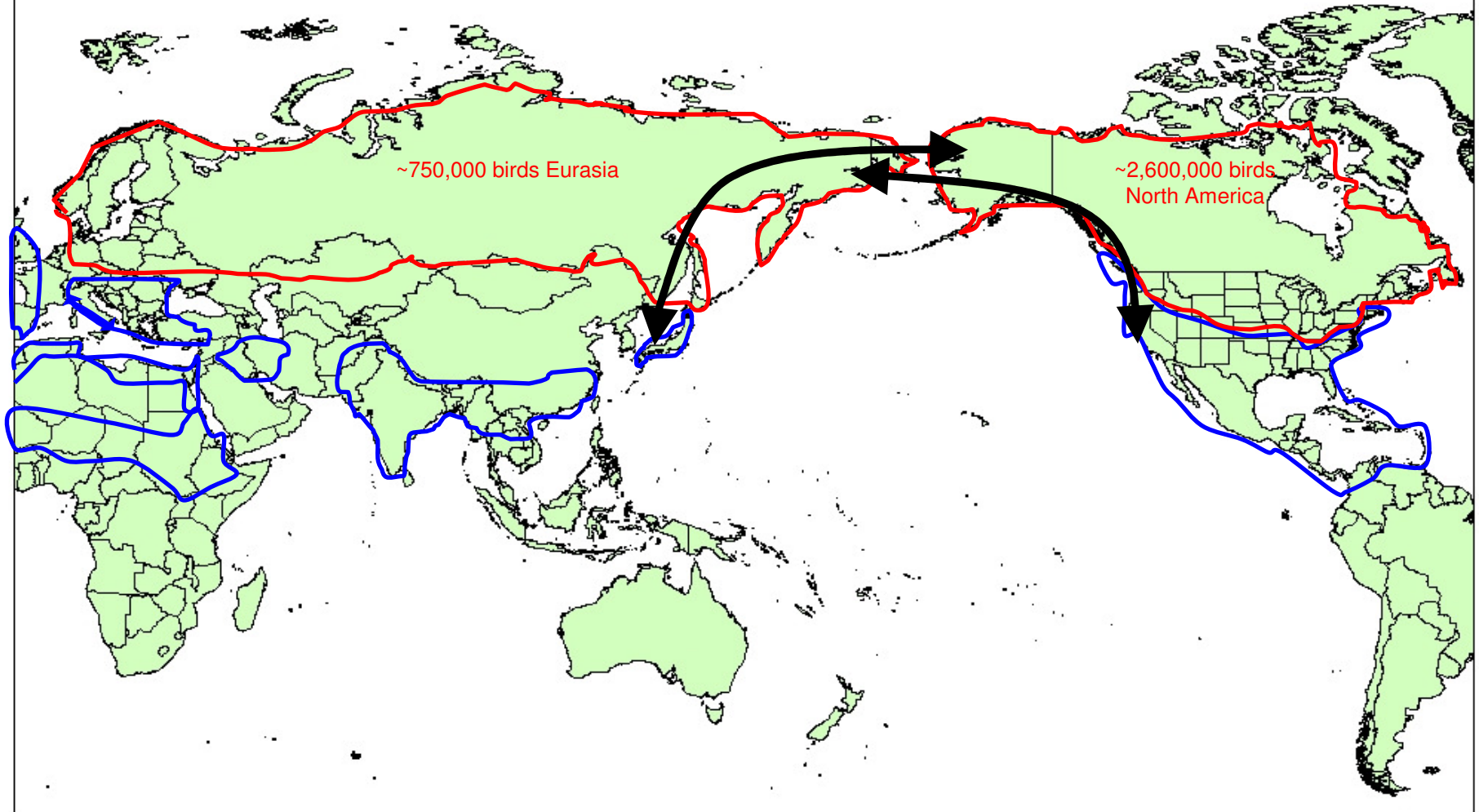
DR





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Northern Pintail



DRAFT

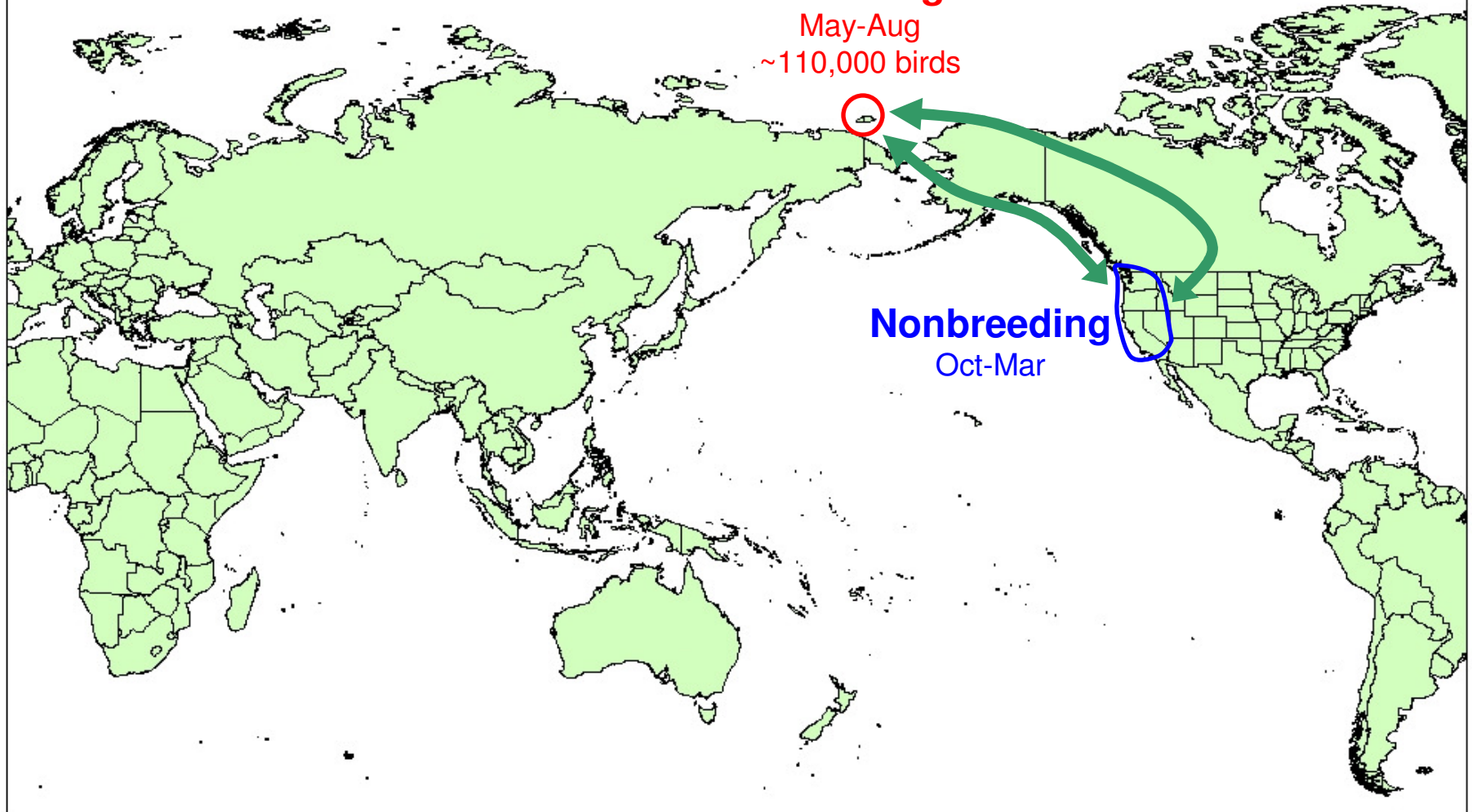
Wrangel Island Snow Geese



Breeding
May-Aug
~110,000 birds

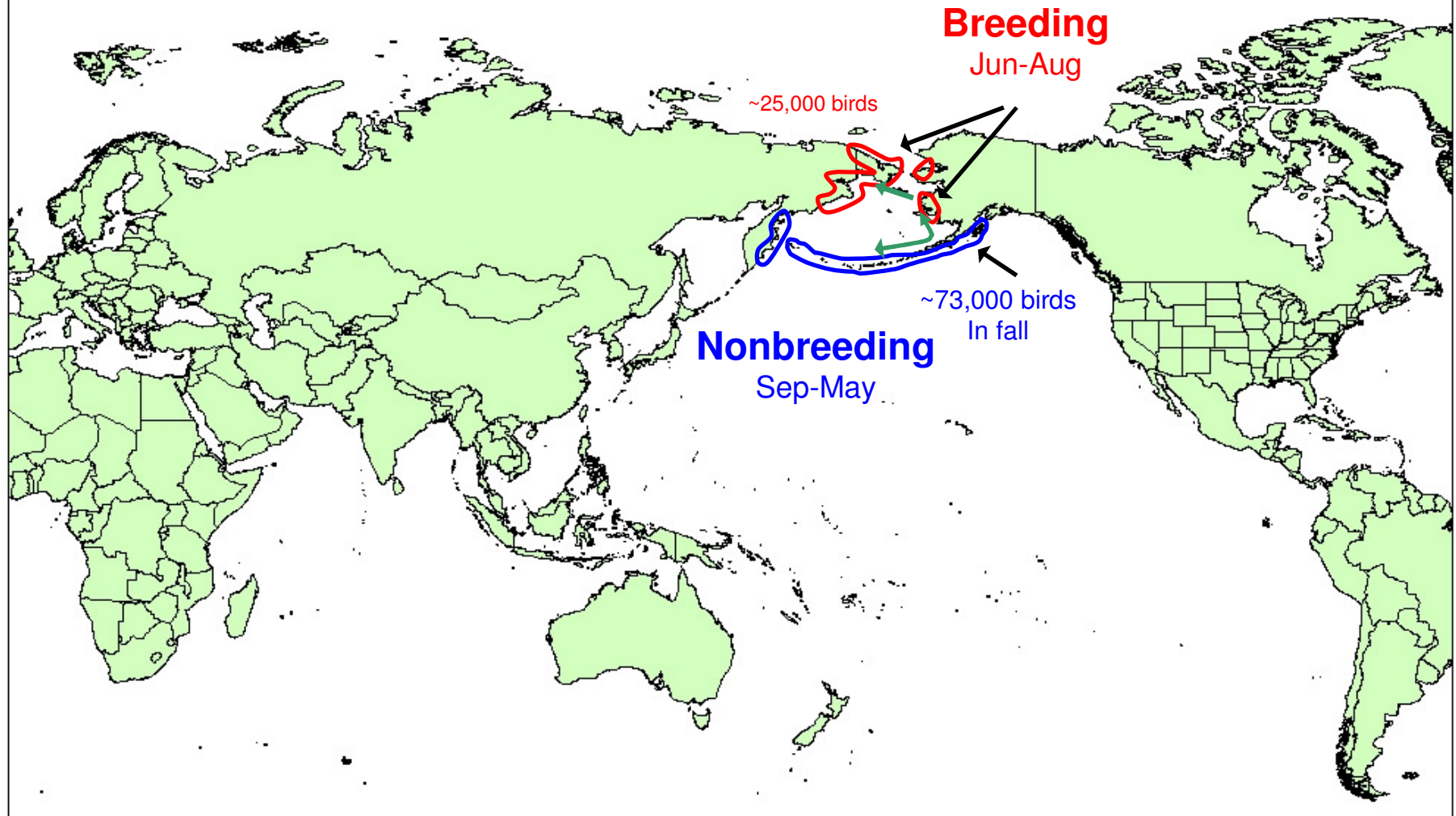


Nonbreeding
Oct-Mar

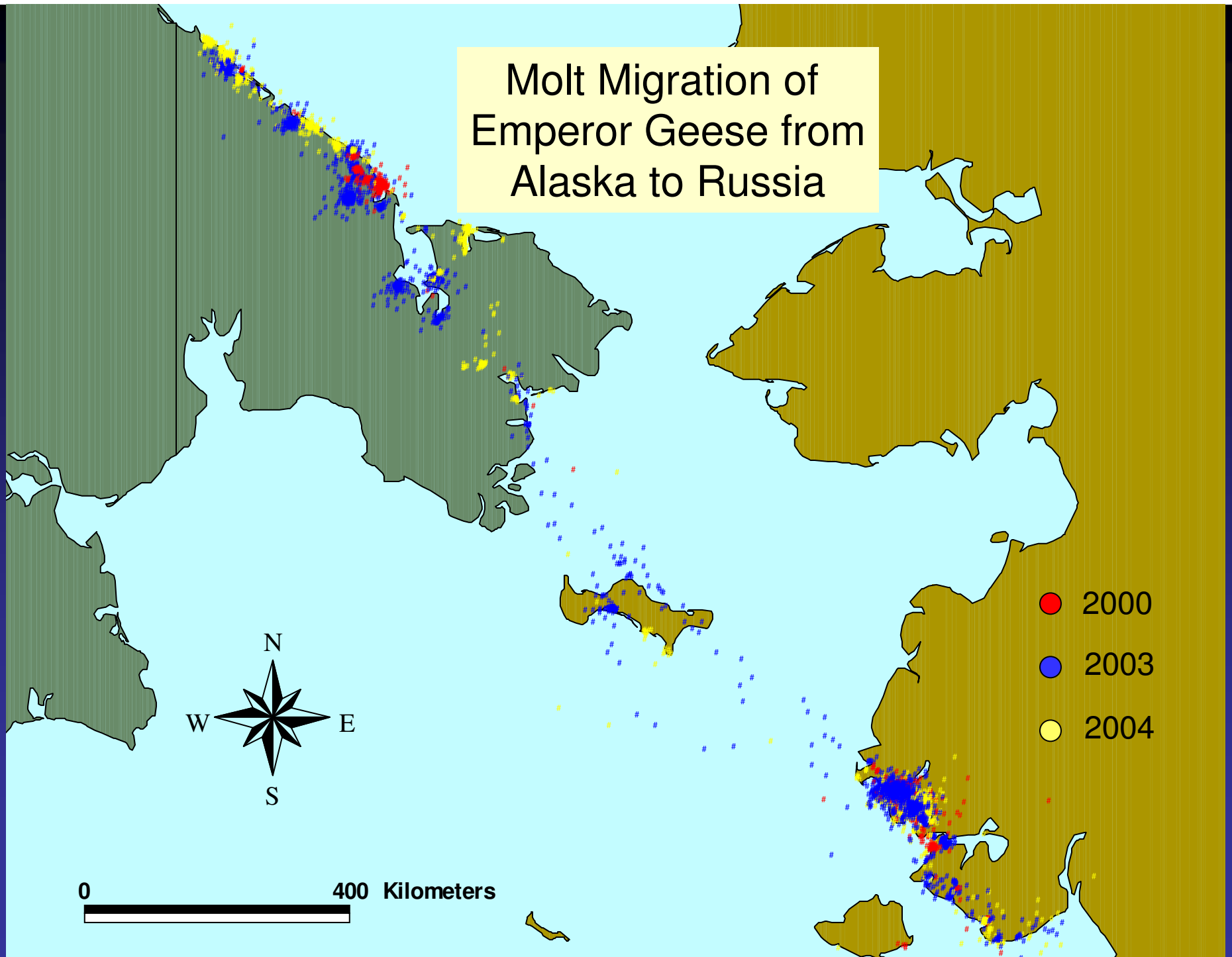


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Emperor Goose

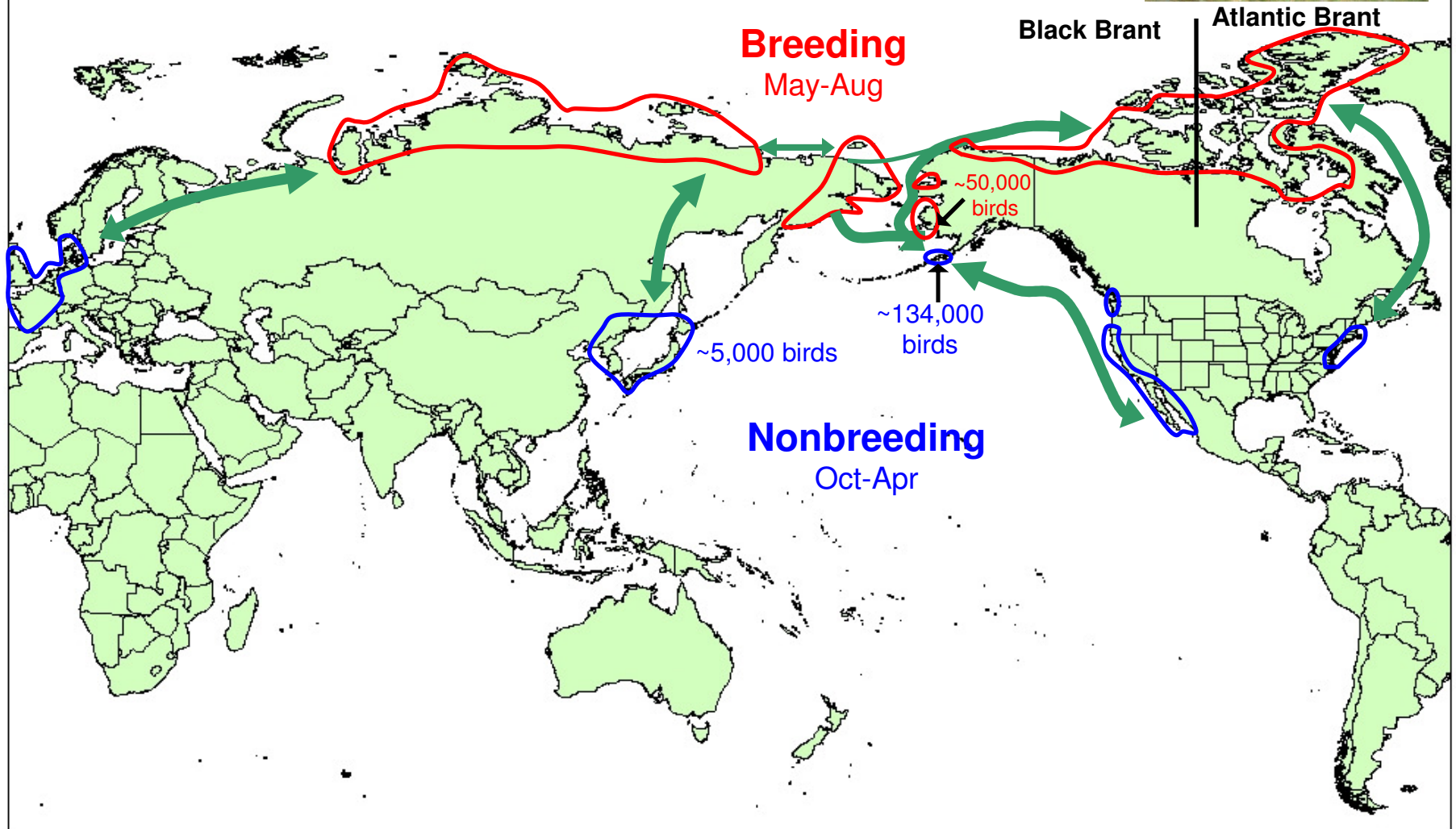


Molt Migration of Emperor Geese from Alaska to Russia



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Brant



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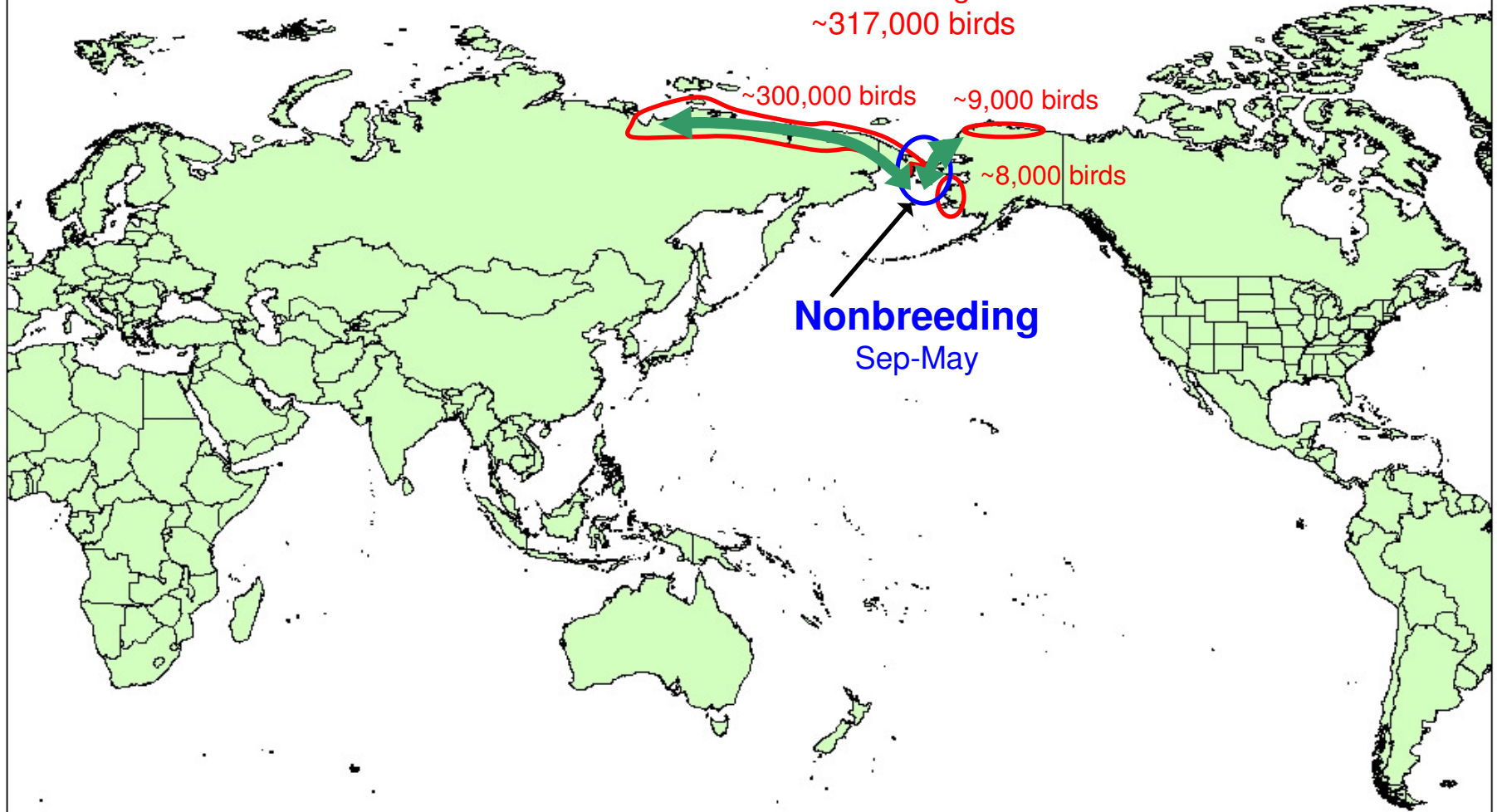
Spectacled Eider



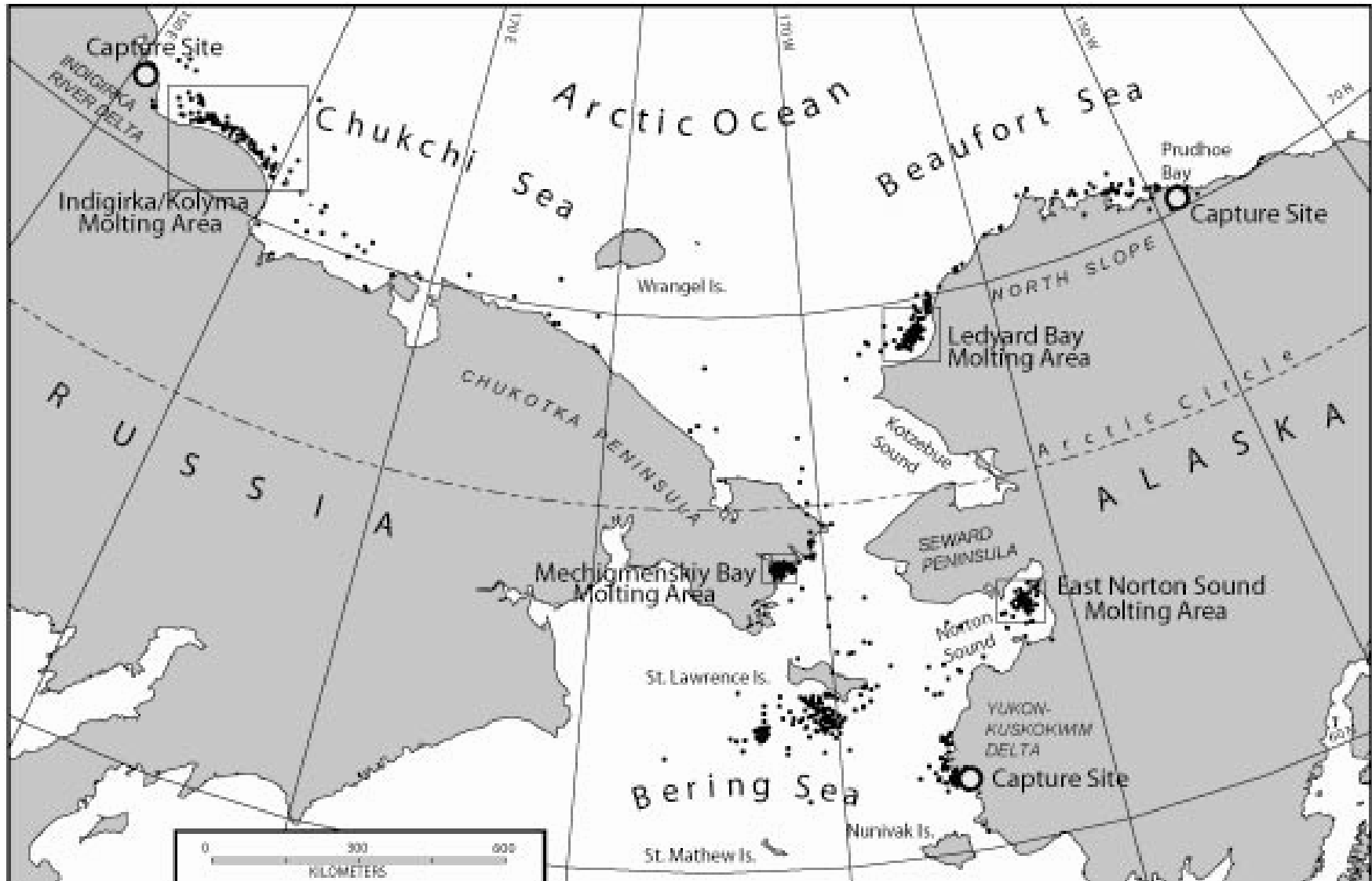
Breeding
Jun-Aug
~317,000 birds

~300,000 birds ~9,000 birds
~8,000 birds

Nonbreeding
Sep-May



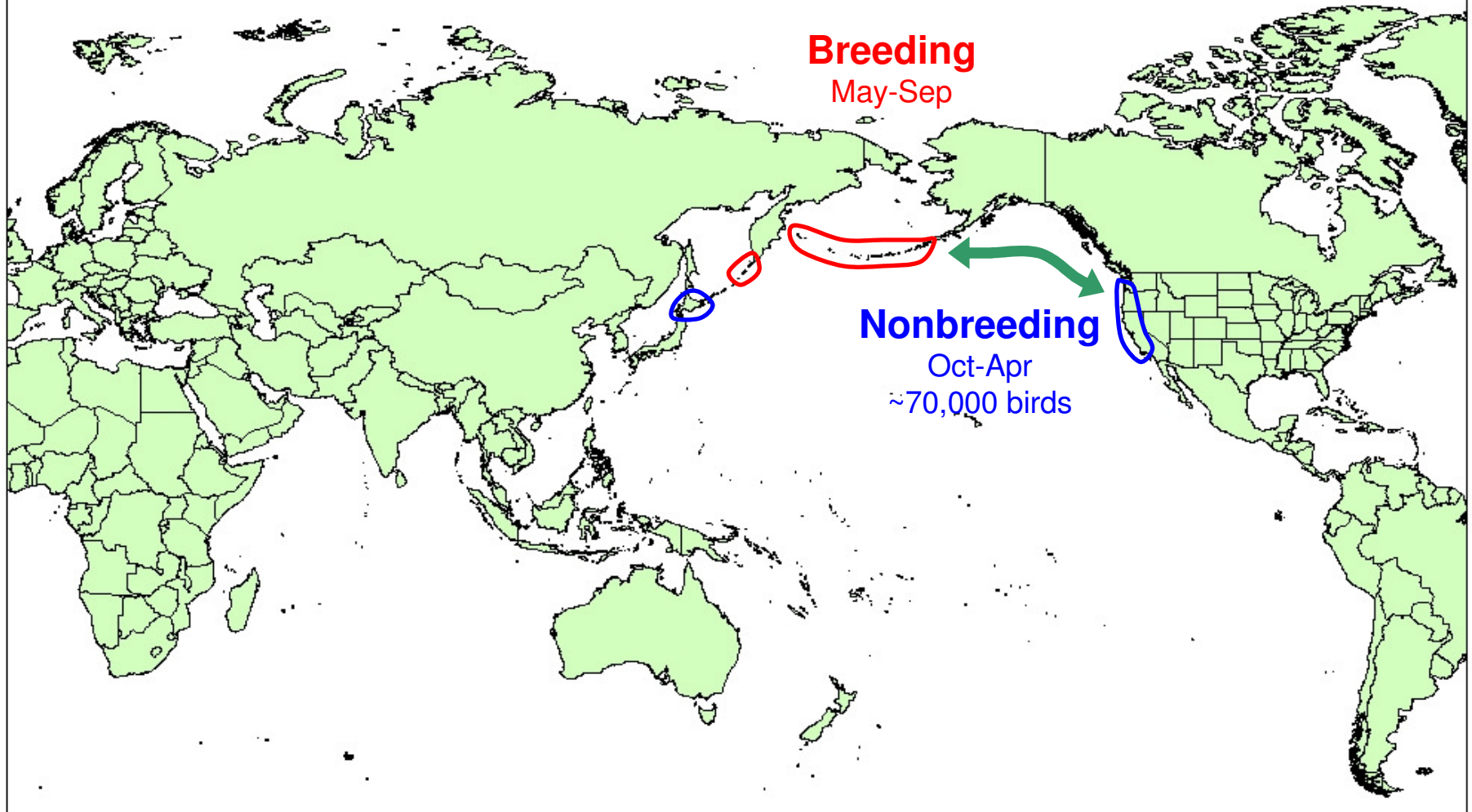
DRAFT





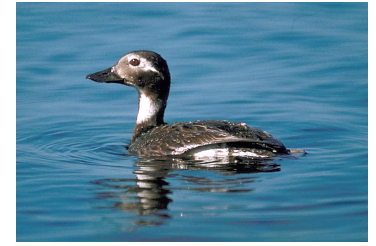
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Aleutian Canada Goose



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Long-tailed Duck



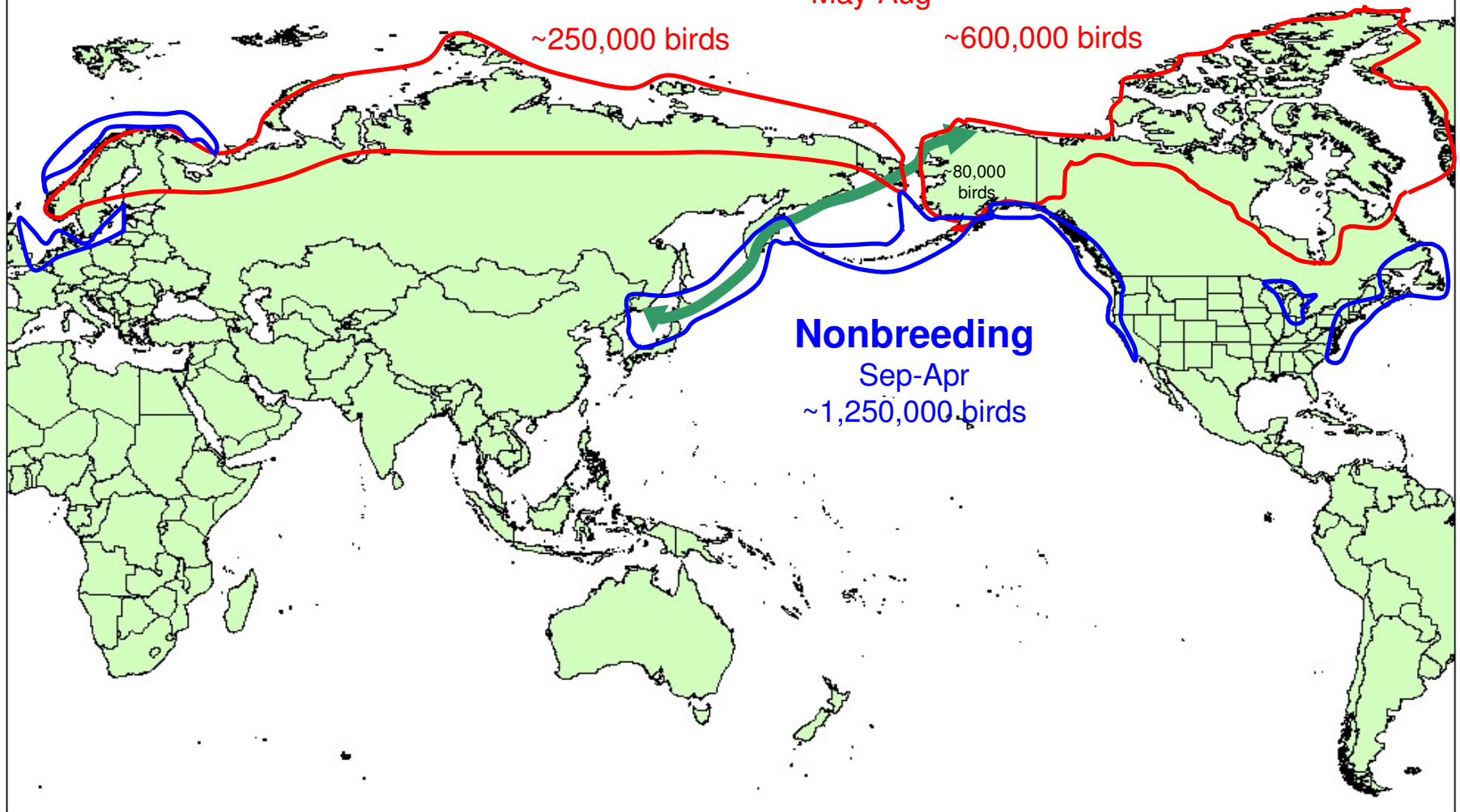
Breeding
May-Aug

~250,000 birds

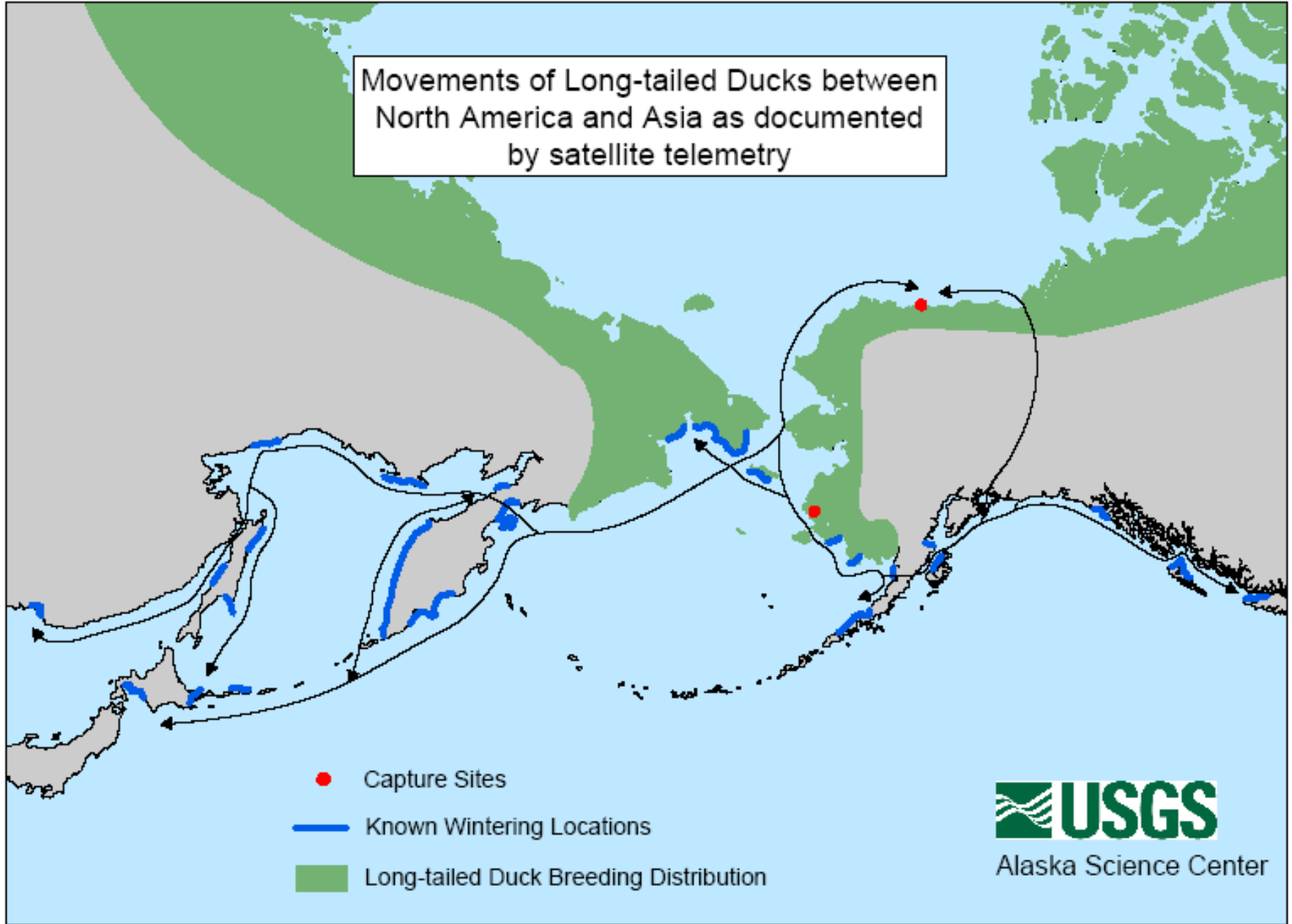
~600,000 birds

80,000
birds

Nonbreeding
Sep-Apr
~1,250,000 birds



Movements of Long-tailed Ducks between North America and Asia as documented by satellite telemetry



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Tundra Swan



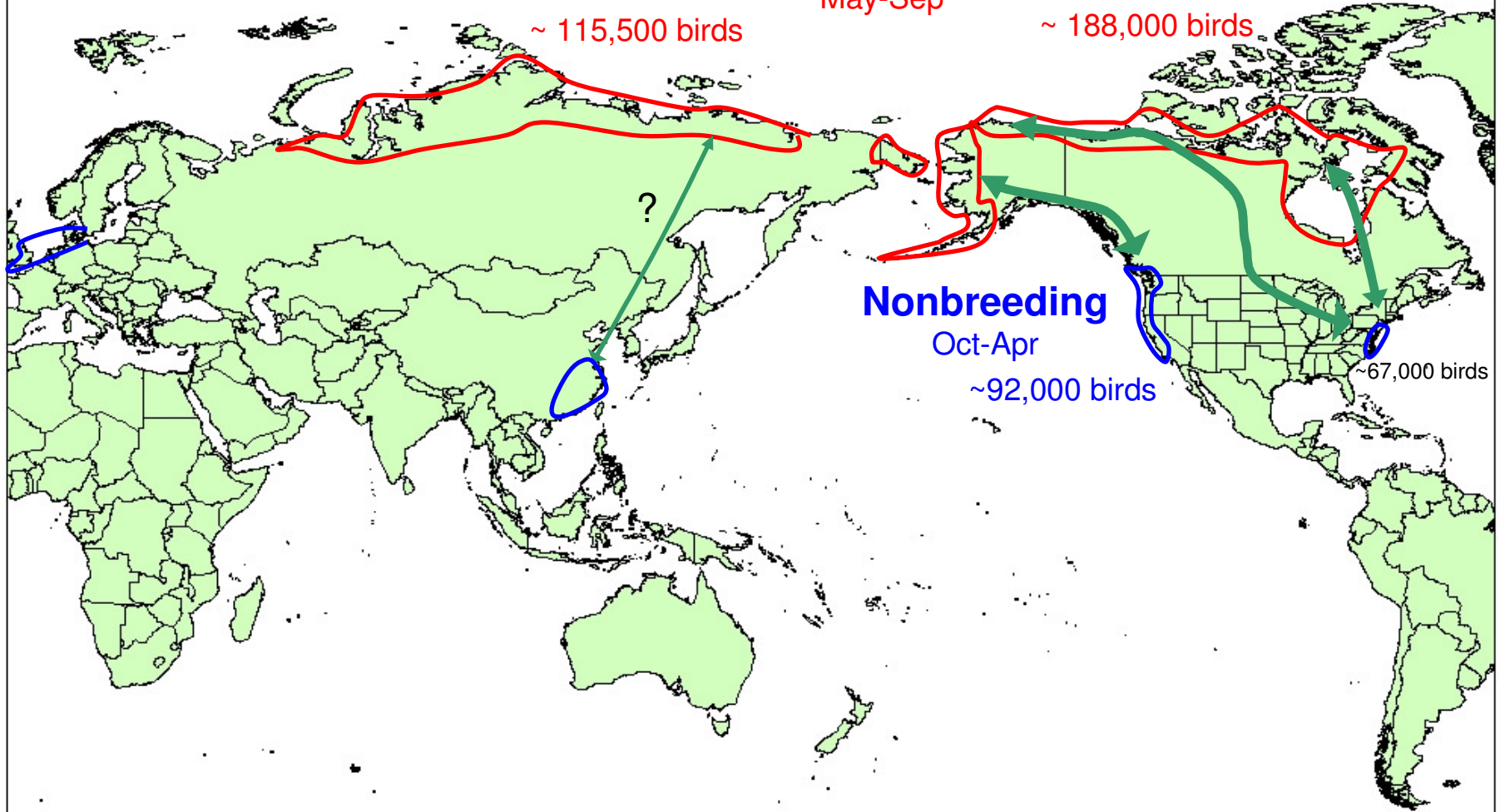
Breeding
May-Sep

~ 115,500 birds

~ 188,000 birds

Nonbreeding
Oct-Apr
~92,000 birds

~67,000 birds

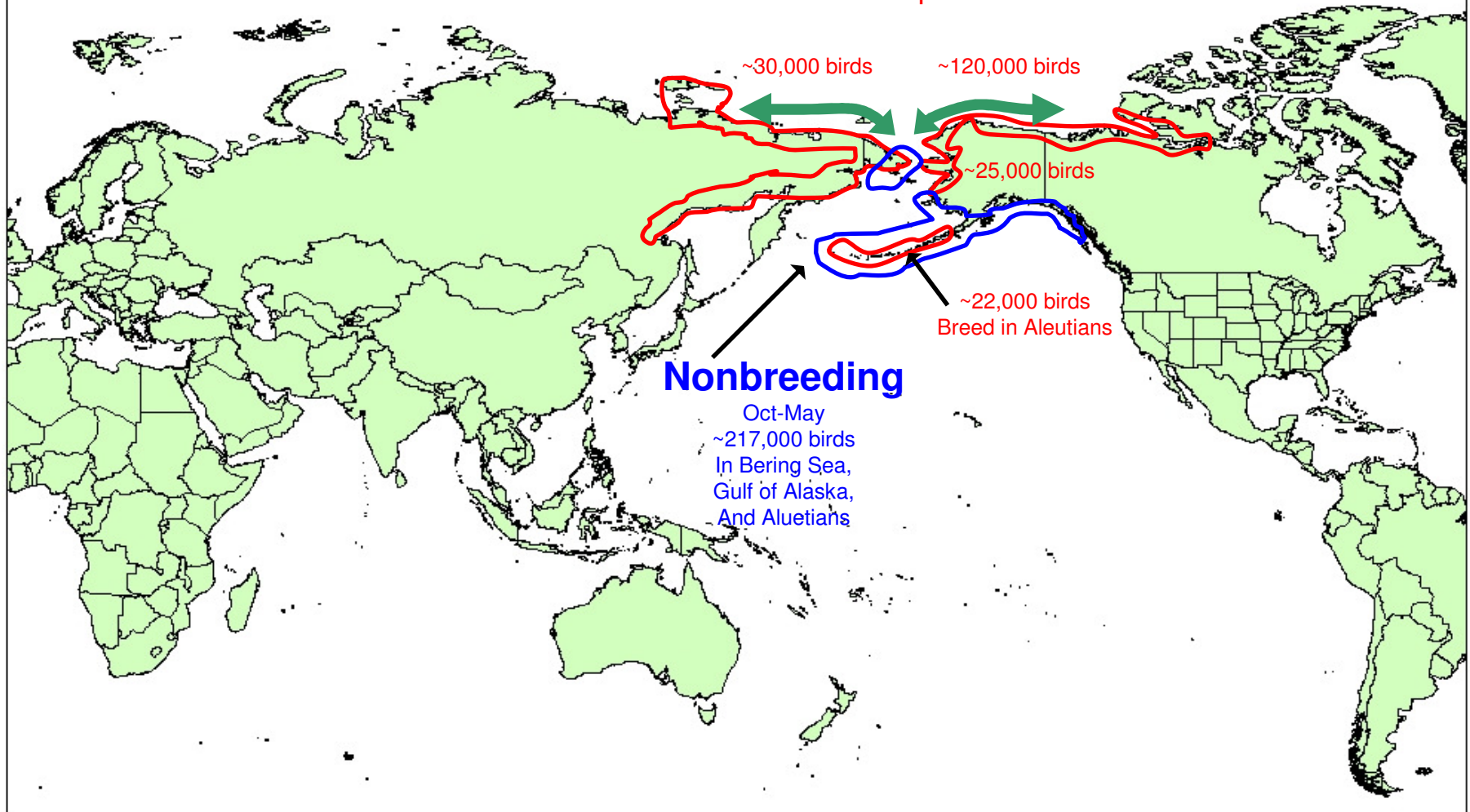


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Pacific Common Eider



Breeding
Jun-Sep

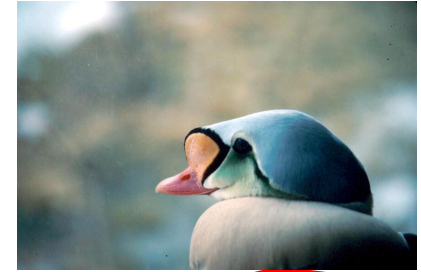


Nonbreeding

Oct-May
~217,000 birds
In Bering Sea,
Gulf of Alaska,
And Aleutians

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King Eider

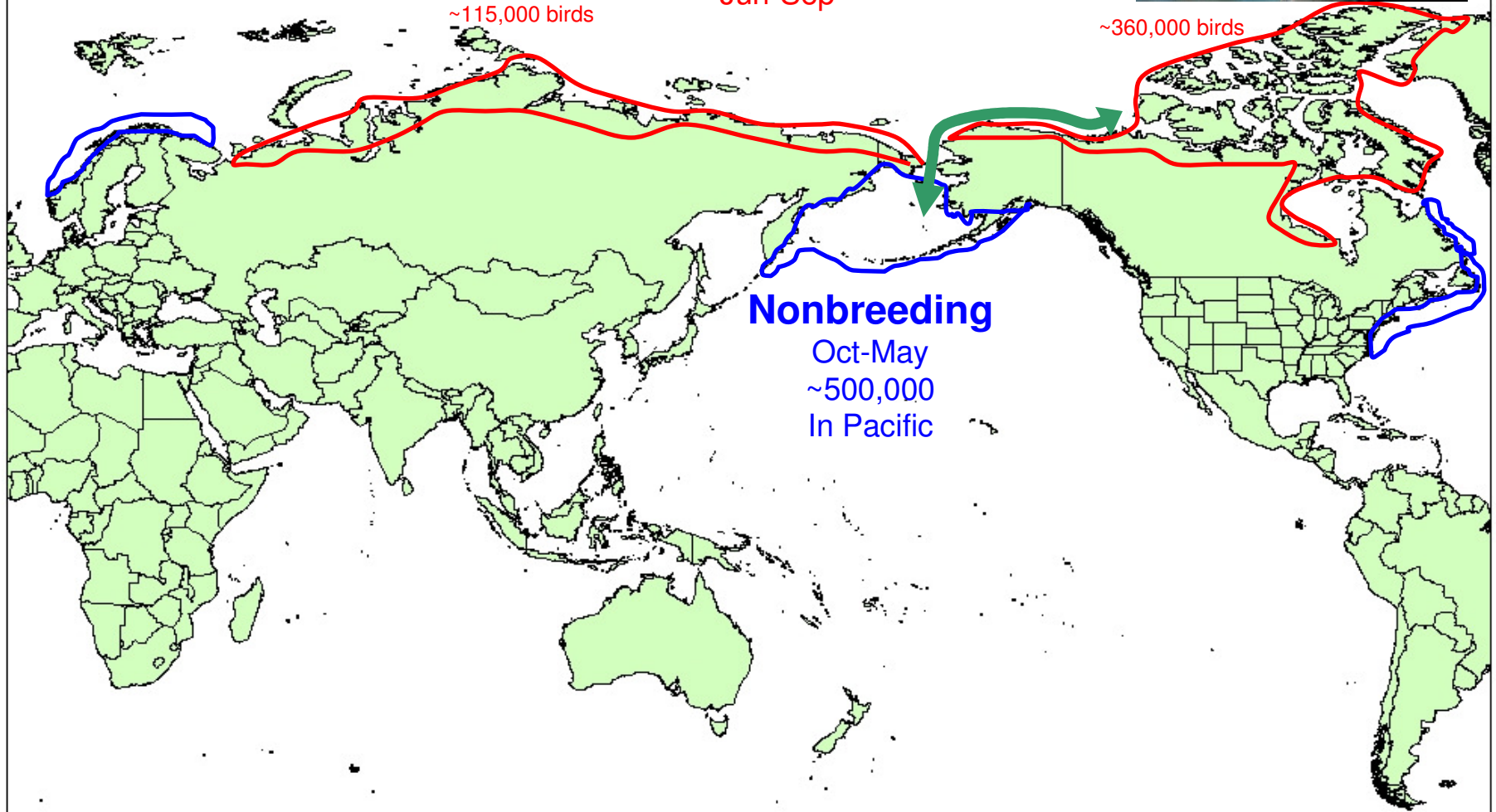


Breeding
Jun-Sep

~115,000 birds

~360,000 birds

Nonbreeding
Oct-May
~500,000
In Pacific



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Lesser Sandhill Crane

Mid-continent population

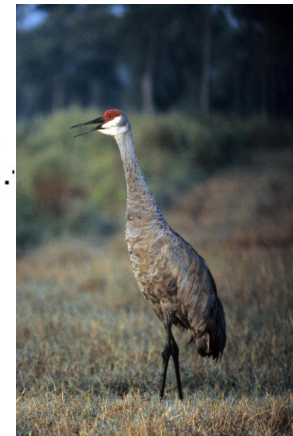
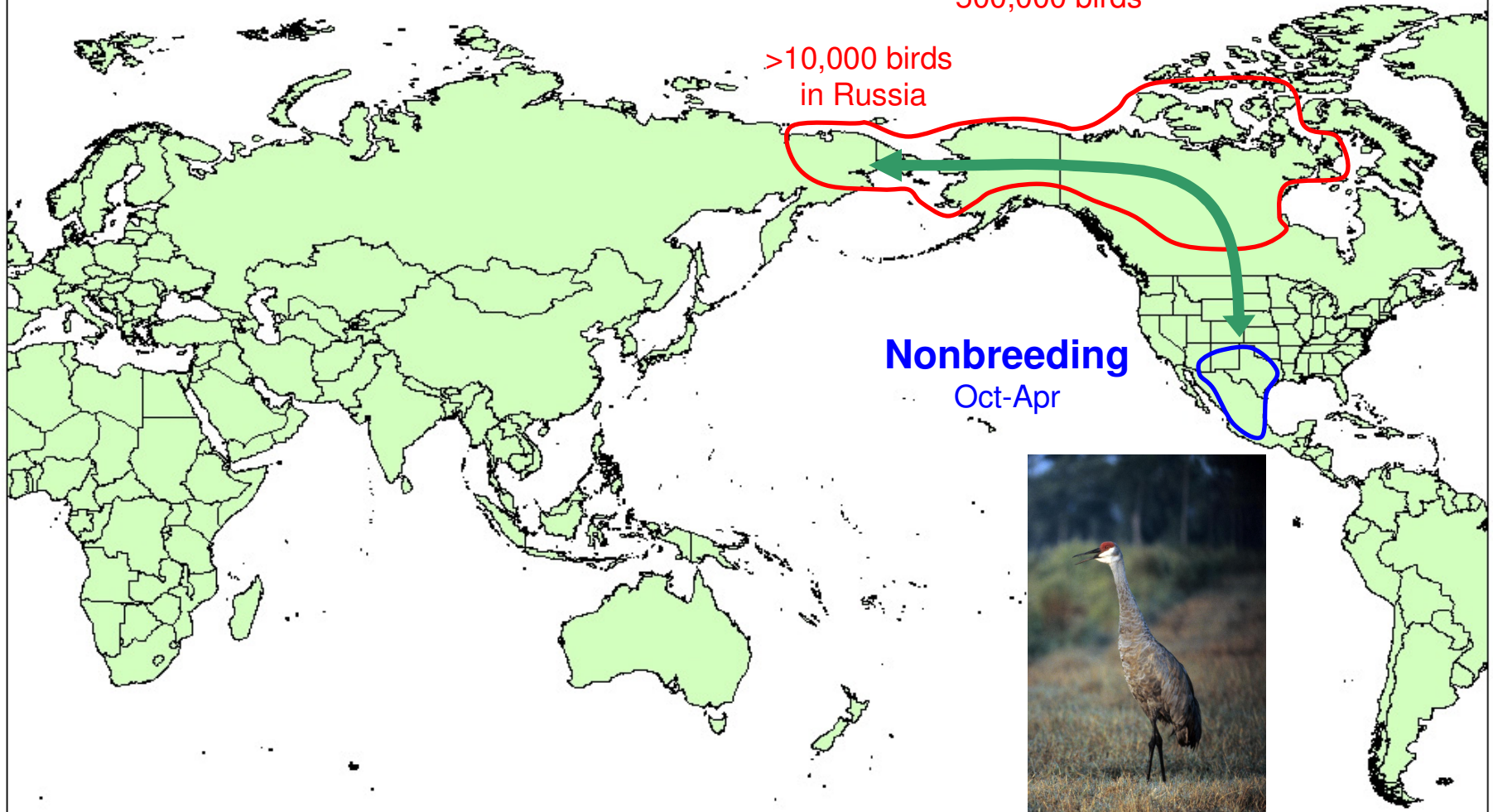
Breeding

May-Sep
~500,000 birds

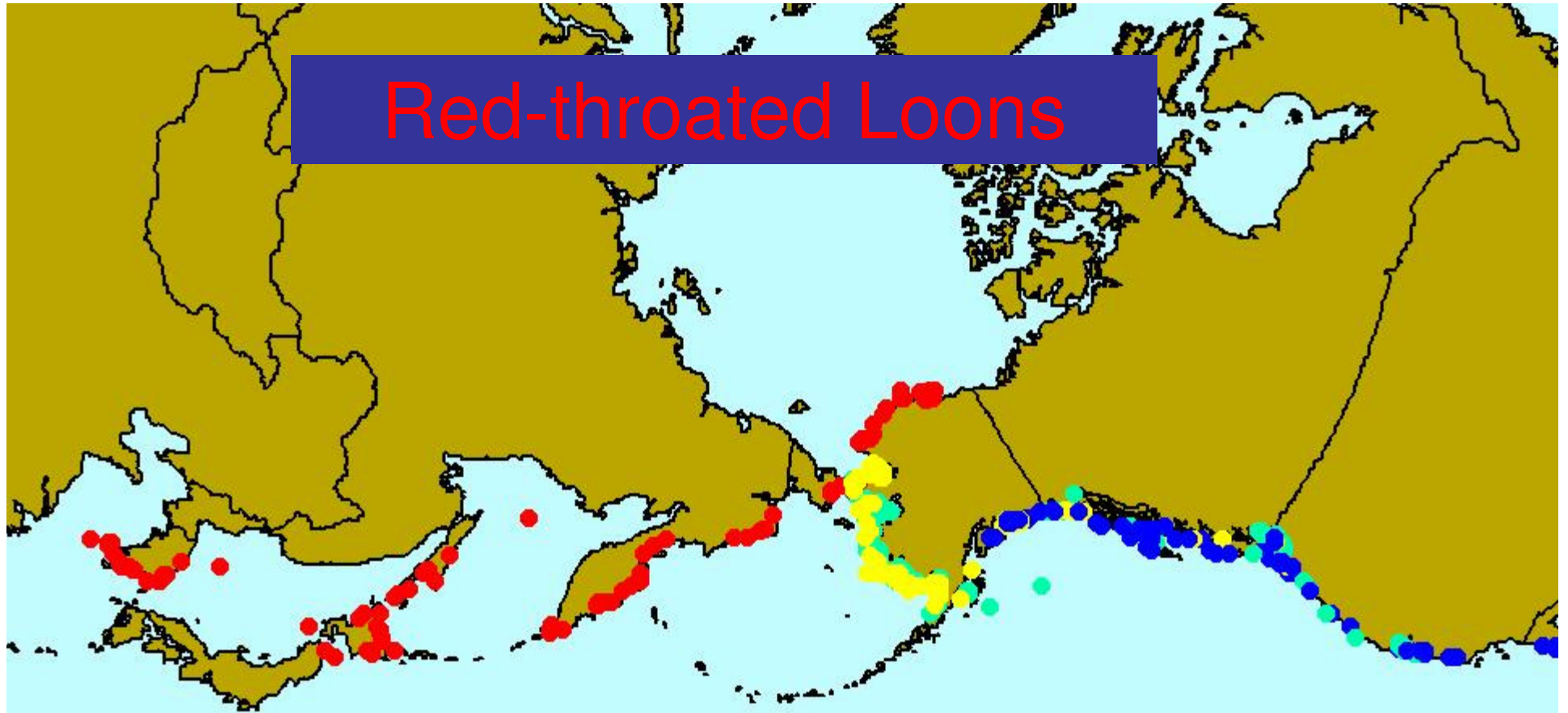
>10,000 birds
in Russia

Nonbreeding

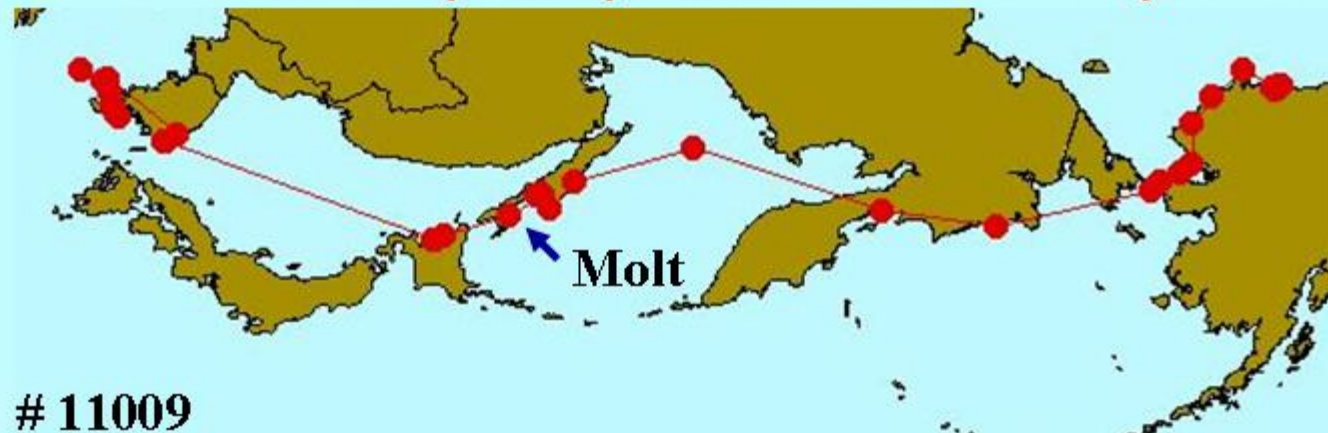
Oct-Apr



Red-throated Loons



Year-round allopatry of North Slope loons



Yellow-billed Loons

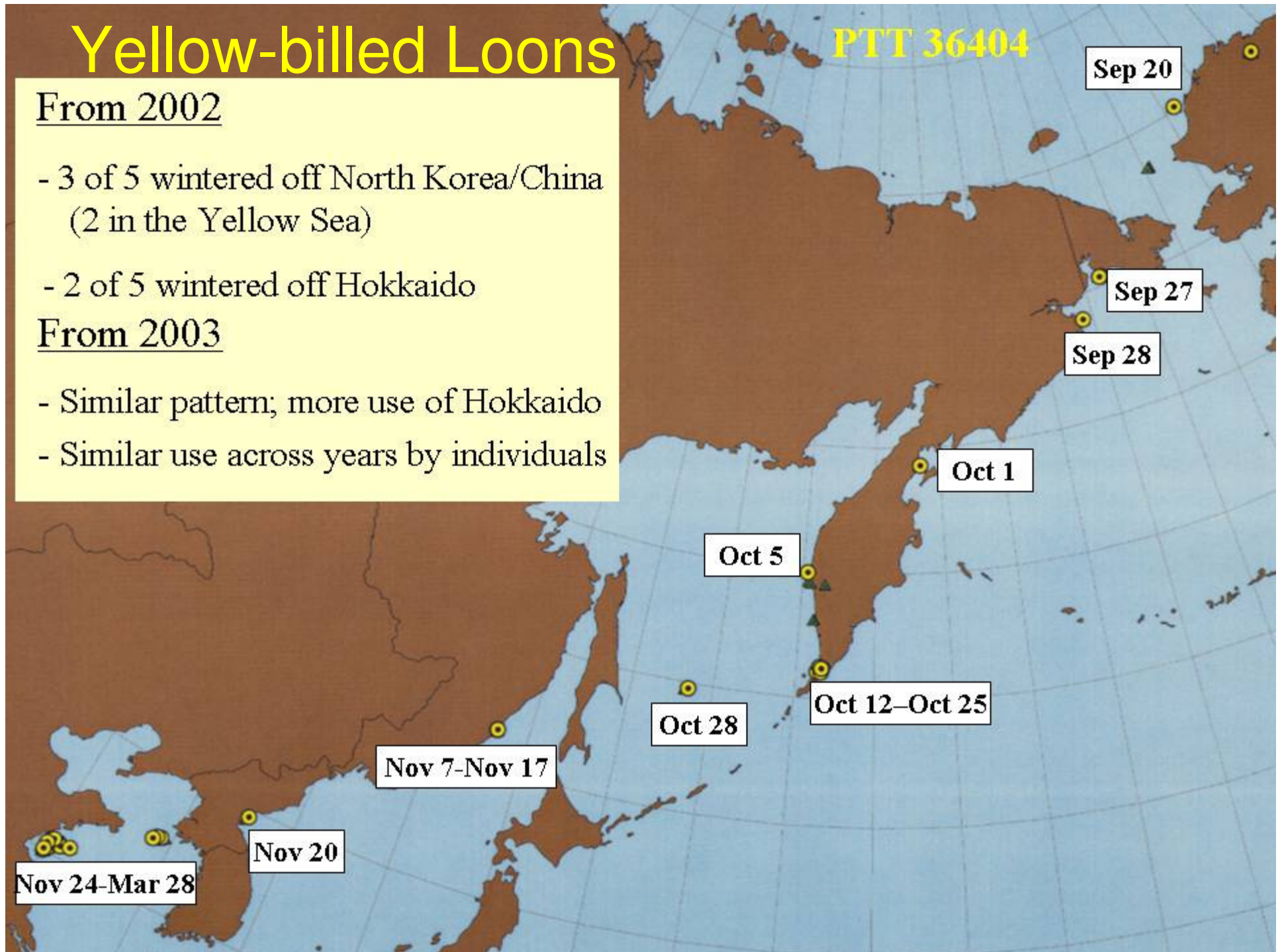
PTT 36404

From 2002

- 3 of 5 wintered off North Korea/China (2 in the Yellow Sea)
- 2 of 5 wintered off Hokkaido

From 2003

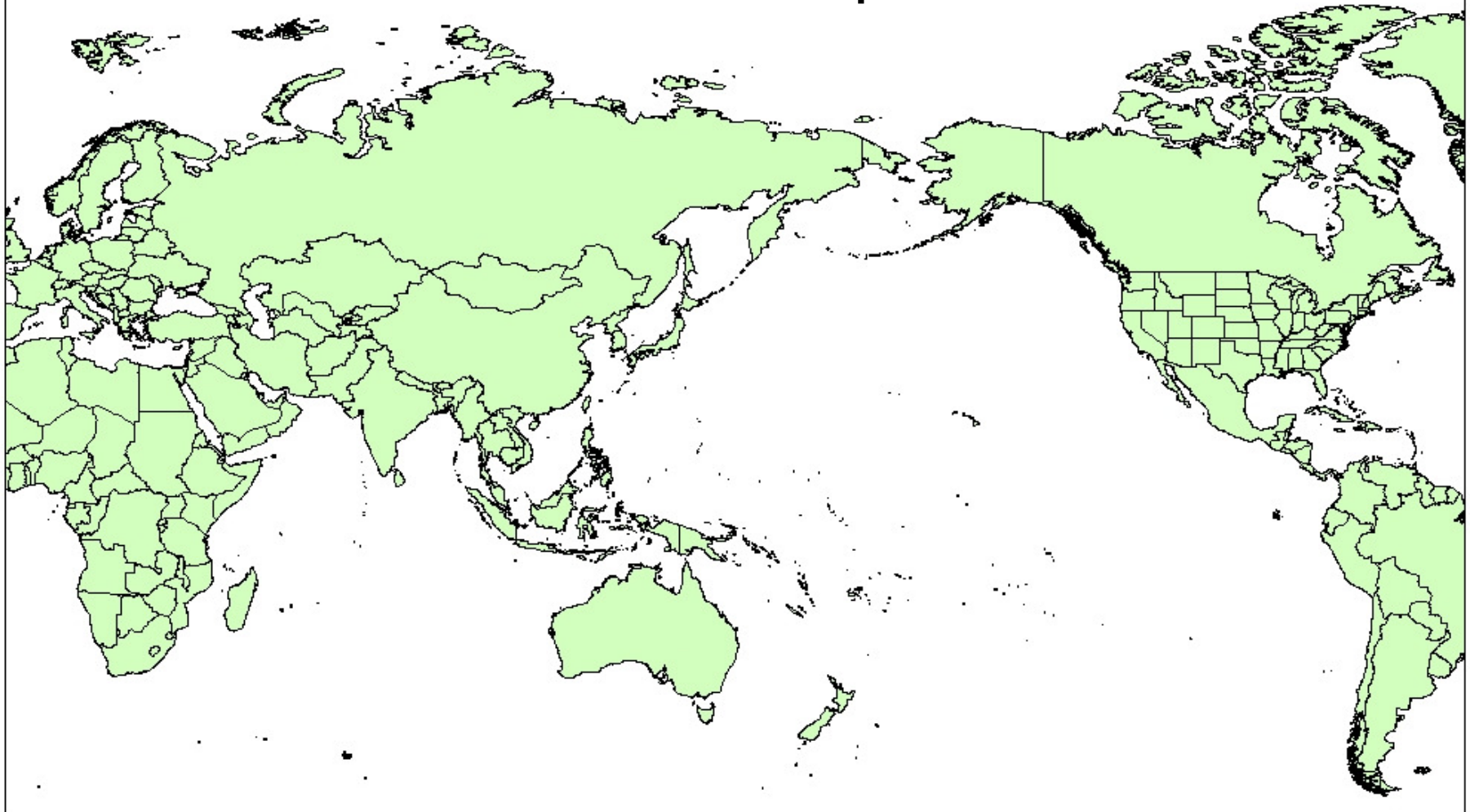
- Similar pattern; more use of Hokkaido
- Similar use across years by individuals



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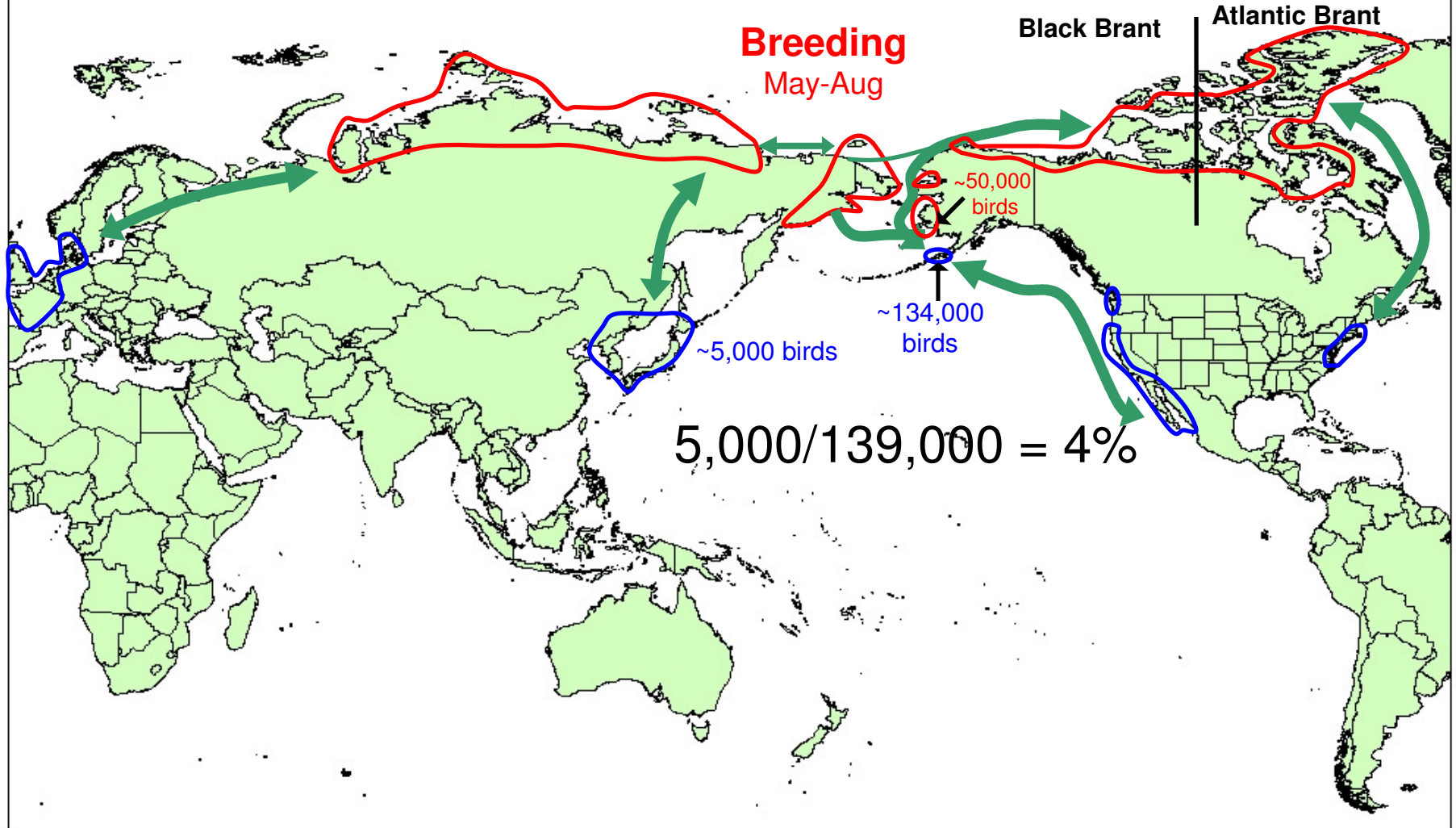
Species Specific Sampling Plans

- Black Brant as an example



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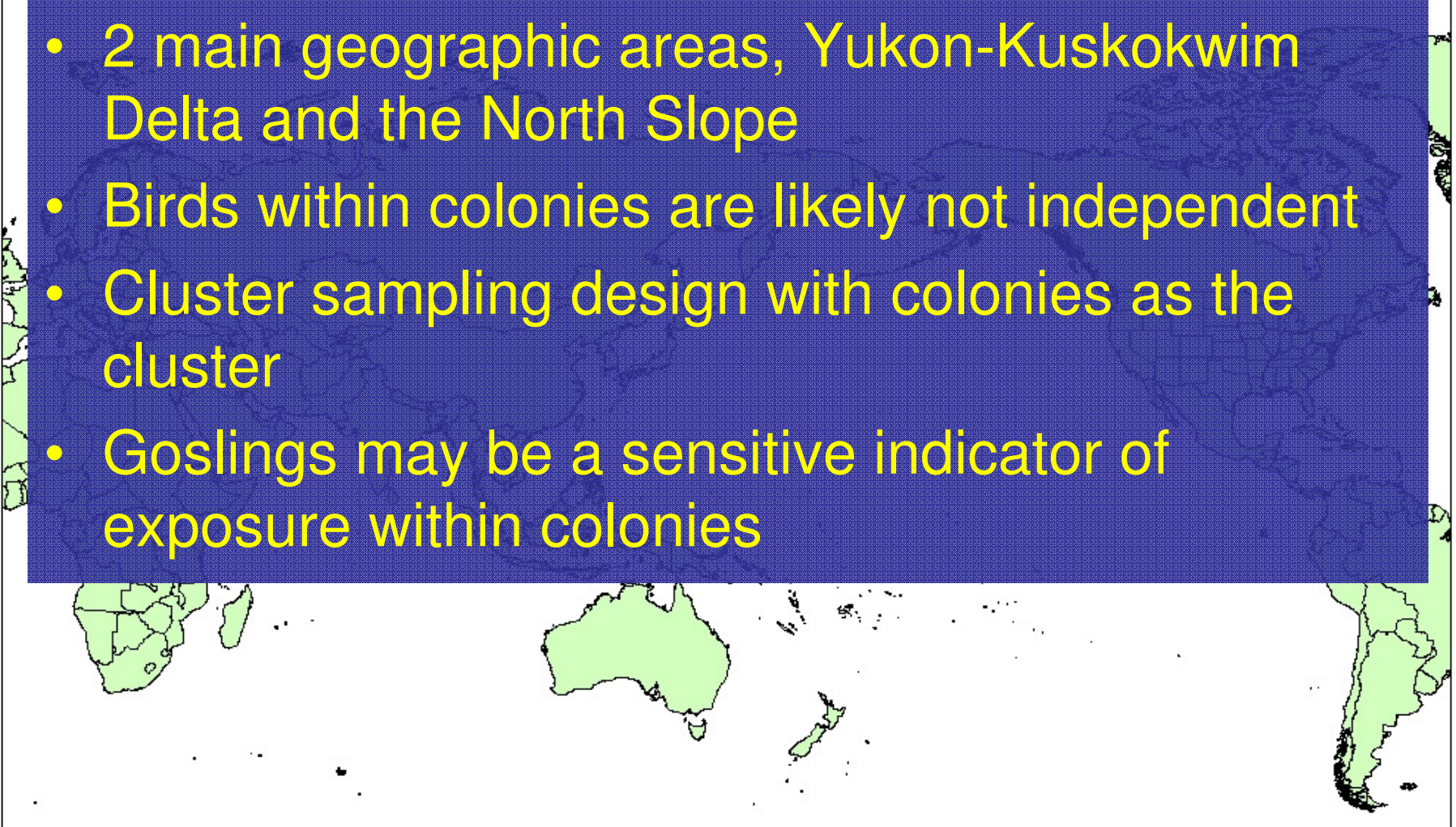
Brant





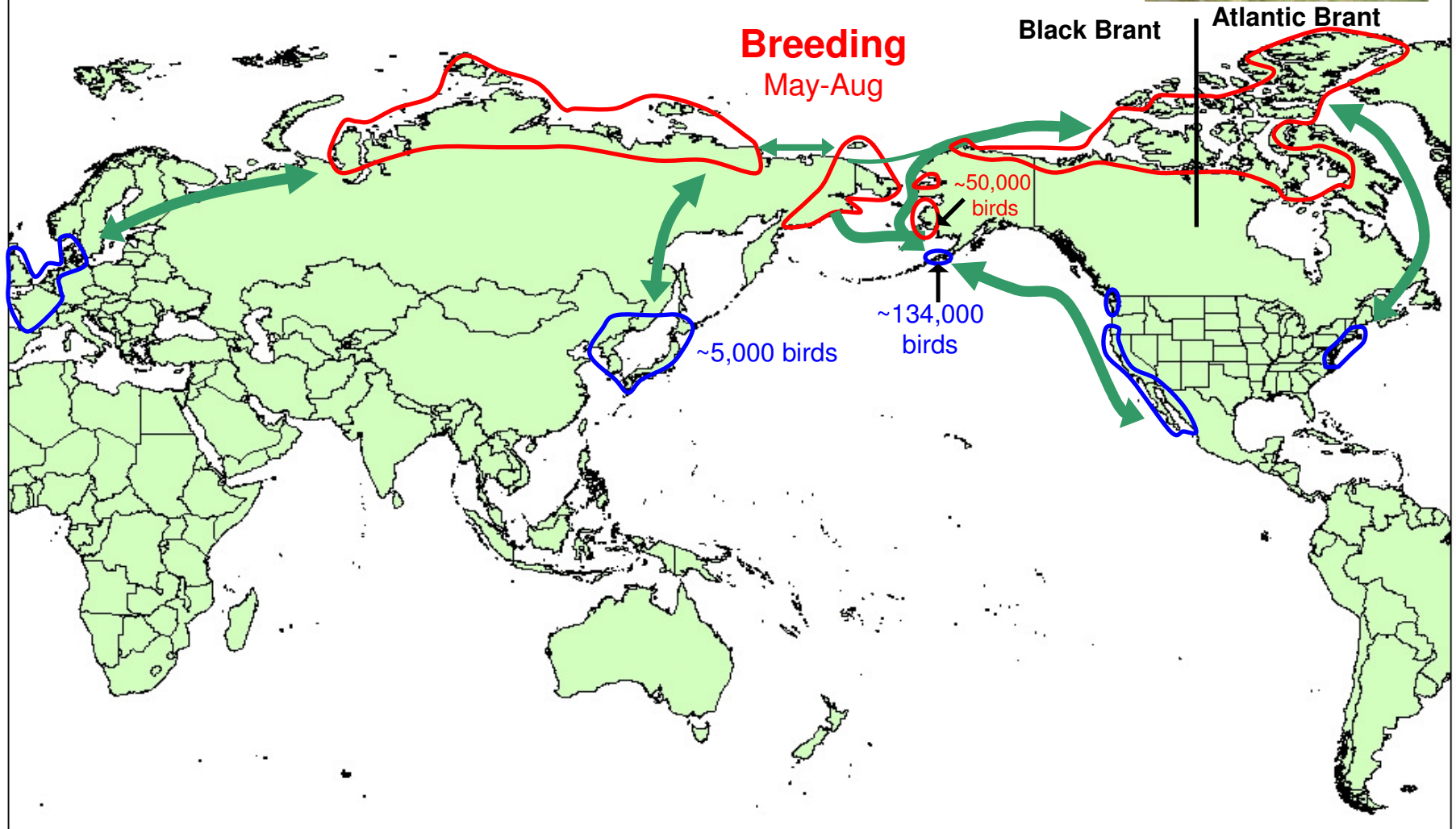
Sampling breeding Brant

- 2 main geographic areas, Yukon-Kuskokwim Delta and the North Slope
- Birds within colonies are likely not independent
- Cluster sampling design with colonies as the cluster
- Goslings may be a sensitive indicator of exposure within colonies



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Brant



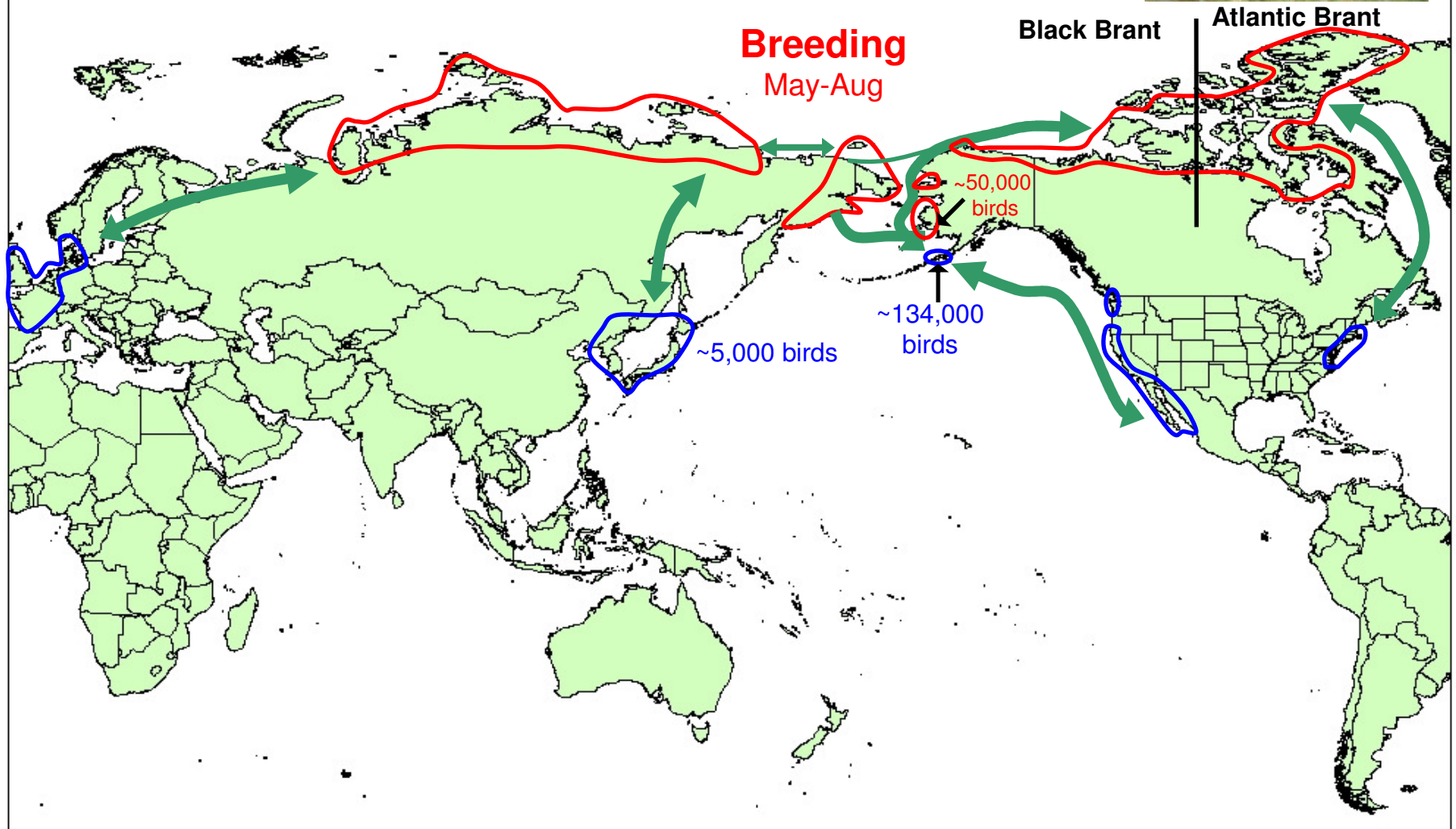


Sampling molting Brant

- 2 main geographic areas, Yukon-Kuskokwim Delta, and the North Slope
- Birds within molting flocks are likely not independent
- Cluster sampling design with flocks as the cluster

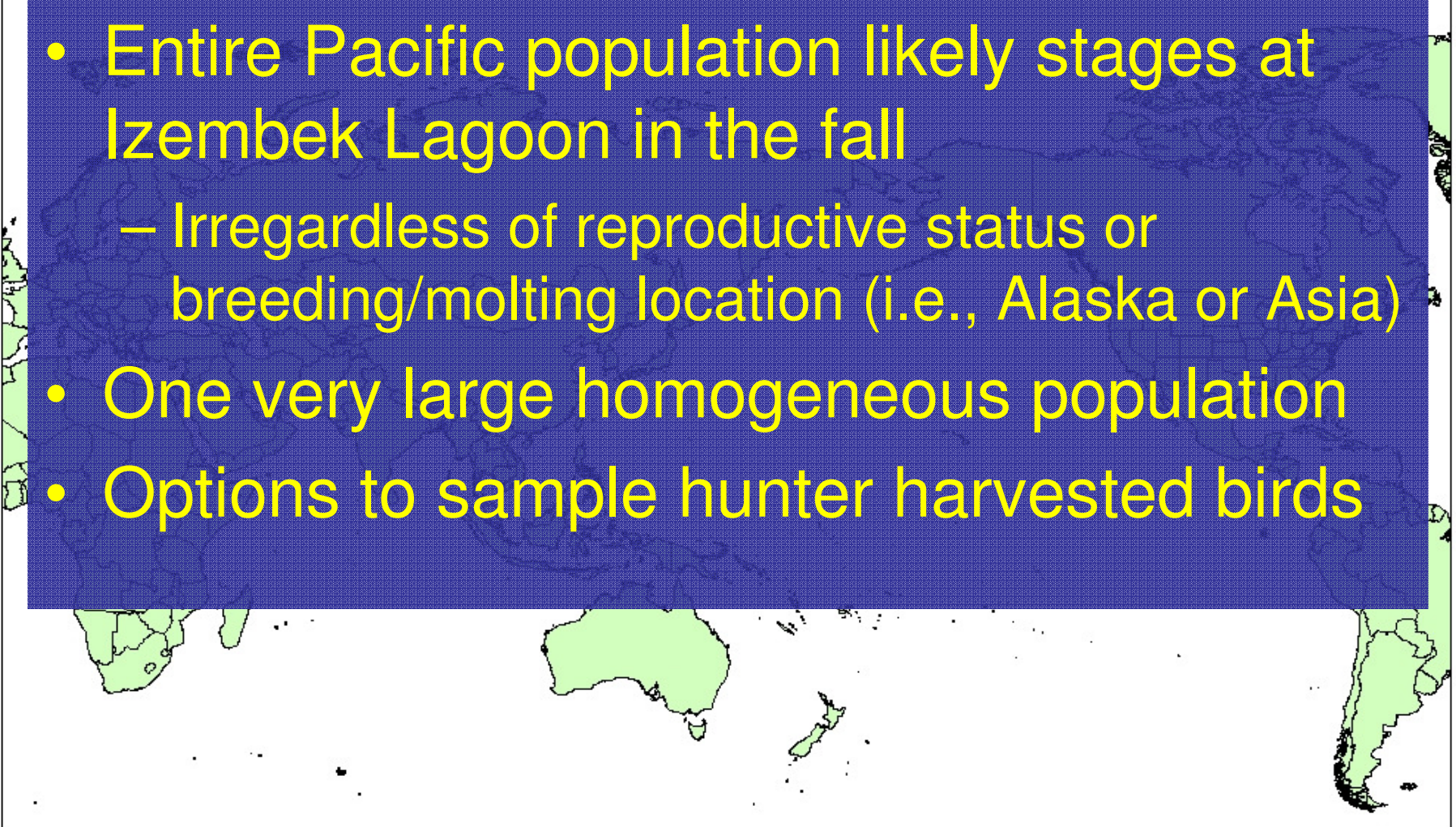
DRAFT

Brant



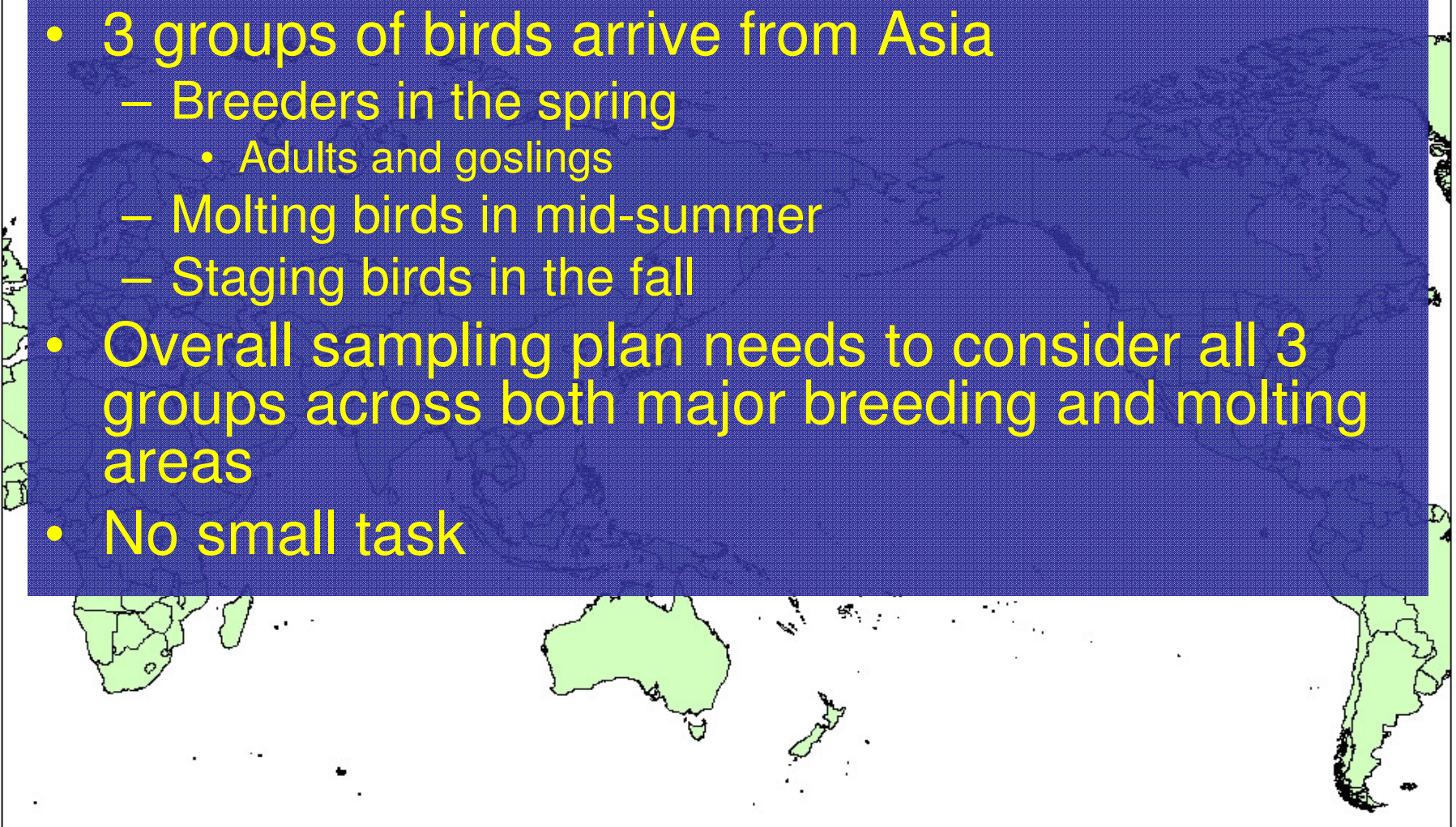
Sampling staging Brant

- Entire Pacific population likely stages at Izembek Lagoon in the fall
 - Irregardless of reproductive status or breeding/molting location (i.e., Alaska or Asia)
- One very large homogeneous population
- Options to sample hunter harvested birds



Sampling Brant

- 3 groups of birds arrive from Asia
 - Breeders in the spring
 - Adults and goslings
 - Molting birds in mid-summer
 - Staging birds in the fall
- Overall sampling plan needs to consider all 3 groups across both major breeding and molting areas
- No small task



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Questions?

