PROJETO AVES MIGRATÓRIAS

AVES COSTEIRAS MIGRATÓRIAS E SUAS CONEXÕES

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Coord. De Pesquisa e Monitoramento

Realização: AQUASIS

Parceria: BR PETROBRAS


7 ANOS
AQUASIS

AVES MIGRATÓRIAS

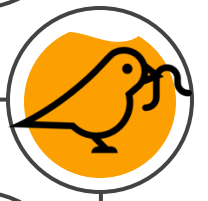
No Brasil há **1.971 espécies** de aves

216 (10,9%) realizam algum tipo de migração

141 (7,1%) migratórias e **75 (3,8%)** parcialmente migratórias

Migrantes de longa distância

Latitudinal (Hemisfério Norte e Sul)

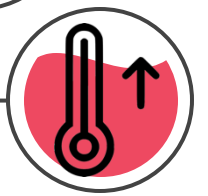


Nômades e irregulares

Seguem a disponibilidade de alimentos

Altitudes

Percorrem algumas centenas de kms em buscas de altitudes ideais.

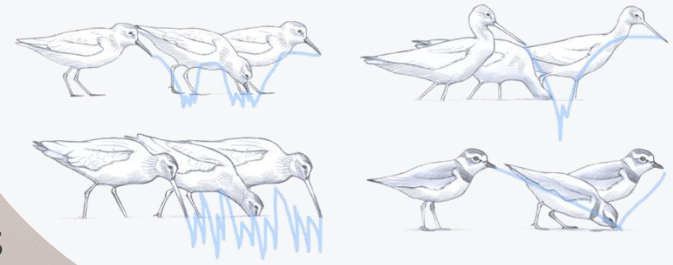


Curta distância

Apenas alguns kms para atingir temperaturas mais quentes.

Pacheco *et al.*, 2021

Aves Limícolas



Aquelas que dependem de ambientes úmidos e buscam alimento nas zonas entre marés e margens de corpos aquáticos, especialmente lagunas costeiras e estuários, embora possam ocupar uma diversidade de habitats.

CEMAVE, 2013

PAN Aves
Limícolas Migratórias

Aves Marinhas

Obtêm seu alimento desde a linha da baixa mar até o mar aberto.

Branco *et al.*, 2010

Trinta-réis-róseo (*Sterna dougallii*)

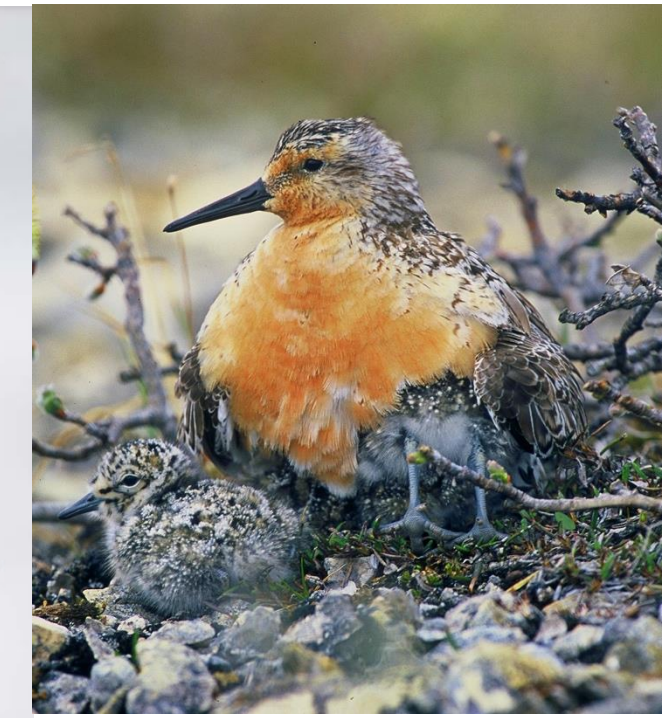
Trinta-réis-de-bando (*Thalasseus acuflavidus*)

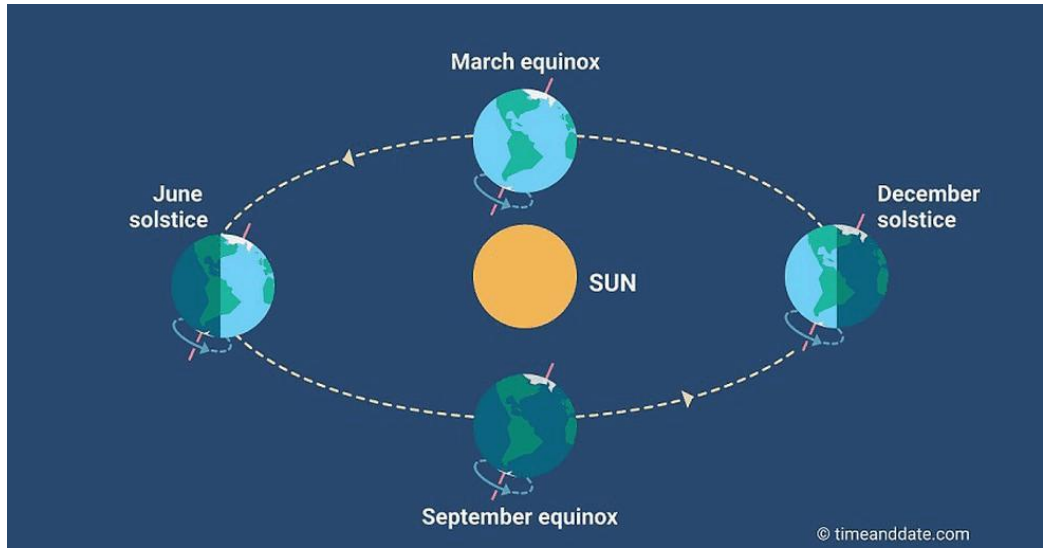
Trinta-réis-real (*Thalasseus maximus*)

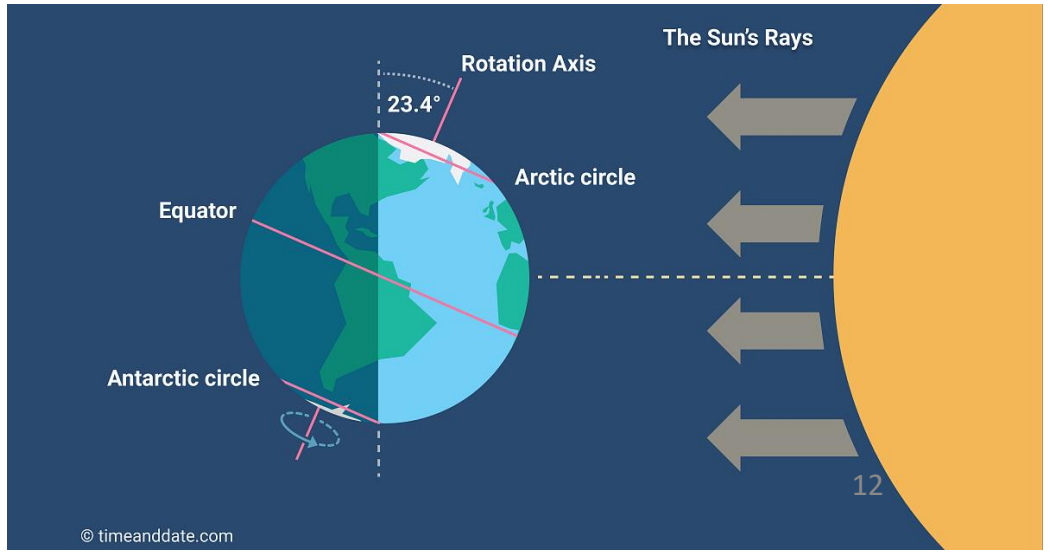
MIGRAÇÃO


Ártico
30.000 km
Tierra del Fuego


Alaska Shorebird Conservation Plan
Version III
April 2019




March equinox
June solstice
December solstice
SUN
September equinox
© timeanddate.com


The Sun's Rays
Rotation Axis
23.4°
Arctic circle
Equator
Antarctic circle
© timeanddate.com

Roosting Western Sandpipers
Sean Meade

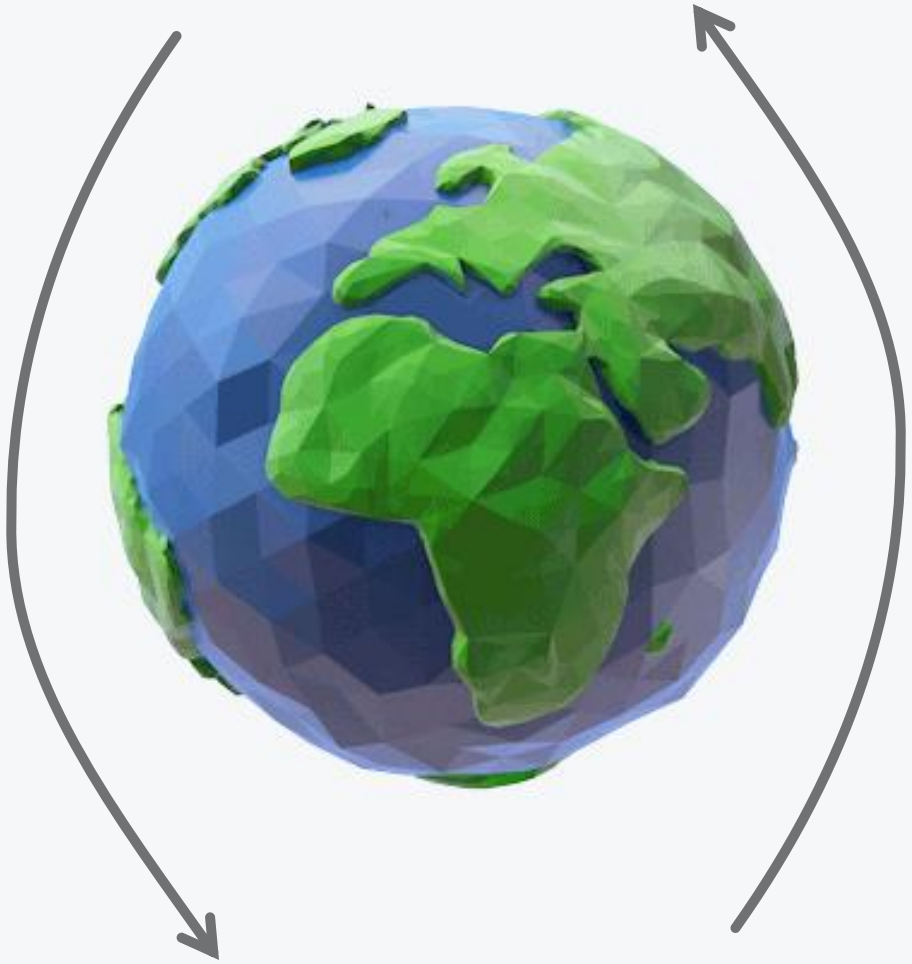
Whimbrel on nest
Kanuti National Wildlife Refuge
Christopher Harwood

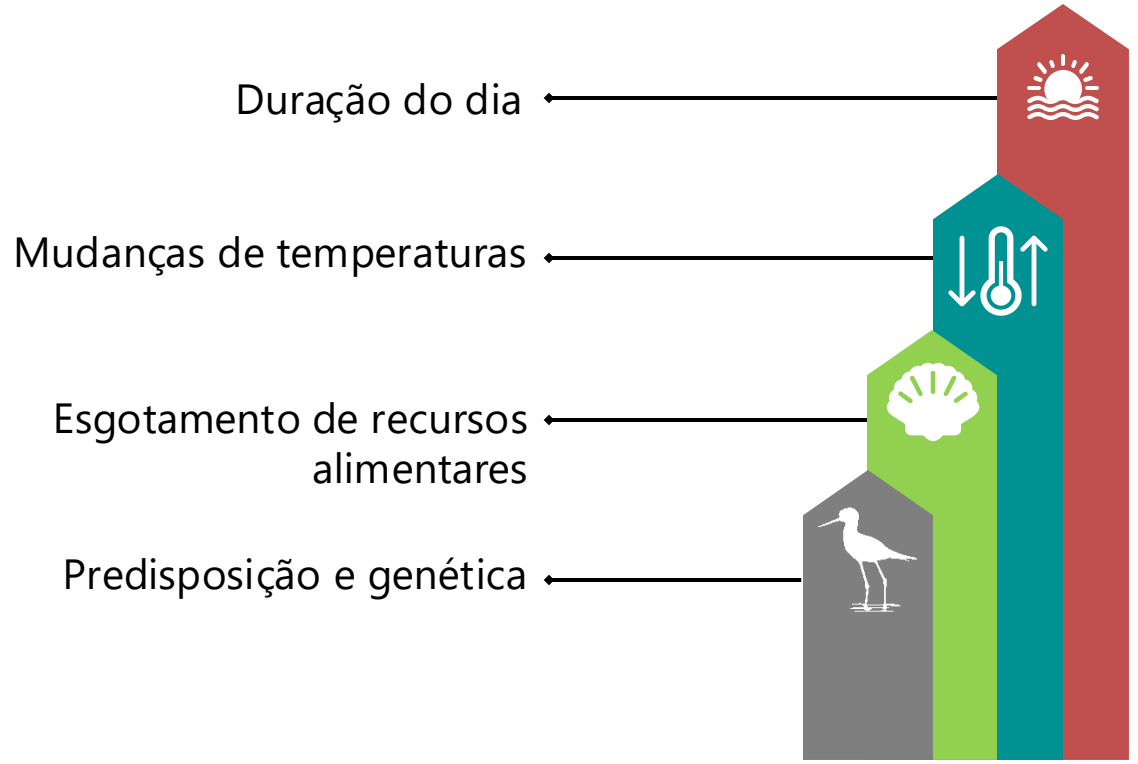
Semipalmated Plover
Zak Pohlen

James Johnson

Brad Winn

Fatores que impulsionam a Migração



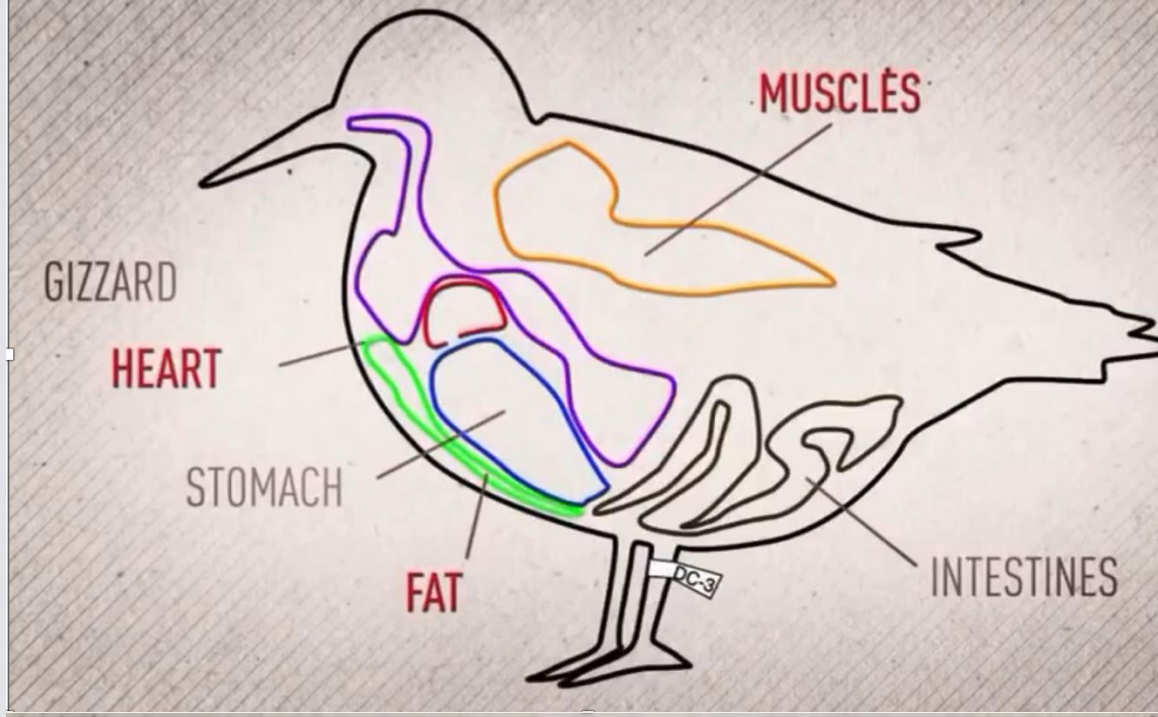


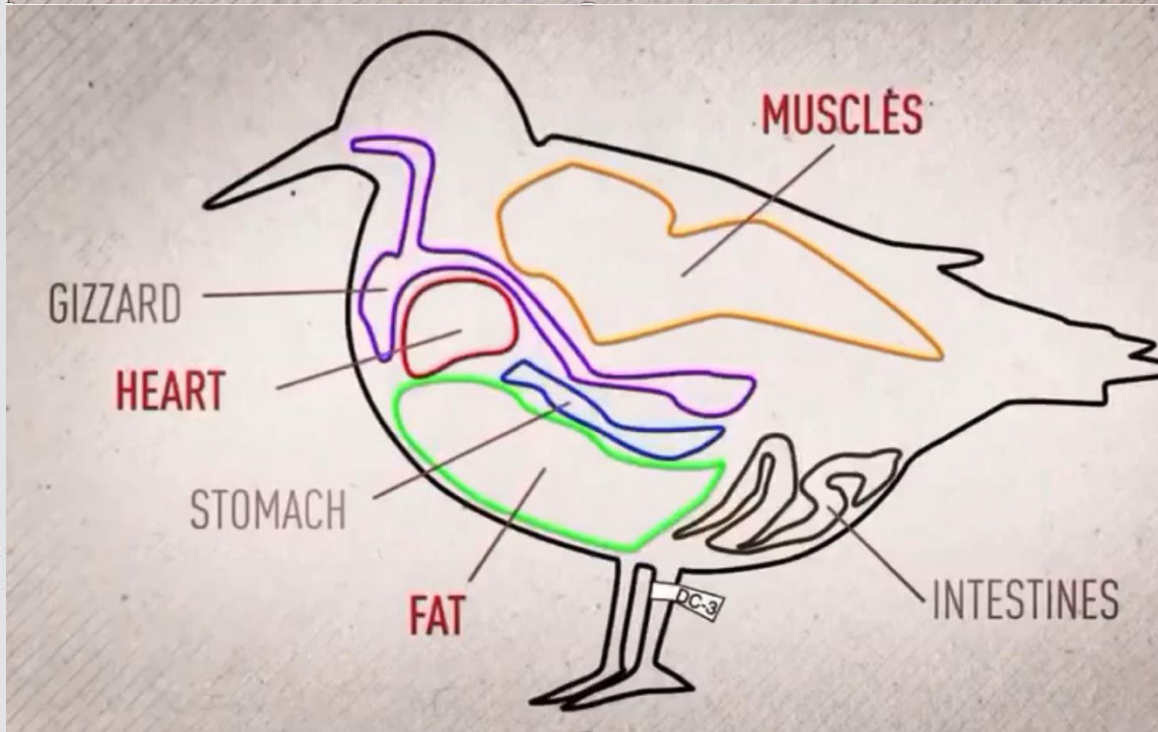
(Alerstam et al., 2003; Teitelbaum et al., 2015; Hebblewhite e Merrill, 2007; McKinnon et al., 2010)

MARCOS VISUAIS

BUSSÓLAS CELESTES

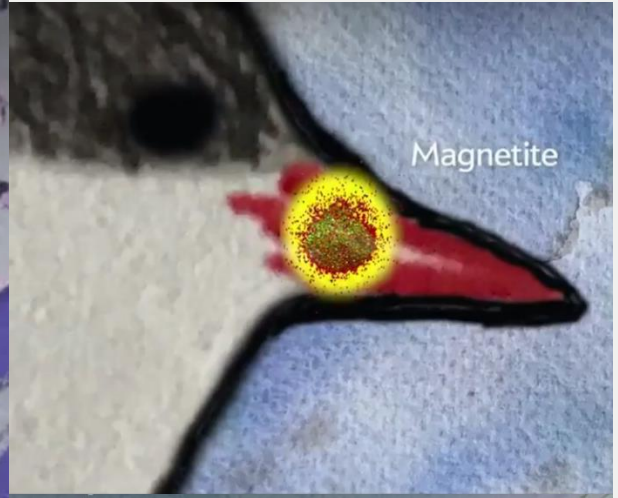
ADAPTAÇÕES FISIOLÓGICAS



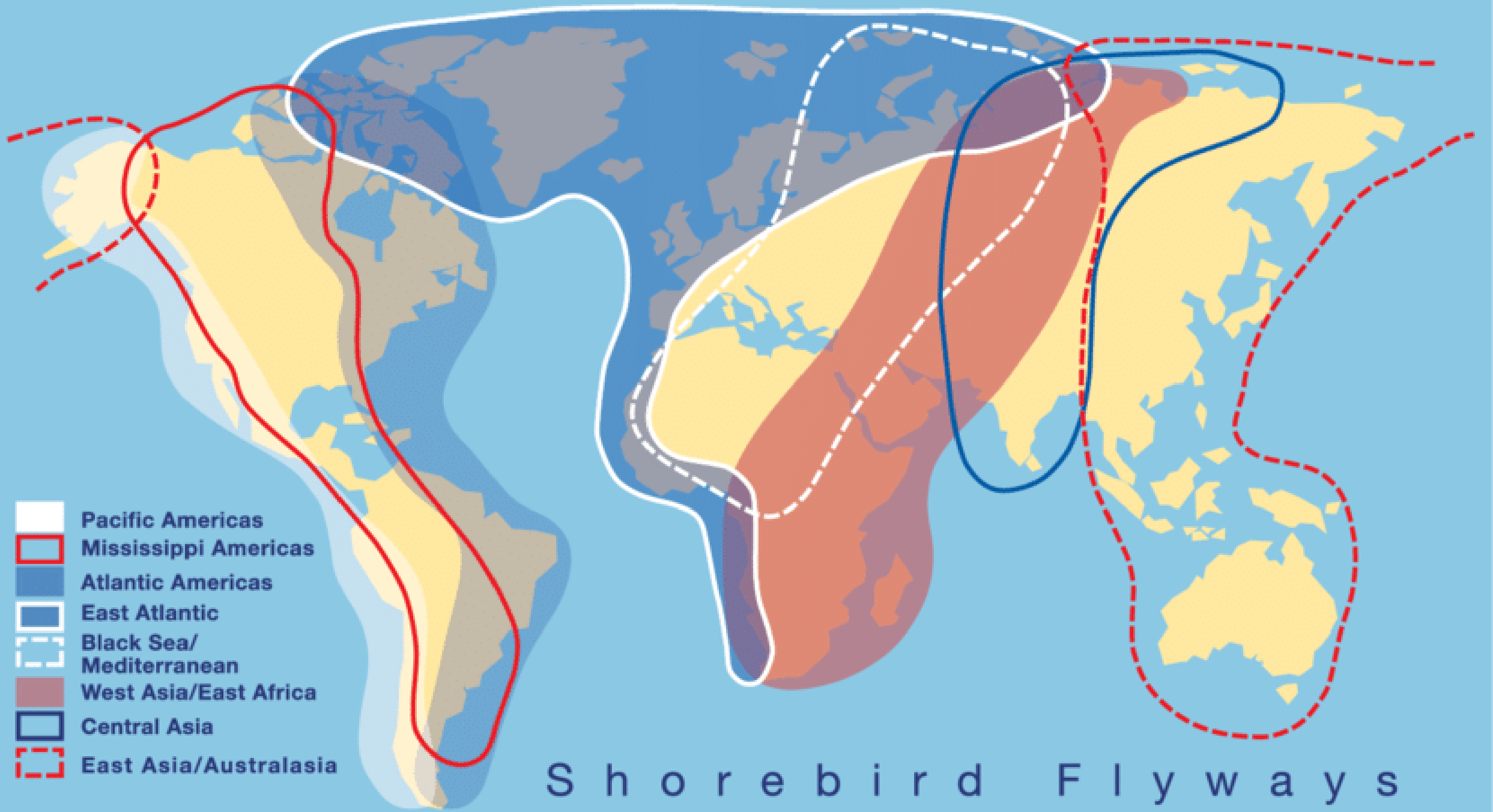


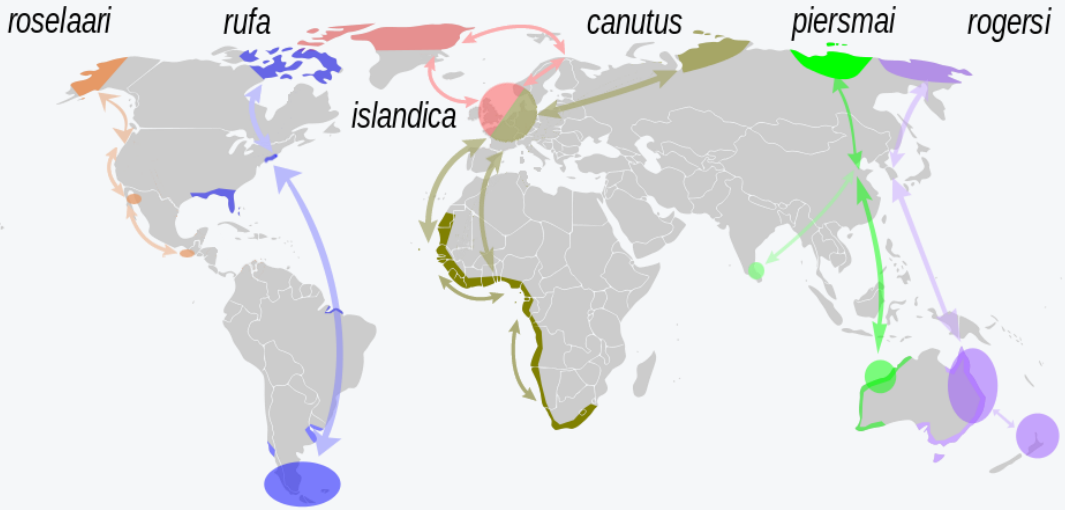
Maçarico-de-papo-vermelho (Calidris canutus)

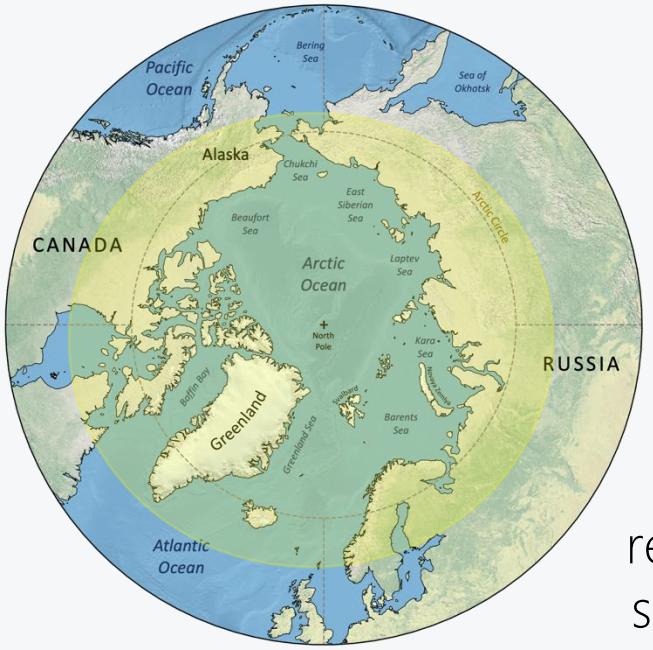
Dependendo da etapa da migração seu peso pode variar de 205 - 125g



Campo magnético


Pacific Americas
Mississippi Americas
Atlantic Americas
East Atlantic
Black Sea/
Mediterranean
West Asia/East Africa
Central Asia
East Asia/Australasia
Shorebird Flyways





Áreas reprodutivas sobrepostas

Calidris canutus rufa

Migration Miracle: The Long-Distance Flier, Rufa Red Knot

A PERILOUS JOURNEY

The red knot faces threats across the Western Hemisphere. Many are driven by climate change, which is raising sea levels, increasing storms and changing food and habitat availability. Additional threats include development, human disturbance, predation and hunting, among others.

Arctic

PREDATION

Arctic predators turn to red knot eggs and chicks when other prey isn't available. When this happens, most chicks do not survive. This pressure may increase with climate change.

2,700 miles

2,000 miles

HABITAT LOSS & DISTURBANCE

In the U.S. and abroad, coastal areas continue to be lost to sea level rise, shoreline projects and development. Human disturbance can keep the red knot from effectively preparing for its long journey.

Delaware Bay

1,200 miles

Texas

1,300 miles

3,500 miles

FOOD

Along their range, red knots feed on small clams and mussels. In Delaware Bay, they rely on horseshoe crab eggs. Red knot declines in the 2000s are linked to commercial crab harvest. With a scientific management framework now in place, harvest is no longer a threat. However, other threats to their food supplies are emerging.

HUNTING

Shorebird hunting in the Caribbean and South America may contribute to red knot declines.

Brazil

LONG-DISTANCE FLIER

The red knot B95, named for his leg band number, has been nicknamed "Moonbird," as researchers calculate this long-lived bird has flown enough miles to journey to the moon and at least halfway back.

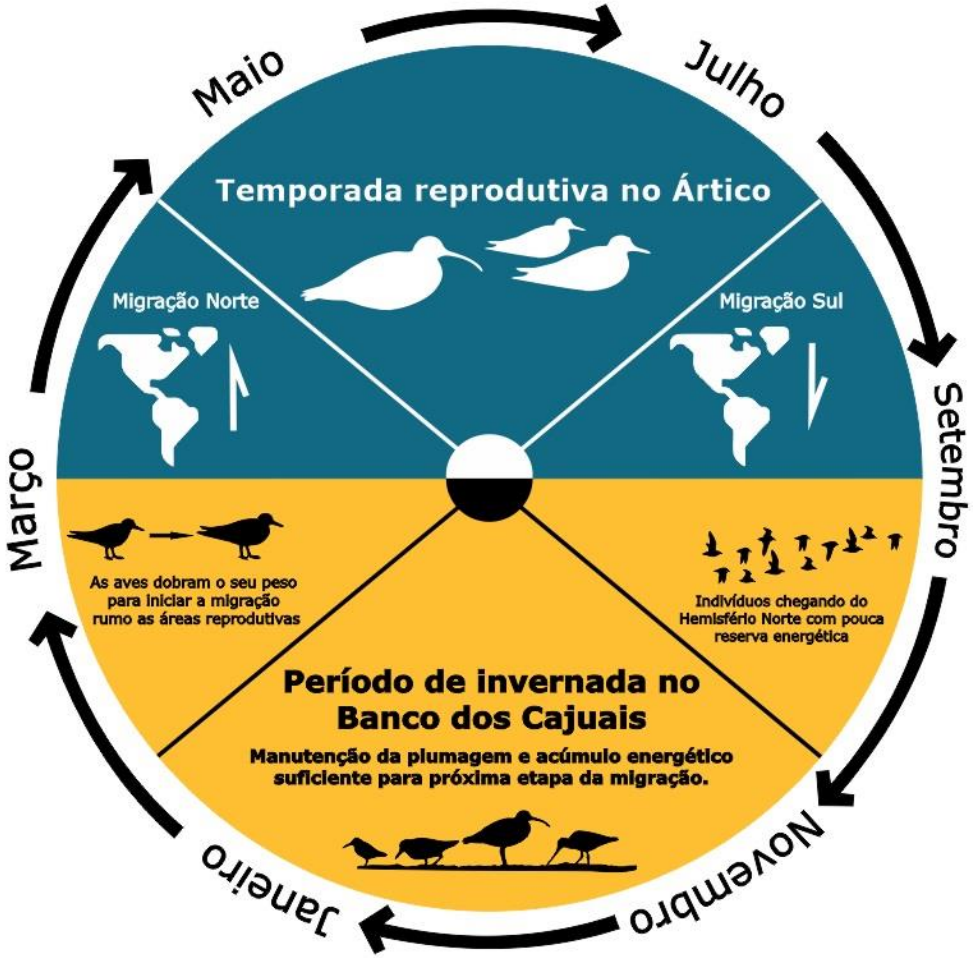
4,250 miles

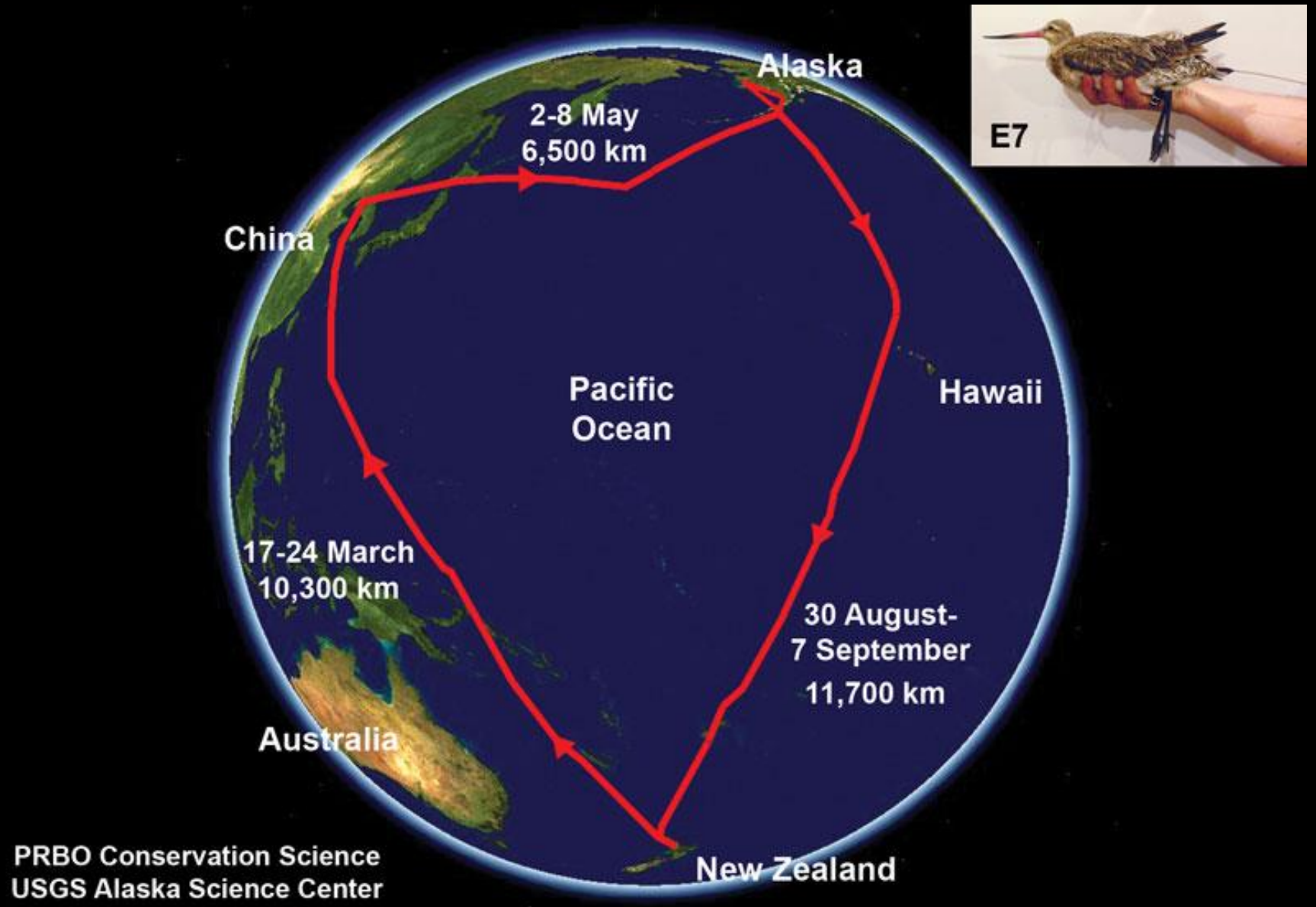
OIL SPILLS

Oil-related activities occur from Argentina to Canada, and depending on location, size and timing, a spill could kill red knots or affect migration. An event in key areas (Tierra del Fuego, Patagonia, the Gulf of Mexico, Delaware Bay and the Gulf of St. Lawrence) would be particularly problematic.

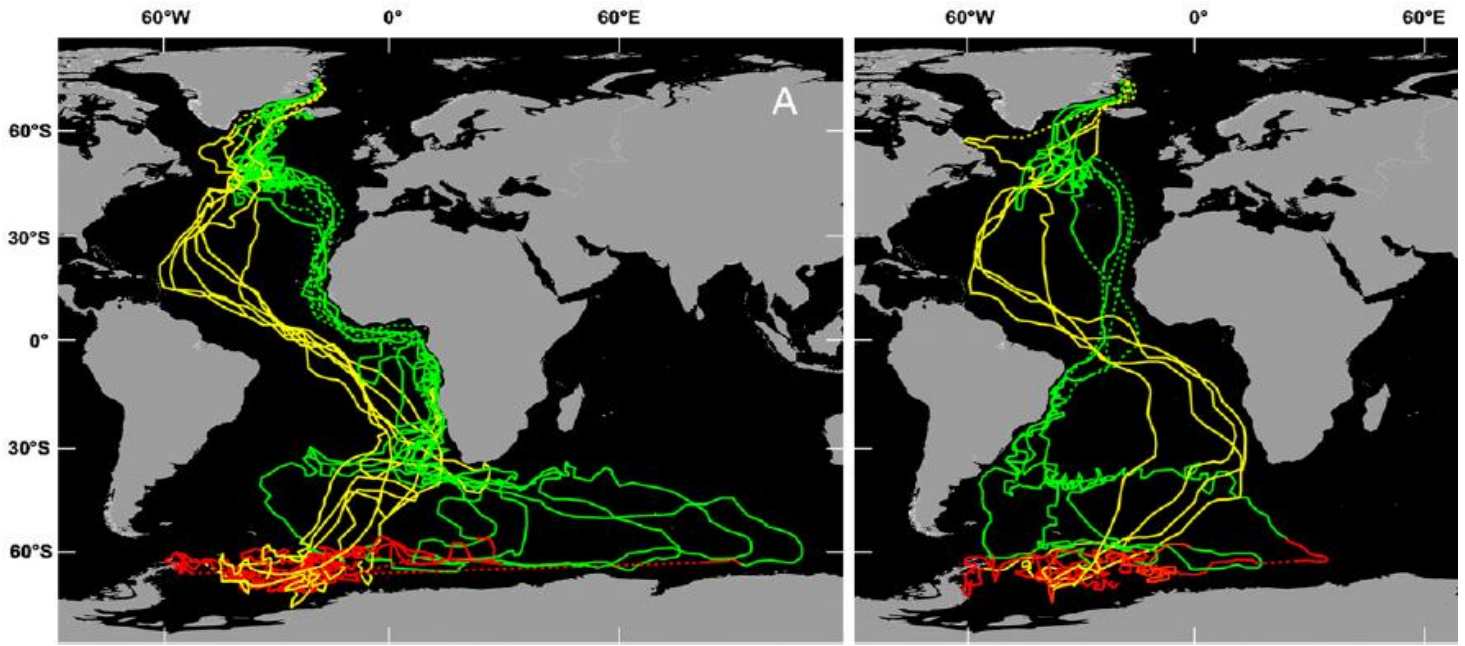
Tierra del Fuego

Created by Debra Reynolds, USFWS; Photos courtesy of USFWS, NASA and Brad Winn, Manomet Center for Conservation Sciences



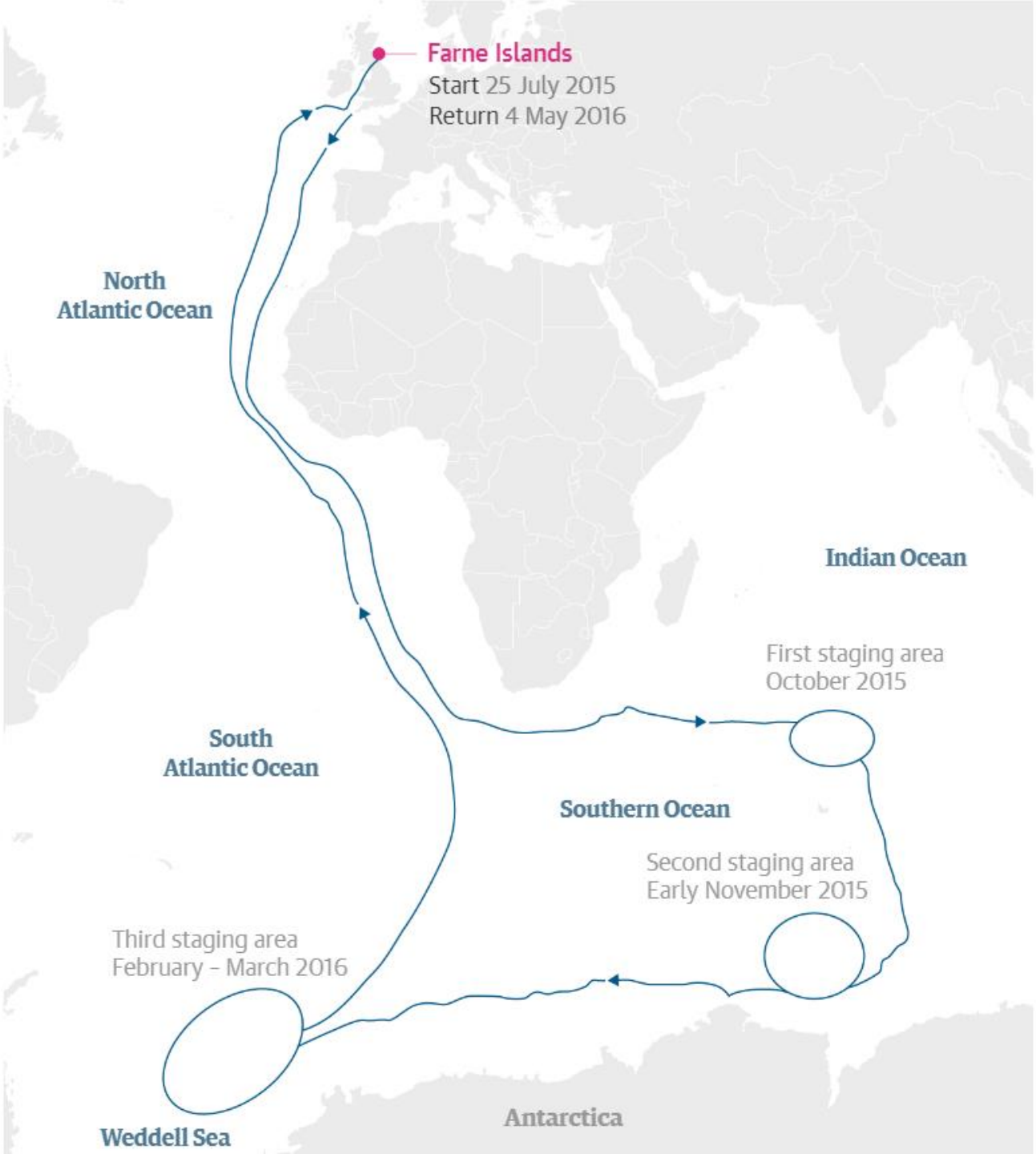


E7 - Fuselo (*Limosa lapponica*)



Distância por dia N→S 330 km
Migração total **60.000-80.000 km por ano**
Distância por dia S→N 530 km

Egevang *et al.* 2010

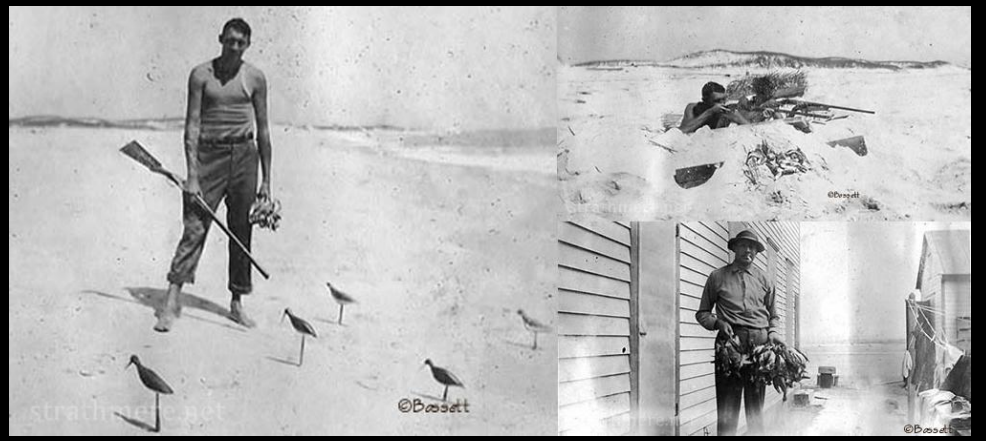


Recorde migração: **96.000km**

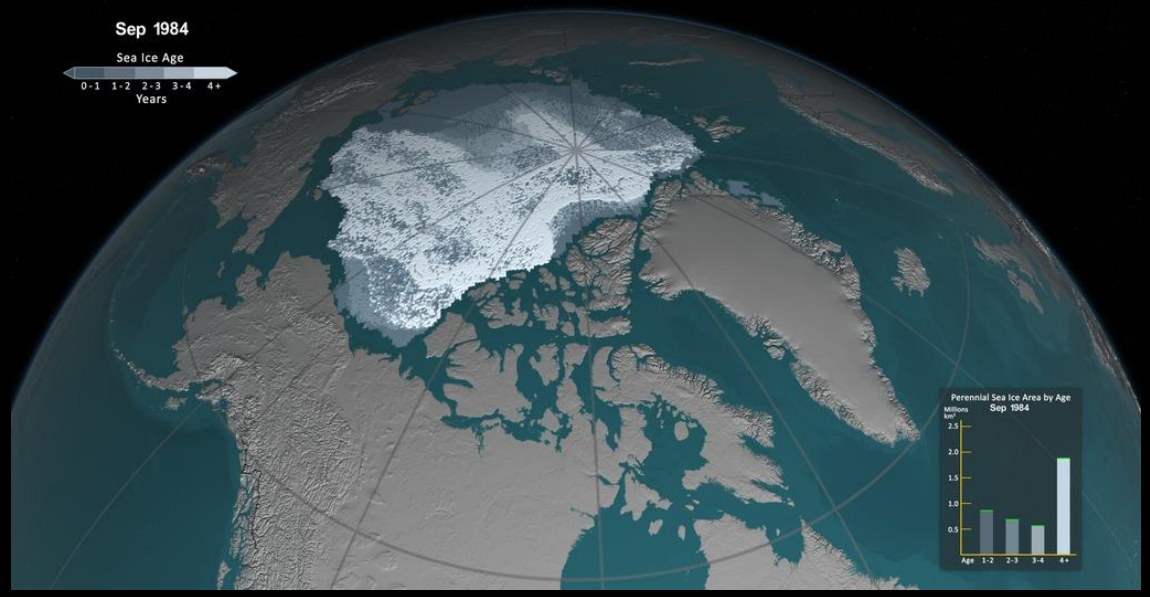
Islândia ⟷ Antártida

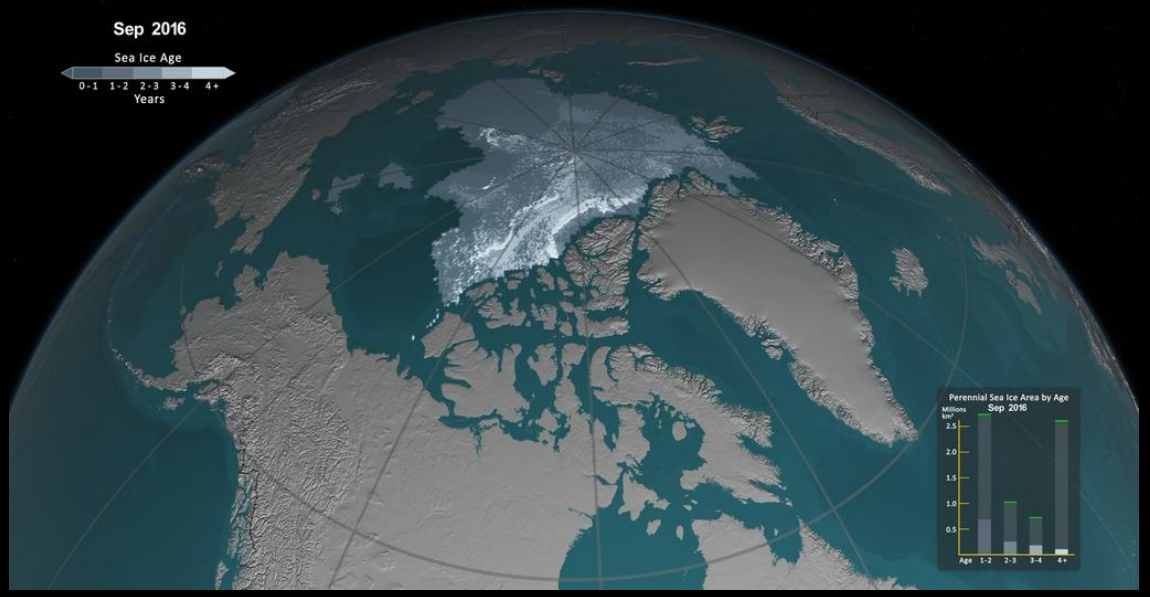
AMEAÇAS

Tringa sp.



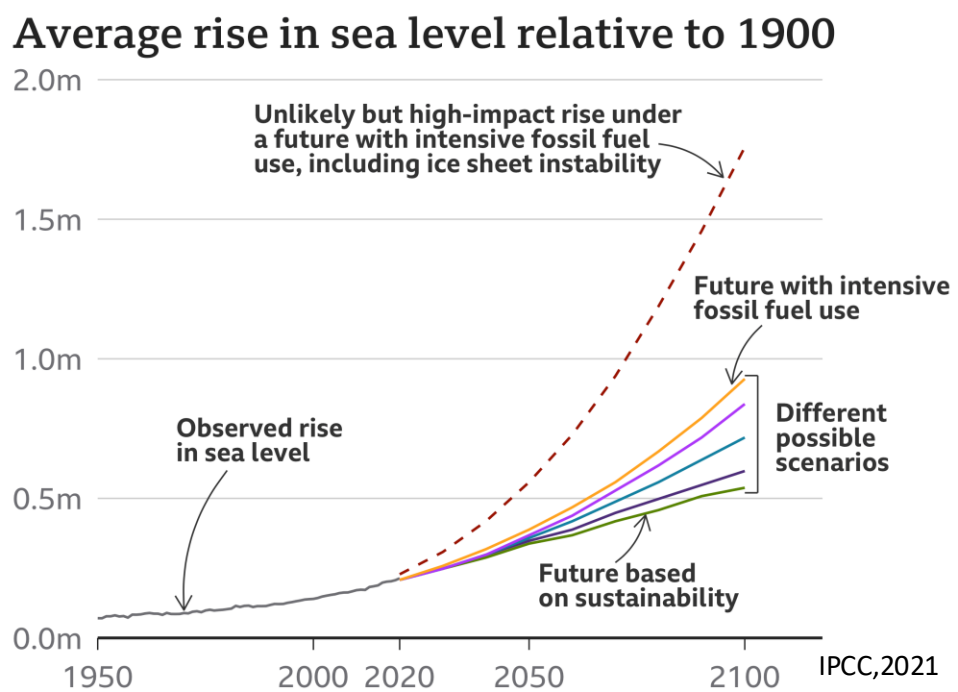
Mudanças climáticas





Elevação do Nível do Mar

Além das ameaças já existentes, os locais de parada e invernada das aves limícolas enfrenta o acelerado aumento do nível do mar devido à mudança climática global



IPCC,2021

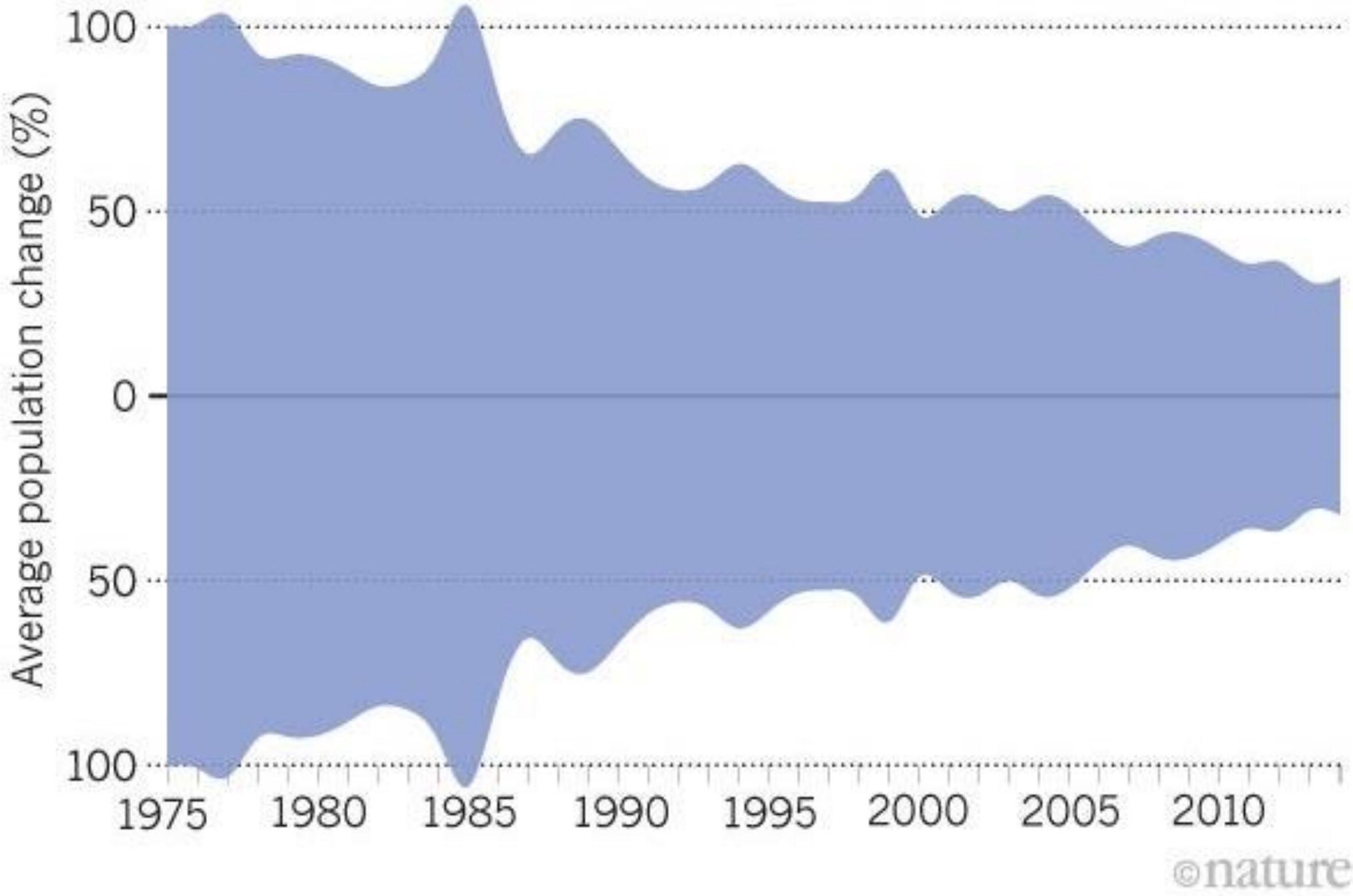
(Ens et al. 1995; Evans 1991, 1997; Doody 2012; Myers e Lester 1992)

Impactos nas áreas de invernada durante a migração

Manguezais foram relatados por Spalding et al. (1997) ocupando uma área de 18.100.000 ha em todo o mundo, mas esta estimativa de cobertura global foi revisada para baixo para 13.776.000 ha por Giri et al. (2011), e depois para 8.349.500 ha por Hamilton e Casey (2016).

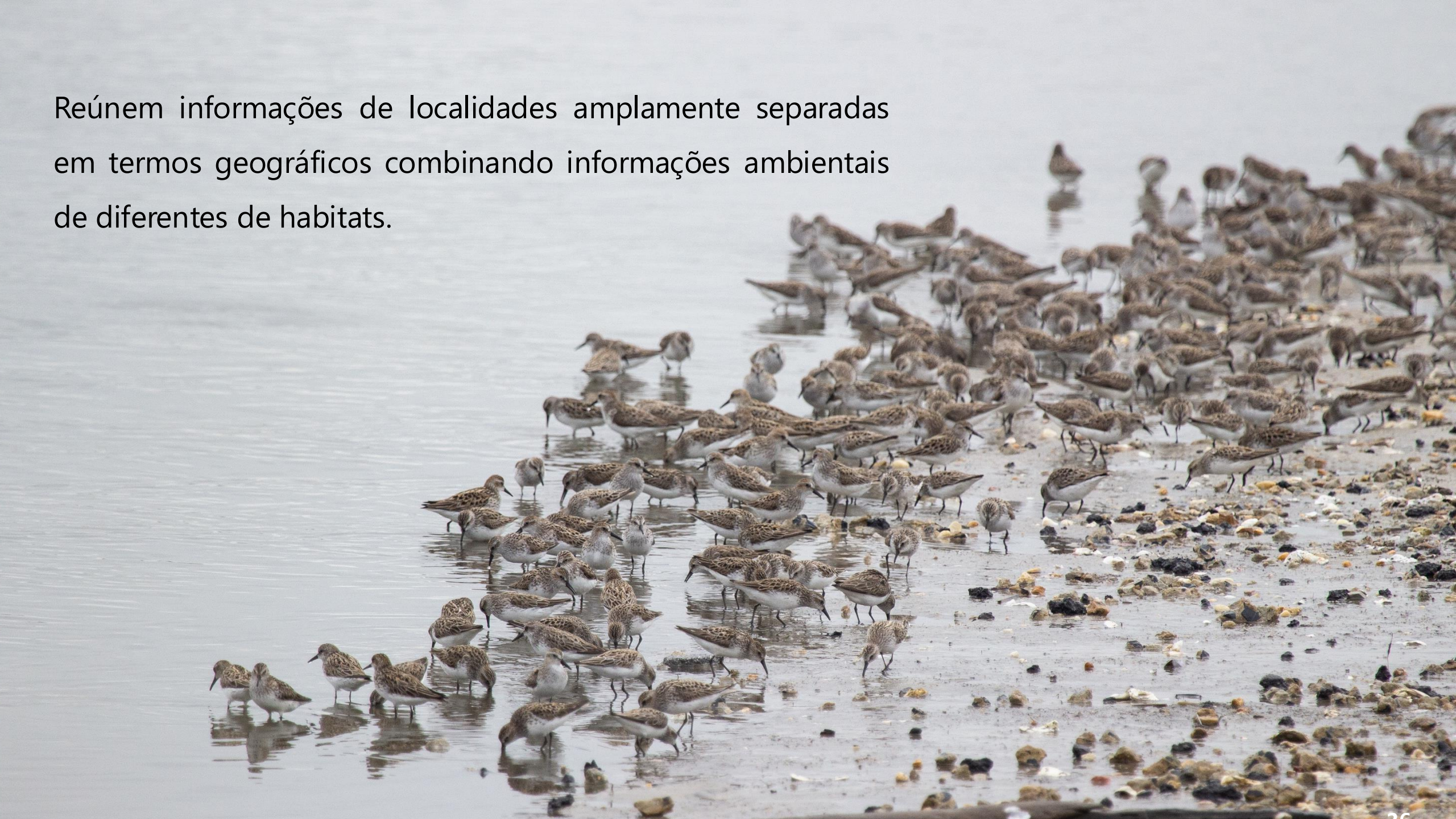
(Romañach et al., 2018)

A


Average population change (%)
100
50
0
50
100
1975
1980
1985
1990
1995
2000
2005
2010
©nature

(Munro, 2017.)

Reúnem informações de localidades amplamente separadas em termos geográficos combinando informações ambientais de diferentes de habitats.



Abordagens de espécies guarda-chuva e/ou bandeira são bem sucedidas na proteção de diversas comunidades.

Merchant *et al.*, 2023


PROJETOAVES
MIGRATORIAS

Pesquisa e Monitoramento

Educação Socioambiental

Políticas Públicas e Advocacy

Comunicação

Pesquisa e Monitoramento

MONITORAMENTO EM ÁREAS PRIORITÁRIAS

SÍTIO WHSRN BANCO DOS CAJUAIS

WHSRN
WESTERN HEMISPHERE
SHOREBIRD RESERVE NETWORK

Maçarico-de-papo-vermelho (*Calidris canutus*) VU

MONITORAMENTO DE AVES LIMÍCOLAS RESIDENTES

PORTO DO PECÉM


MAERSK

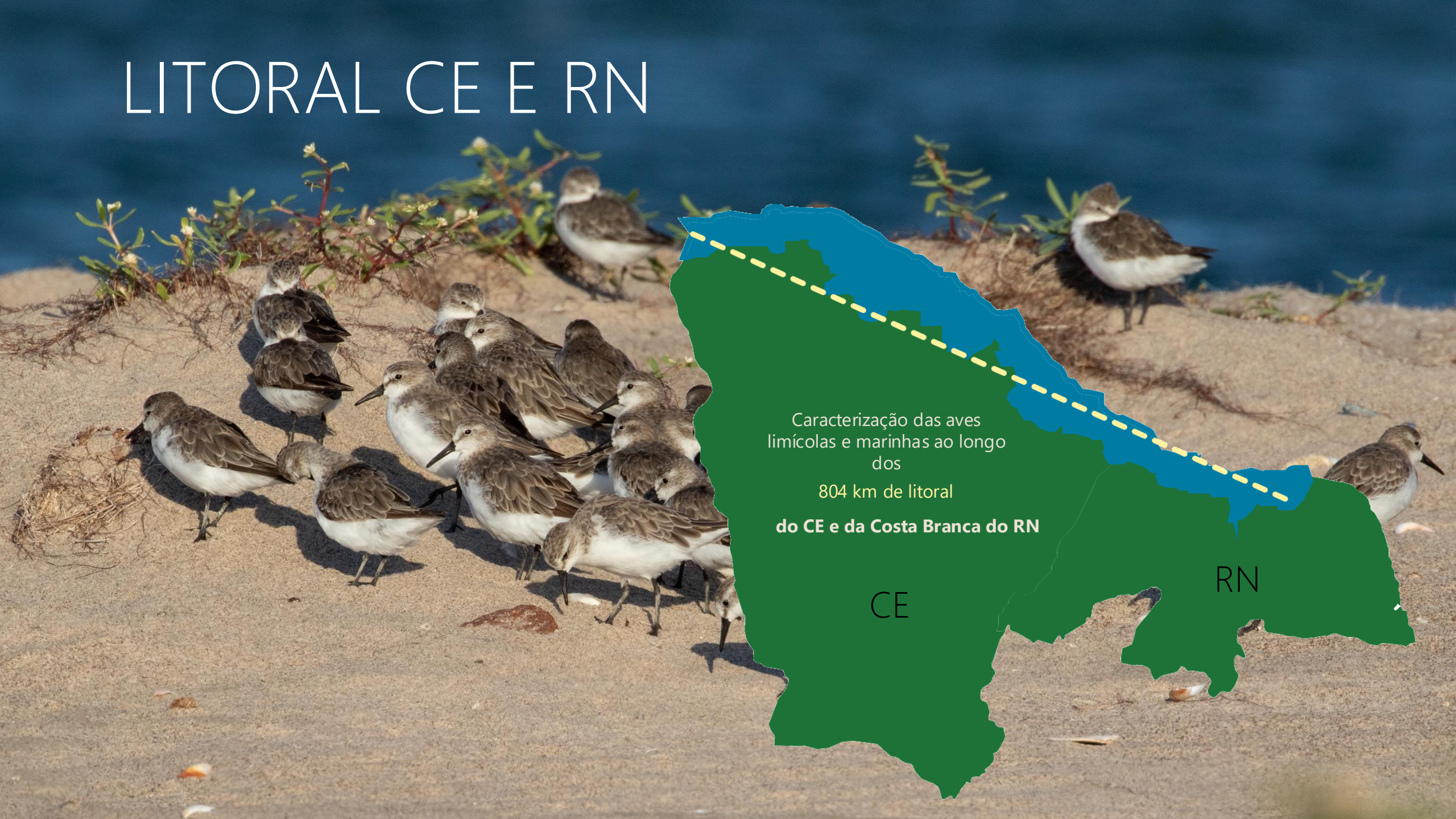
VU

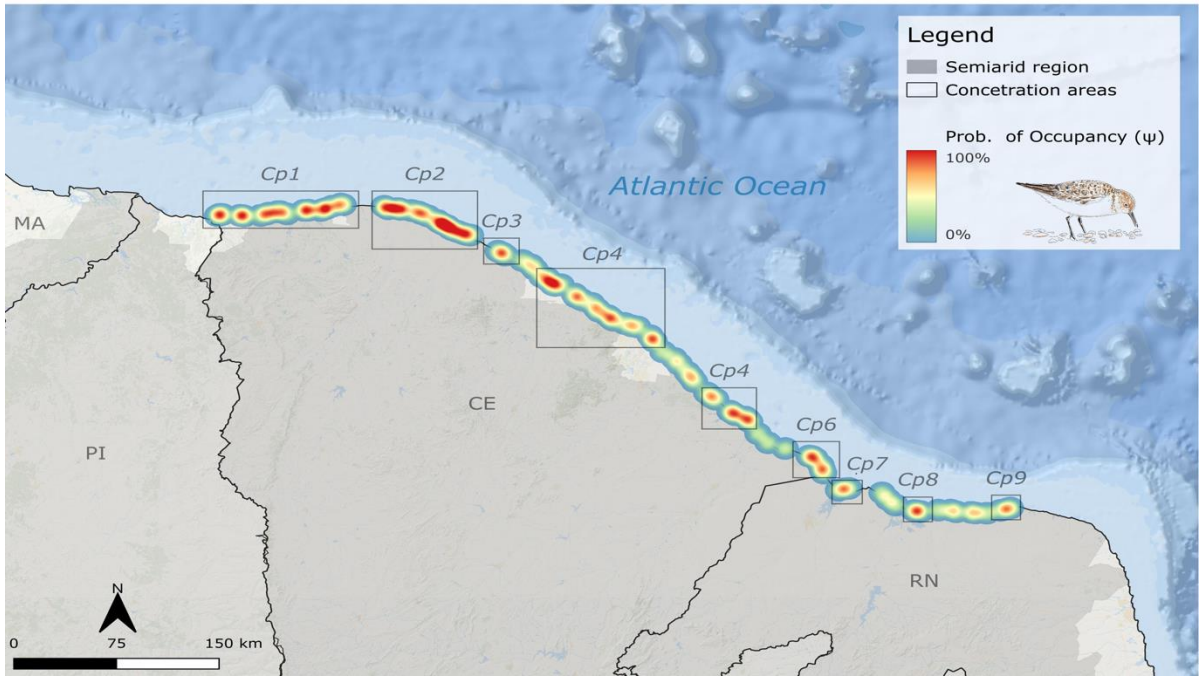
Trinta-réis-róseo (*Sterna dougallii*)

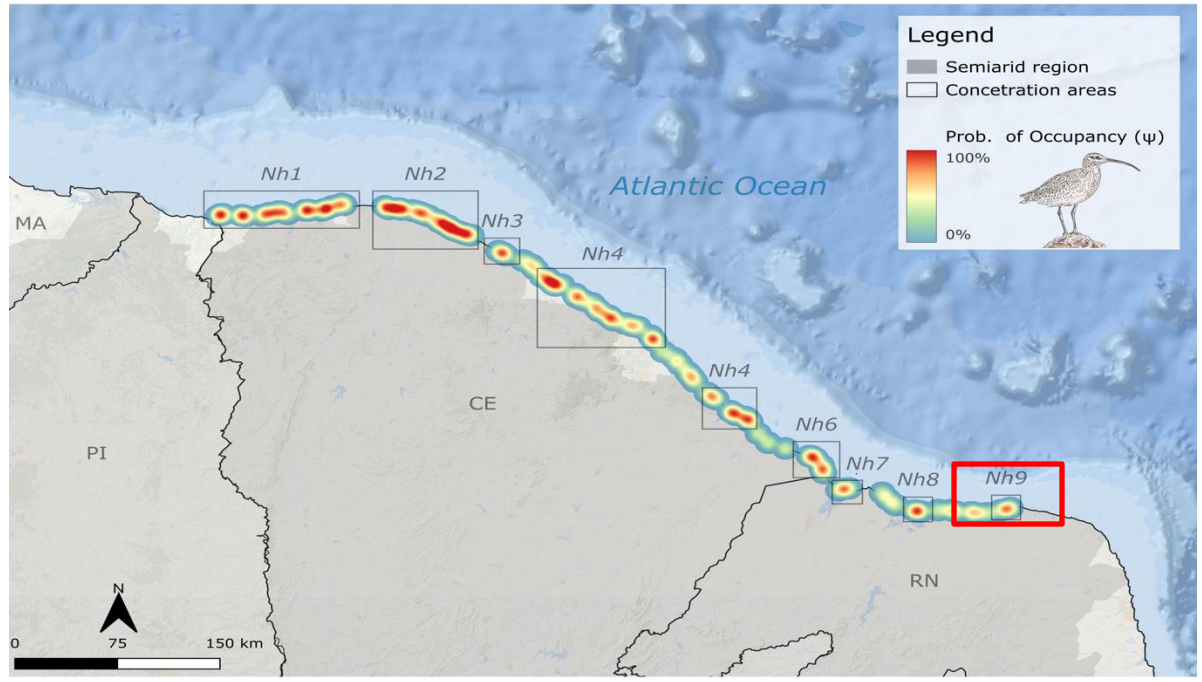
APA DELTA DO PARNAÍBA

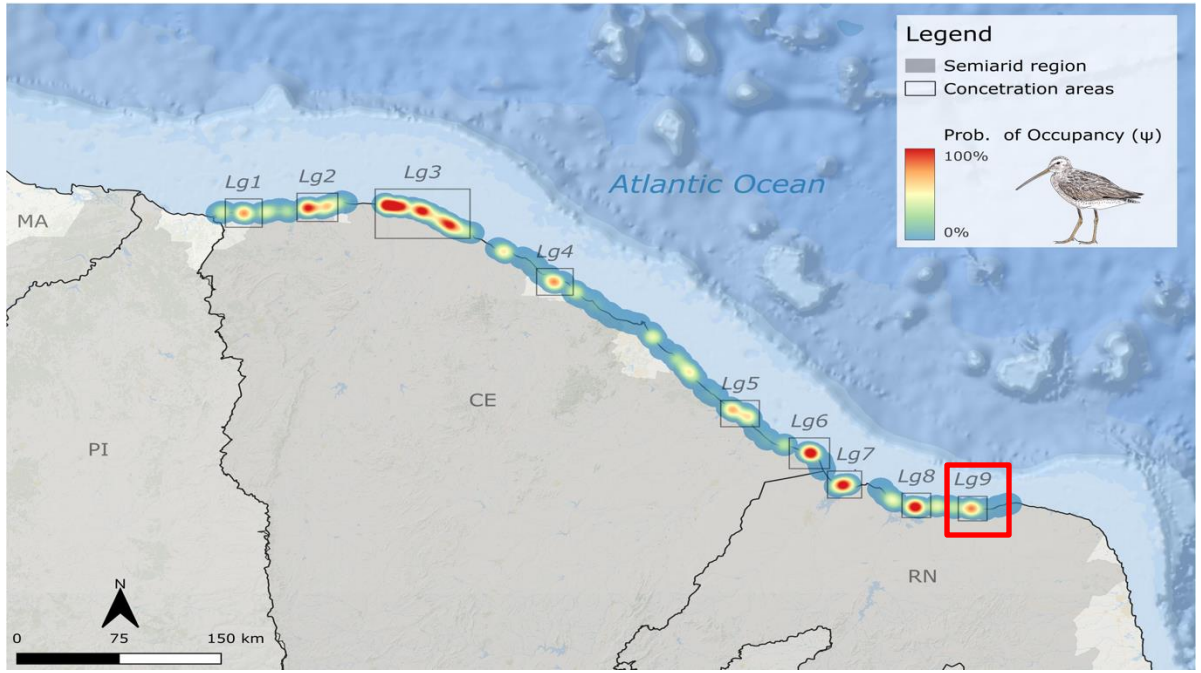
Dados referente a 2023 - 2024

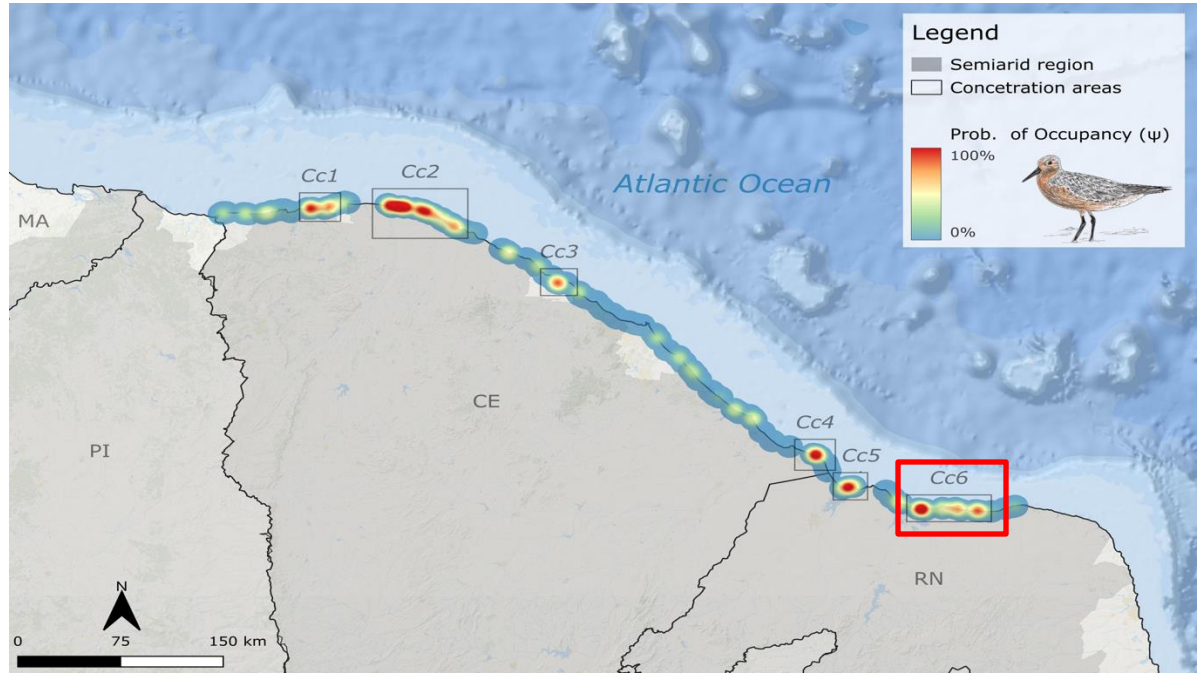
LITORAL CE E RN



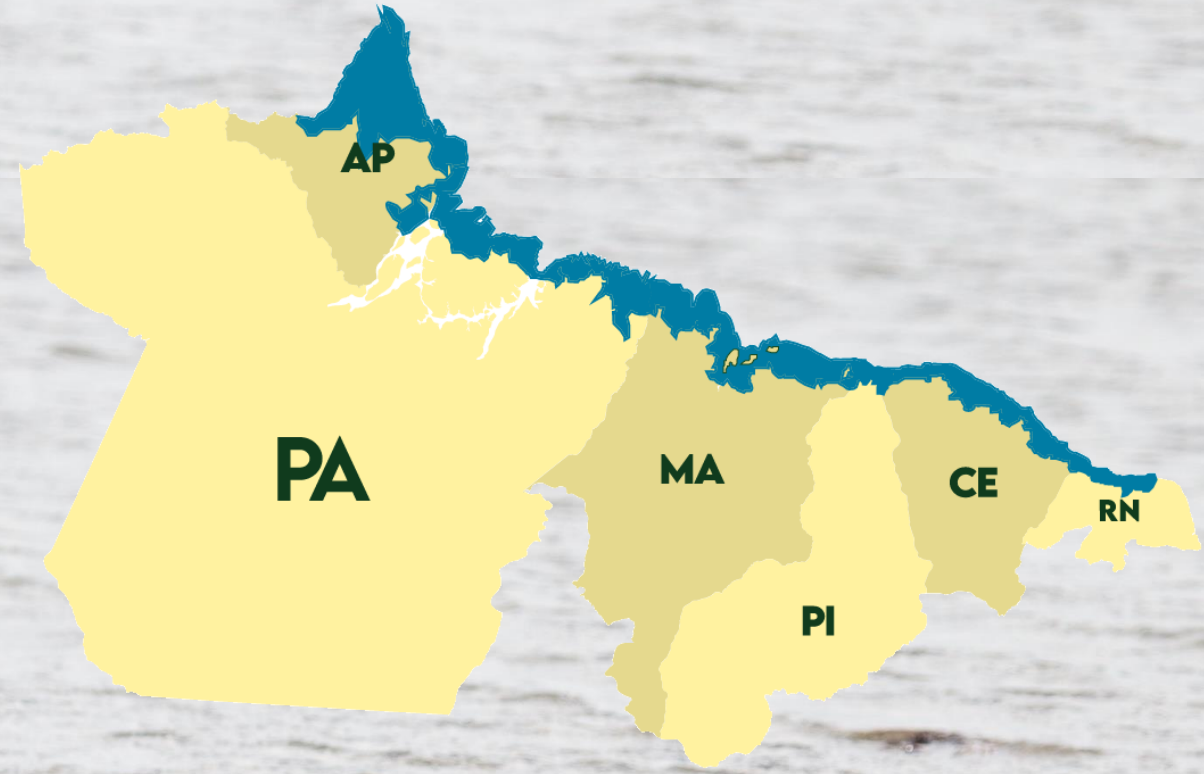

Legend
Semiarid region
Concetration areas
Prob. of Occupancy (ψ)
100%
0%
Atlantic Ocean
MA
CE
PI
RN
Cp1
Cp2
Cp3
Cp4
Cp4
Cp6
Cp7
Cp8
Cp9
N
0
75
150 km


Legend
Semiarid region
Concetration areas
Prob. of Occupancy (ψ)
100%
0%
Atlantic Ocean
MA
CE
PI
RN
Nh1
Nh2
Nh3
Nh4
Nh4
Nh6
Nh7
Nh8
Nh9
N
0
75
150 km

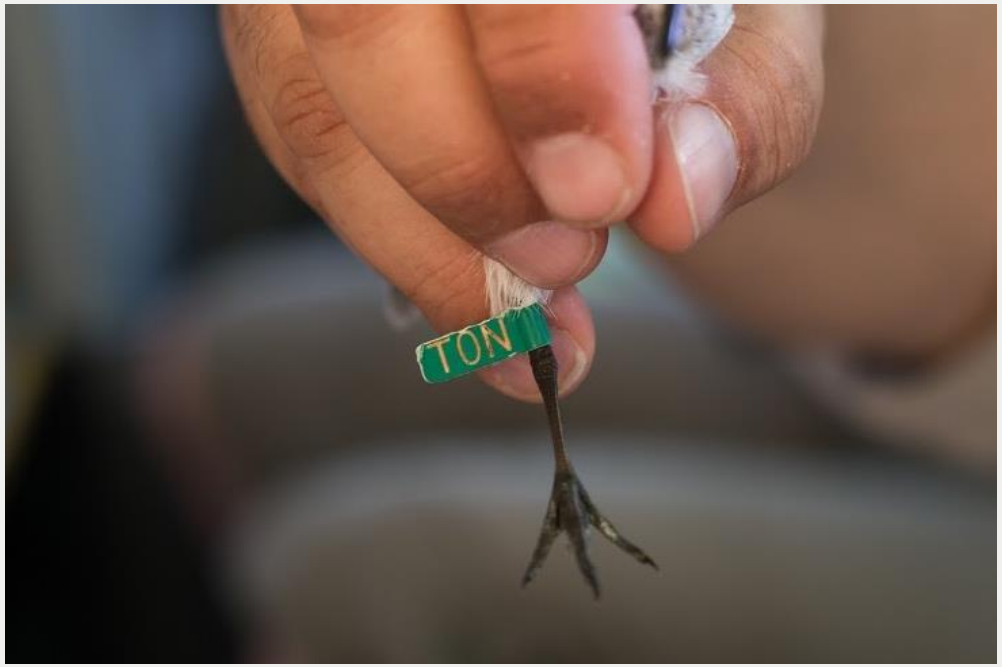

Legend
Semiarid region
Concetration areas
Prob. of Occupancy (ψ)
100%
0%
Atlantic Ocean
MA
CE
PI
RN
Lg1
Lg2
Lg3
Lg4
Lg5
Lg6
Lg7
Lg8
Lg9
N
0
75
150 km


Legend
Semiarid region
Concetration areas
Prob. of Occupancy (ψ)
100%
0%
Atlantic Ocean
MA
CE
PI
RN
Cc1
Cc2
Cc3
Cc4
Cc5
Cc6
N
0
75
150 km

PROSPECÇÃO NA MARGEM EQUATORIAL BRASILEIRA



MARCAÇÃO E RASTREAMENTO



PASP (Pan American Shorebirds Project)


EK6


Y11


A3C


=NL


KS8


B65


B63


CM9


J48


A91


BW5

Conservation Science and Practice
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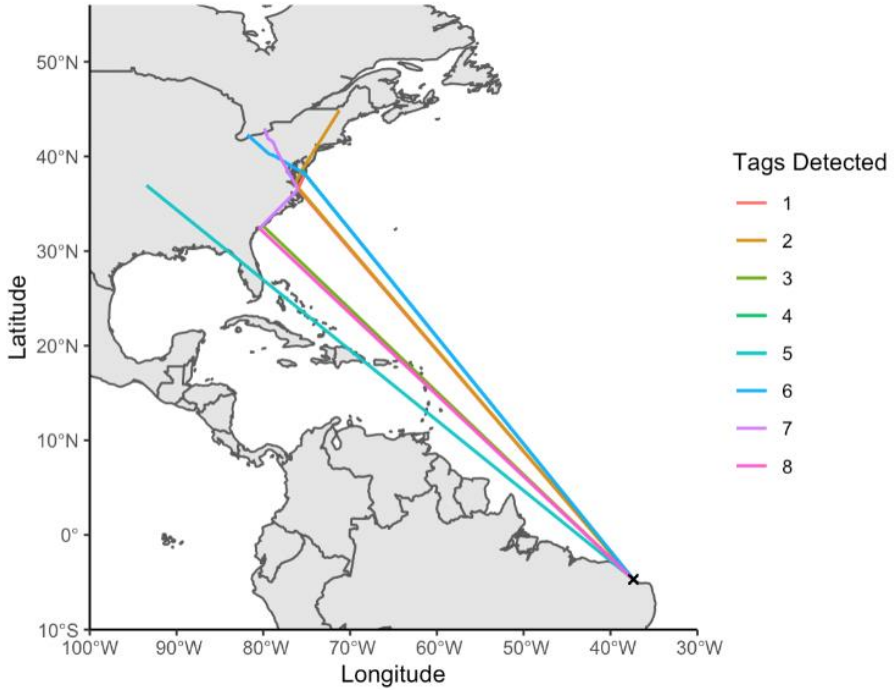
CONTRIBUTED PAPER | Open Access

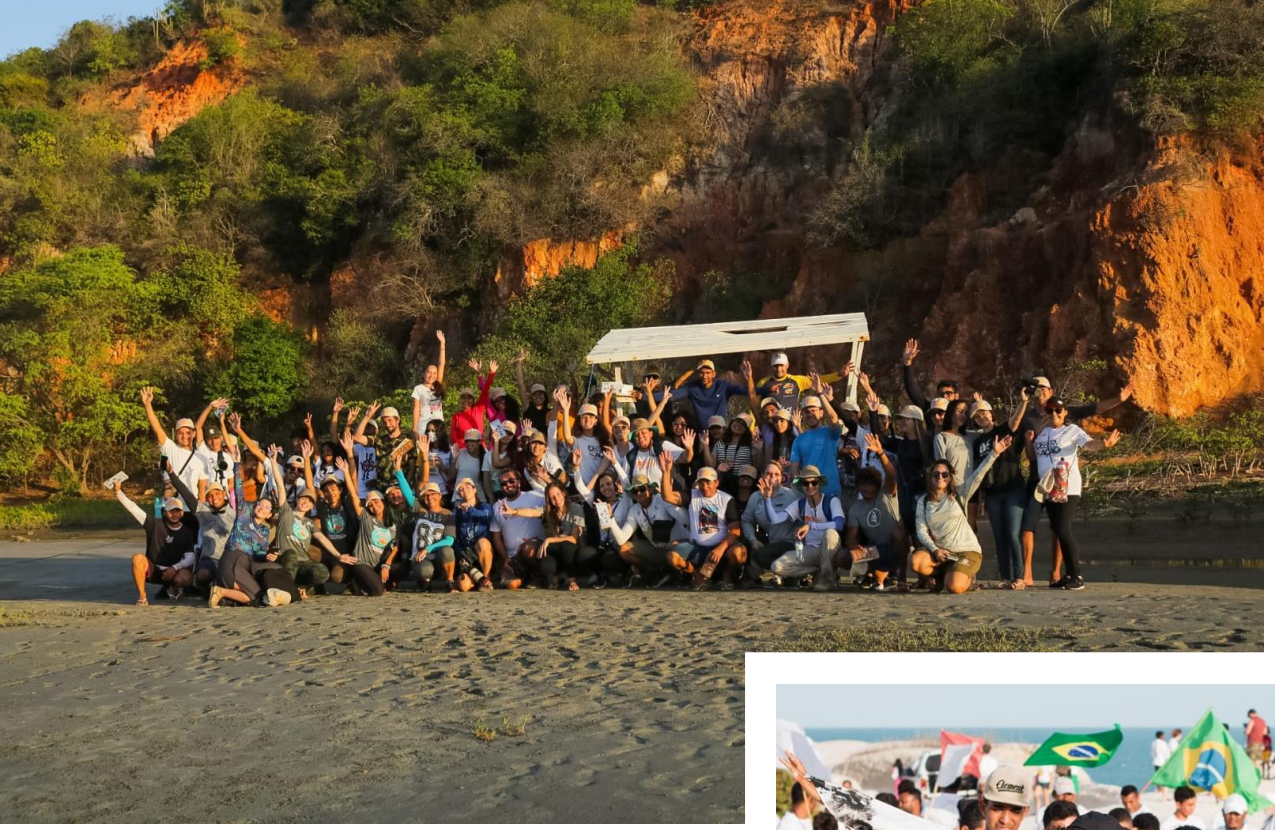
Movement and habitat use of non-breeding Semipalmated Sandpiper (*Calidris pusilla*) at the Banco dos Cajuais in Northeast Brazil

Rebeca C. Linhart, Diana J. Hamilton, Julie Paquet, J. Onofre N. Monteiro, Gabriela P. Ramires, Jason A. Mobley



DIETA DAS AVES LIMÍCOLAS

Educação socioambiental




LIMPEZA DE PRAIA


AQUA
Seleta

Políticas Públicas e Advocacy


Ministério do
Meio Ambiente
Instituto Chico Mendes
de Conservação da Biodiversidade
CEMAVE

Comunicação


PAN Aves
Limícolas Migratórias
PAN Aves
Marinhas
ATLANTIC FLYWAY
SHOREBIRD
INITIATIVE
WHSRN
WESTERN HEMISPHERE
SHOREBIRD RESERVE NETWORK

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OBRIGADO

Realização:

AQUASIS

PROJETO AVES MIGRATÓRIAS

Parceria:

PETROBRAS