

How changes in migration because of climate change also influence landscape and seascape carbon storage



Photo by Ryan Choi



Photo by Peter Macreadie



Photo by Trisha Atwood

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We need to remove 6.5 Gt CO₂yr⁻¹ to keep
temps from increasing by 2°C

Natural Climate Solutions can help!

Natural Climate Solutions Contributions

~ 5 Gt CO₂ yr⁻¹



Photo by Lara Jameson:
<https://www.pexels.com/photo/yellow-flower-with-green-leaves-9324330/>



Photo by Monayem Billah
<https://www.pexels.com/photo/green-rural-fields-20161587/>



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Photo by: Samyuchta,
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FORESTS
Reforestation
Avoided conversion

AG. & GRASSLAND
Smart Crops
Avoided Grassland Conv.

BIOCHAR & SOILS
Soil & Nut. Manag.
Enhanced Soils

WETLANDS
Restoration
Avoided Conversion

Need: +1 Gt CO₂ yr⁻¹



FORESTS
Reforestation
Avoided conversion

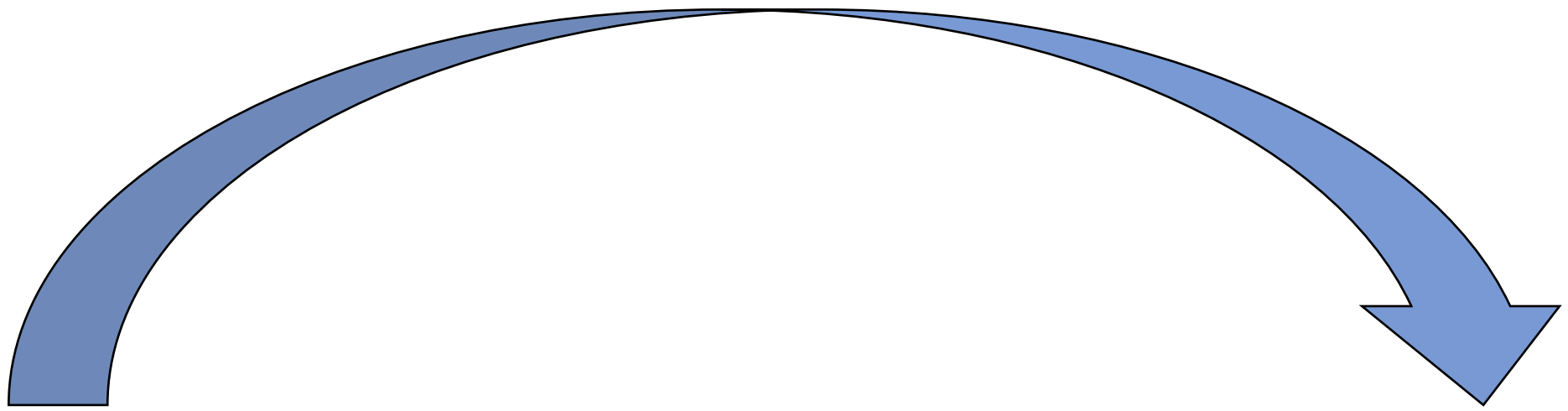
AG. & GRASSLAND
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WETLANDS
Restoration
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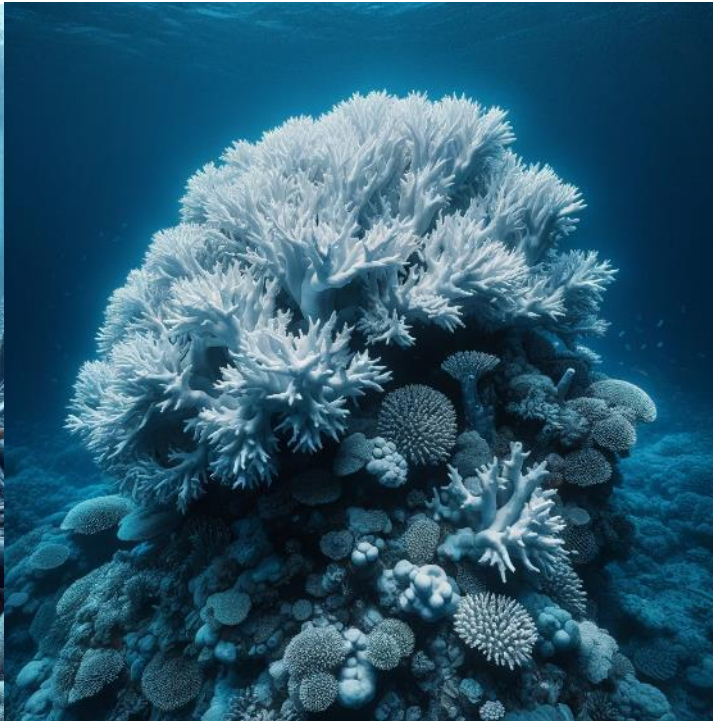
A close-up photograph of a white puzzle piece with a black interlocking shape cut out of its center. The text "Protect & Manage Animal Networks" is printed in black on the white surface of the puzzle piece. The puzzle piece is surrounded by other white puzzle pieces, some of which are partially visible. The lighting creates soft shadows, giving the puzzle pieces a three-dimensional appearance.

Protect & Manage
Animal Networks



Climate Change

Animal Communities



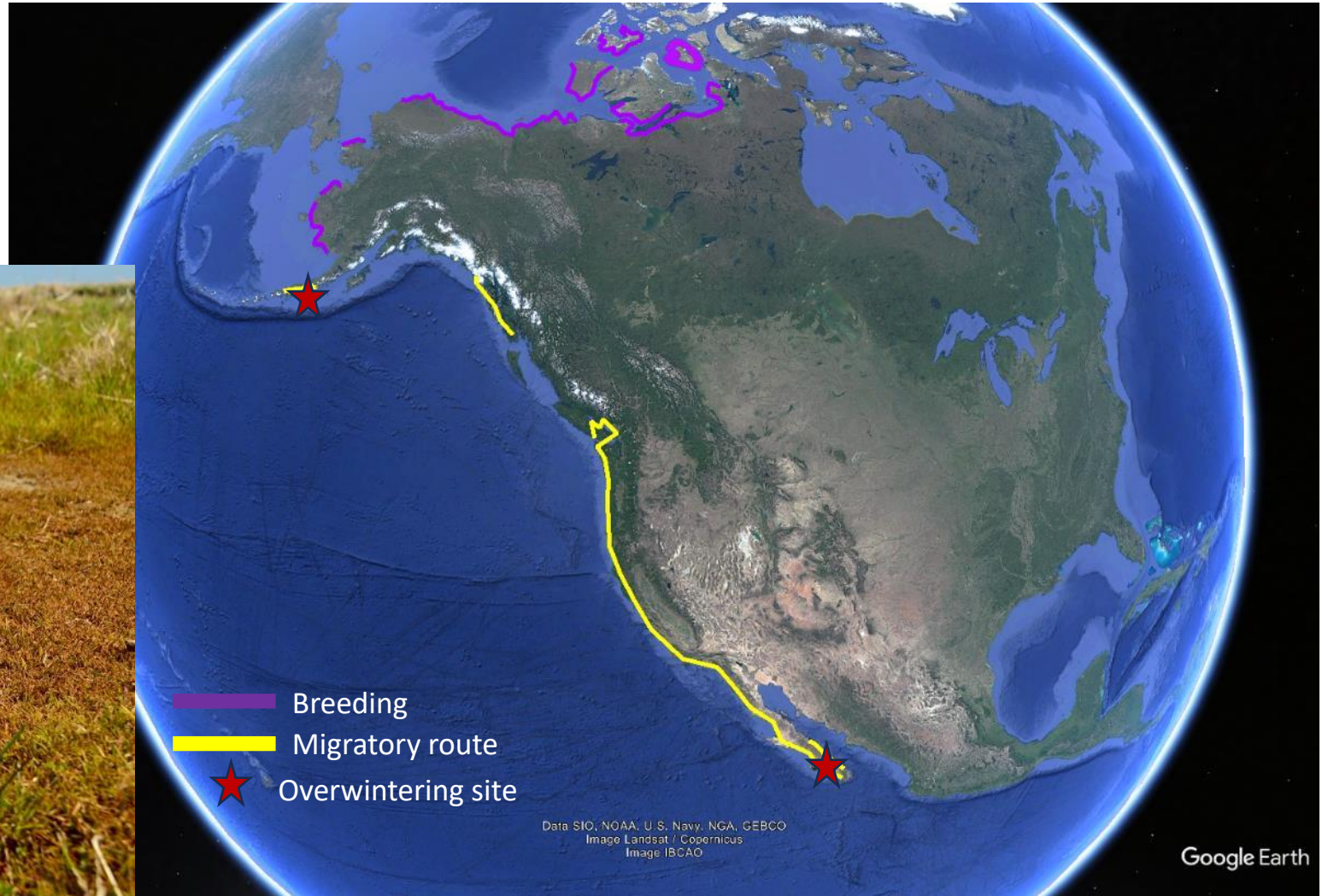


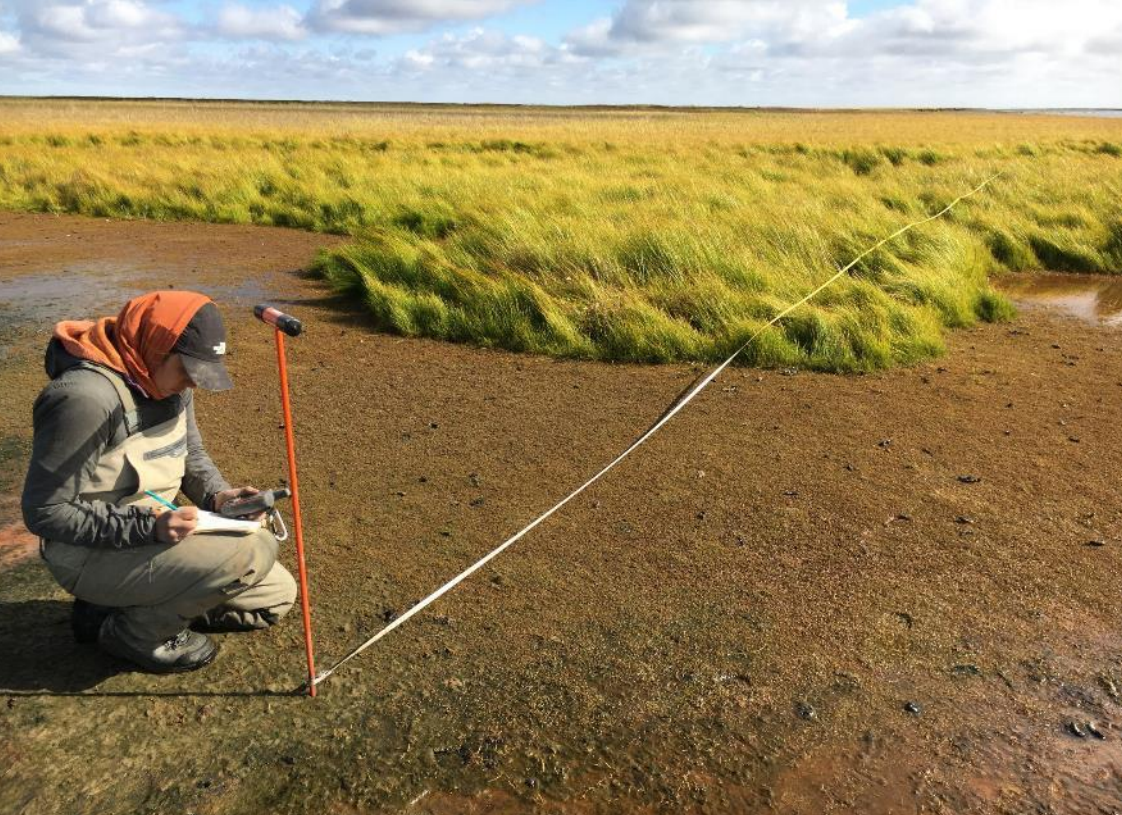
Climate Change

Animal Communities



Case studies: Migratory Geese (Pacific Black Brant)

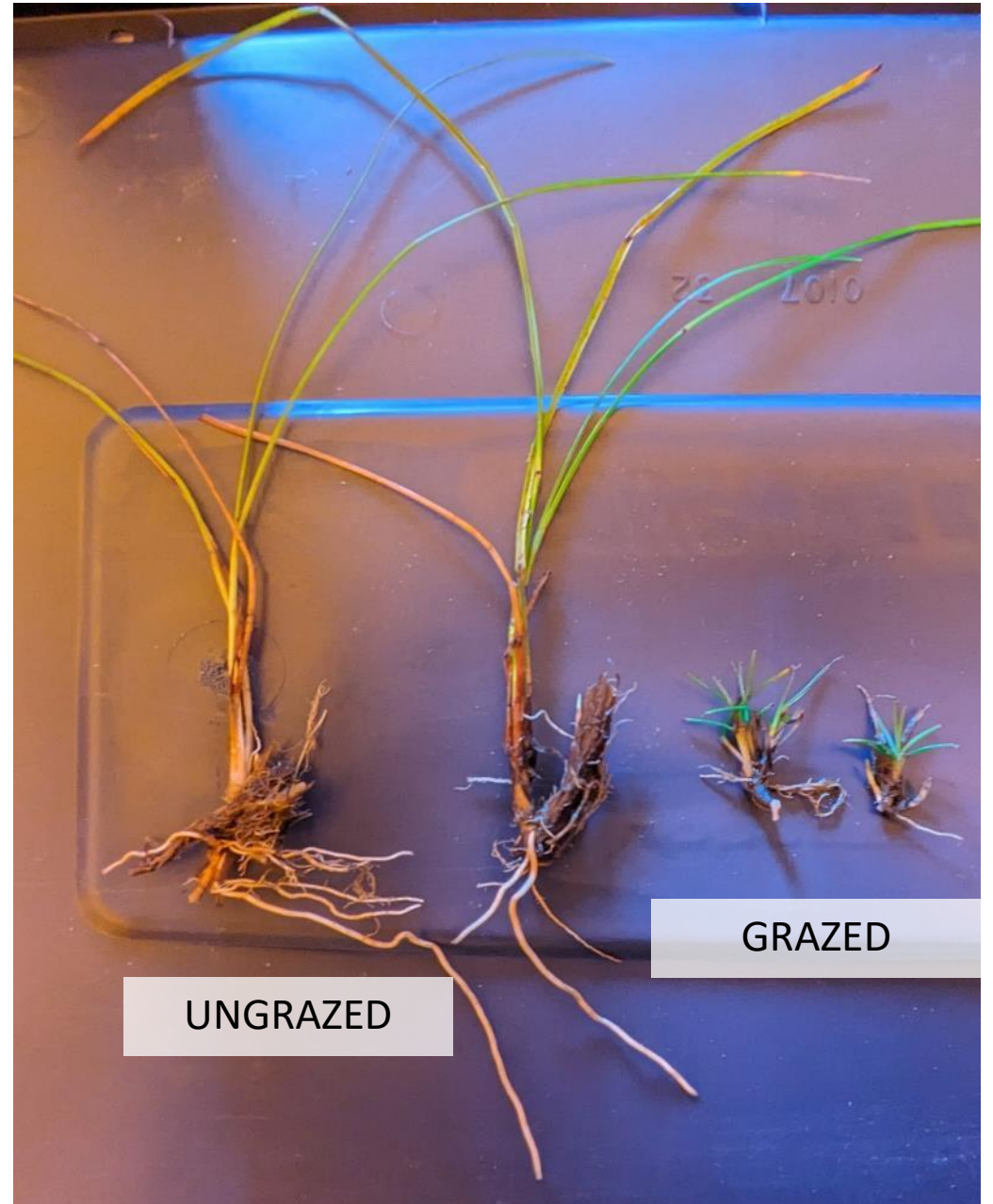




UNGRAZED



GRAZED



UNGRAZED

GRAZED

Gazing by geese alters plants chemistry & soils

UNGRAZED

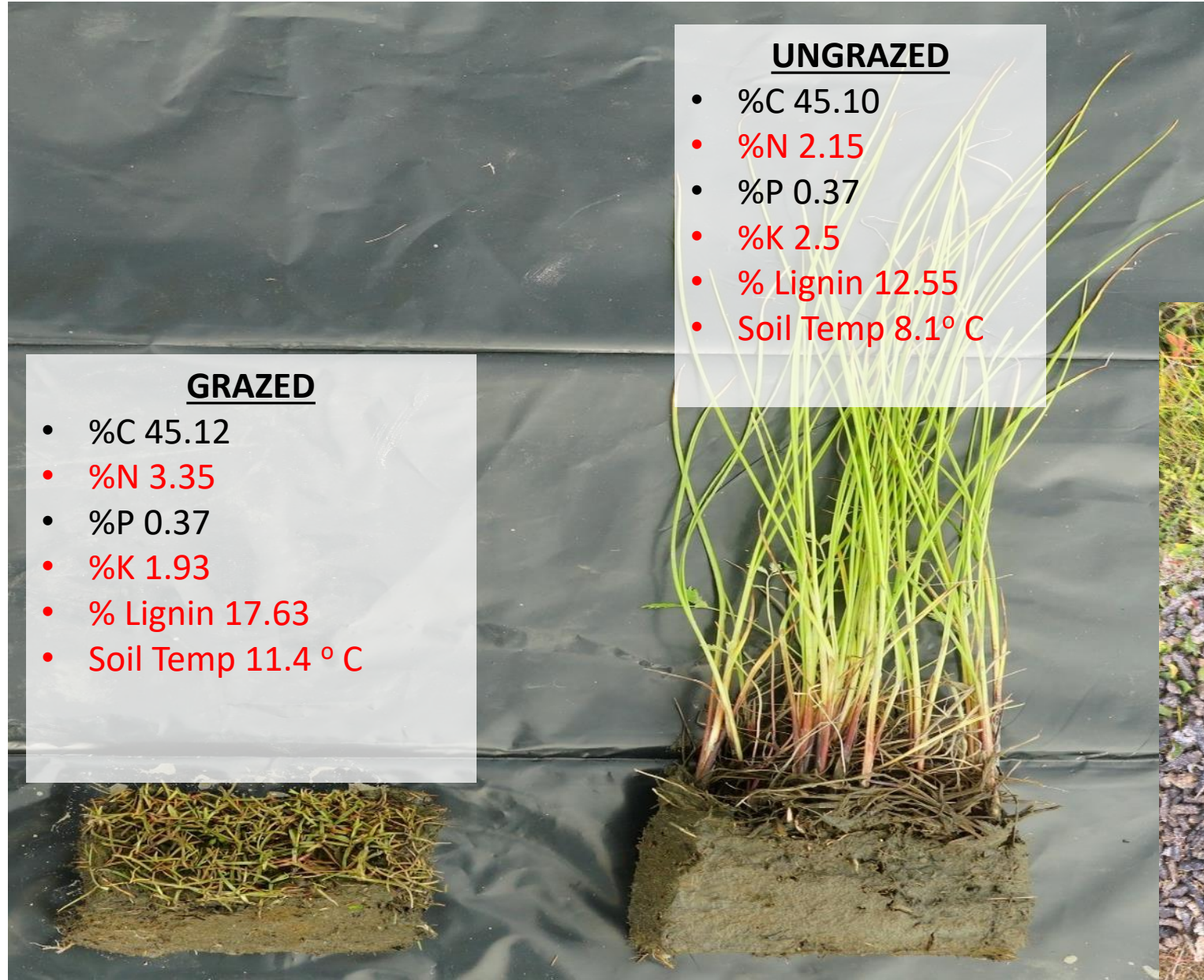
- %C 45.10
- %N 2.15
- %P 0.37
- %K 2.5
- % Lignin 12.55
- Soil Temp 8.1° C

GRAZED

- %C 45.12
- %N 3.35
- %P 0.37
- %K 1.93
- % Lignin 17.63
- Soil Temp 11.4 ° C

FECES

- %C 26.7
- %N 1.62
- %P 0.42
- %K 2.3

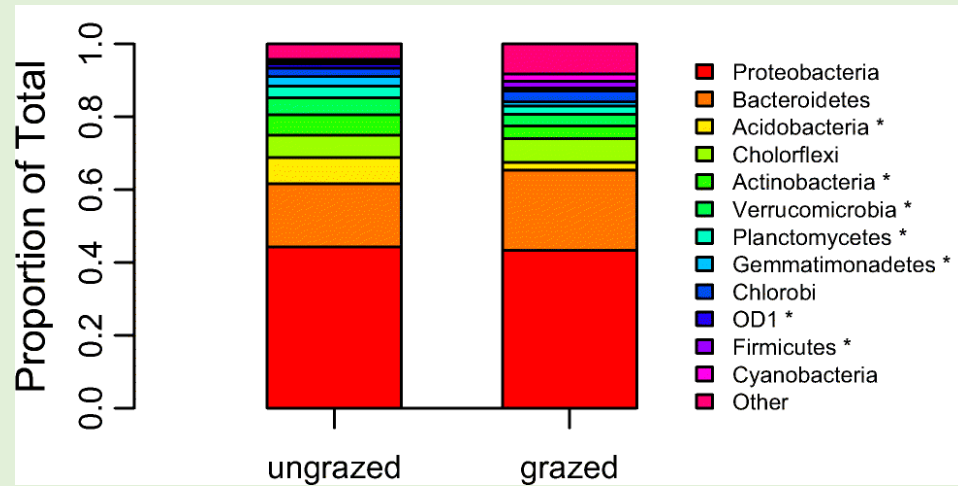




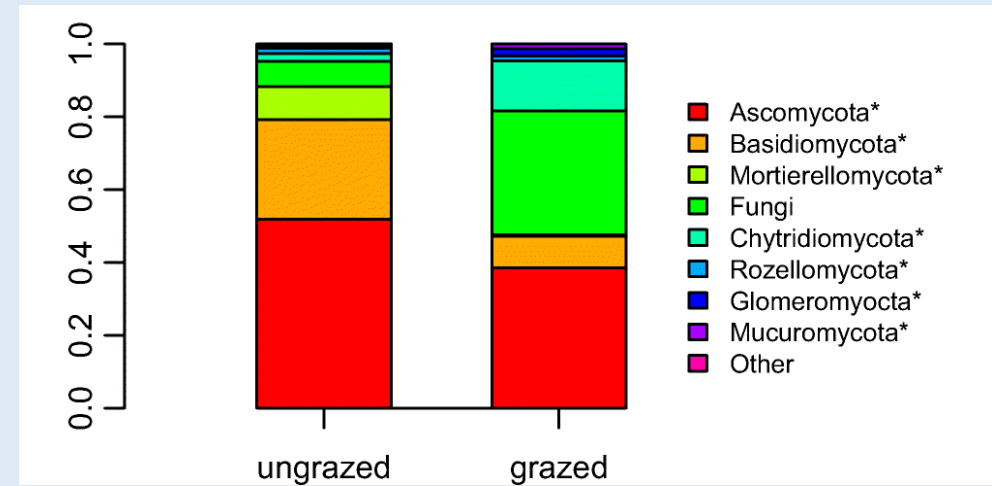
Grazing fundamentally changes the soil microbial community

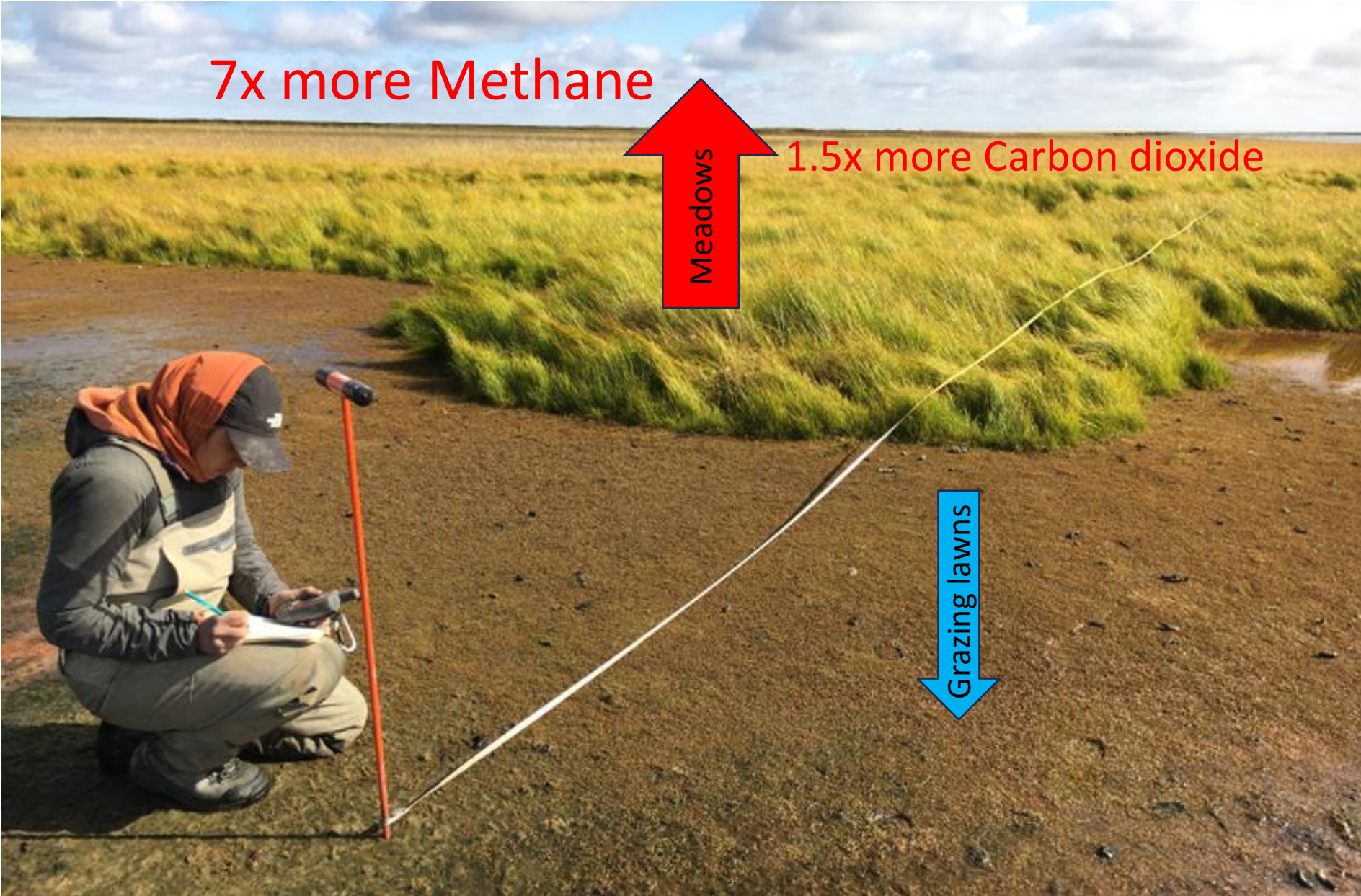


Bacterial Communities



Fungal Communities



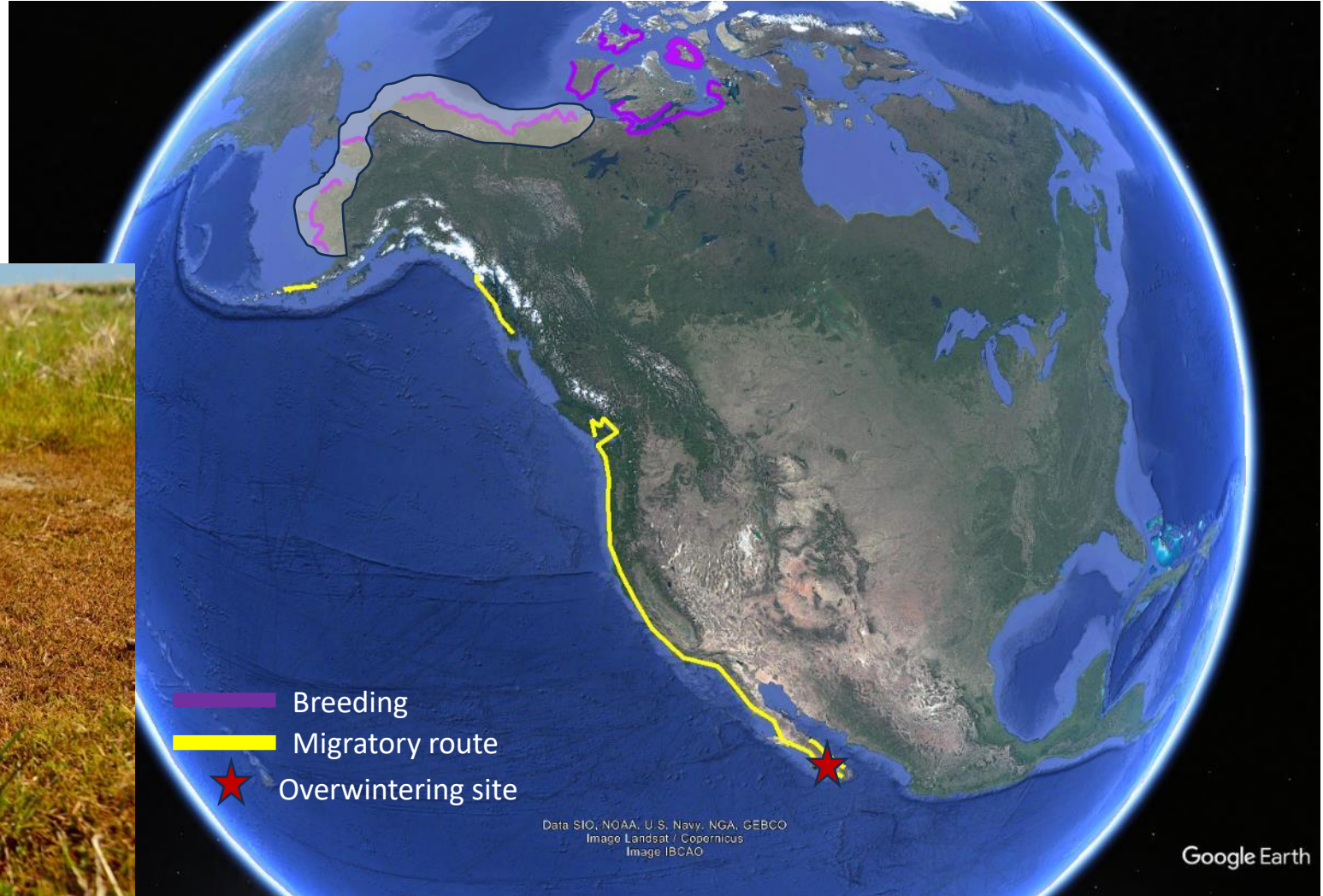


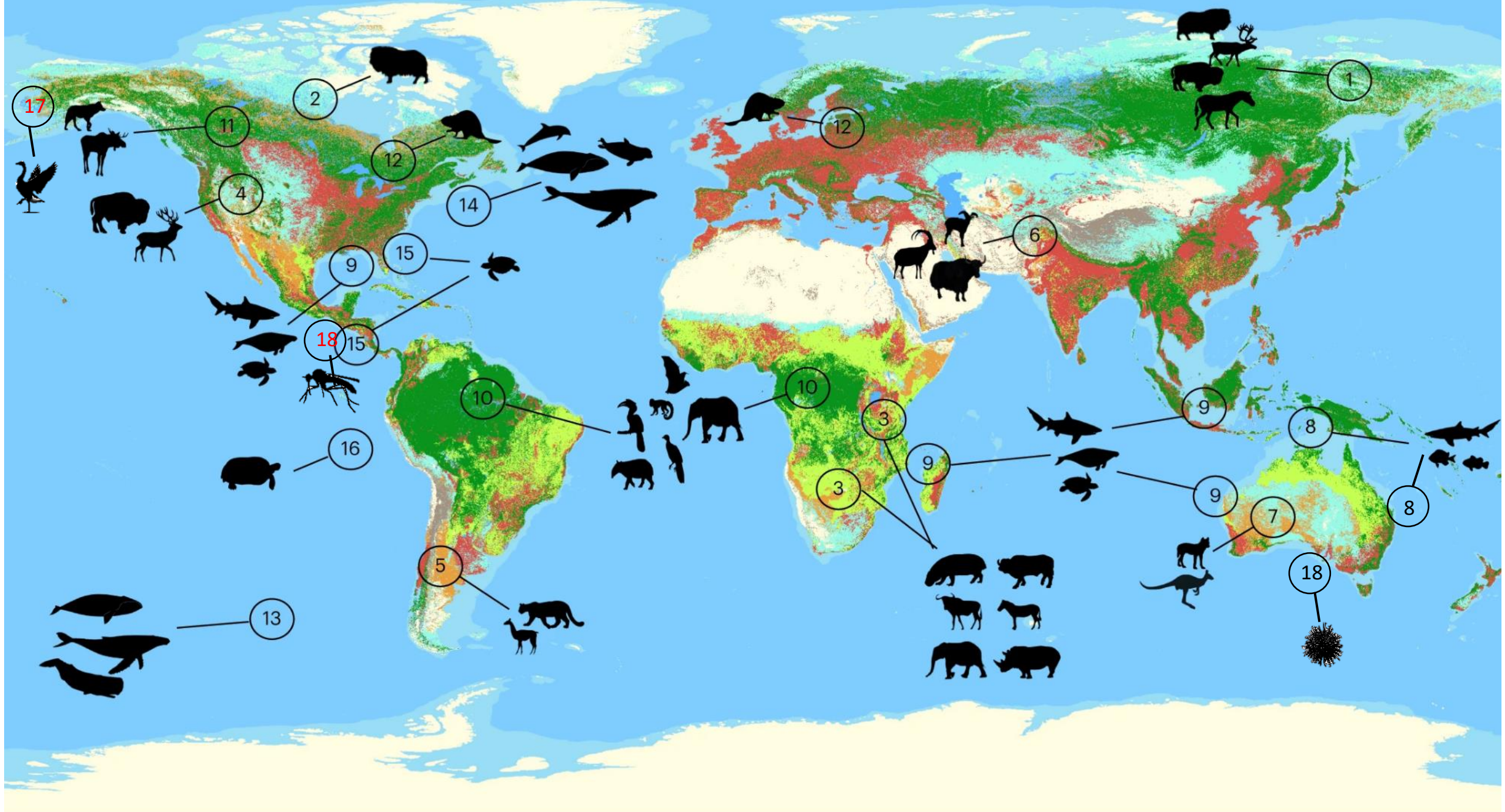
7x more Methane

1.5x more Carbon dioxide



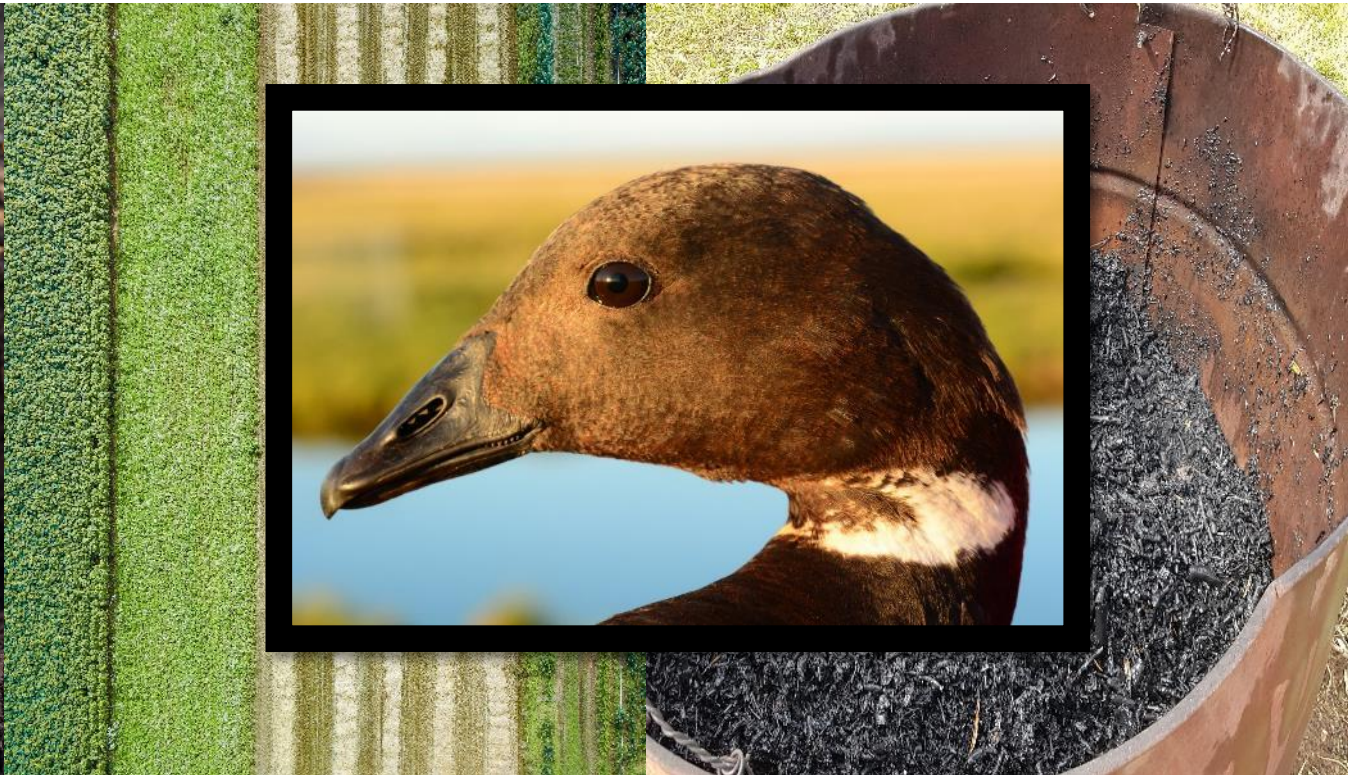
Case studies: Migratory Geese (Pacific Black Brant)





Can animals help us close the gap?

Need: +1 Gt CO₂ yr⁻¹



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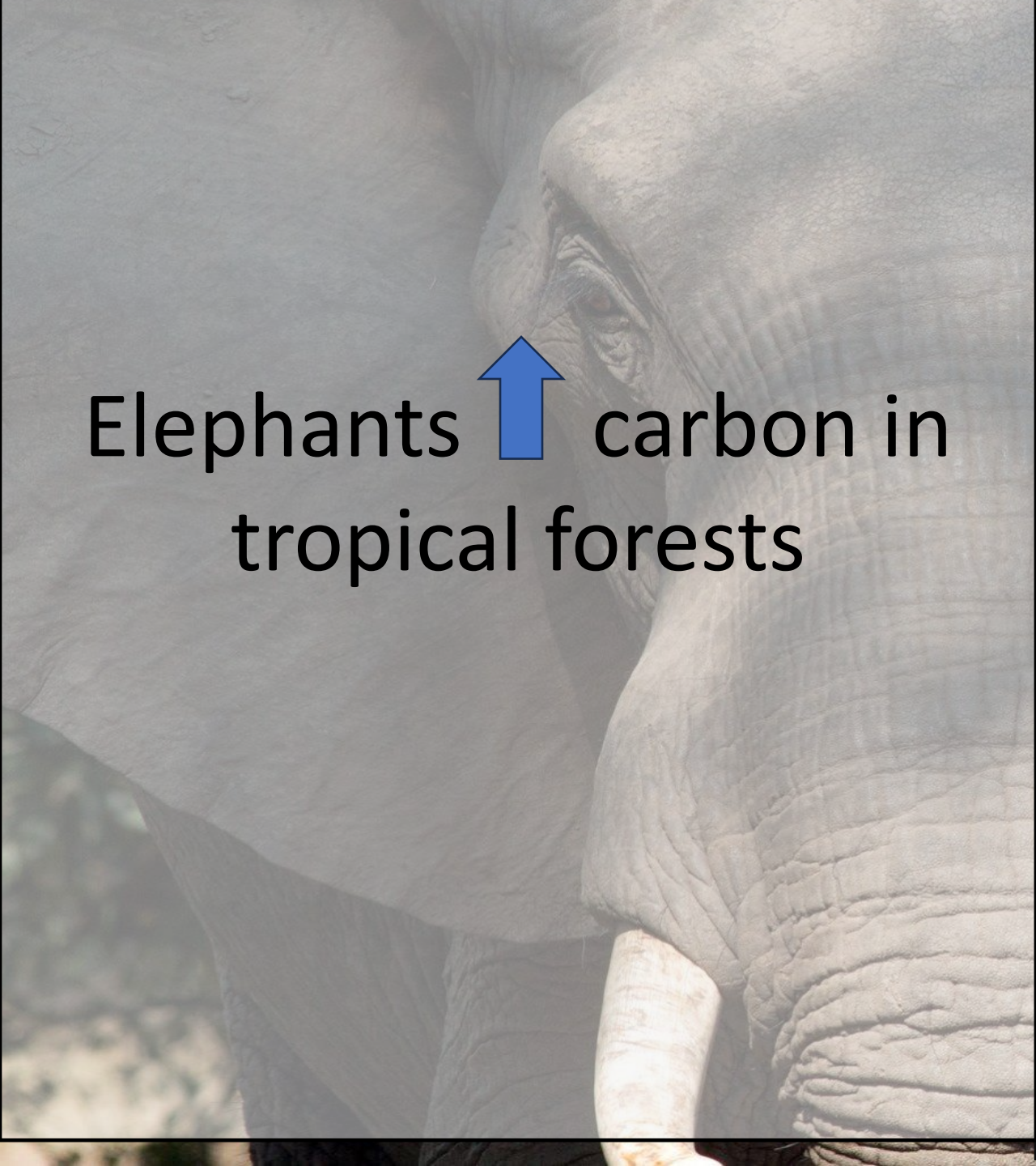
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**Animals help capture
>6 Gt CO₂ yr⁻¹**



Elephants  carbon in
tropical forests



Elephants  carbon in
savannahs



What can scientists and policy makers do?





Align with Broader Goals and Identify Trade-Offs

Photo courtesy of Ryan Choi


Assess and identify synergies and trade-offs between conservation actions for migratory species and other ecosystem services, Sustainable Development Goals (SDGs), climate targets. Prioritize integrated strategies that maximize co-benefits while minimizing conflicts.



Photo courtesy of Edd Hammill



Prioritize Win-Win Strategies



Identify and implement actions that simultaneously benefit migratory species and provide measurable positive outcomes for carbon storage and retention, aligning conservation goals with climate change mitigation and adaptation.

A close-up photograph of a human hand holding a small, detailed figurine of an elephant. The elephant is standing on a pile of several coins. The hand is open, with fingers slightly curled, and the background is a soft, out-of-focus light. The lighting is warm, highlighting the textures of the skin, the elephant's trunk, and the metallic surfaces of the coins.

Expand Joint Funding Opportunities

Explore innovative funding strategies, such as ecosystem-based carbon credit programs and biodiversity markets, to support the protection of critical habitats and the intricate food webs that support migratory species.

Thank you



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