

Three Things Everyone Should Know About Climate Change

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Chief Communications Officer

**Woodwell
Climate
Research
Center**

Woodwell Climate Research Center

conducts science for solutions at the nexus
of climate, people, and nature.

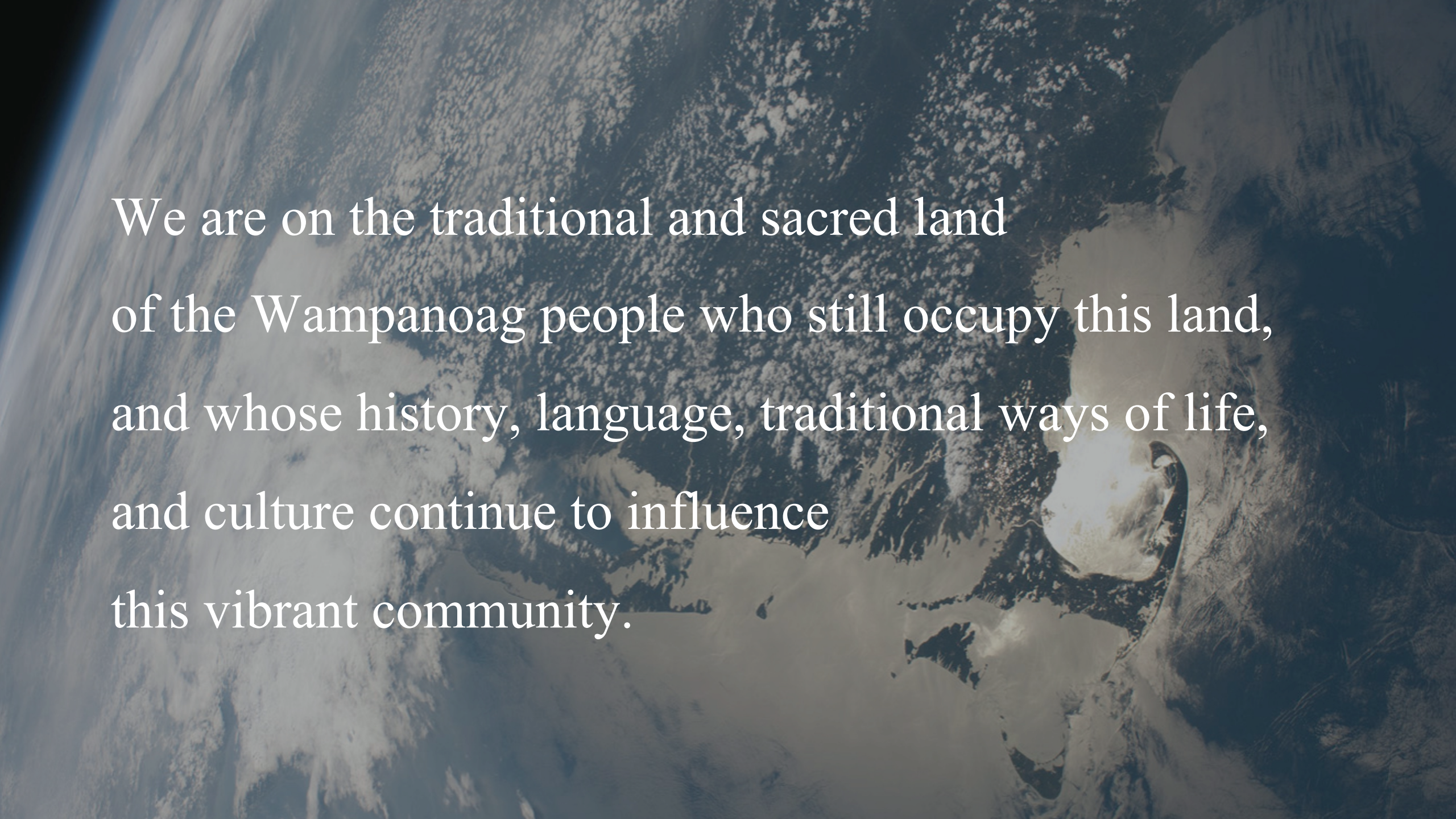
We partner with leaders and communities
for just, meaningful impact to
address the climate crisis.

#ClimateScienceforChange

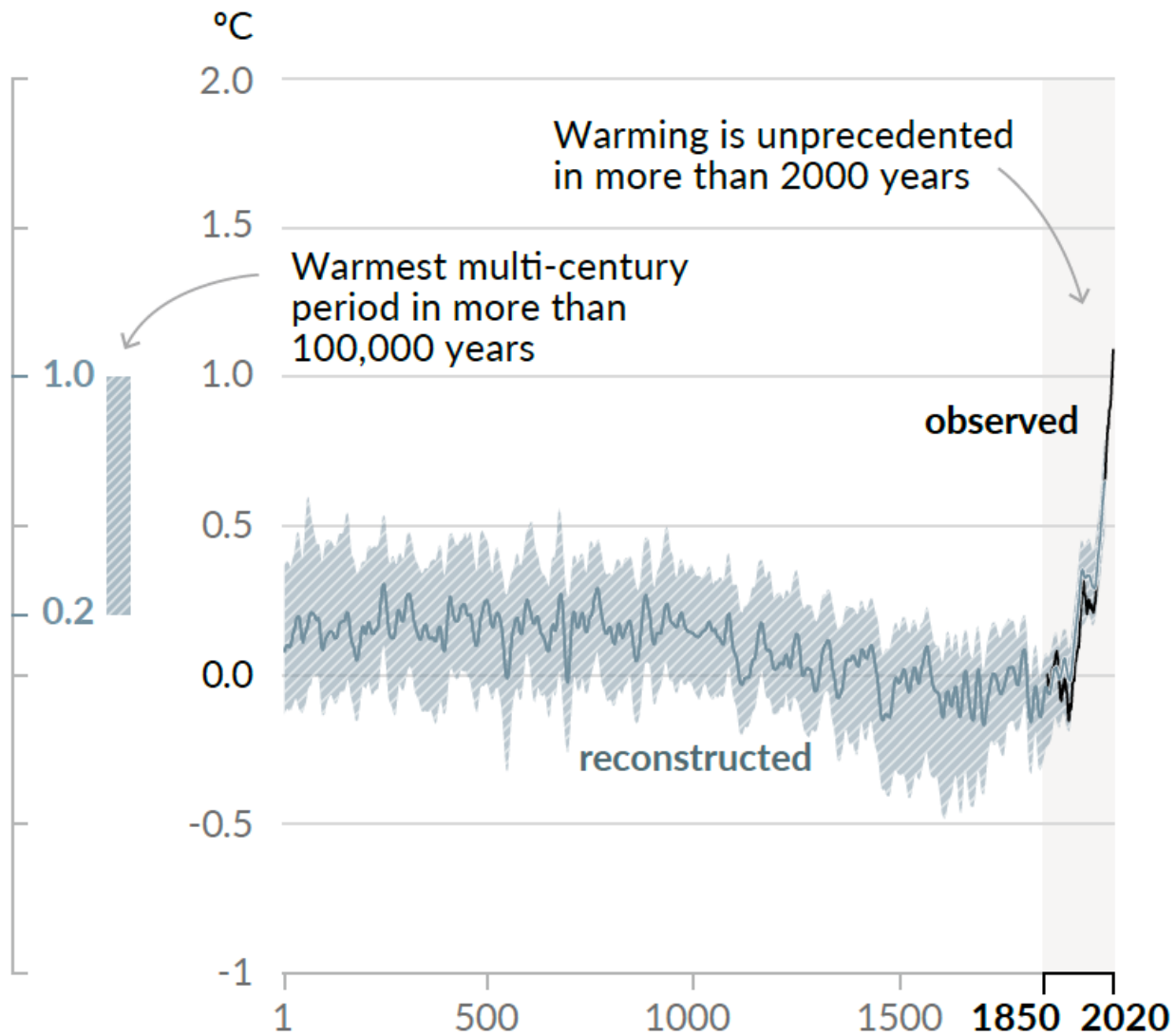




**Woodwell Climate
Research Center**

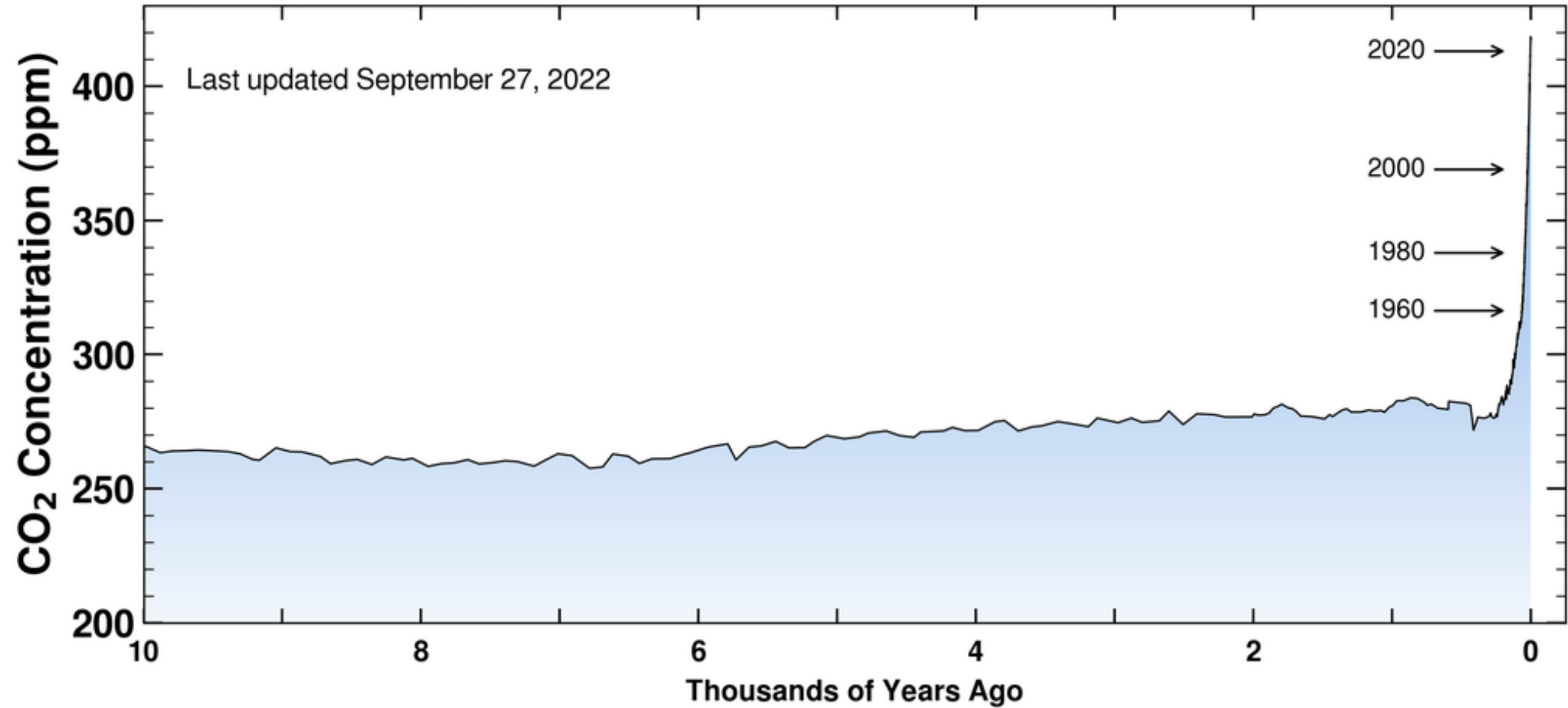
A satellite view of Earth, showing a large body of water (likely the Atlantic Ocean) and a portion of the North American continent. The text is overlaid on the image in a white serif font.

We are on the traditional and sacred land
of the Wampanoag people who still occupy this land,
and whose history, language, traditional ways of life,
and culture continue to influence
this vibrant community.



“Human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years.”

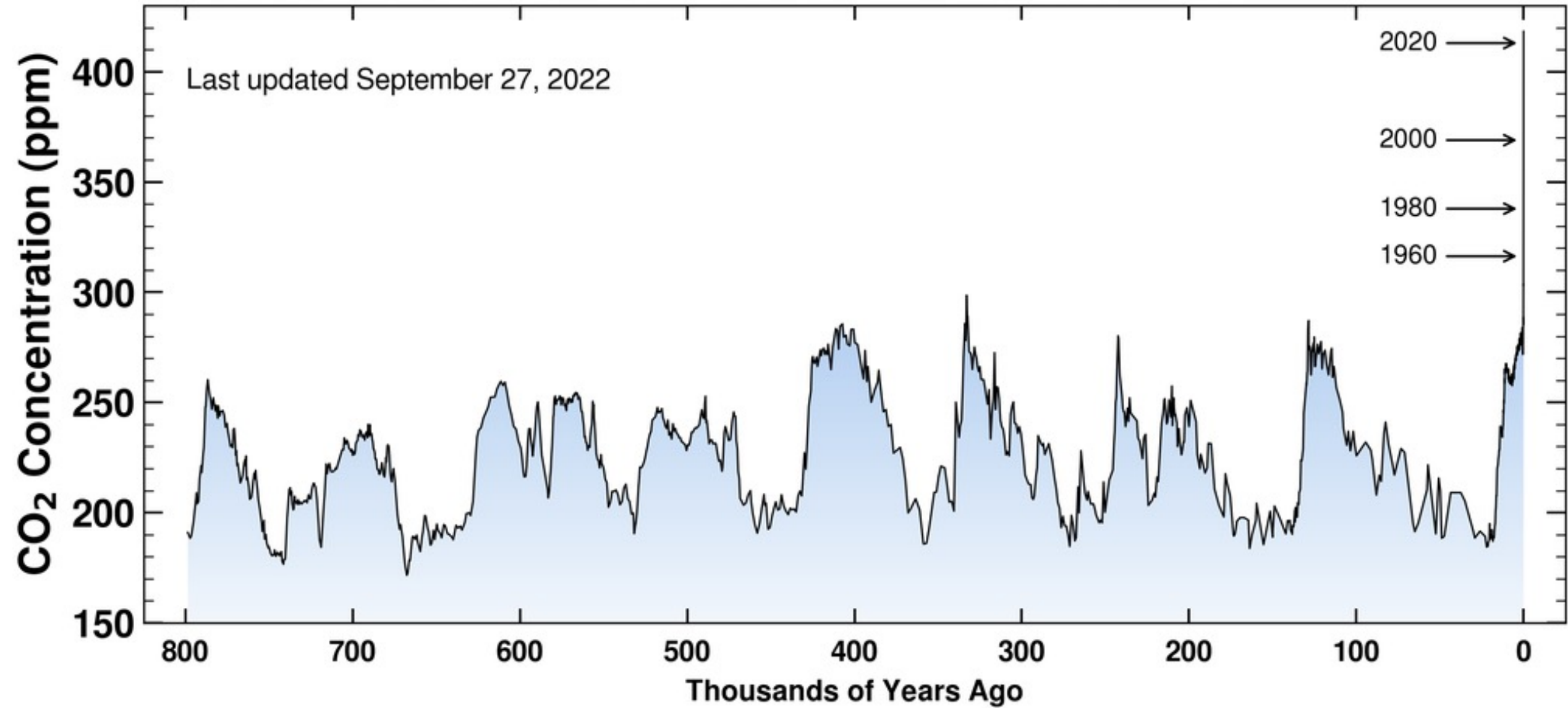
Ice-core data before 1958. Mauna Loa Data after 1958.





Dietmar Rabich

Ice-core data before 1958. Mauna Loa Data after 1958.



We have left behind the stable climate
that supports modern society.

“Unless there are immediate, rapid, and large-scale reductions in greenhouse gas emissions, limiting warming to 1.5°C will be beyond reach.”

1.0

1.5

2.0

2.5

3.0

3.5

4.0

“Unless there are immediate, rapid, and large-scale reductions in greenhouse gas emissions, limiting warming to 1.5°C will be beyond reach.”

1.0

1.5

2.0

2.5

3.0

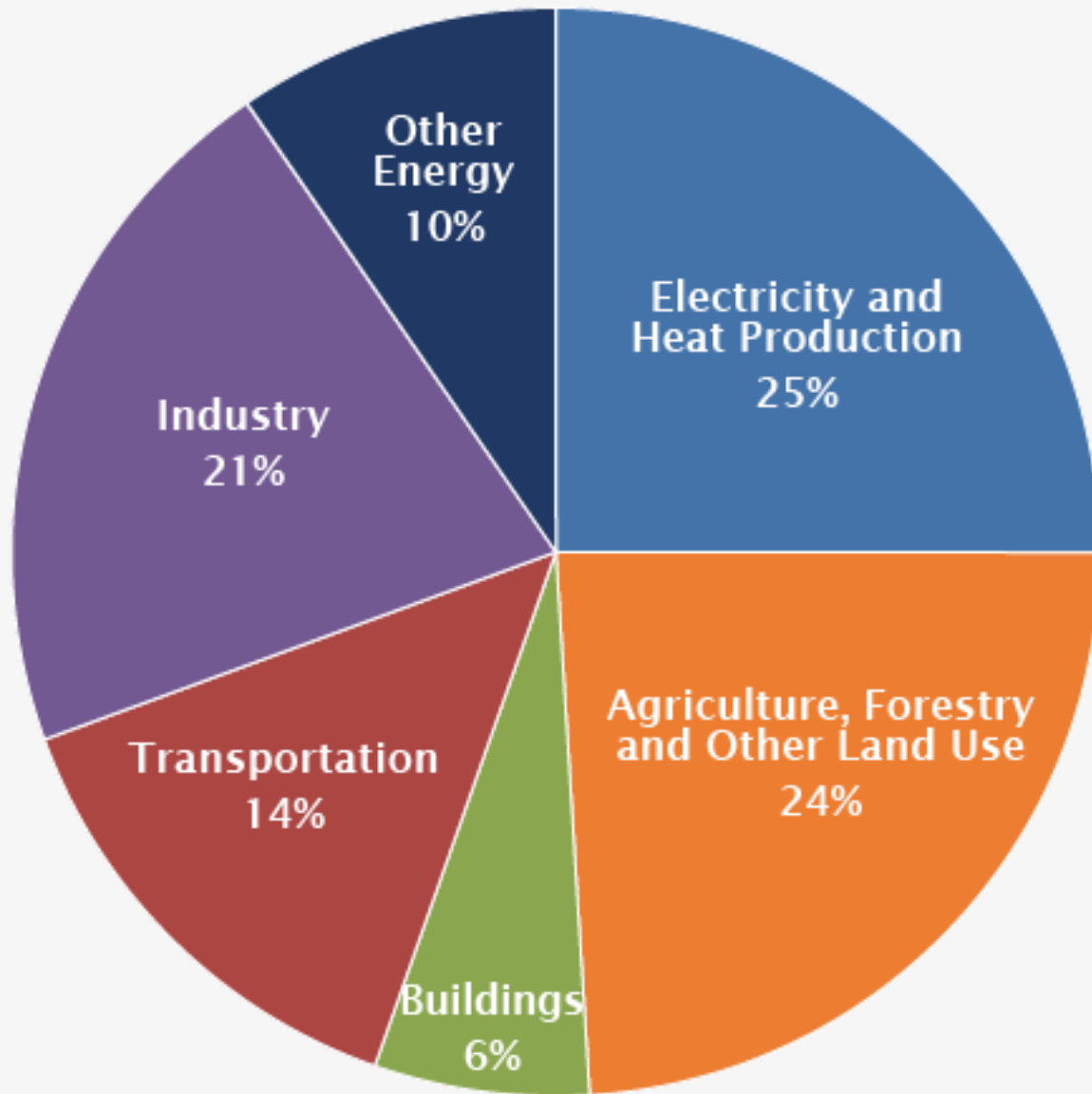
3.5

4.0

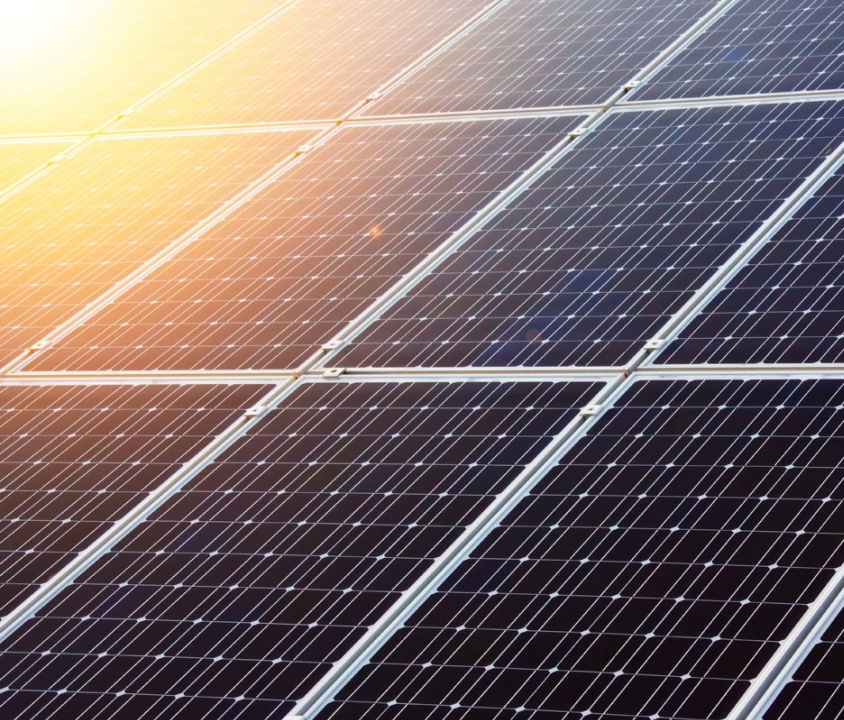
Adaptation is
necessary ...

but there
are limits.

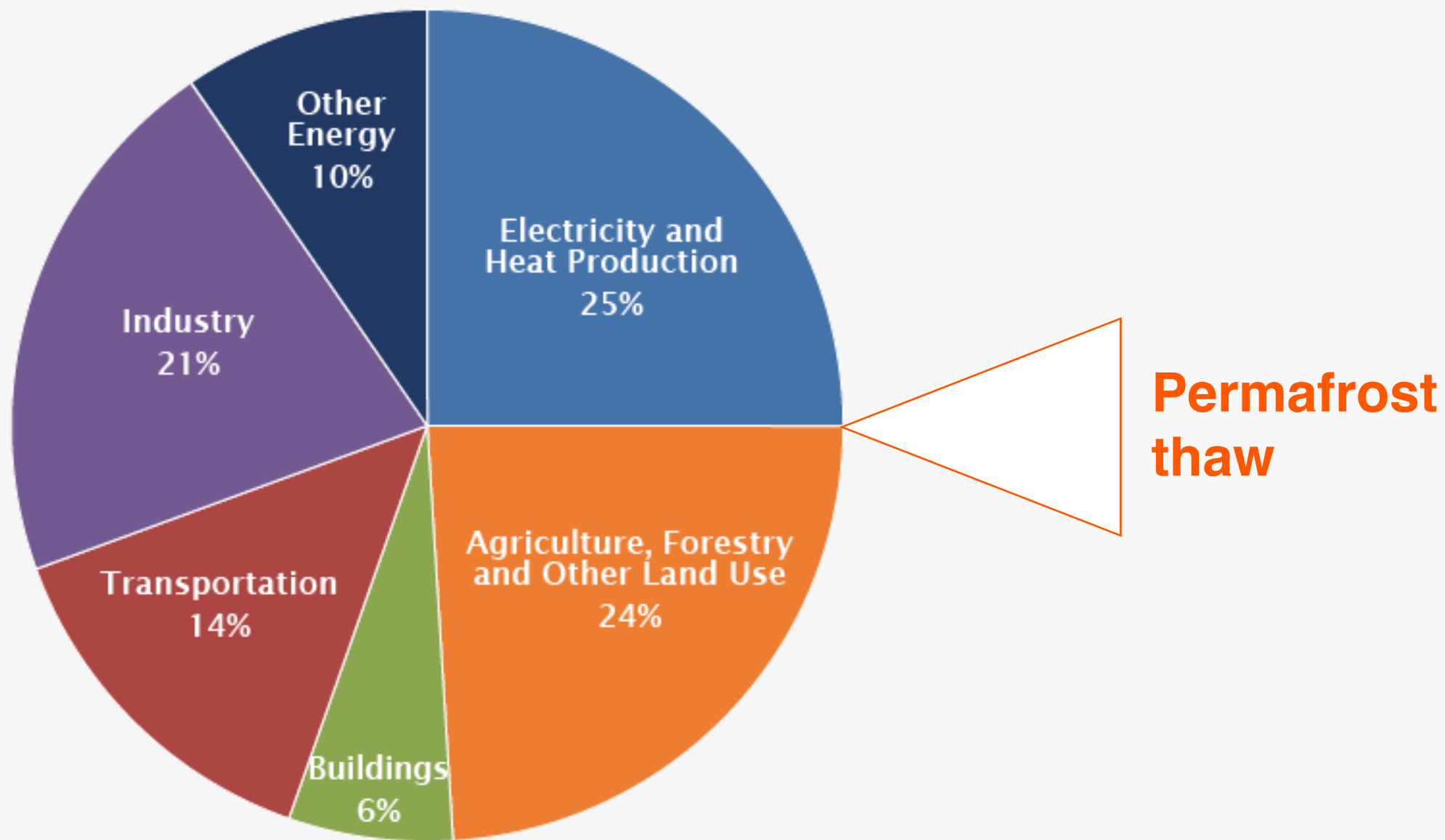




Current climate change is wholly and unequivocally the result of human-caused greenhouse gas emissions



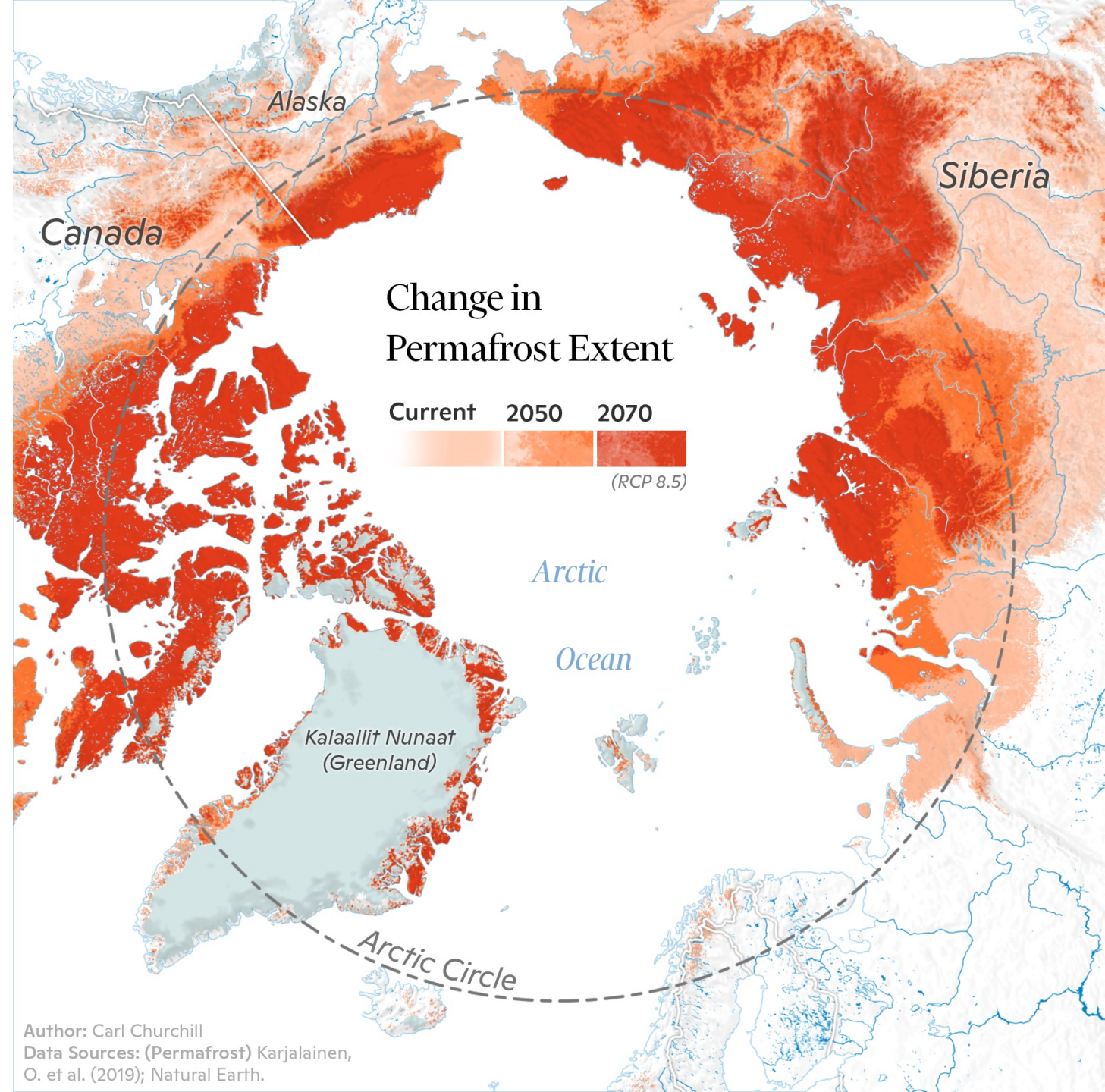
We are omitting critical elements from
our carbon accounting.





ALASKA
ARMY NATIONAL
GUARD

**Permafrost holds
twice as much
carbon as is
currently in the
atmosphere ...
and it is thawing.**





110 GT

This infographic consists of four circles of increasing size from left to right, representing different permafrost storage estimates. The first circle is yellow and labeled '110 GT' and 'PERMAFROST Low end'. The second circle is light gray and labeled '184 GT' and 'INDIA'. The third circle is light gray and labeled '376 GT' and 'USA'. The fourth circle is yellow and labeled '550 GT' and 'PERMAFROST High end'.

Category	Storage (GT)
PERMAFROST Low end	110
INDIA	184
USA	376
PERMAFROST High end	550

PERMAFROST
Low end

184 GT

INDIA

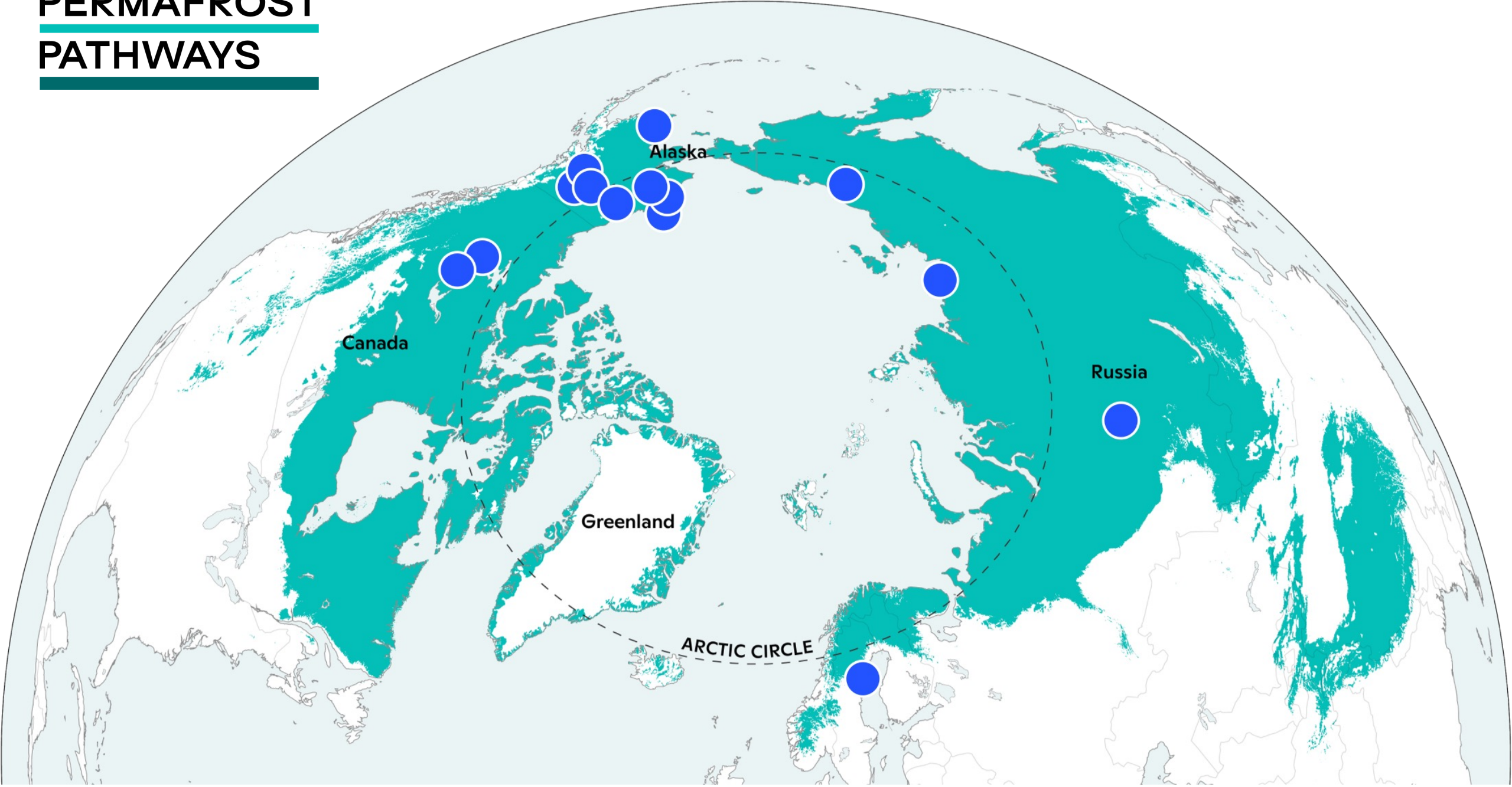
376 GT

USA

550 GT

PERMAFROST
High end

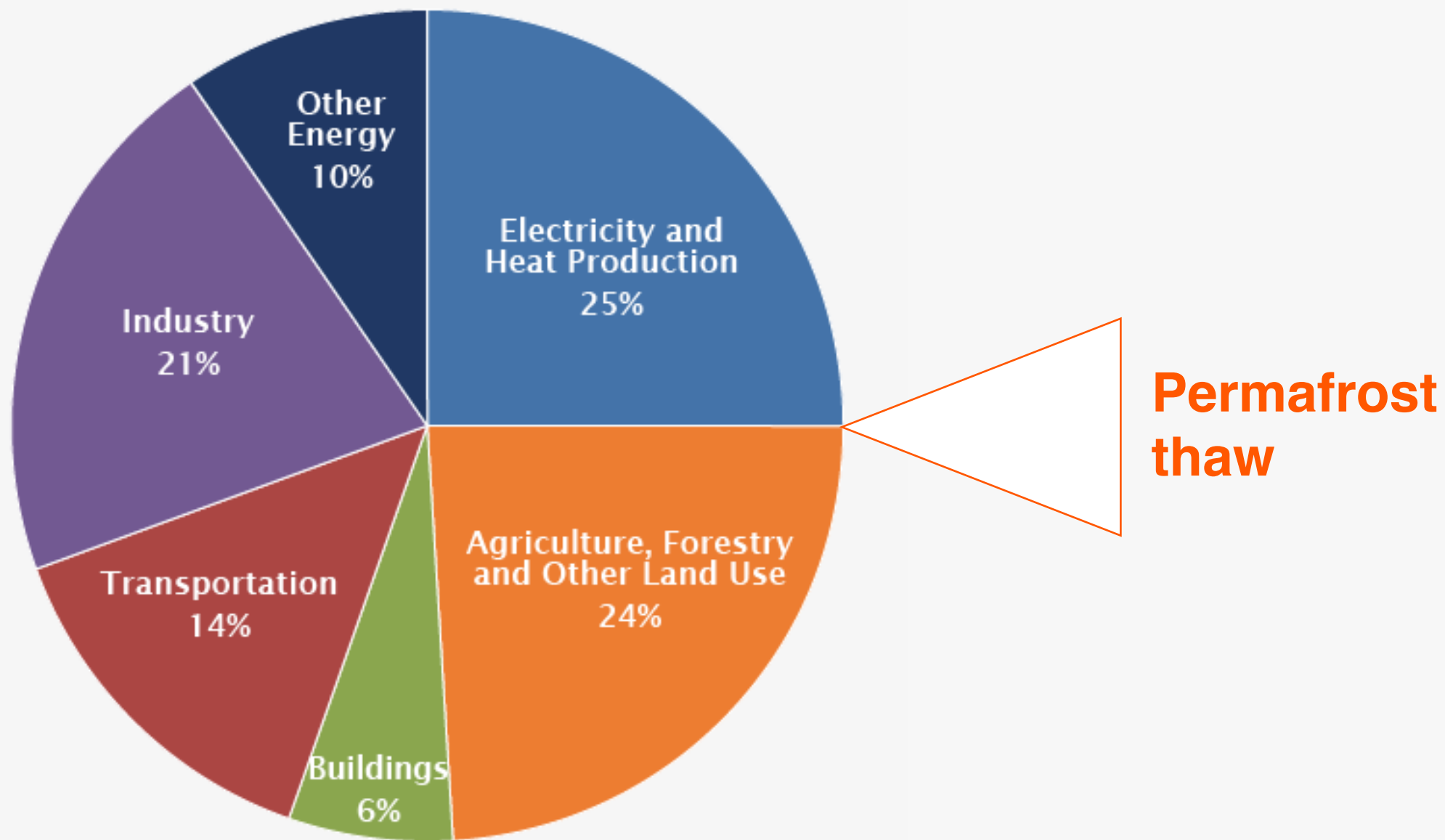
PERMAFROST PATHWAYS



We must

- 1) We must prepare for more severe impacts;
- 2) Be more ambitious in mitigation.

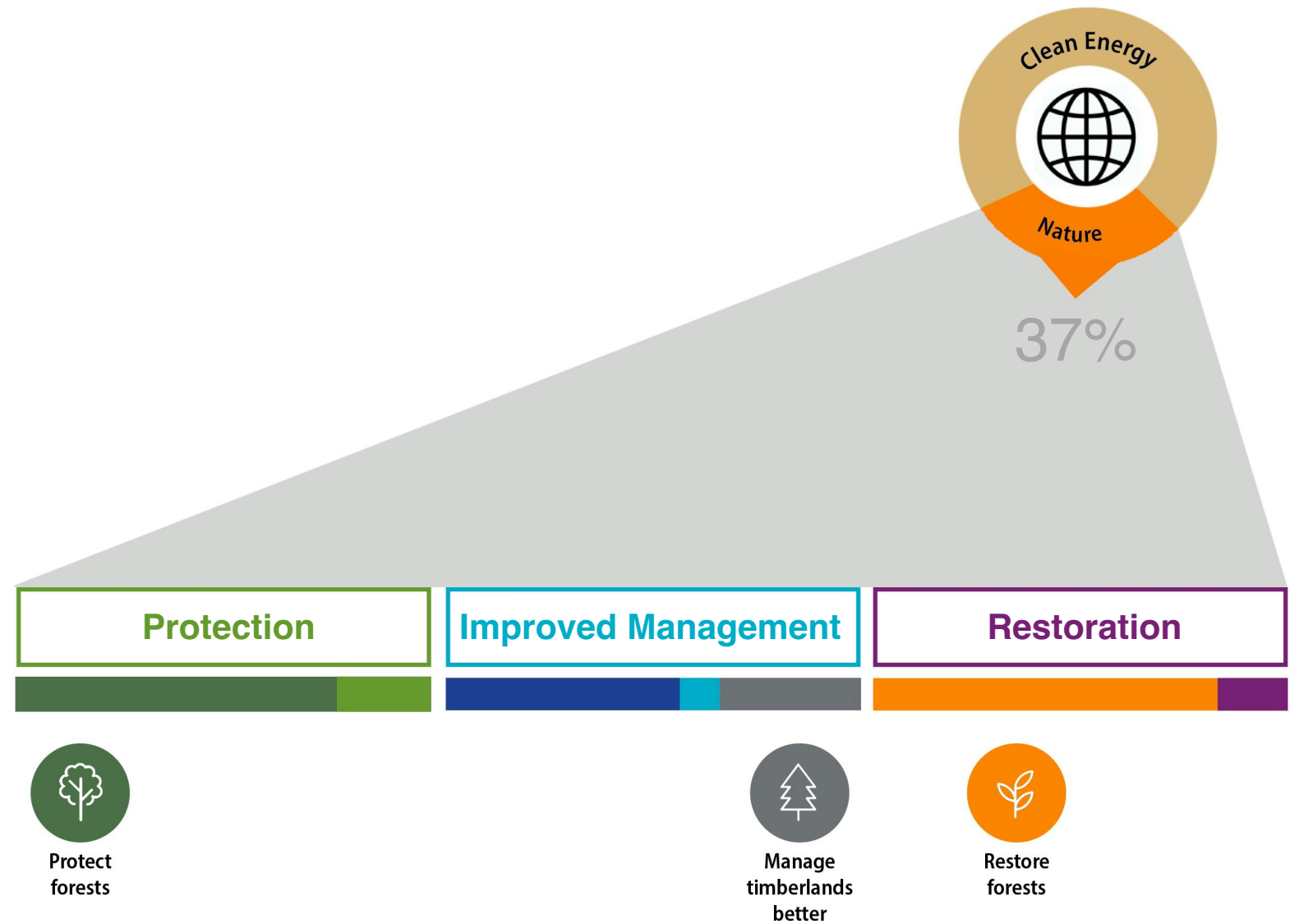
We are undervaluing natural climate solutions.



NATURAL Climate Solutions

37%

The potential contribution of nature between now and 2030 to keeping temperature increases below 2° C.



Sources: (1) Griscom et al., PNAS (2017). (2) Griscom et al., 2020, Philosophical Transactions of the Royal Society. (3) R B Jackson et al., 2019 Environ. Res. Lett. 14 121001, "Persistent fossil fuel growth threatens the Paris Agreement and planetary health", 4 December 2019. Graphics adapted from the Nature Conservancy magazine and SW infographics.

Potential
Carbon Storage

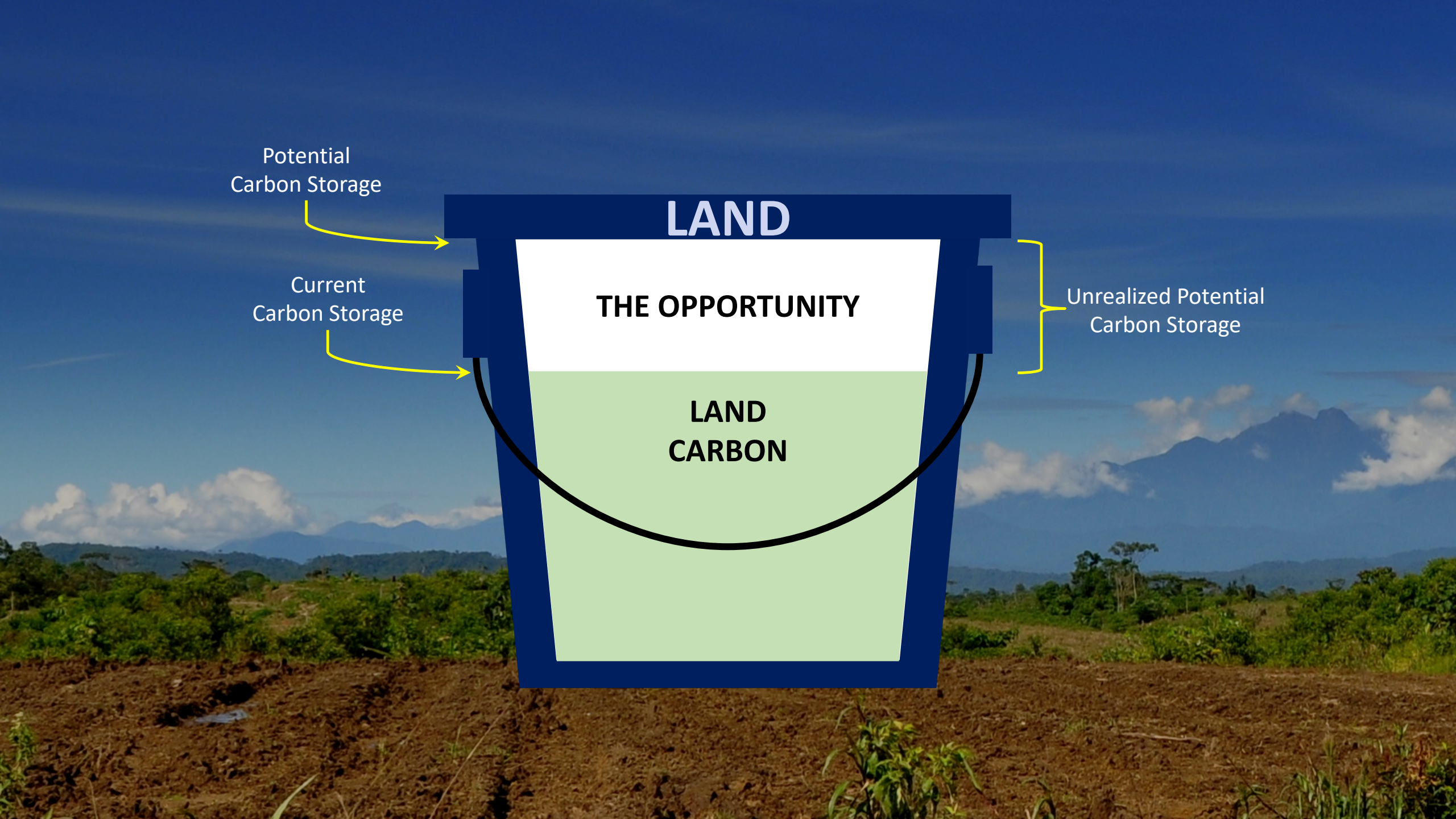
Current
Carbon Storage

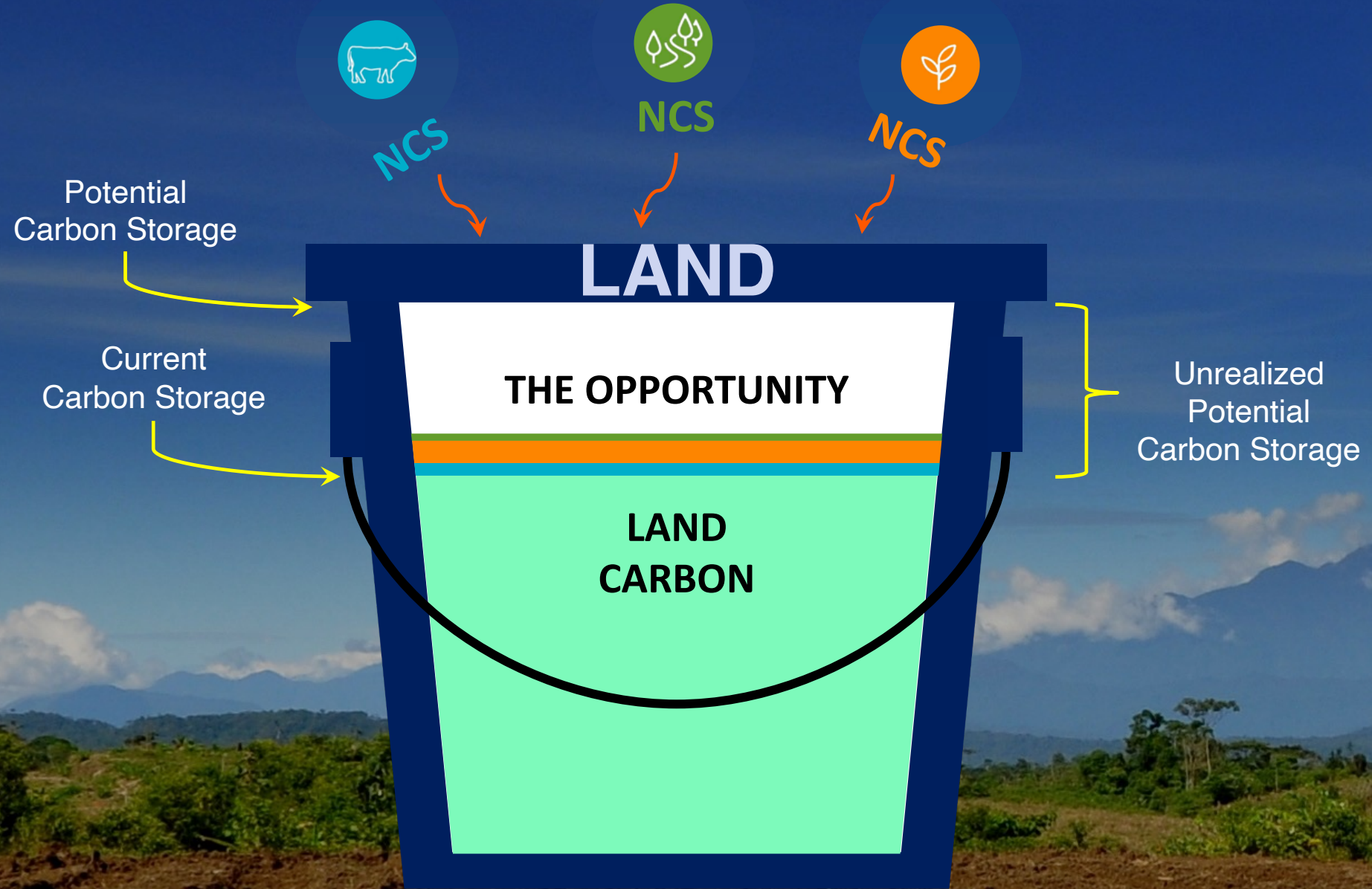
LAND

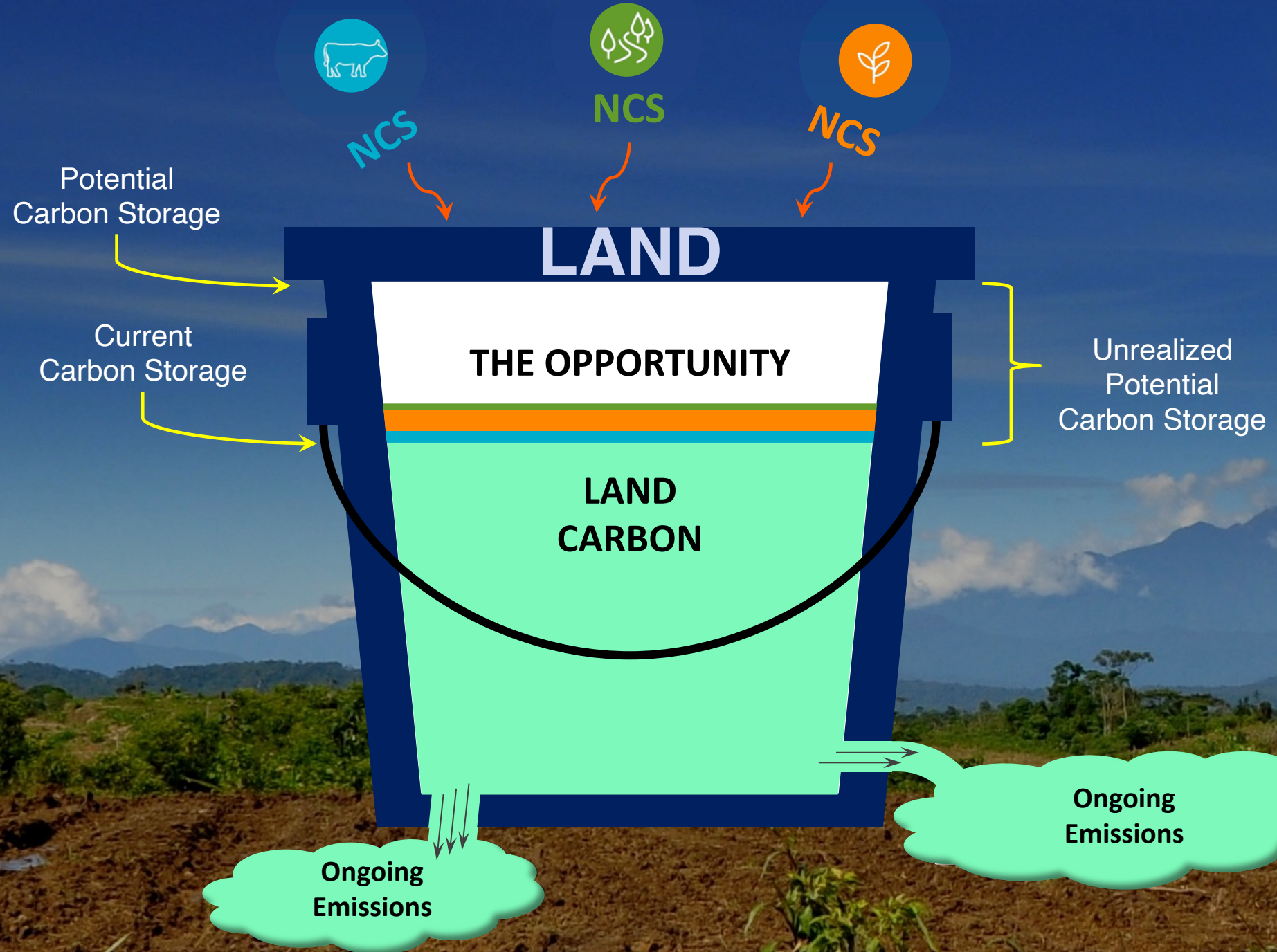
THE OPPORTUNITY

**LAND
CARBON**

Unrealized Potential
Carbon Storage







Potential
Carbon Storage

Current
Carbon Storage

LAND

THE OPPORTUNITY

LAND
CARBON

Unrealized
Potential
Carbon Storage

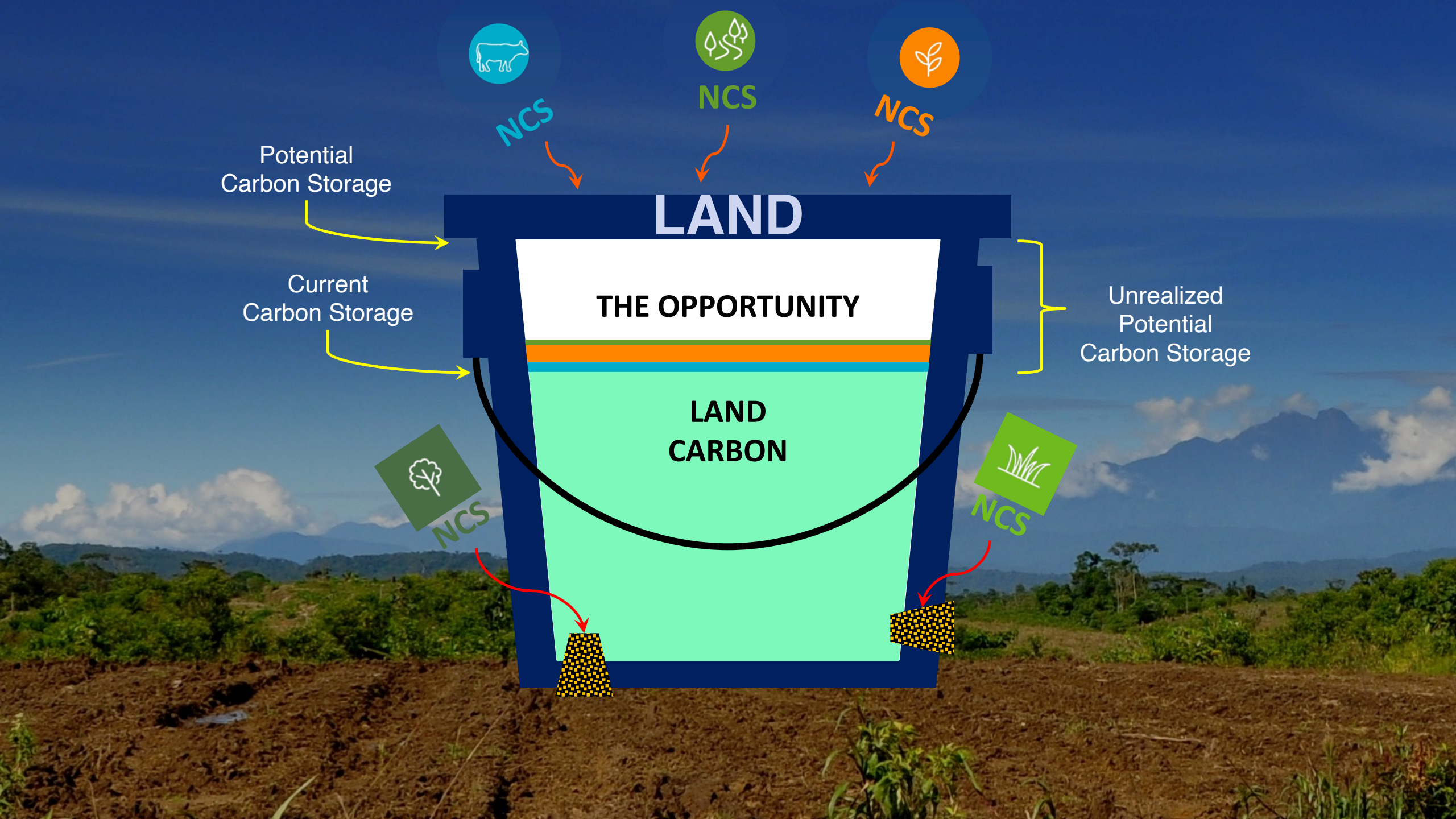
NCS

NCS

NCS

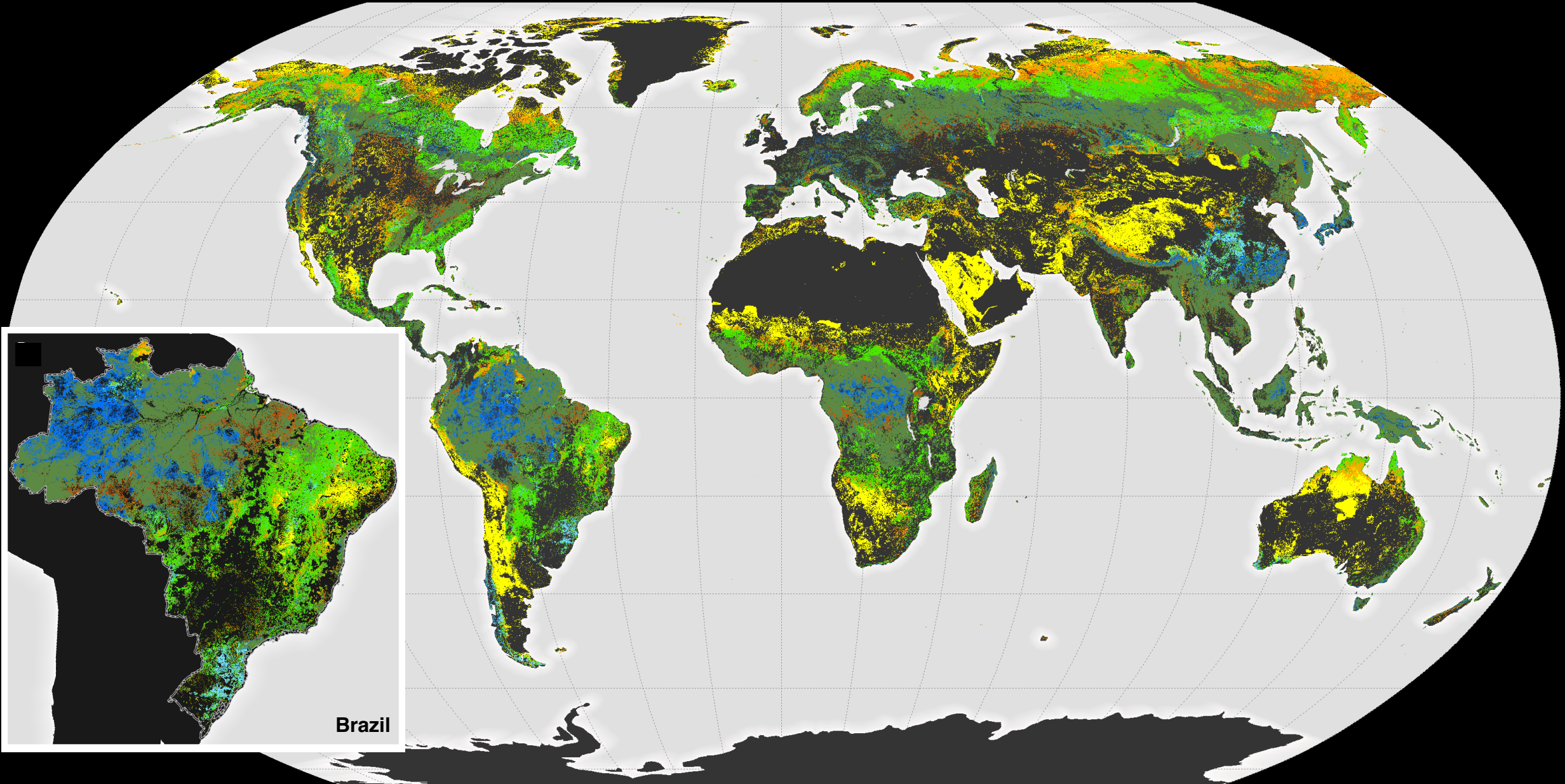
NCS

NCS



Distribution of NCS Opportunities

Protect | Manage | Restore



5 million
points

Steamship
Authority

Ferry

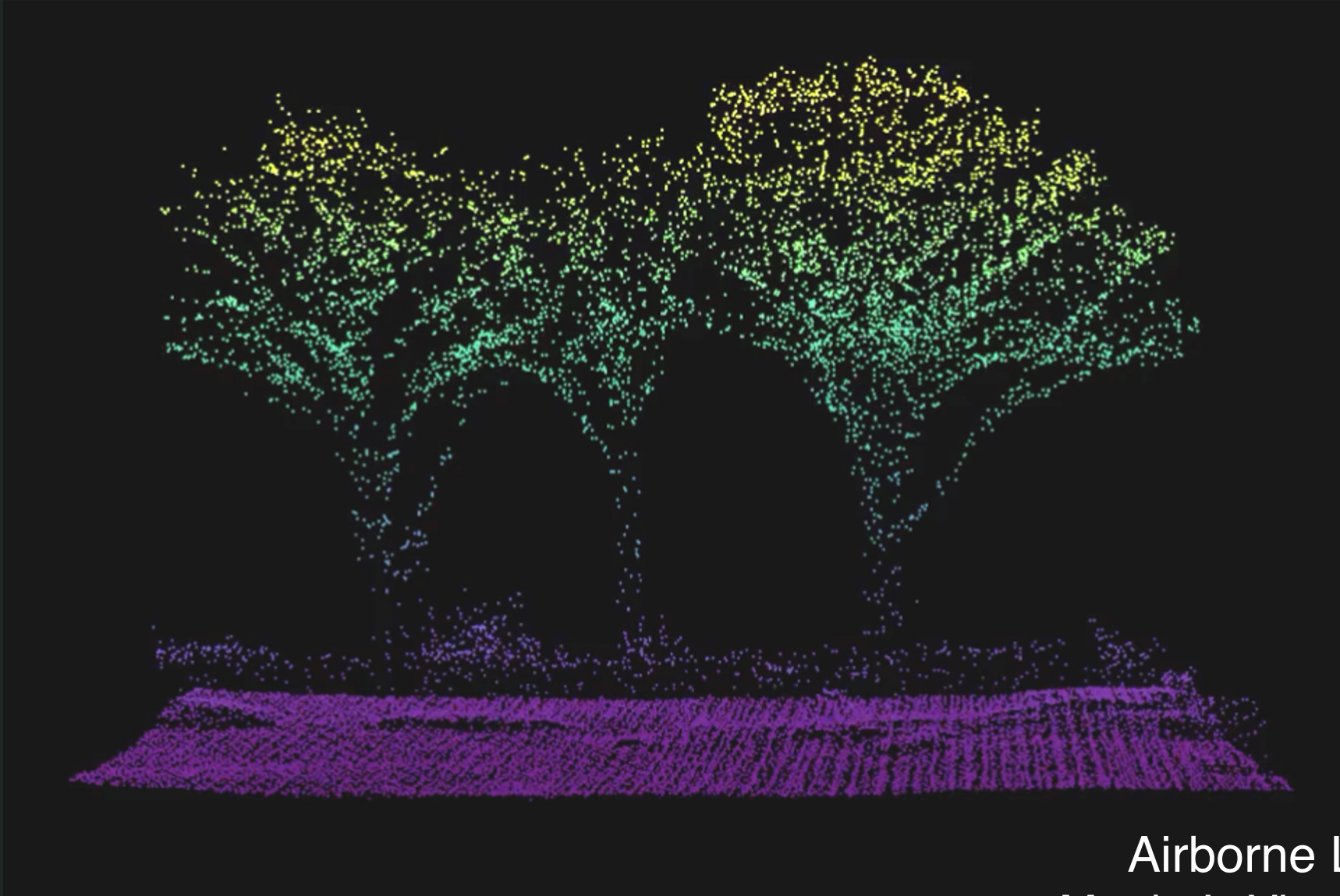
Sail
Boat

Sail
Boat

Airborne LiDAR Martha's Vineyard 2021

Commonwealth of MA / Sheriff's Meadow Foundation

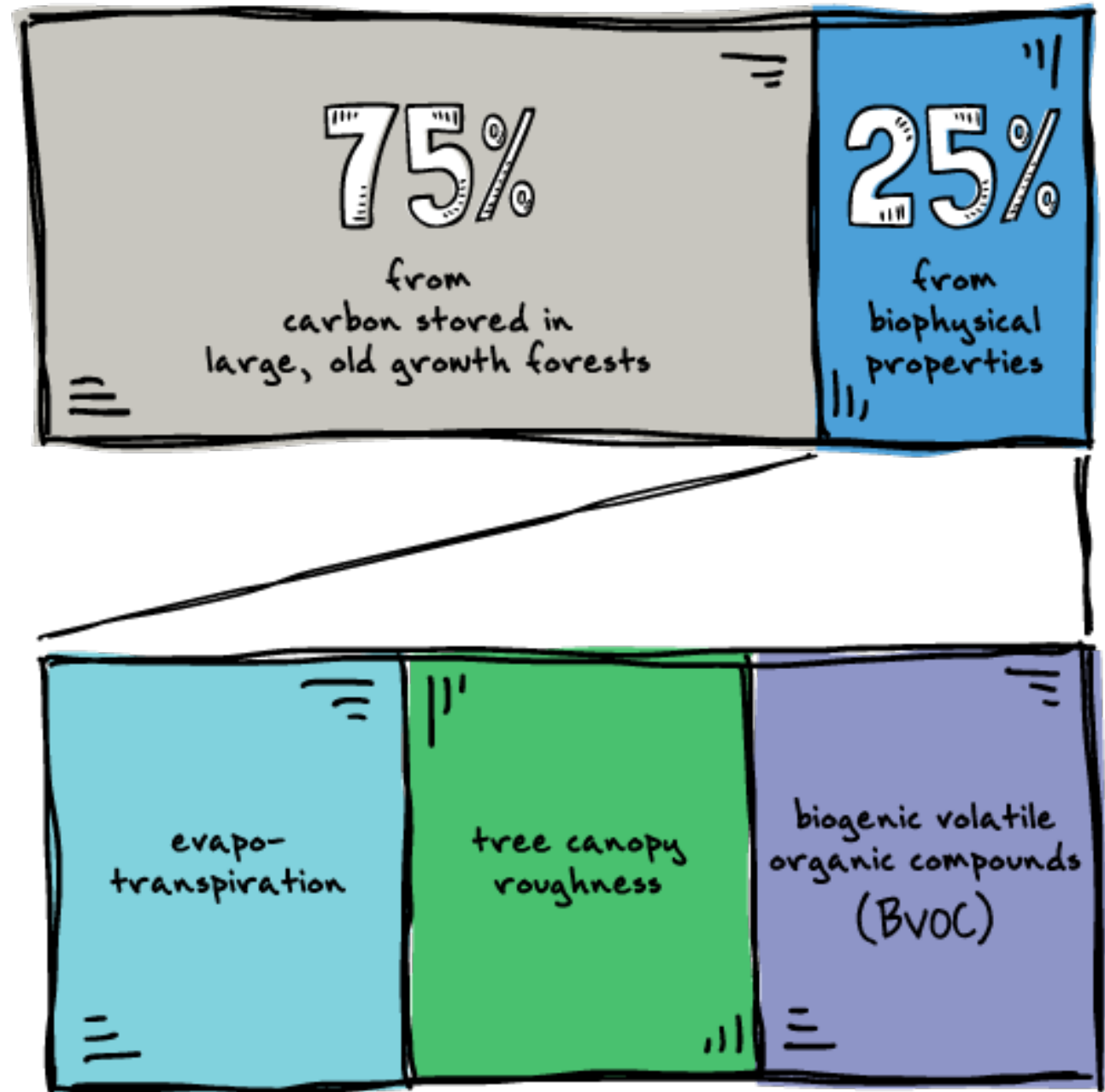
21,000
points



Airborne LiDAR
Martha's Vineyard 2021
Commonwealth of MA / Sheriff's Meadow Foundation



HOW TROPICAL FORESTS PREVENT WARMING







Nature has the power to **make** or **break**
our climate future.

THANK YOU