

The Arctic and Antarctic

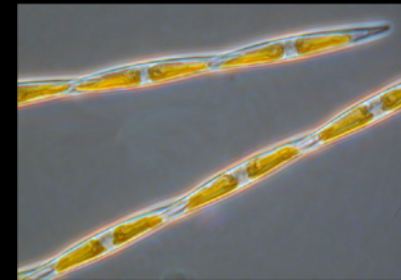
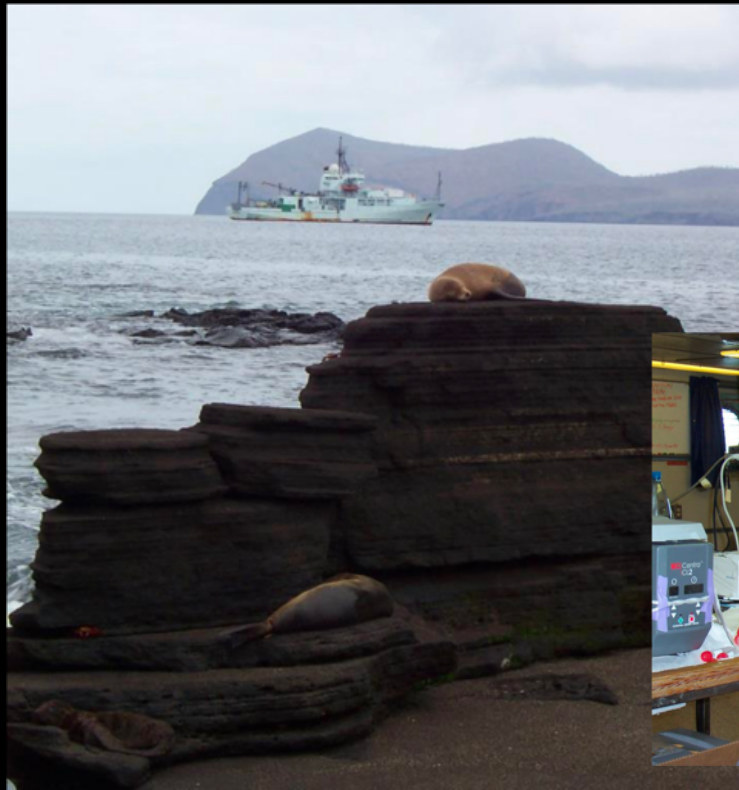
Tasha Snow



High School - Ocean Shores WA



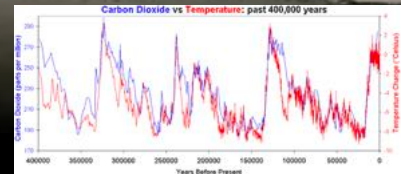
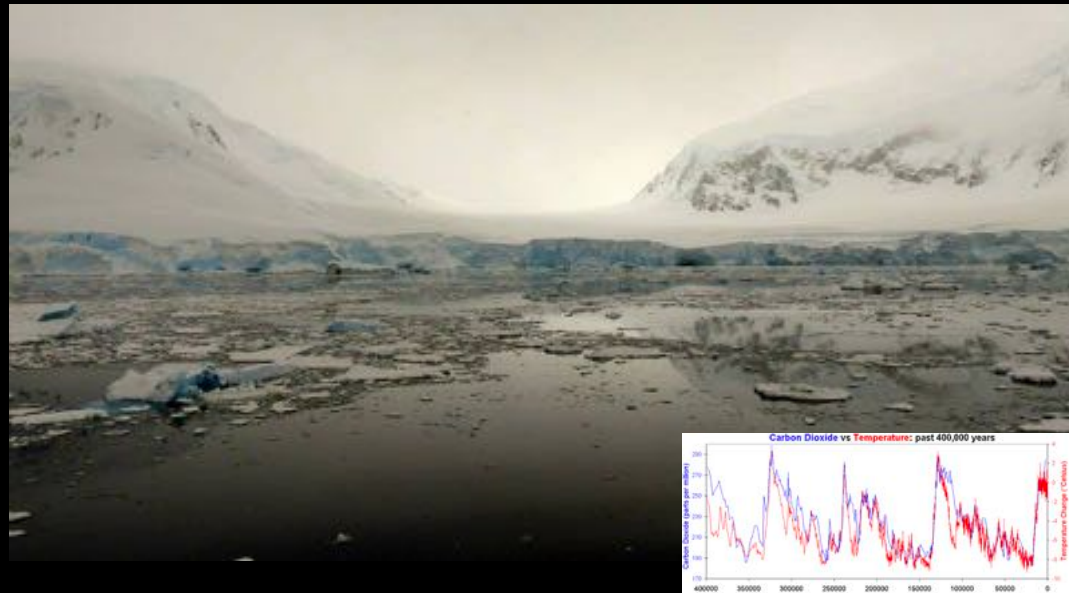
Undergrad – U. Washington



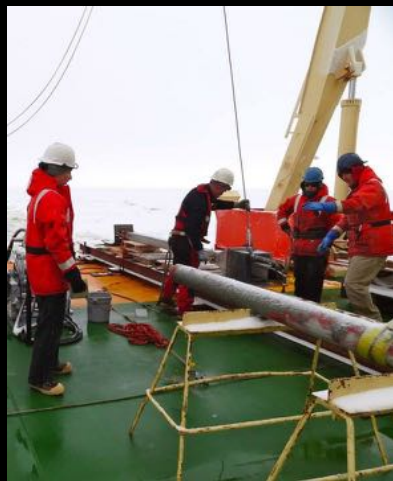


US Navy

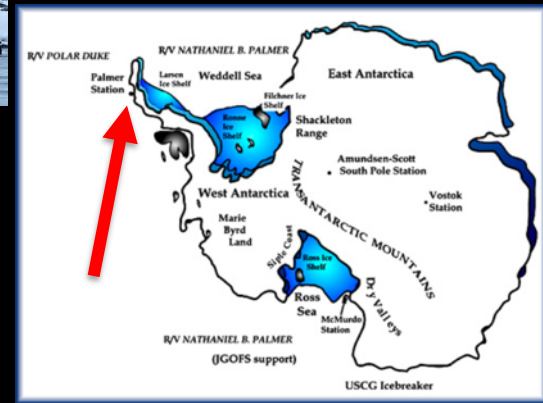


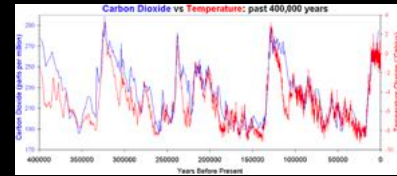


Masters – U. South Florida



Antarctic Peninsula Palmer Station

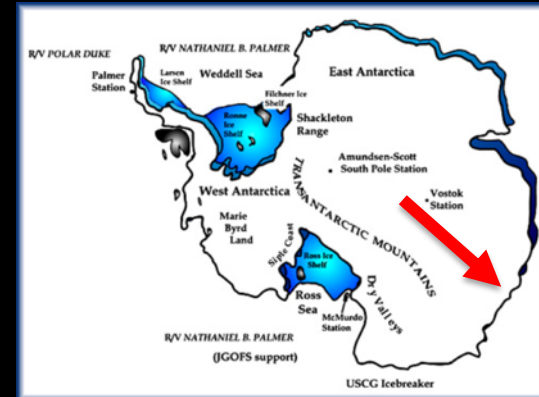


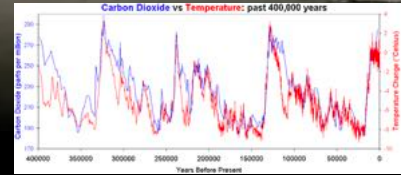
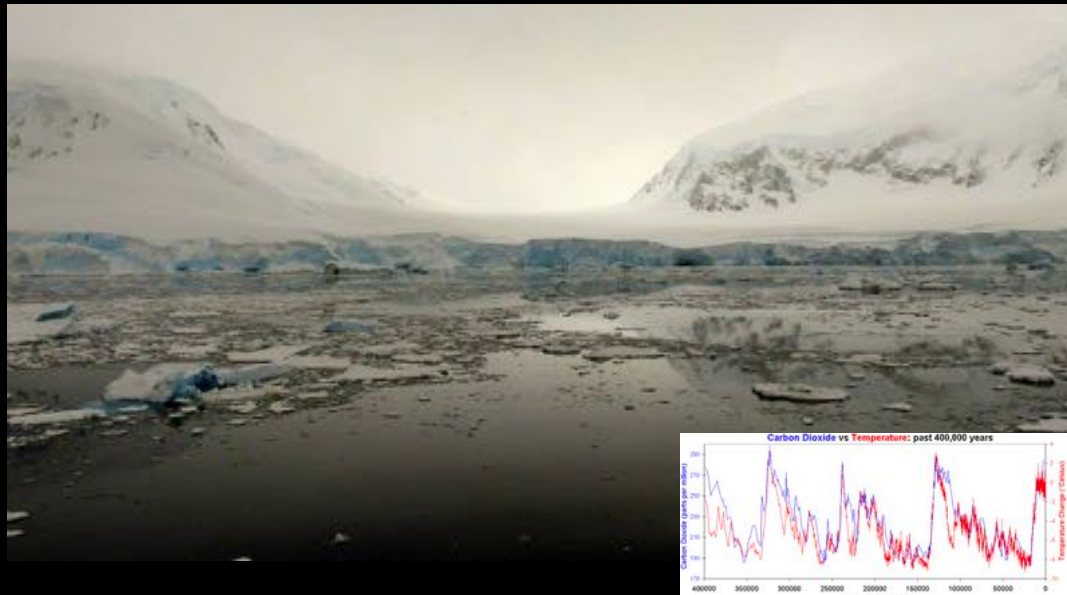


Masters – U. South Florida



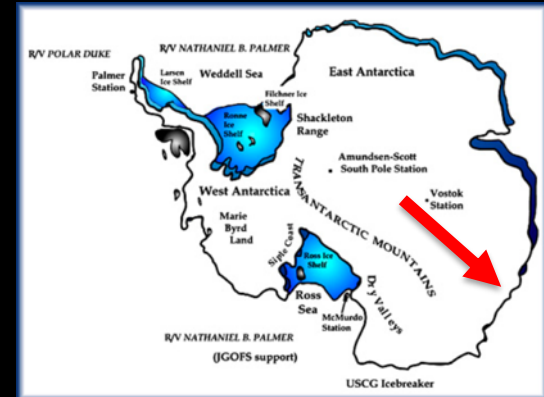
East Antarctica
Totten Glacier





Masters – U. South Florida

East Antarctica
Totten Glacier



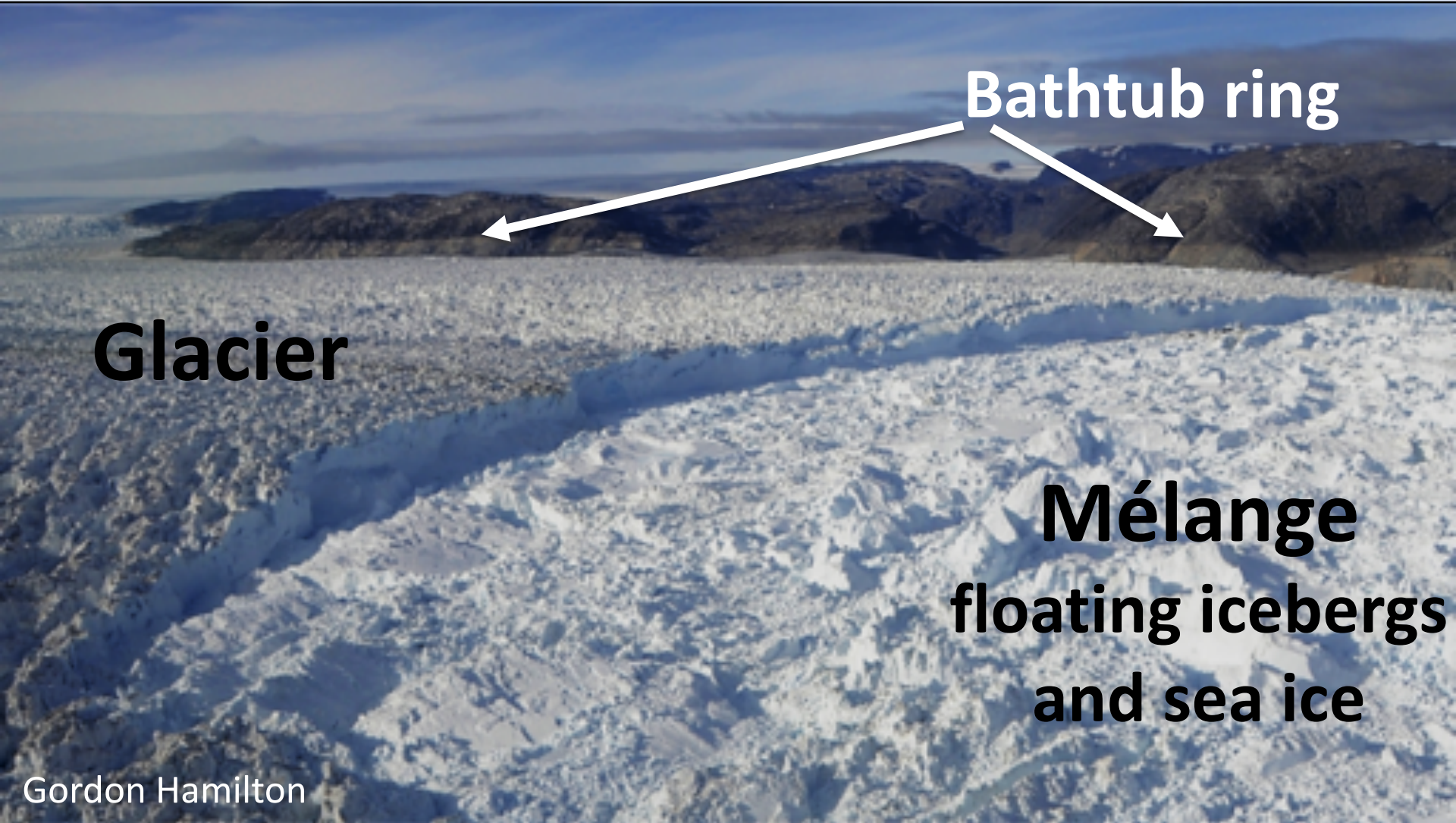
PhD at U. Colorado Boulder

Glaciologist /
oceanographer

St. Mary Glacier, Colorado



Helheim Glacier



Bathtub ring

Glacier

**Mélange
floating icebergs
and sea ice**

Front of
Helheim
Glacier



35-story
tower

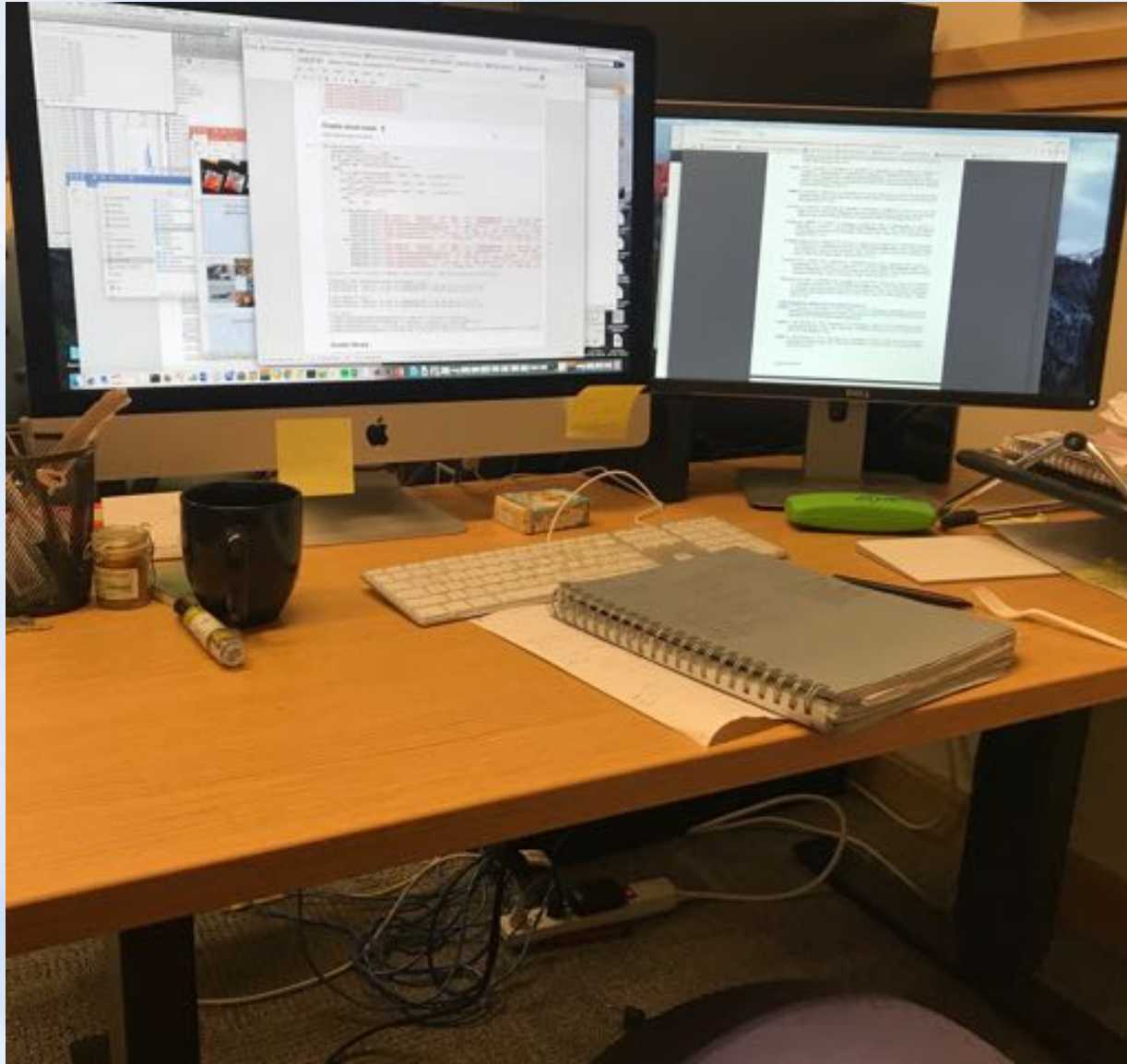


Greenland

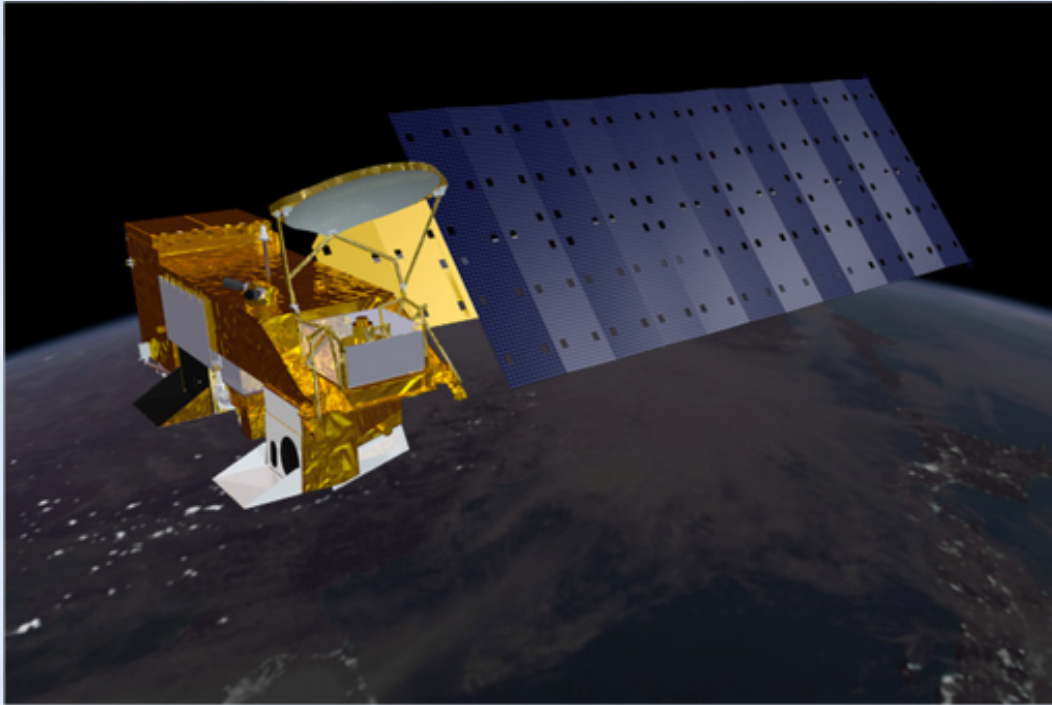


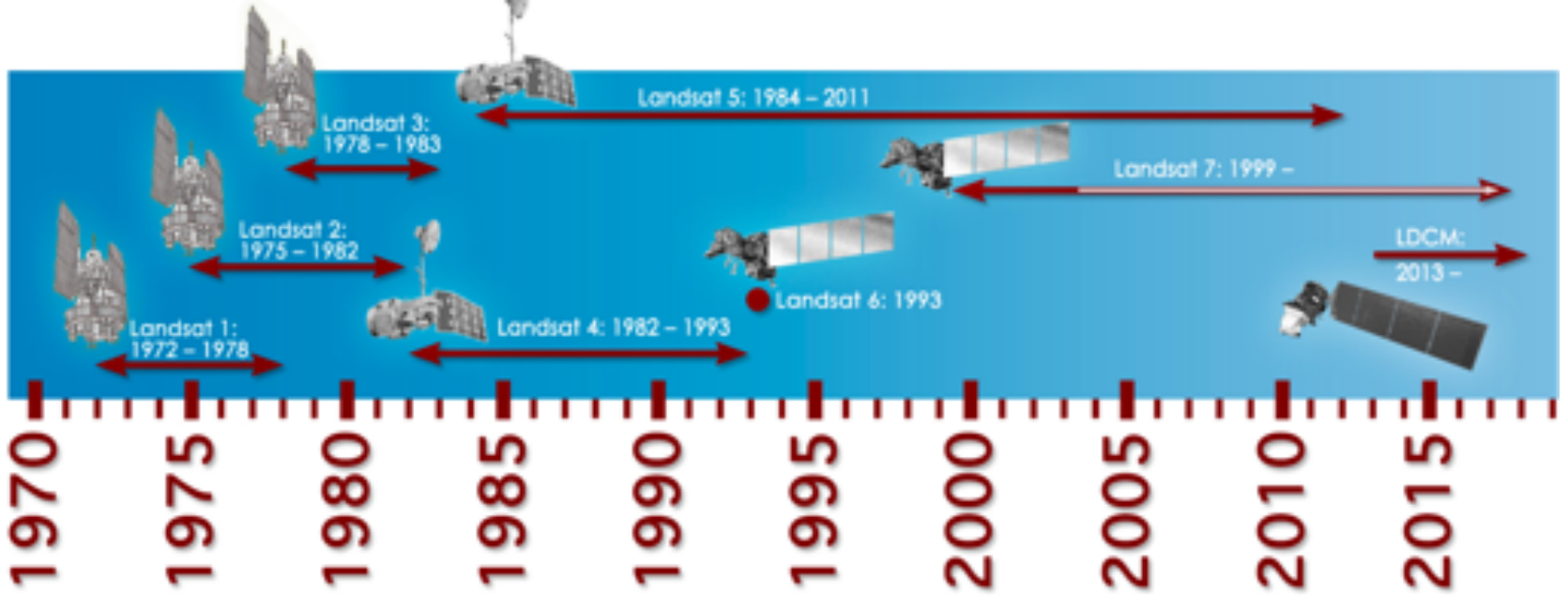


Most days...



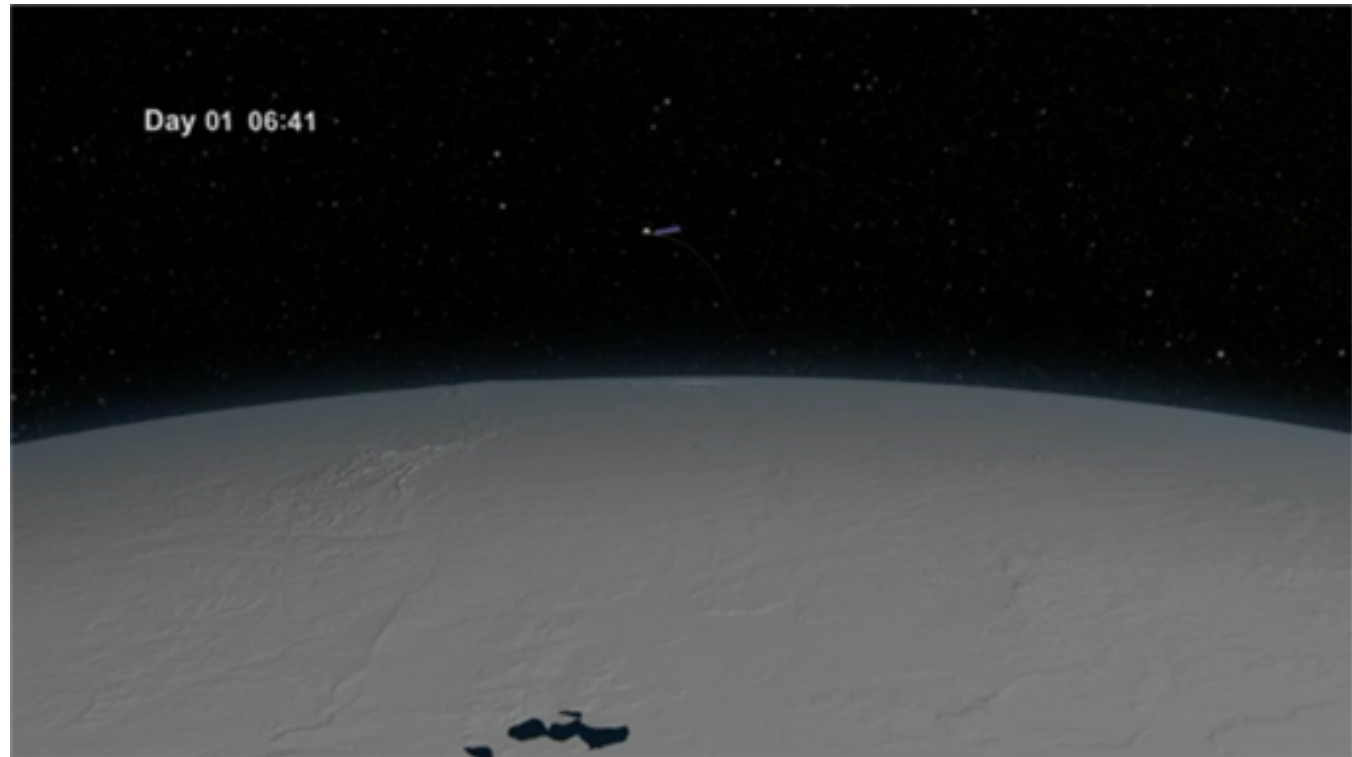
Satellites





**1st earth
science
satellite:**

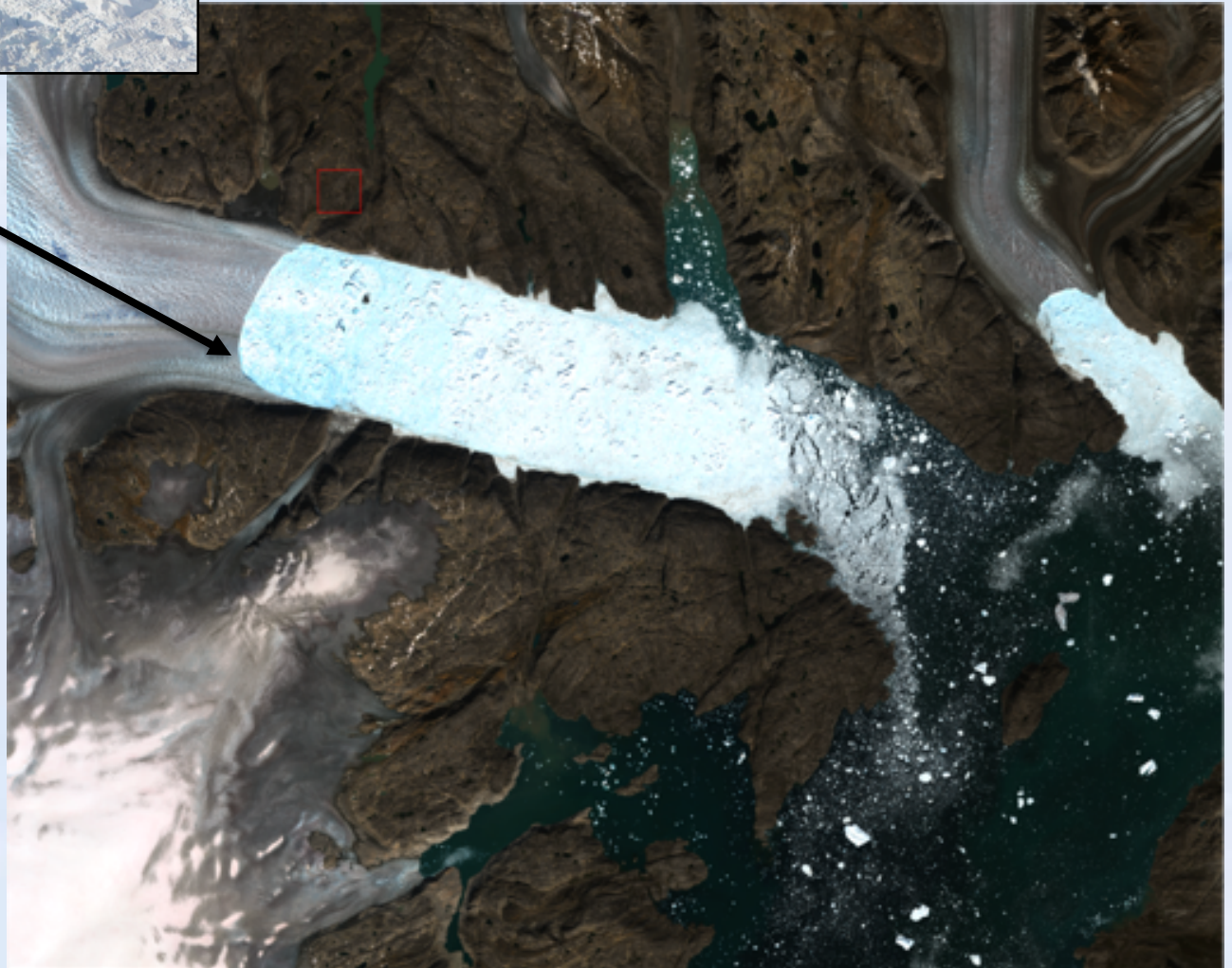
Landsat

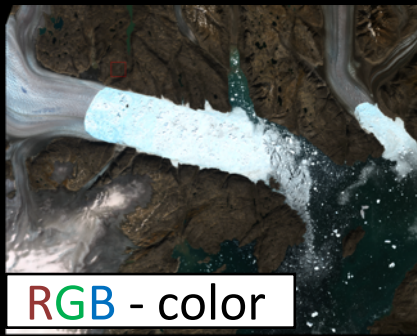


Color image



Red
Green
Blue



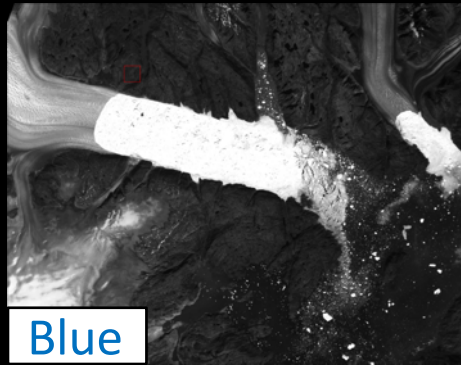


RGB - color

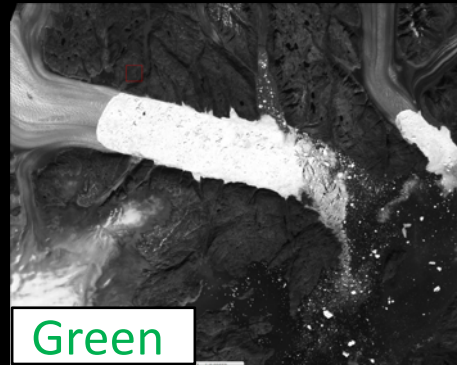
The ~~eyes~~ of a satellite bands



Ultra Blue



Blue



Green



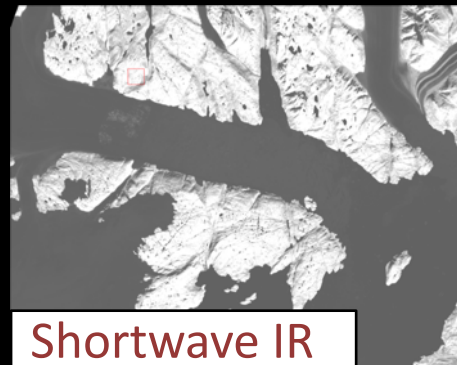
Red



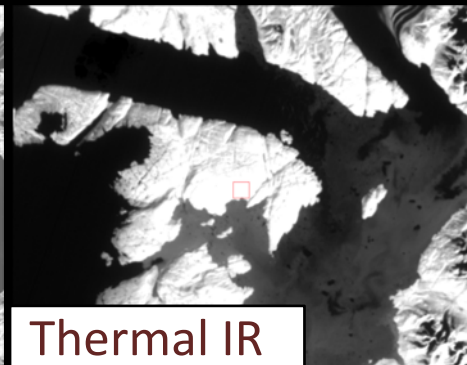
Near IR



Shortwave IR



Shortwave IR



Thermal IR

Seeing across the electromagnetic spectrum

Free and easy to view and download

NASA and USGS data and satellite imagery

[NASA EarthData](#)

[WorldView MODIS imagery](#)

[Landsat EarthExplorer](#)

Some days my life looks
like this...









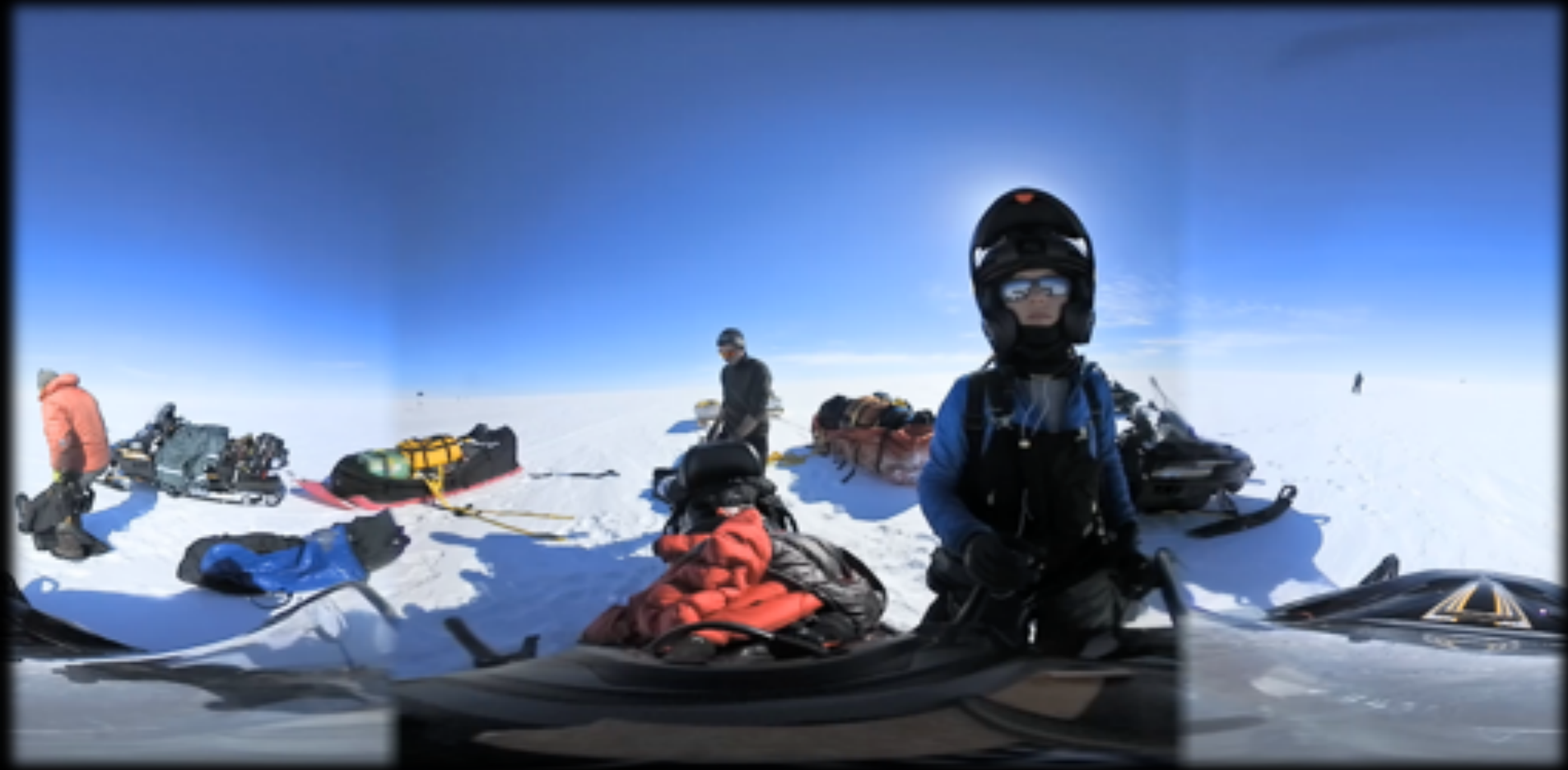
63302



On our own



Time to set up camp



Sciencing...drilling ice cores







Our ice core



Our ice core

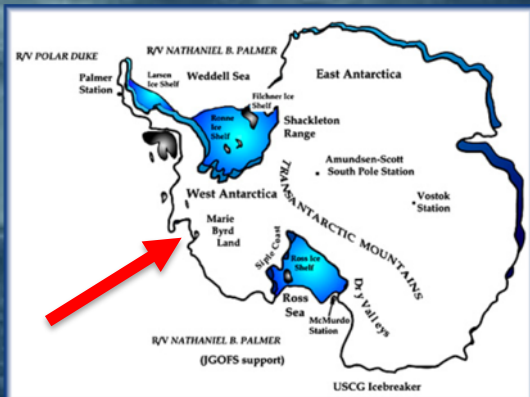
Top - youngest



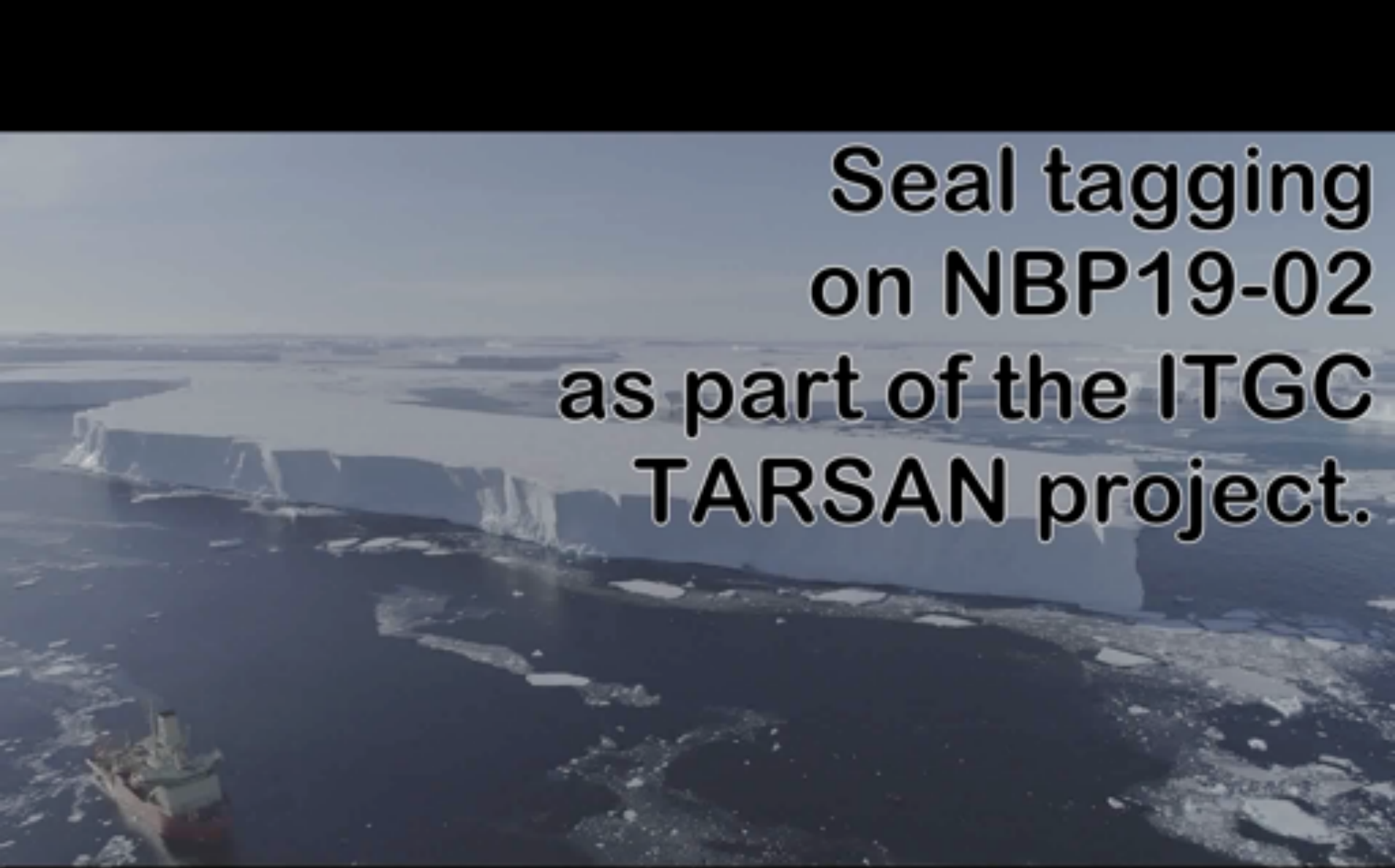
Bottom - oldest

Antarctica







An aerial photograph of a massive glacier system, likely in Antarctica, with a ship visible in the lower-left corner. The glacier is a large, flat expanse of white ice, with some smaller icebergs or chunks floating in the dark water in the foreground. The sky is a pale, overcast blue.

**Seal tagging
on NBP19-02
as part of the ITGC
TARSAN project.**

Seals aiding in research

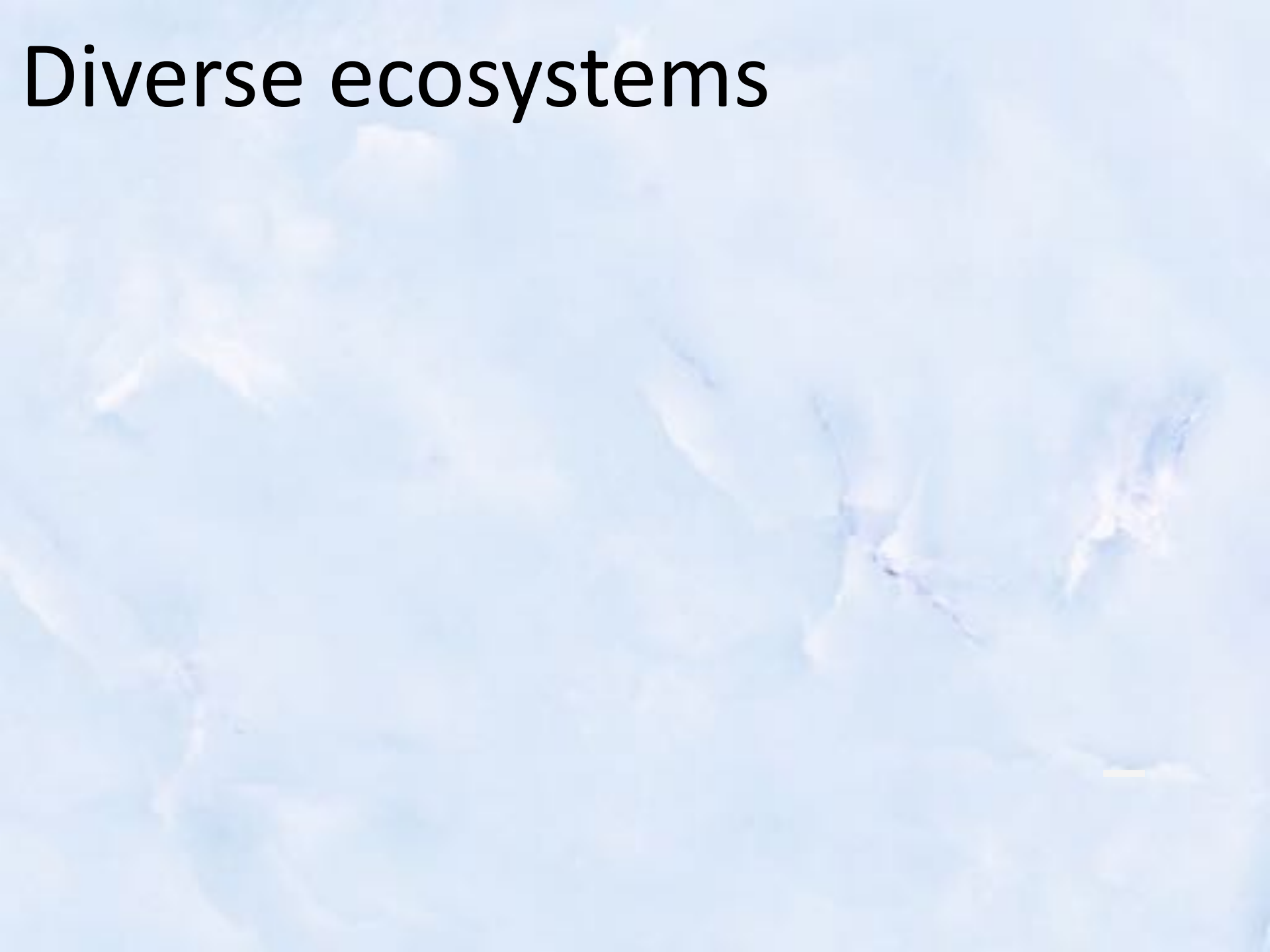


Permit#UK29/2018

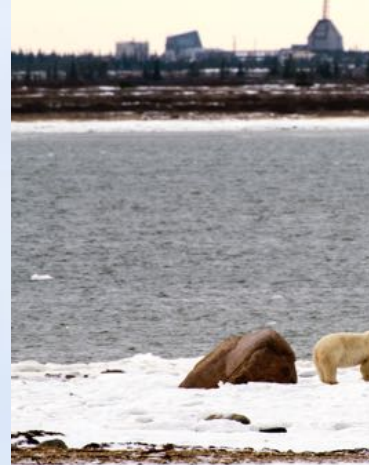


Why important?

Diverse ecosystems



Diverse ecosystems



Barbara McFerrin

© Barbara McFerrin/Polar Bears International



Peter Leopold, UiT



James Kirkham



Diverse ecosystems

Climate Central



Permafrost

Dry Valleys



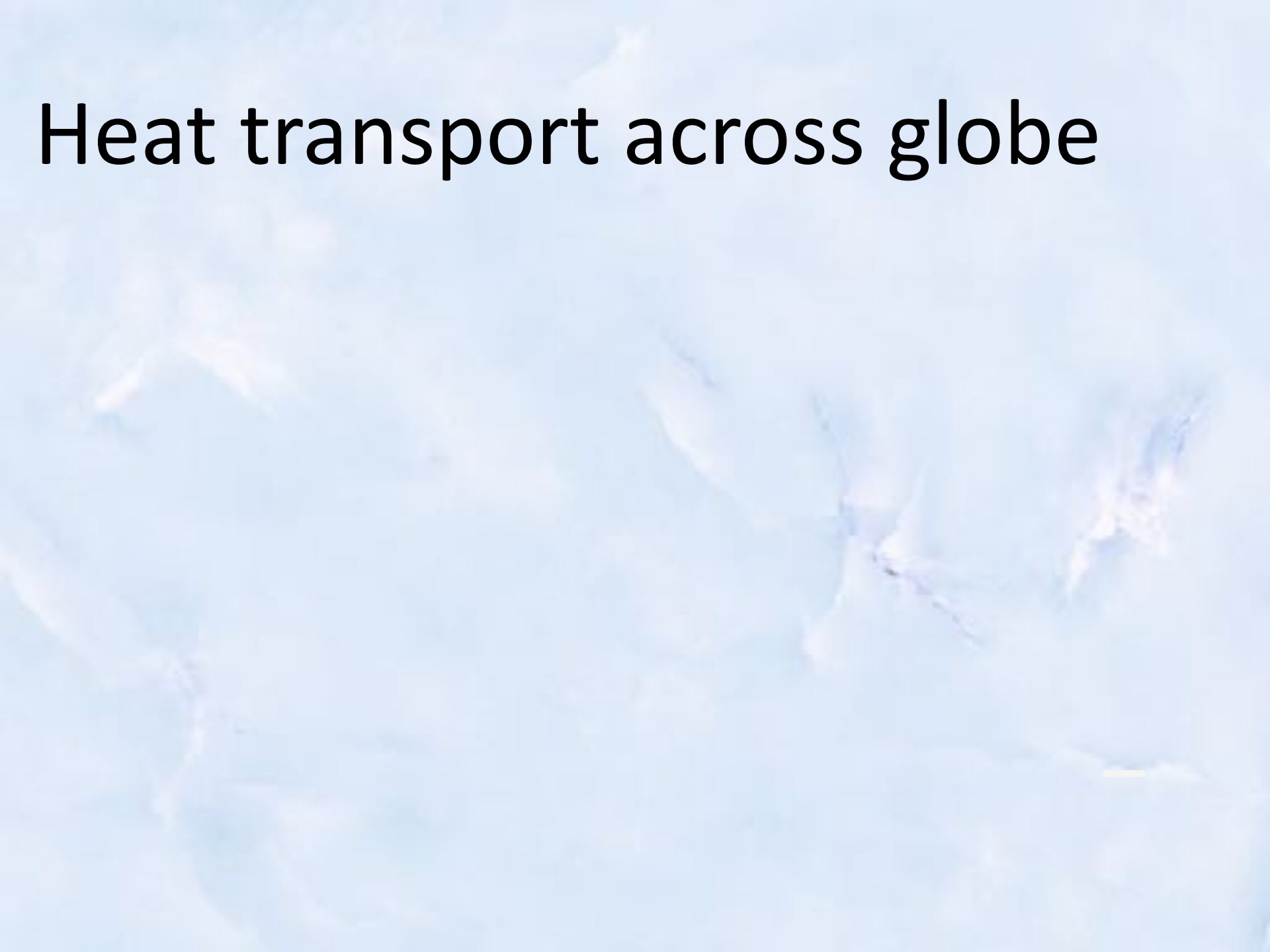
UAA ACCS

Tundra to
boreal forests

Provide water resources



Heat transport across globe

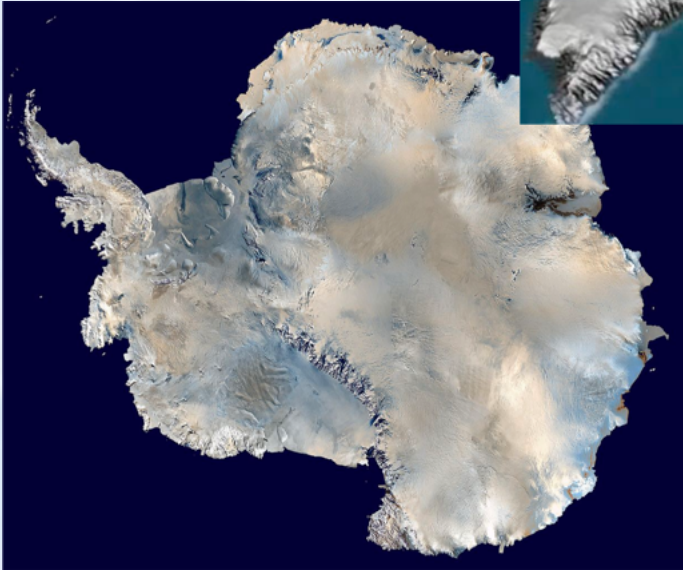


6 m



Sea level

60 m



Miami

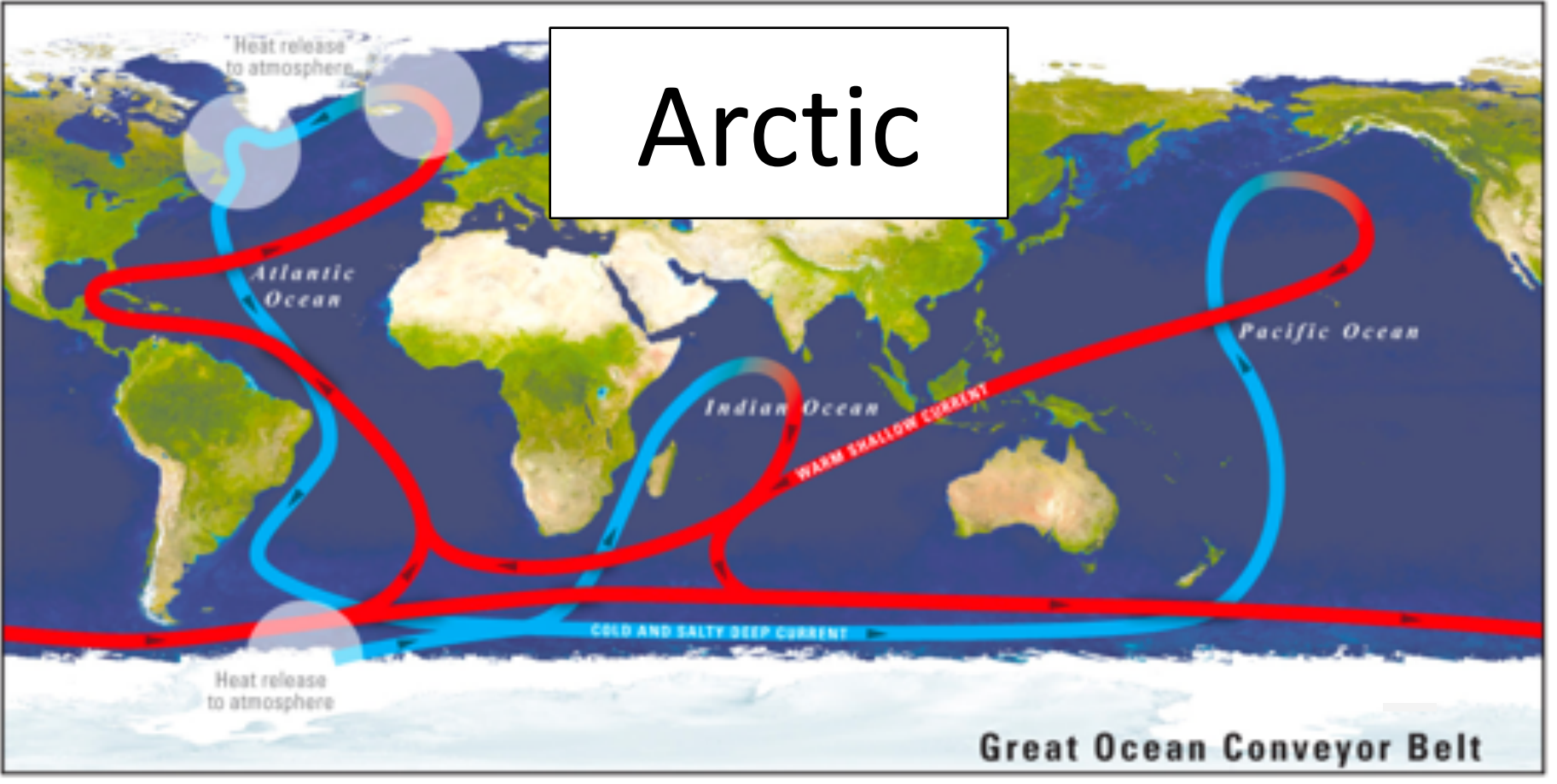


Global ocean circulation

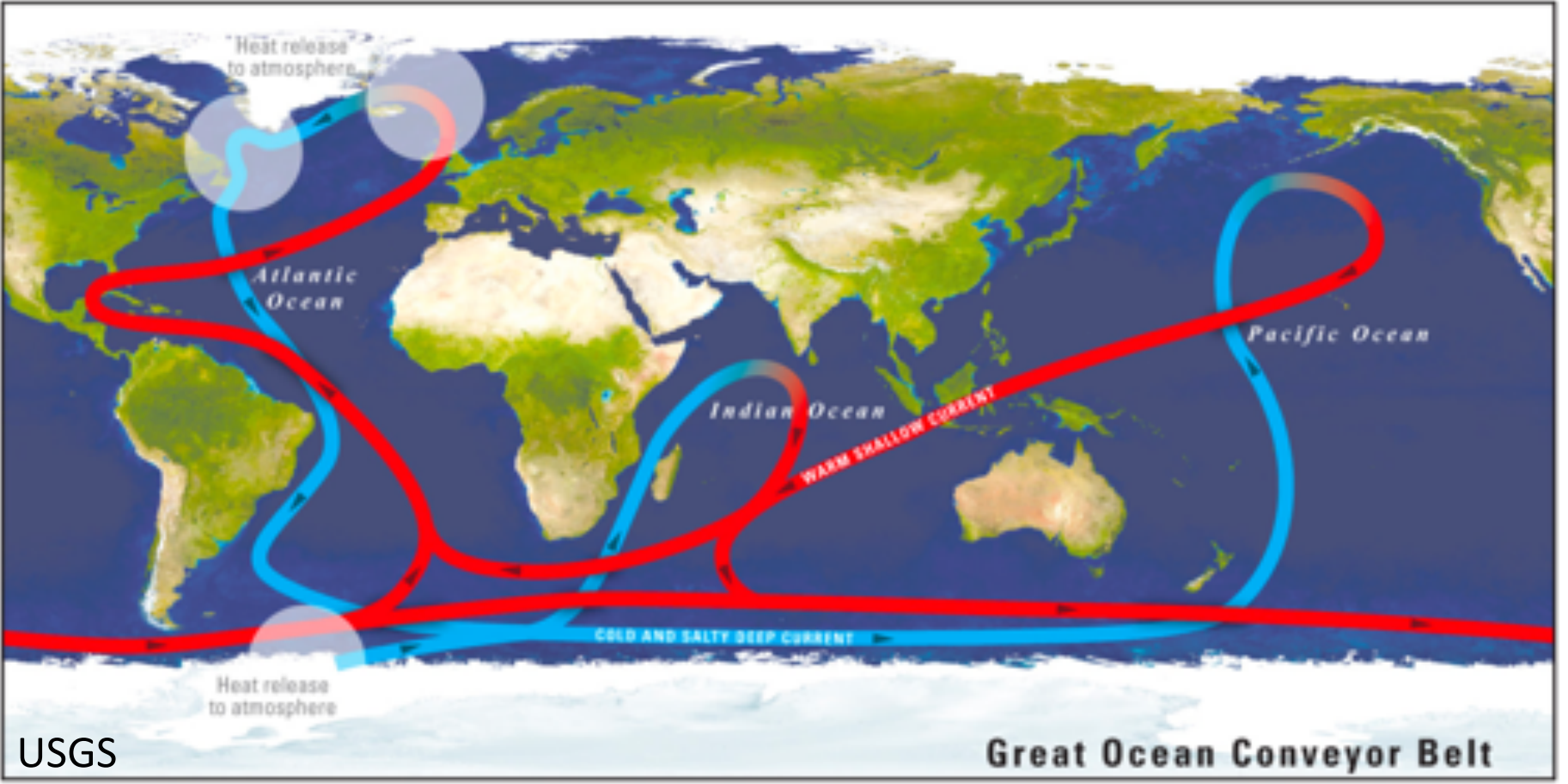
aka thermohaline circulation



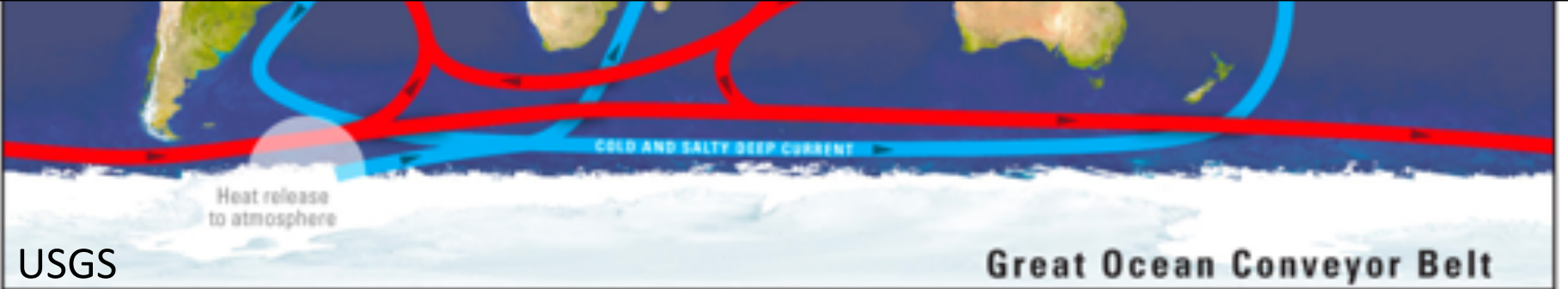
Global ocean circulation



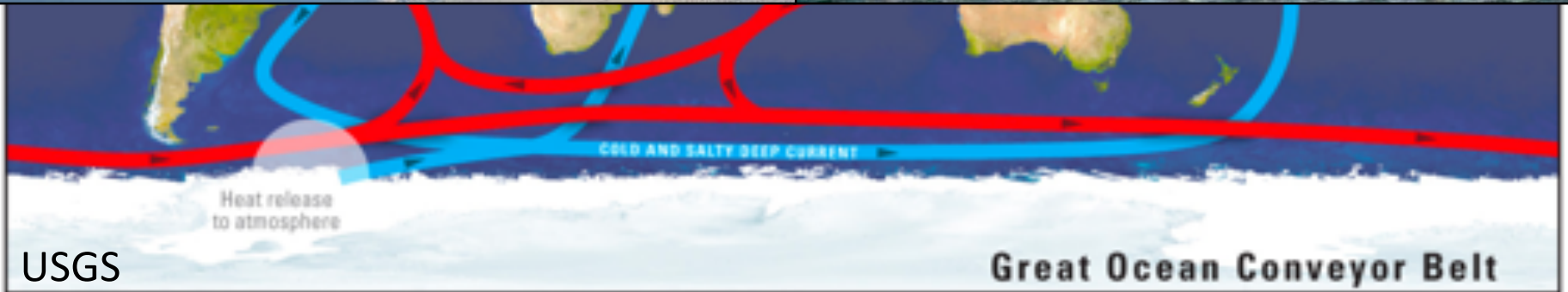
Global ocean circulation



Antarctic – sea ice formation

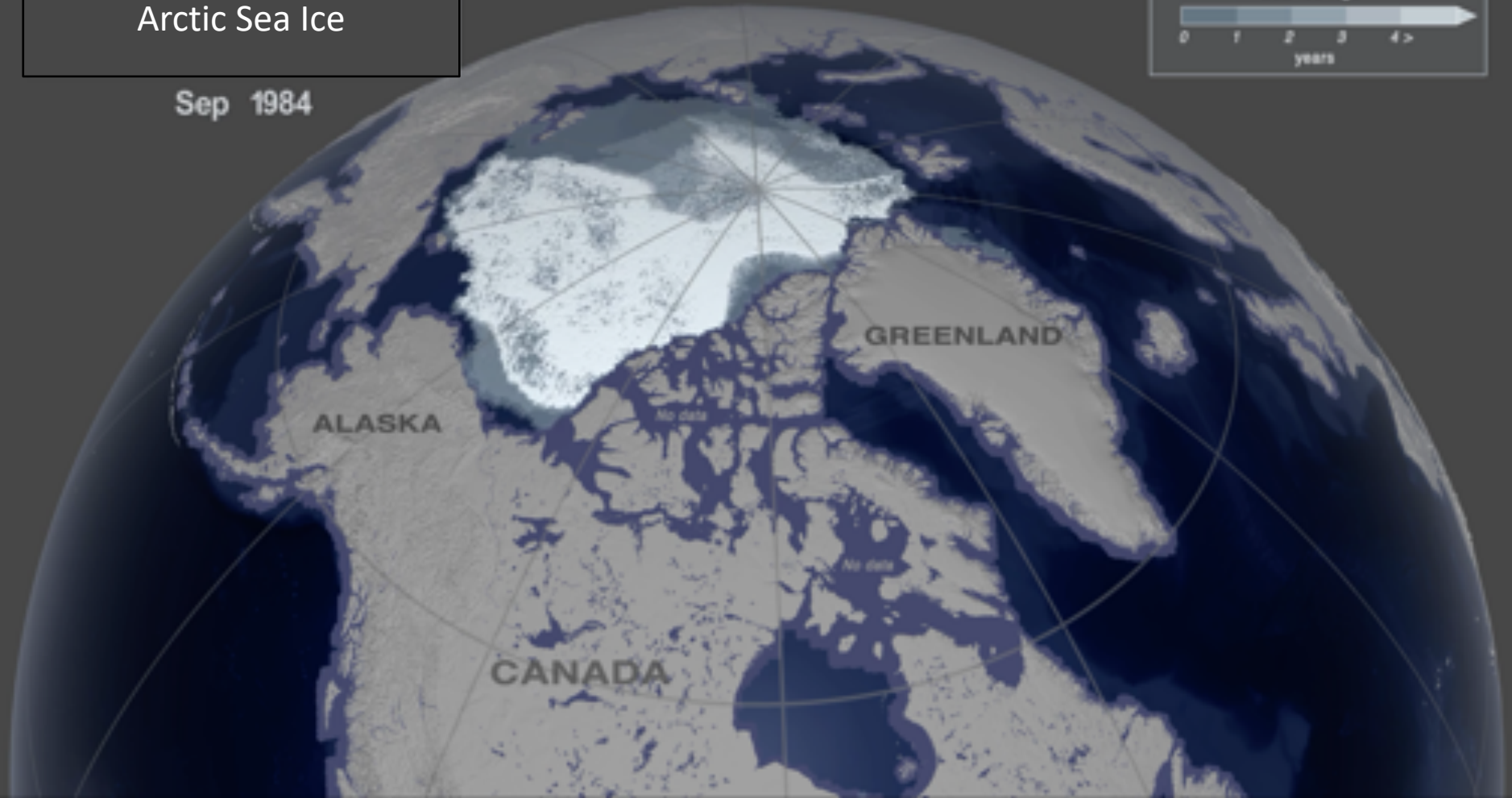


Antarctic – sea ice formation

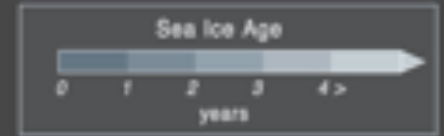


Arctic Sea Ice

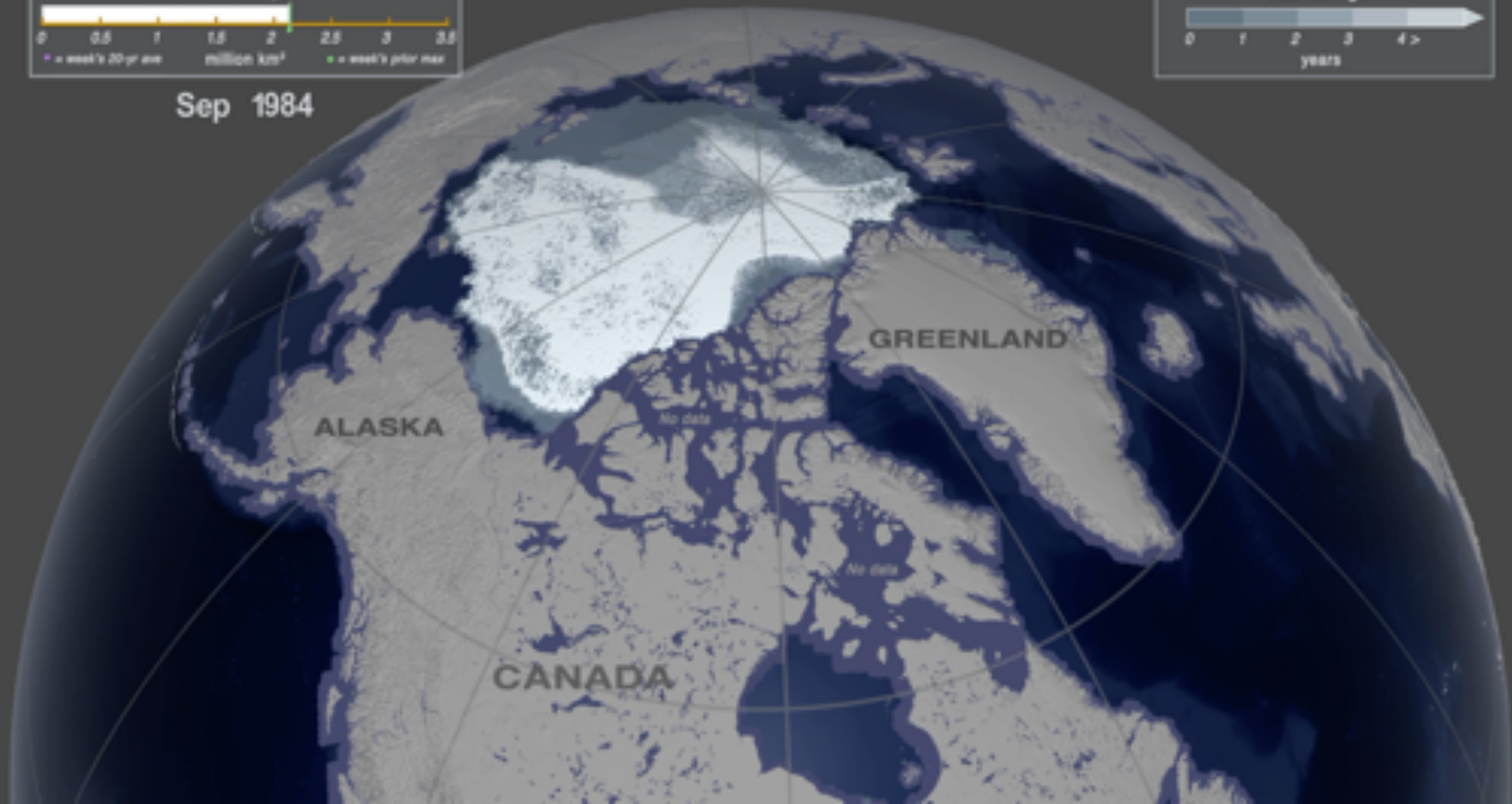
Sep 1984



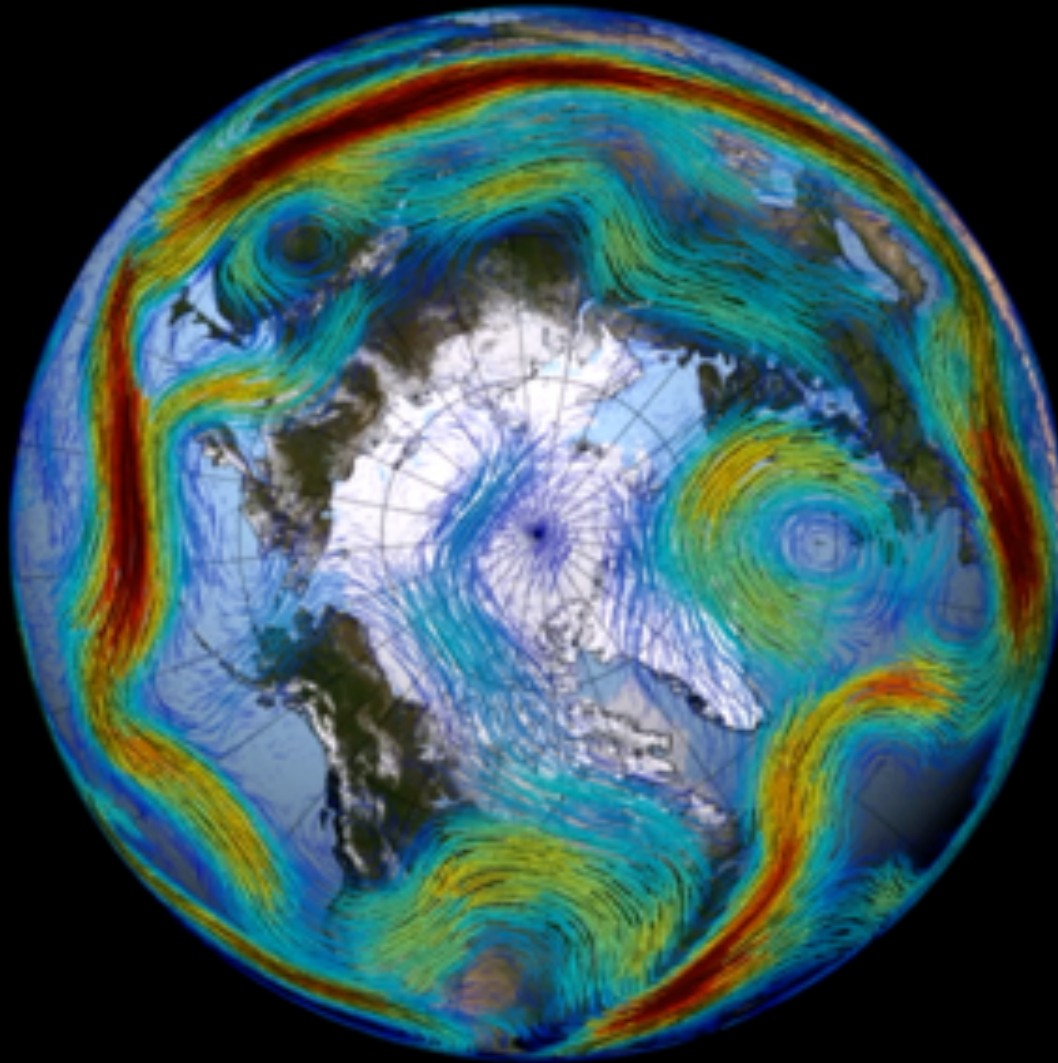
Reflects energy back to space



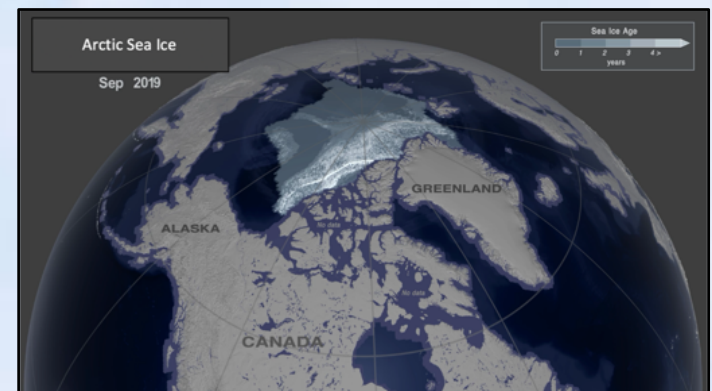
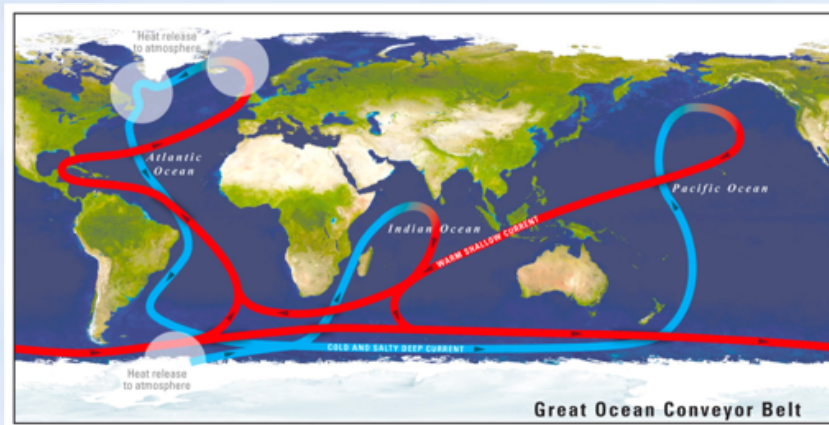
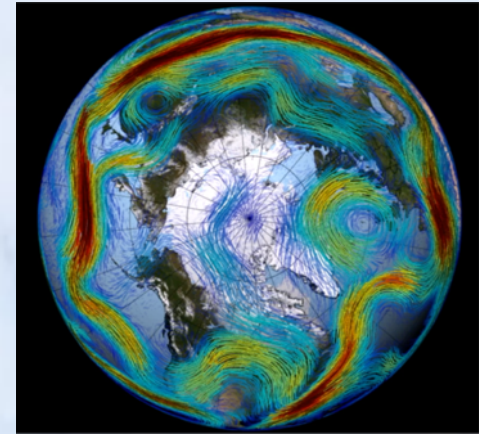
Sep 1984



Affect weather



Arctic and Antarctic





Questions?

