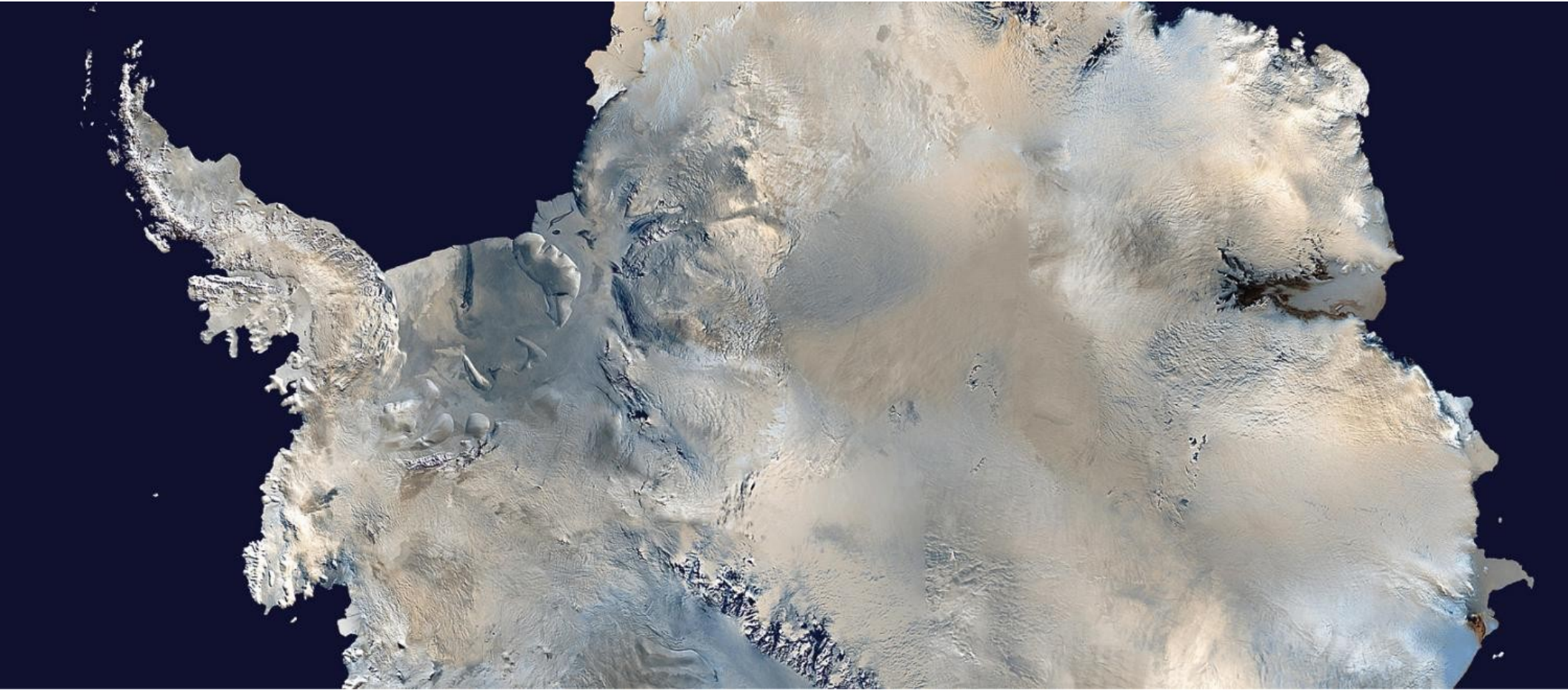


Ice sheets in Yorkshire?

Yvan Romé

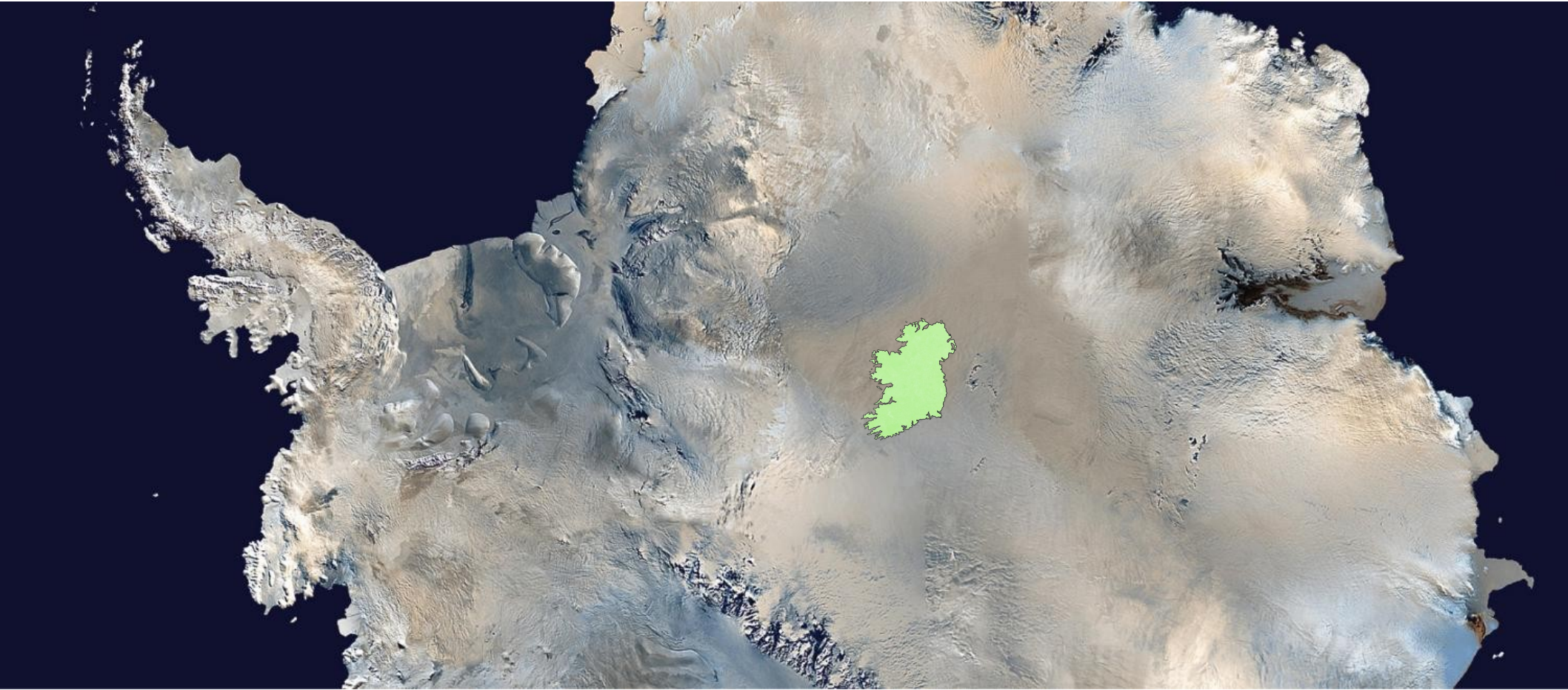


What is an ice sheet?



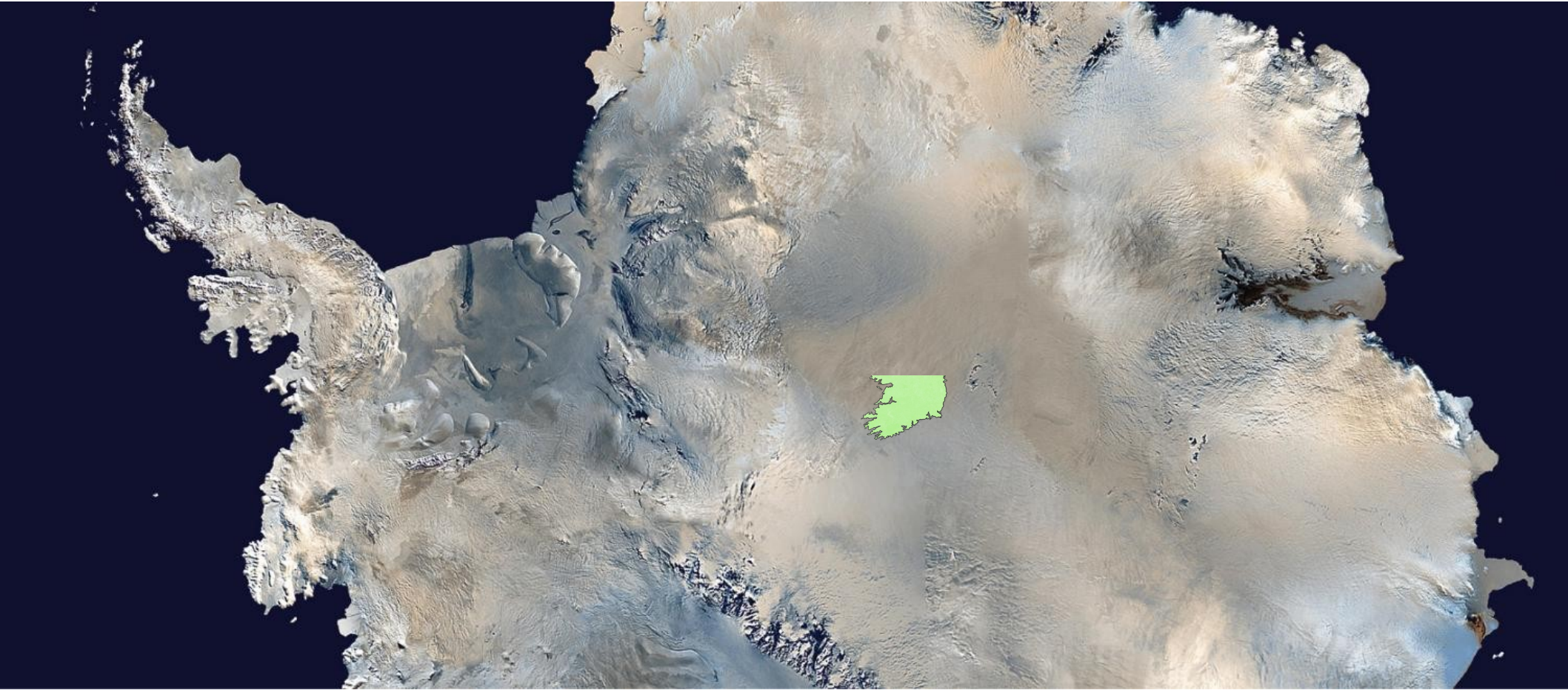
Credit: USGS, via Wikipedia, Public Domain

What is an ice sheet?



Credit: USGS, via Wikipedia, Public Domain

What is an ice sheet?



Credit: USGS, via Wikipedia, Public Domain

The Antarctic ice sheet

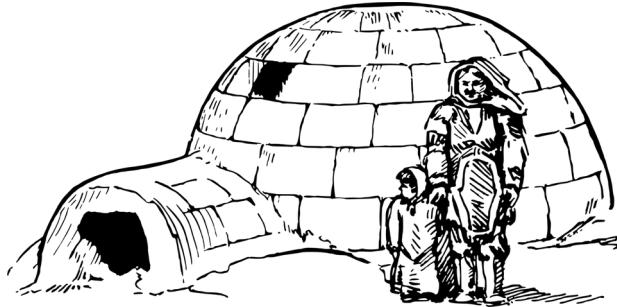


The white continent

- The largest ice sheet : 14 Mkm² (~ 60 times the UK)
- Also the oldest : 40 Myrs
- And the coldest : down to -90°C
- Highest point: 4,900 m (up to 4,750m of ice)



The Greenland ice sheet



The world's largest island

- Surface : 1.7 Mkm^2 (~ 7 times the UK)
- Age : ~ 20 Myrs
- Coldest temperature : -70°C
- Highest point : $3,300 \text{ m}$ (up to $3,000 \text{ m}$ of ice)



Credit: BAS

What is the difference between an ice sheet and a glacier?...



Credit: Karsten Würth

..., Sea ice?...



Credit: Hannah Zanowski/University of Washington

..., And ice shelves?



Credit: Ted Scambos & Rob Bauer, NSIDC

Natural evidence of past ice sheets



Credit: Tanya Tulupenko

A fjord in Norway



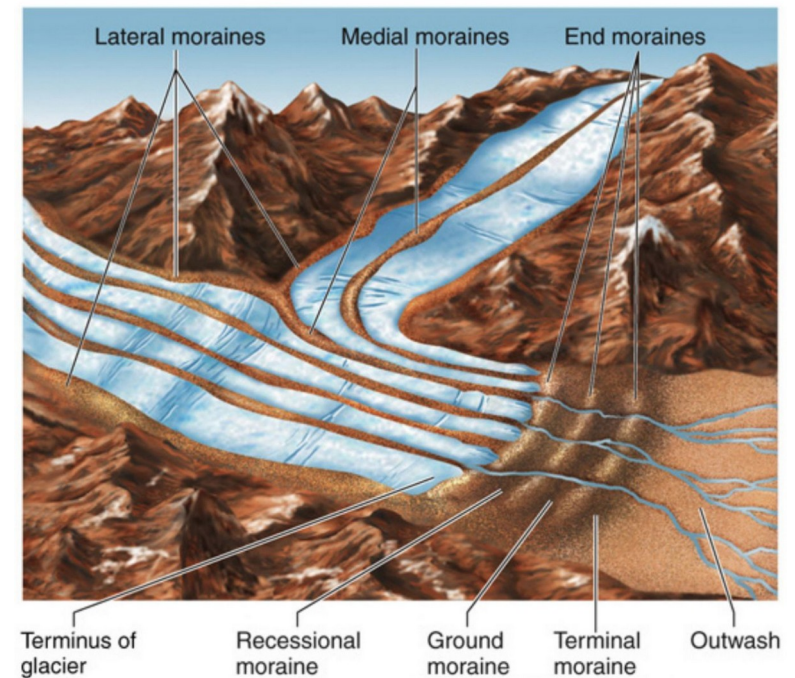
Credit: Dr Lee Brown

Boulders in the Alps

Satellite observations



*Imagery from GoogleEarth,
diagram created by J. Bendle*



Credit: University of Notre Dame

Ice cores



Credit: BAS

Credit: N. Bertier



Sea level rise



Credit: Short-beaked Echnida

*Credit: Damian
O'Grady, Michael
Bird*



CC

Has there always been ice sheets on Earth?



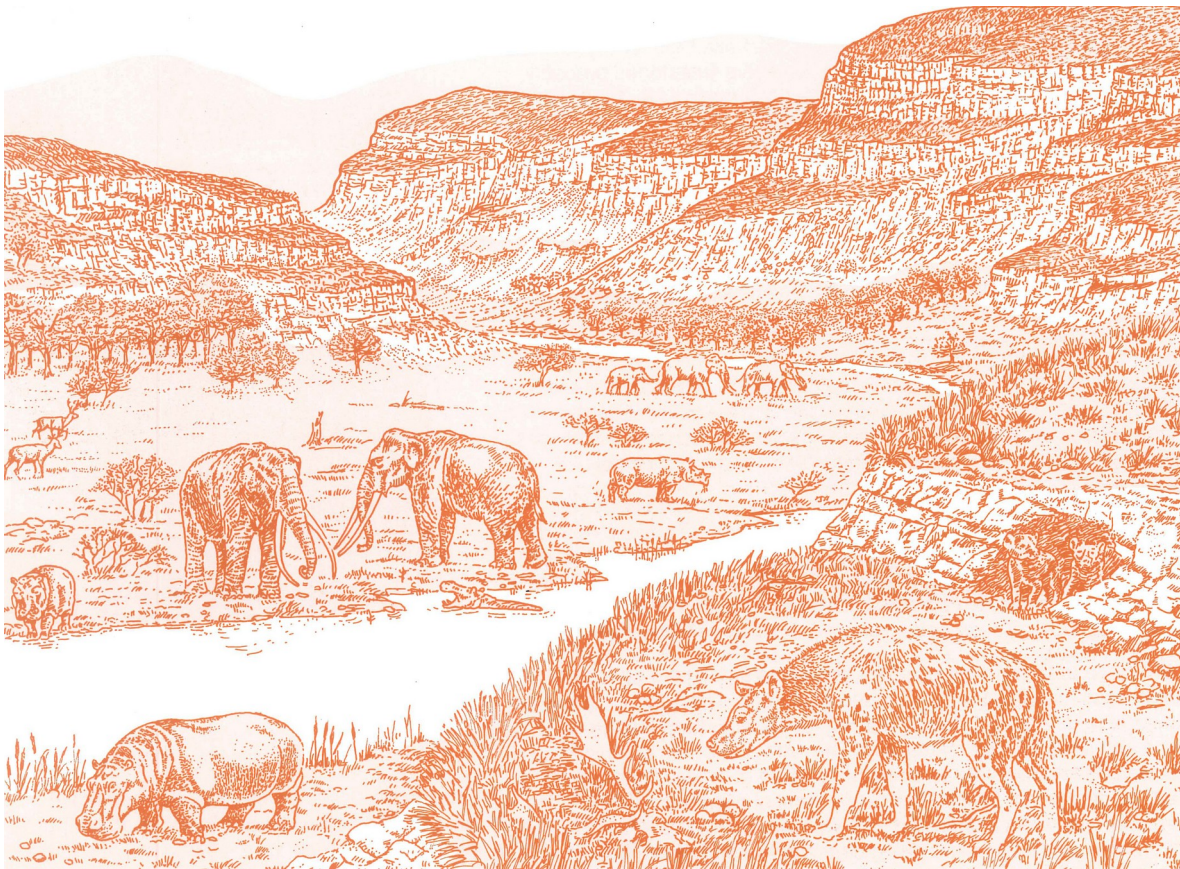
NO!

These periods are called **interglacials**. Example :
Pangea (300-150 Myrs)

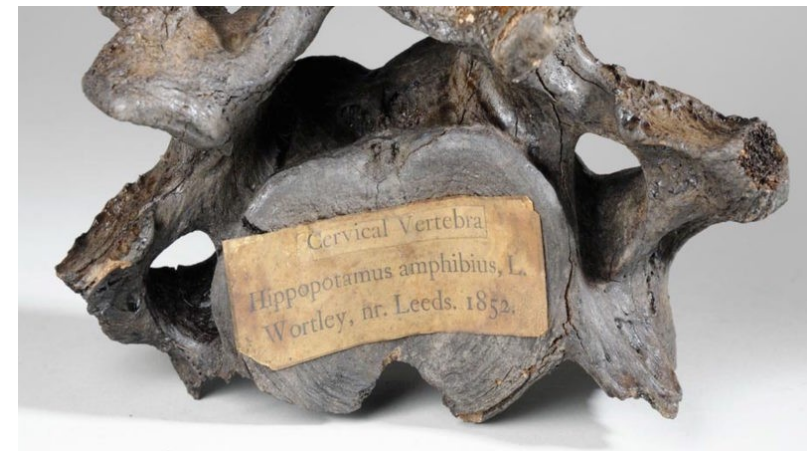
Credit: Massimo Pietrobon

Has there always been ice sheets on Earth?

Yorkshire had the same climate than **Central Africa**



Credit: YDNPA



Credit: Chris Manias/History
Today

Have the ice sheets been larger?

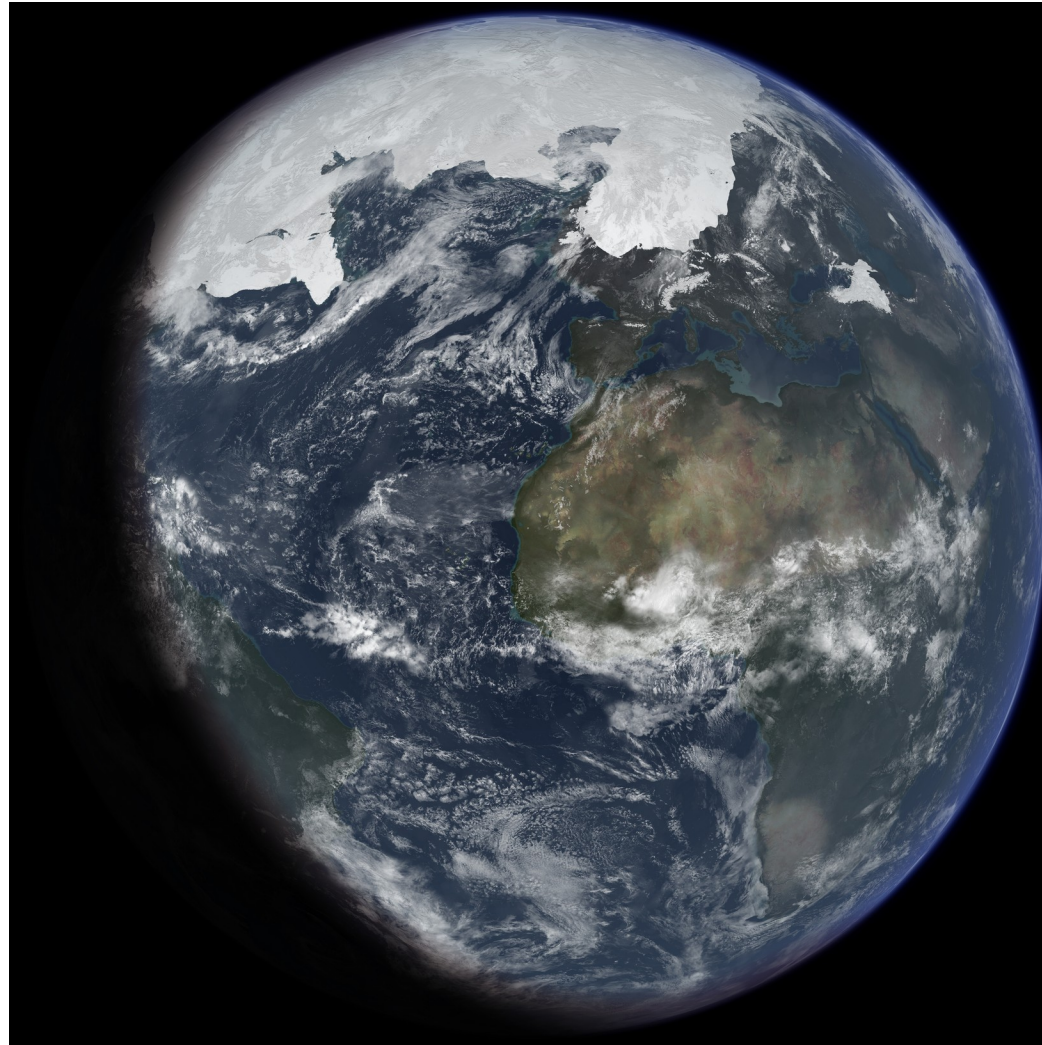
Yes!

During glacial periods also called **Glaciations** or **Ice Ages**.



Credit: Alessandro Mangione and Benedetto Sala

The Last Glacial Maximum

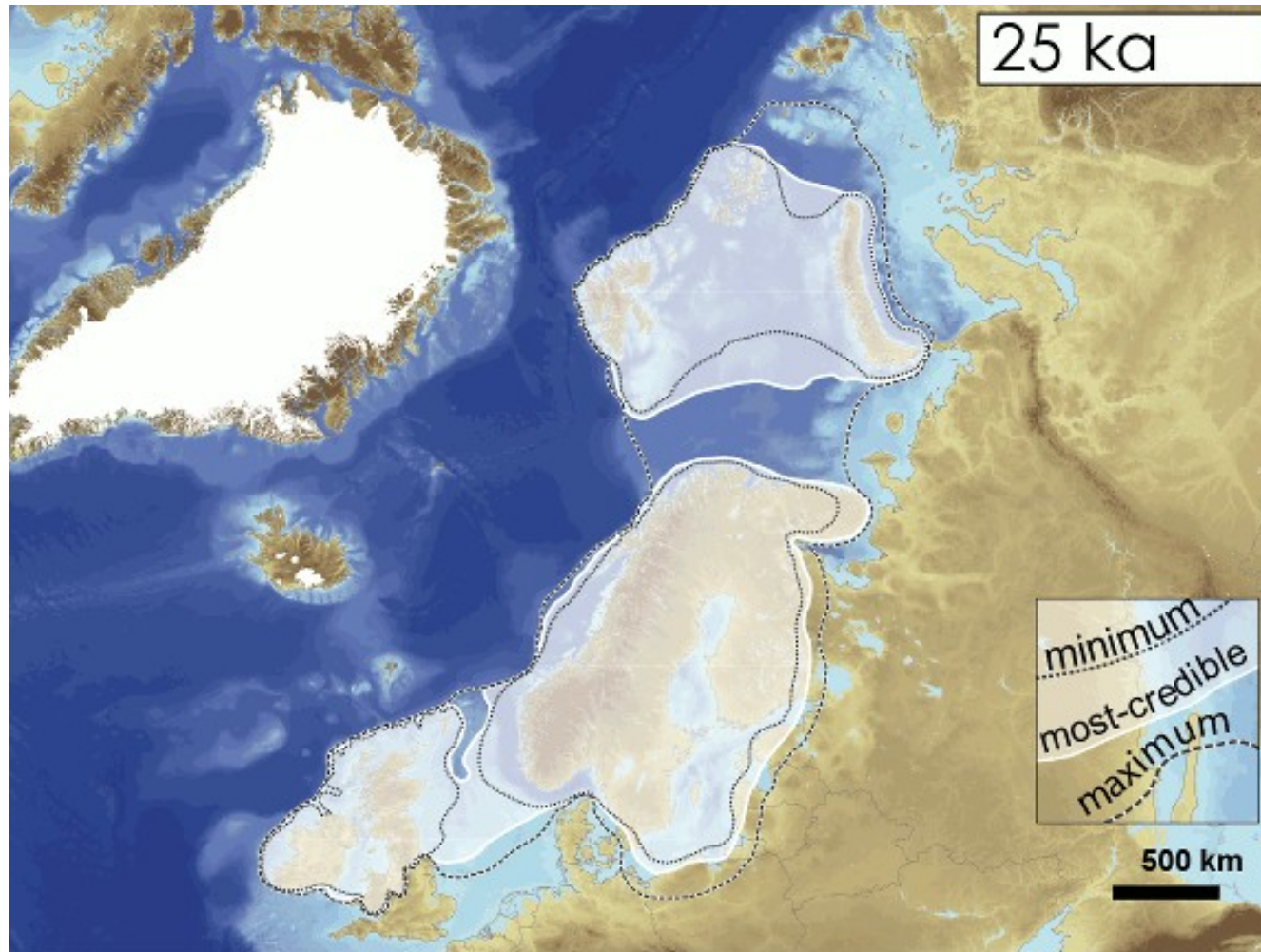


Laurentide ice sheet



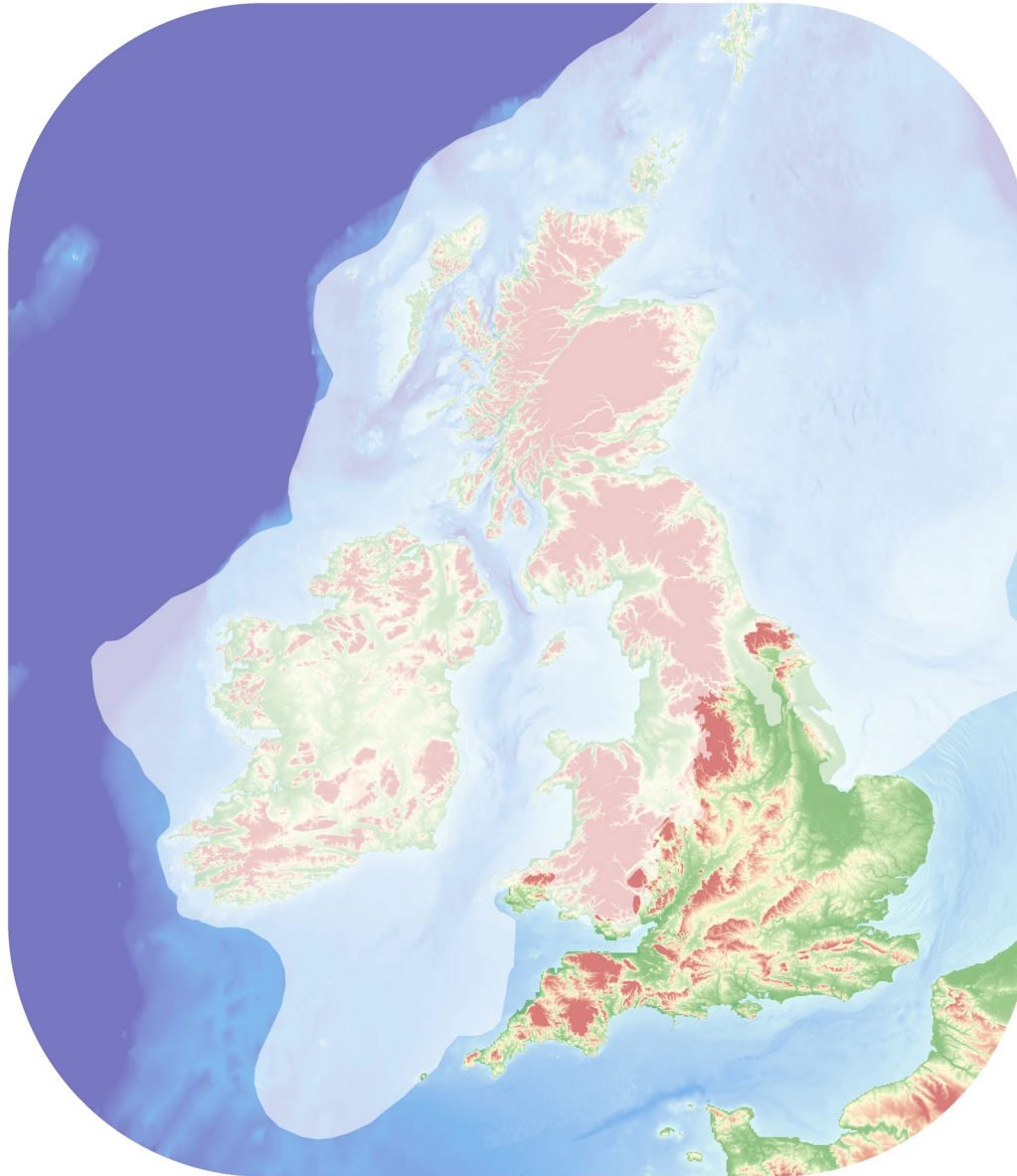
*Credit: Dr. Ron Blakey,
Paleogeography and Geologic History of North America*

Eurasian ice sheet



Credit: Hughes et al., 2016

British Irish ice sheet



Credit: ???

Doggerland



Europe's Lost Frontiers, University of Bradford

Ice sheets in Yorkshire?



Credit: Daniel Pecena

Credit: David Benbennick



Ice sheets in Yorkshire?



Credit: Stephen Oldfield

The ice sheets are still moving!



Credit: ESA, contains modified Copernicus Sentinel data (2021), CC BY-SA 3.0 IGO