

# WCC 6: Ice sheets and glaciers

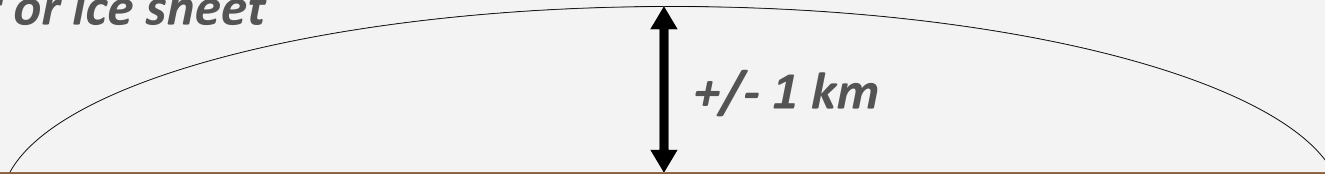
*CTB3300WCx: Introduction to Water and Climate*

Miren Vizcaino

# Glacier formation



*Glacier or ice sheet*



***+/- 1 km***

# Density profile



*Fresh snow: 200 kg/m<sup>3</sup>*

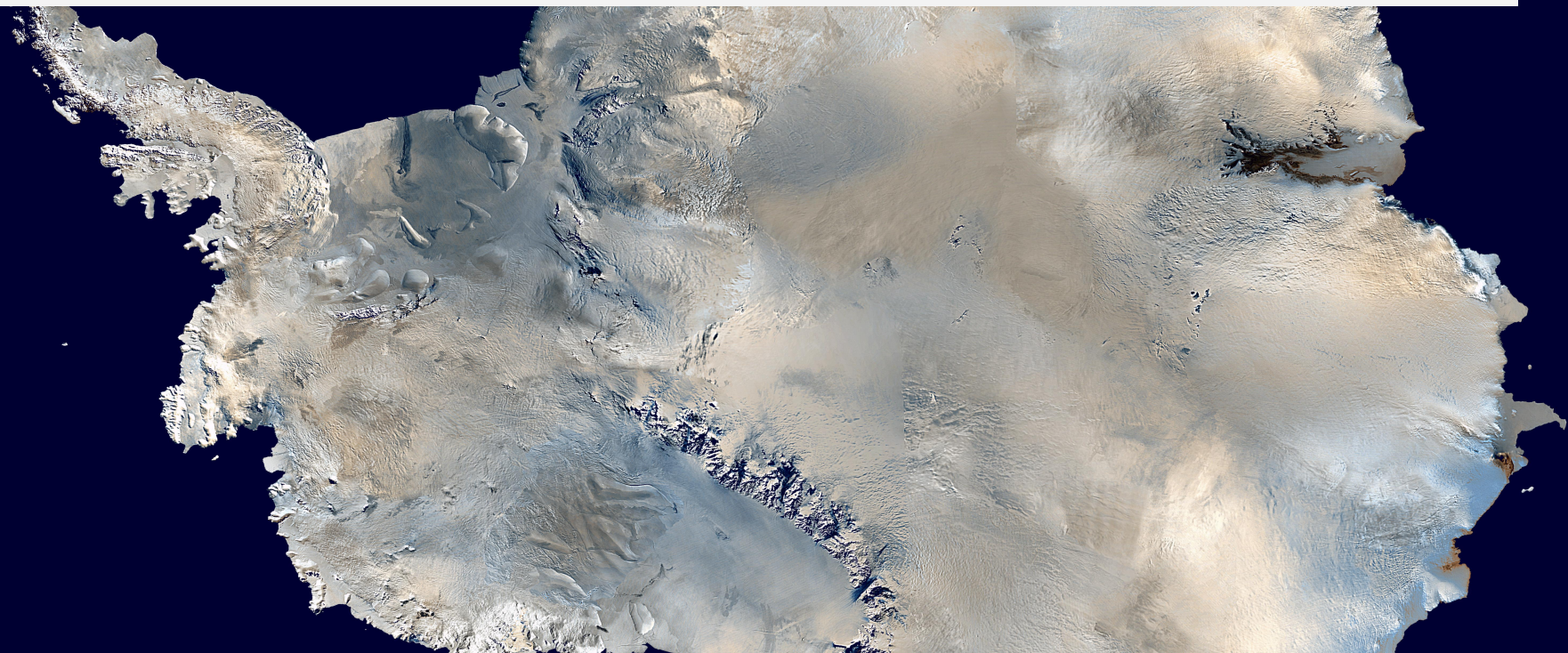
*Firn: 500 kg/m<sup>3</sup>*

*Glacial ice: >900 kg/m<sup>3</sup>*

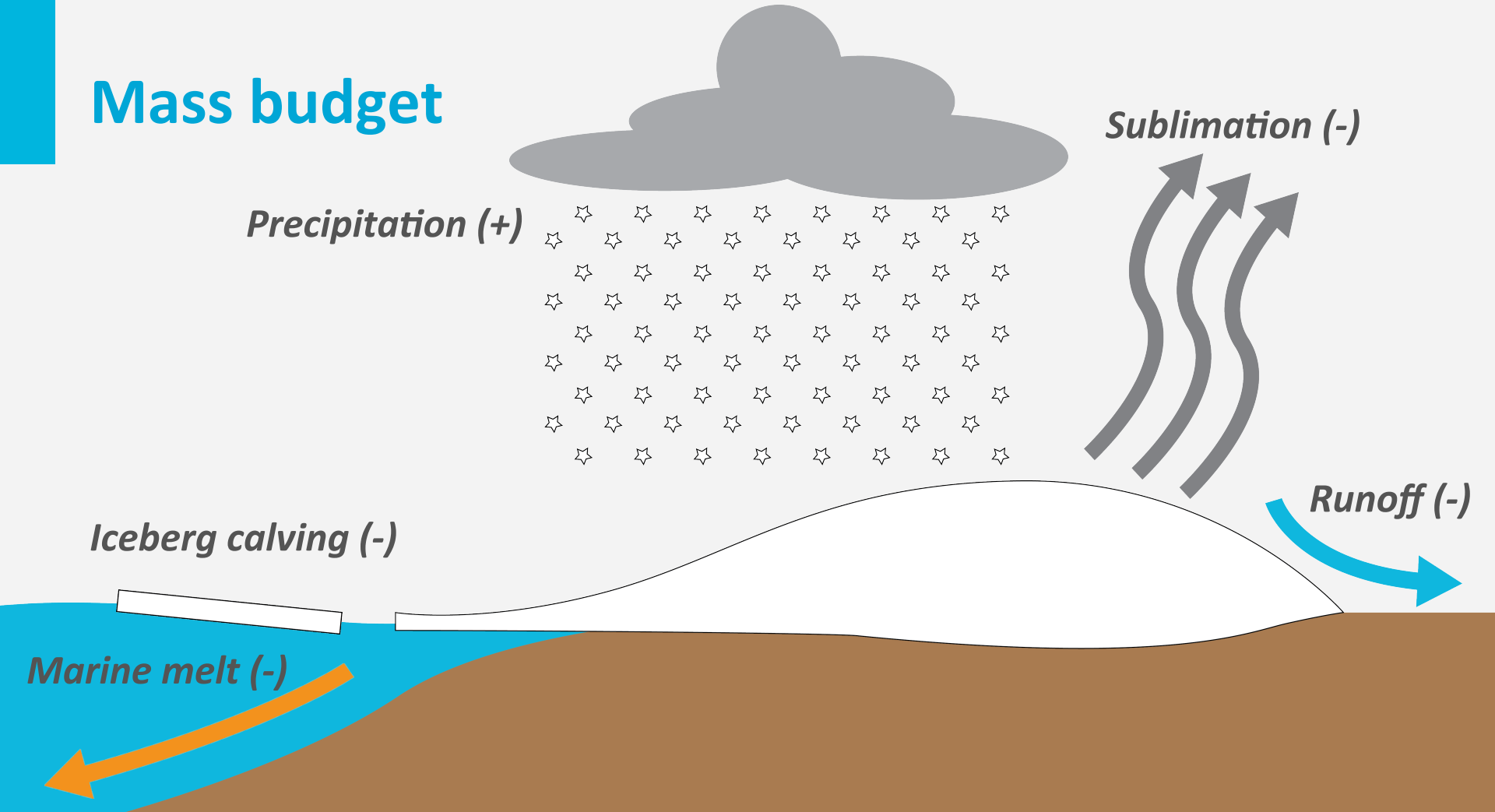
*0 – 100 m*



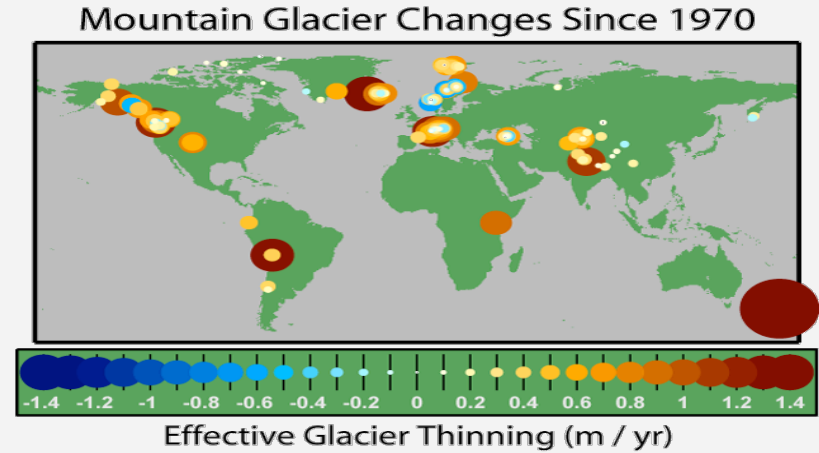
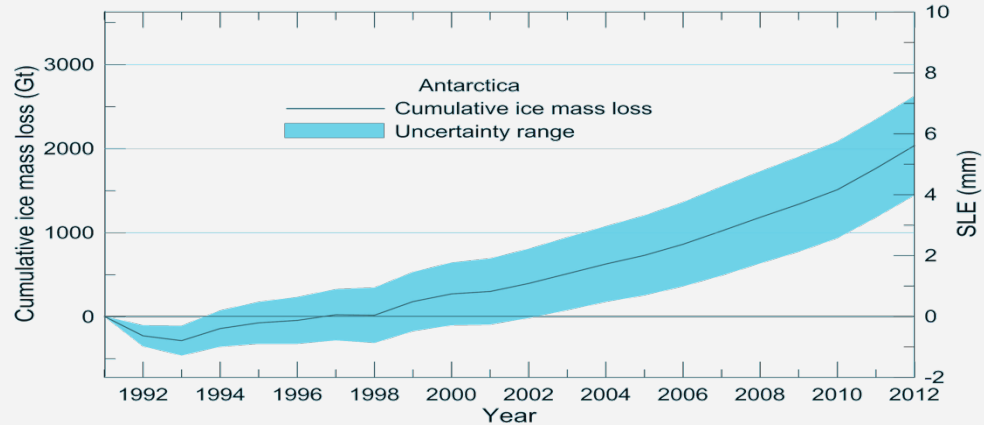
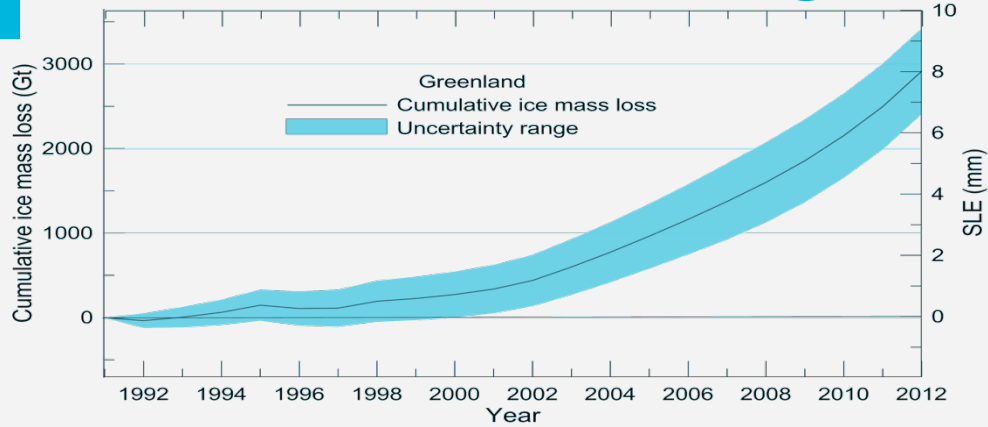
# Glaciers and alpine ice sheets



# Mass budget

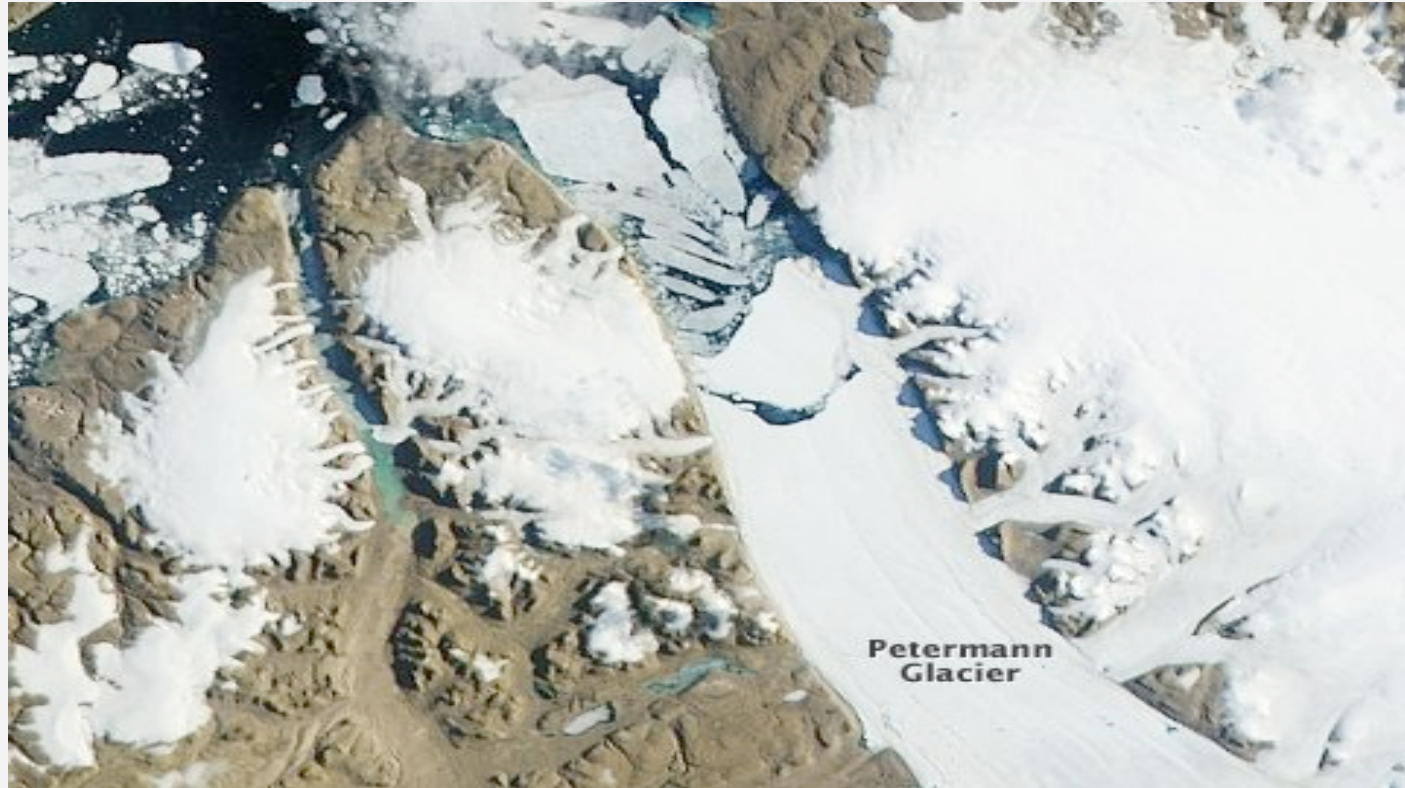


# Land ice is decreasing worldwide

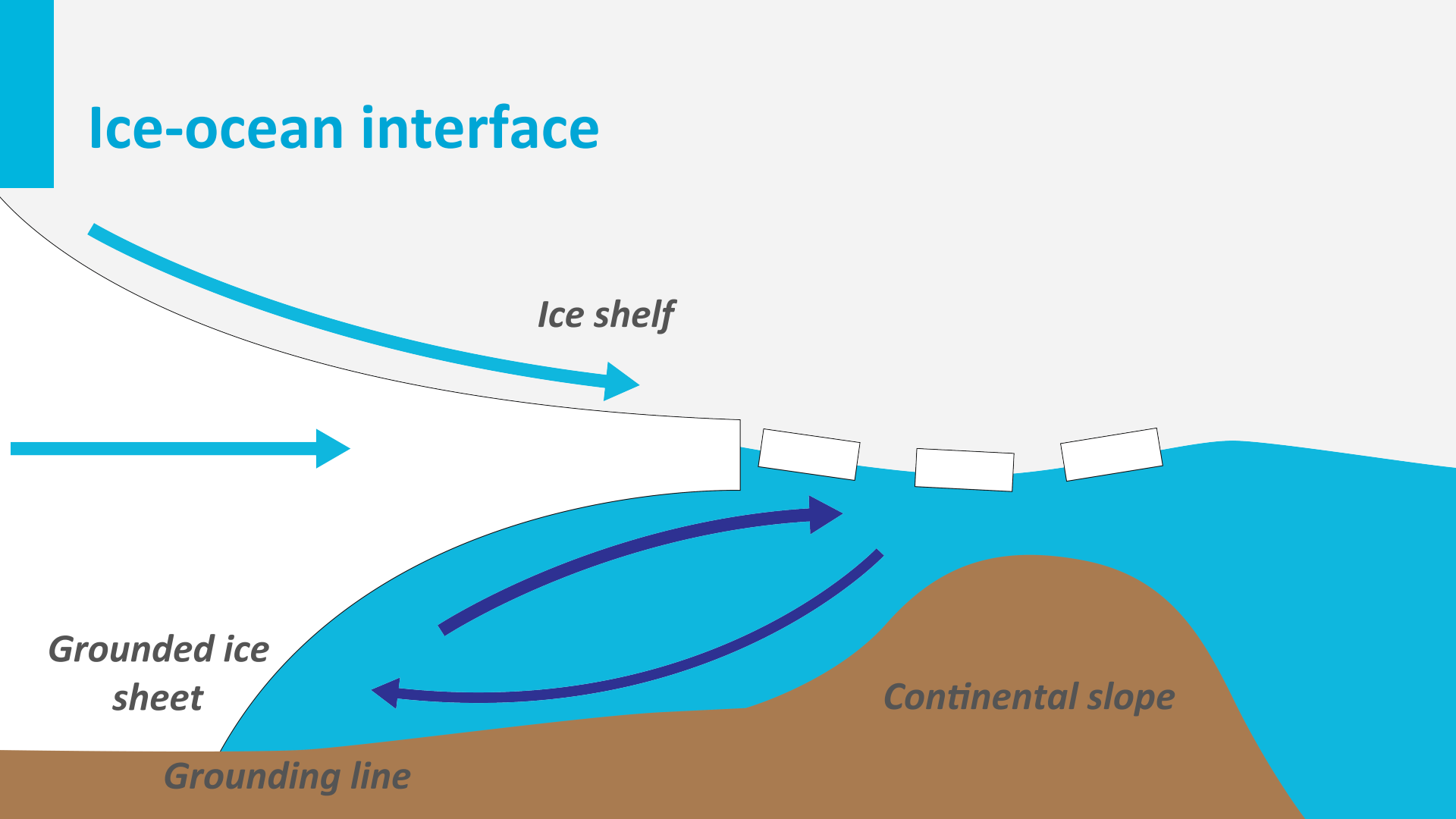


# Mass loss

*Glacier retreat breaks  
off 10<sup>th</sup> anniversary (2010)*



# Ice-ocean interface



*Ice shelf*

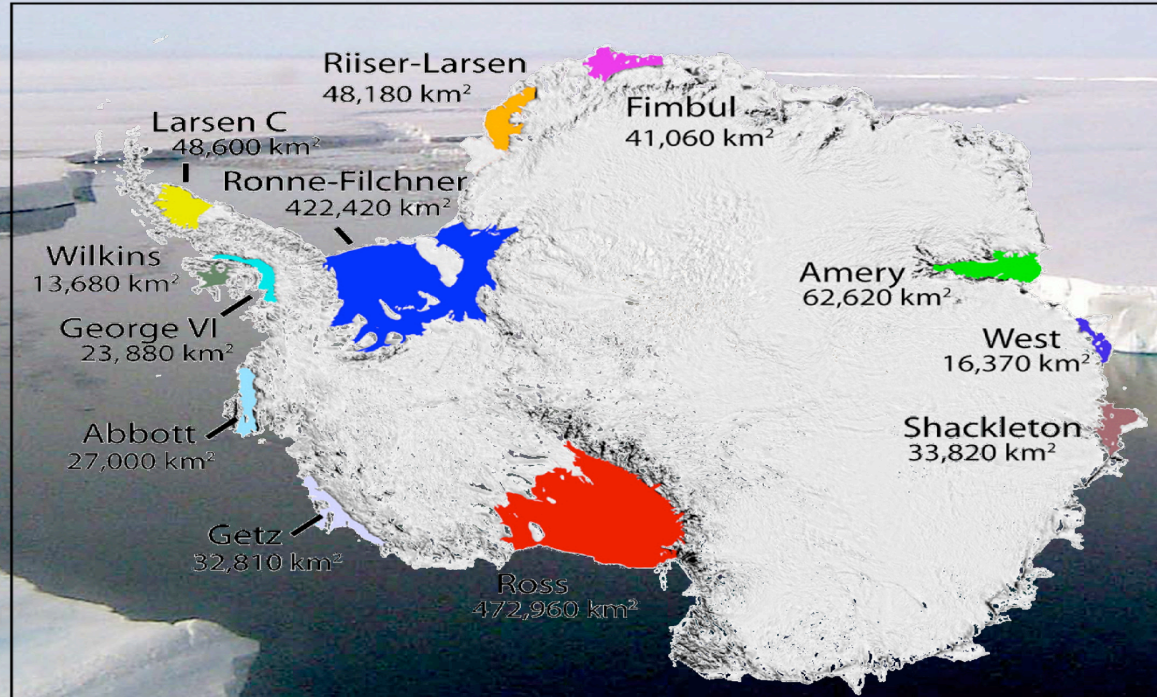
*Grounded ice sheet*

*Grounding line*

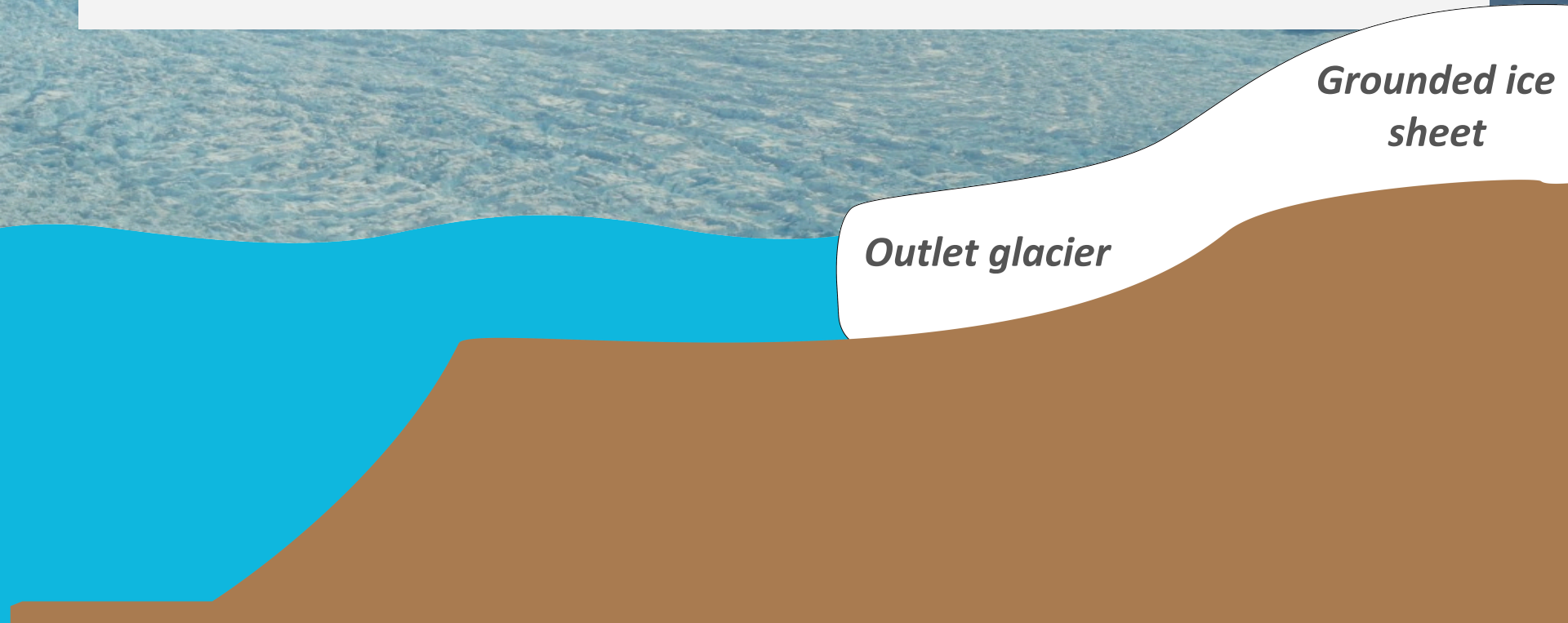
*Continental slope*



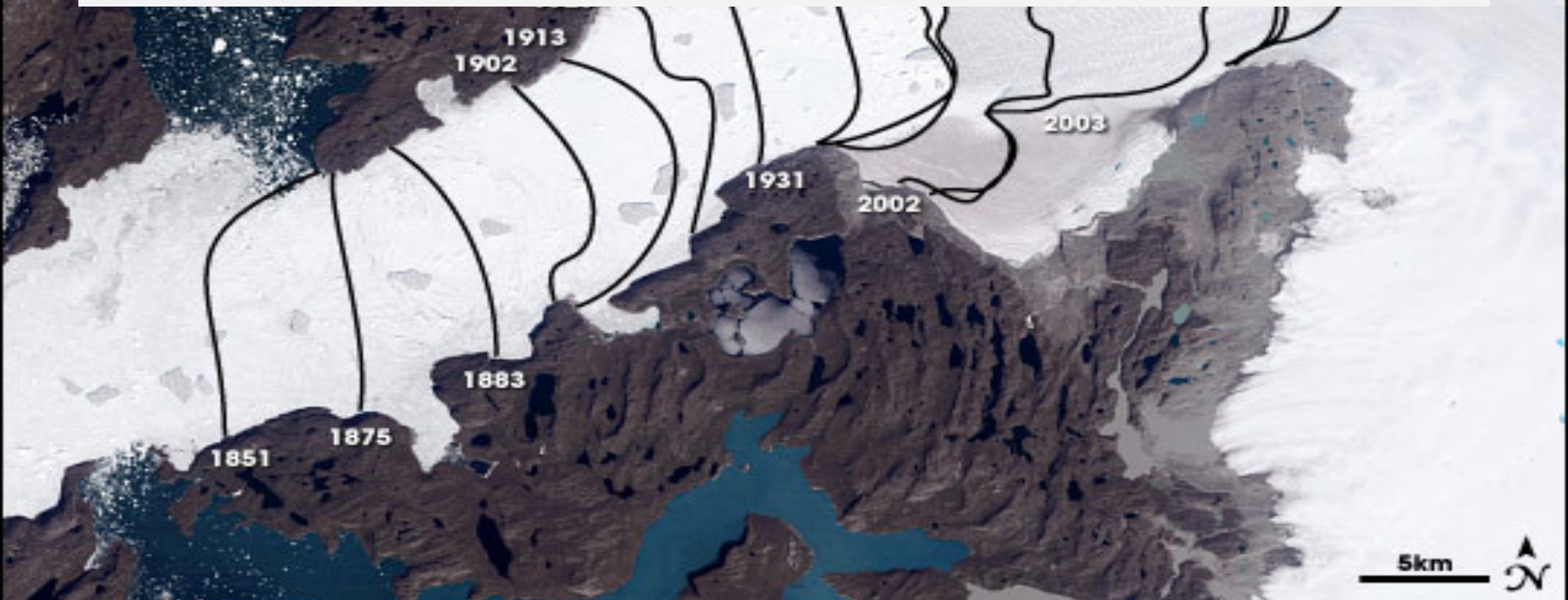
# Antarctic ice shelves



# Greenland outlet glaciers



# Jakobshavn Isbrae is retreating



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