



2025
International
Year of Glaciers'
Preservation

Gletscher

... und ihre Bedeutung für die Wasserversorgung

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World Glacier Monitoring Service

University of Zurich, Switzerland

wgms



How much glacier ice is out there?



Glacier inventories

How (fast) do glaciers change?

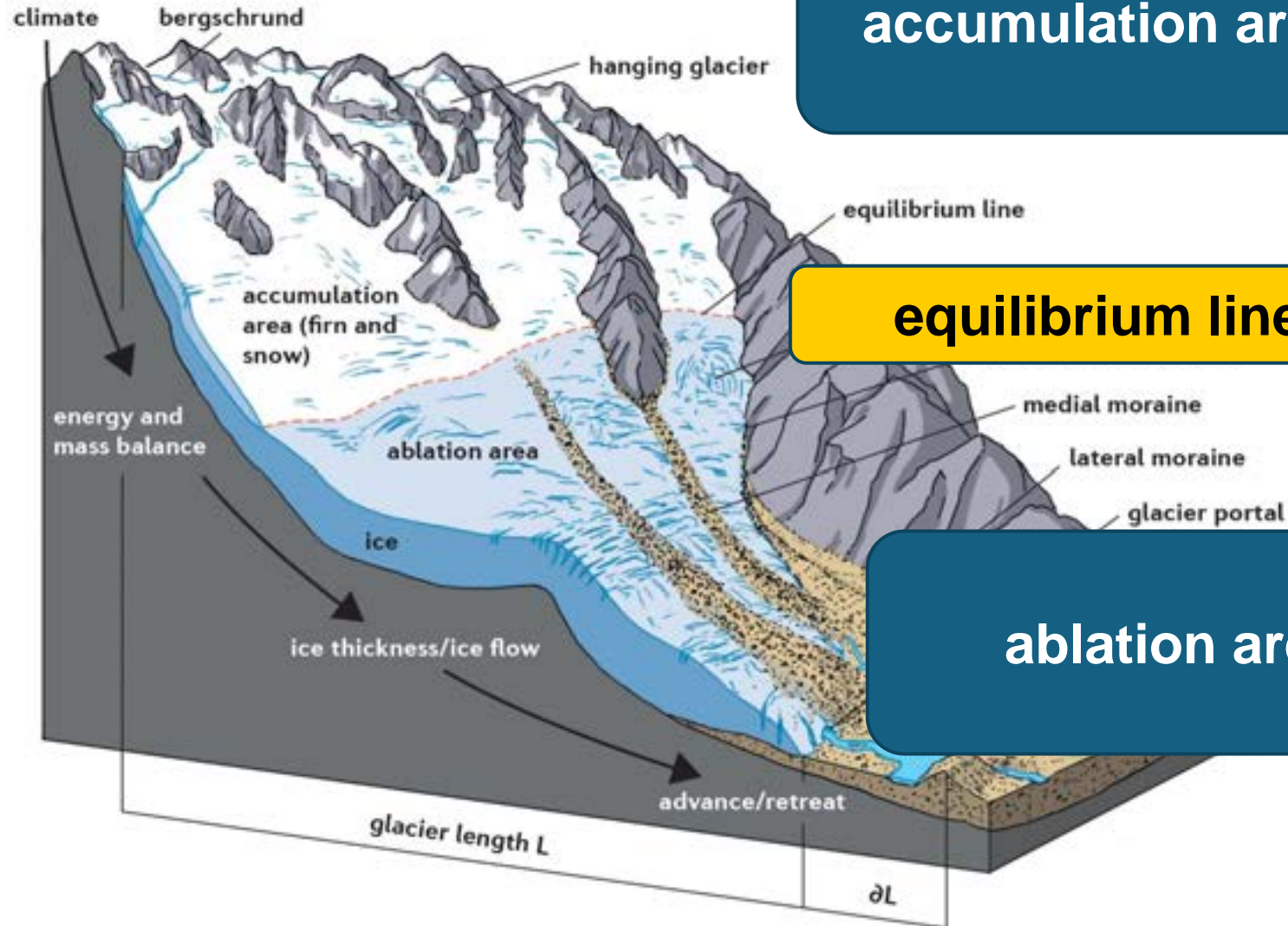


Glacier fluctuations





What is a glacier?

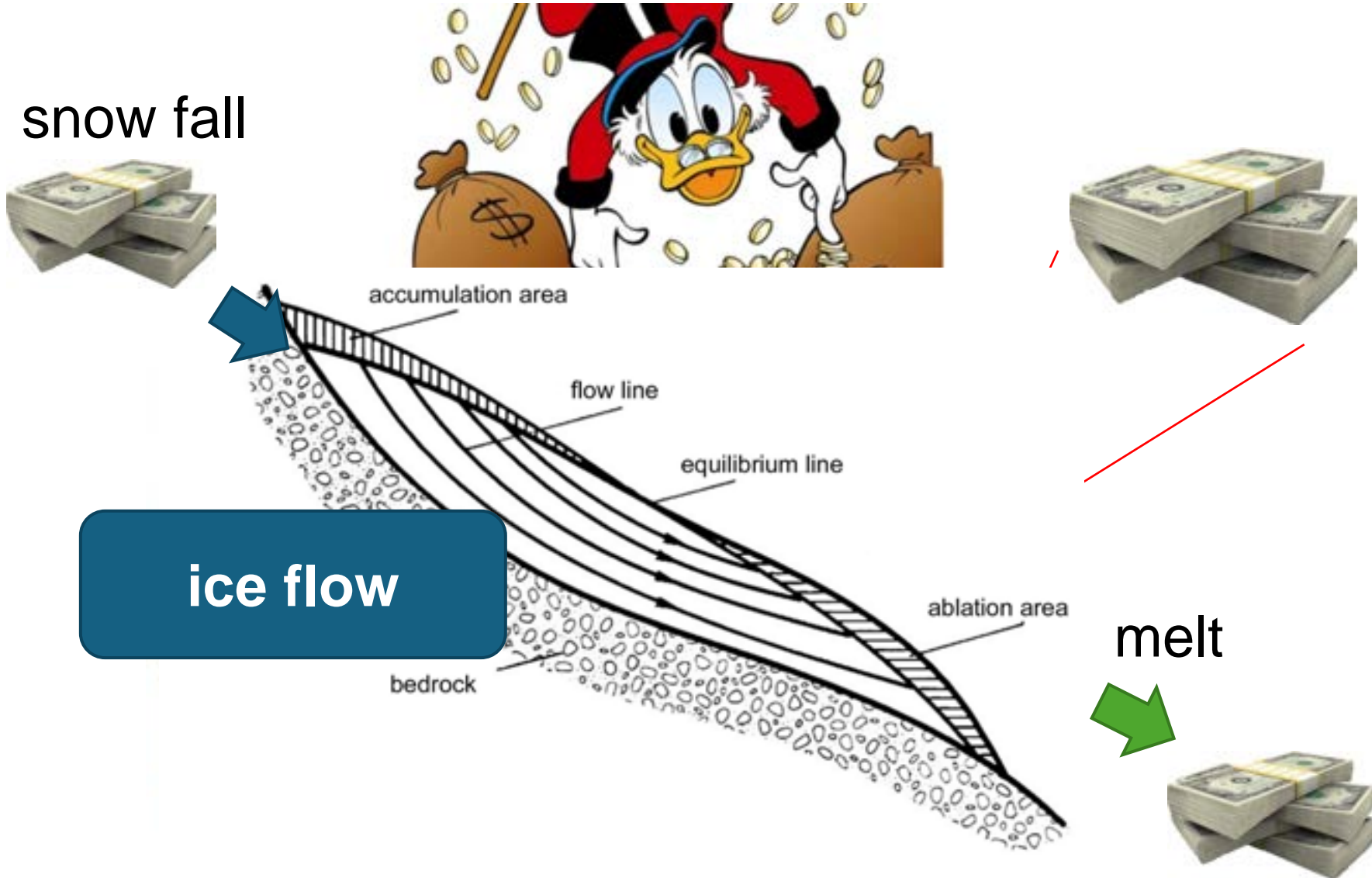


accumulation area

equilibrium line

ablation area

Glacier as bank account (or: "mass balance")





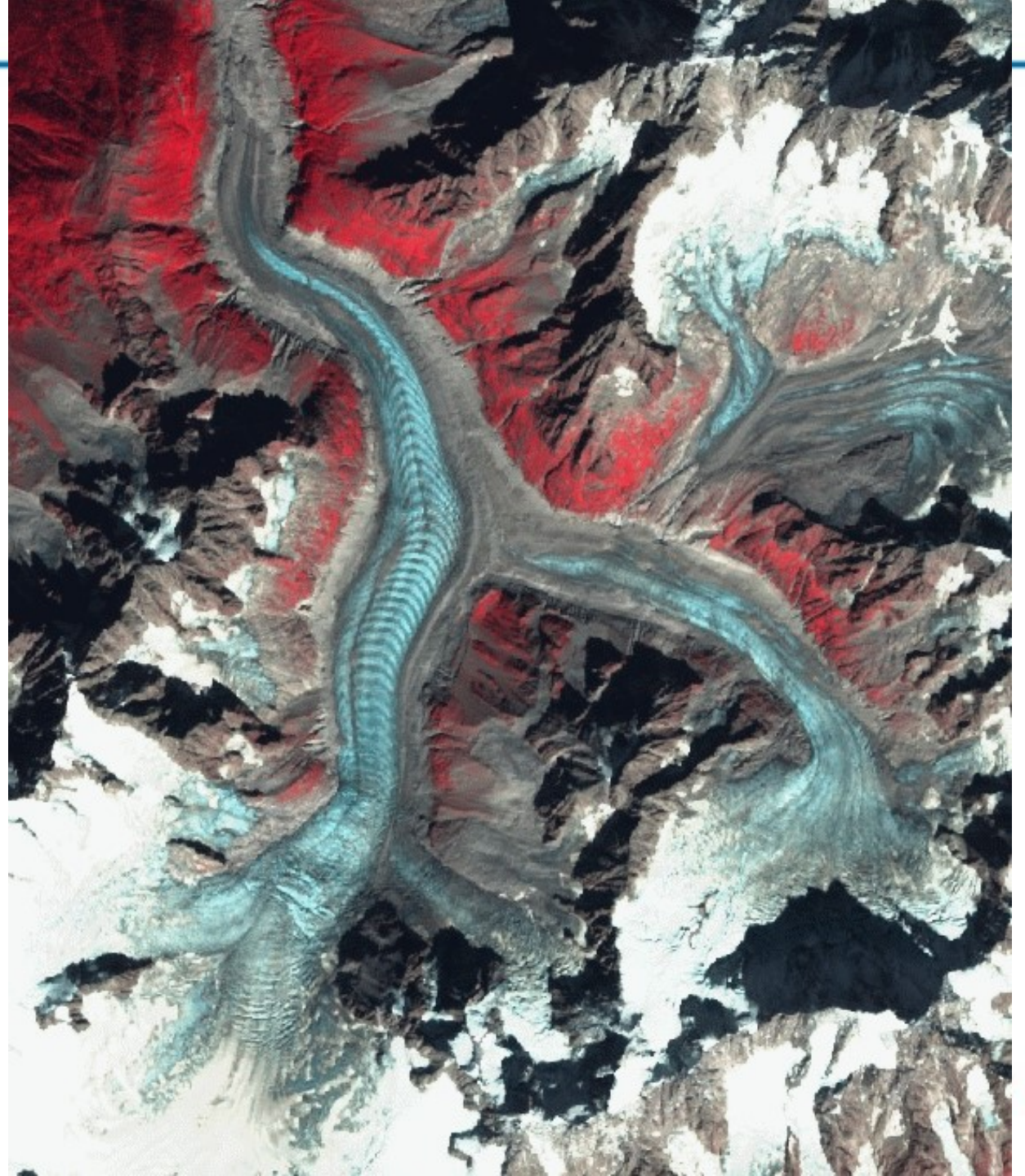
The role of ice flow



What is a glacier?

Mer de Glace (French Alps)
Sentinel-2 Satellite, 2015–2020

Animation: Frank Paul, University of Zurich



The International Year of Glaciers' Preservation 2025



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WGMS: implementation partner for glacier monitoring

UNITED NATIONS  NATIONS UNIES

How many glaciers do we have?

How fast are glaciers melting?

Why does glacier melting matter?

Can we still preserve our glaciers?

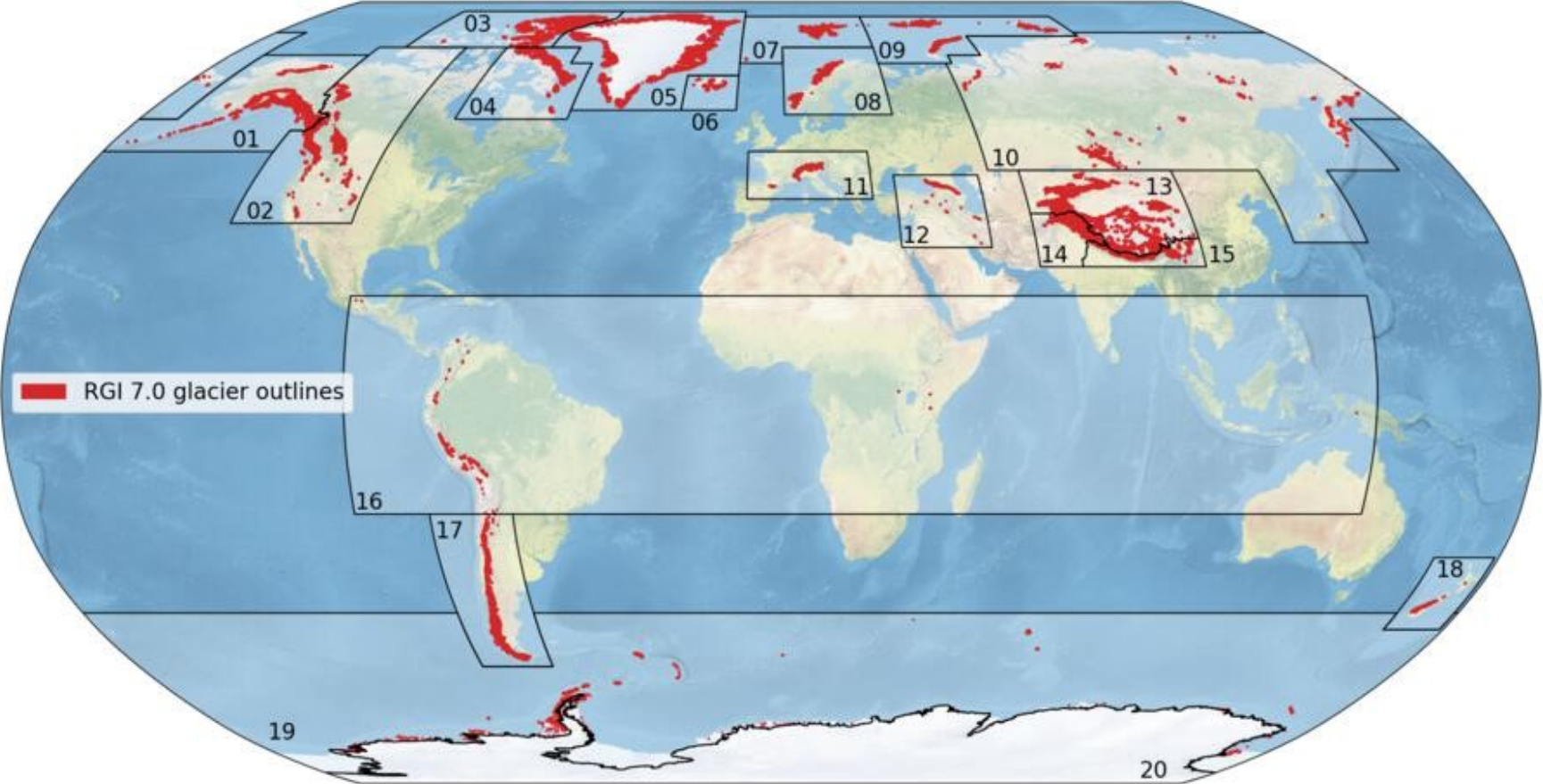
- Add
- Co-f
- Implemented by international organisations and programmes, universities, associations, and NGOs
- UN Decade of Action for Cryospheric Sciences 2025-34

How many glaciers do we have?

Glacier distribution in 2000

275 000 glaciers*
700 000 km²

***distinct from Greenland and Antarctic ice sheets**



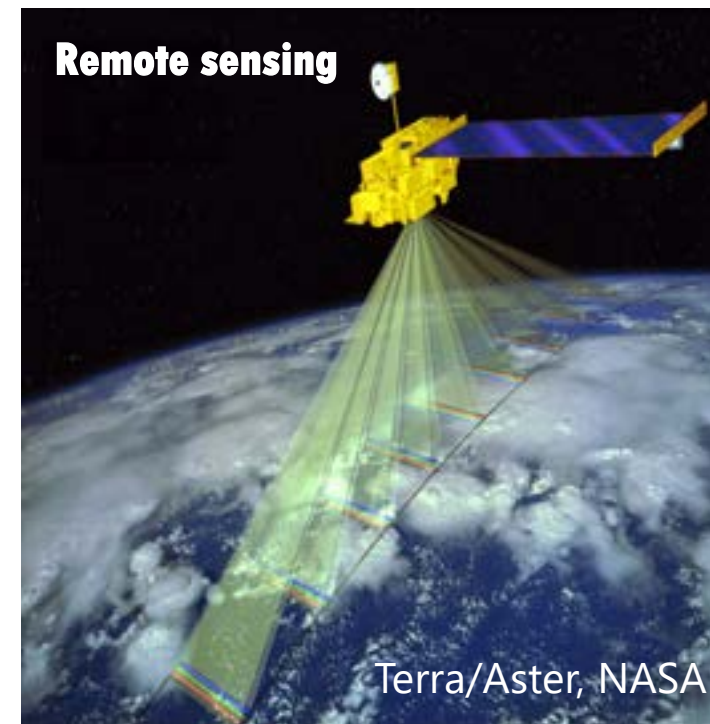
How fast are glaciers melting?



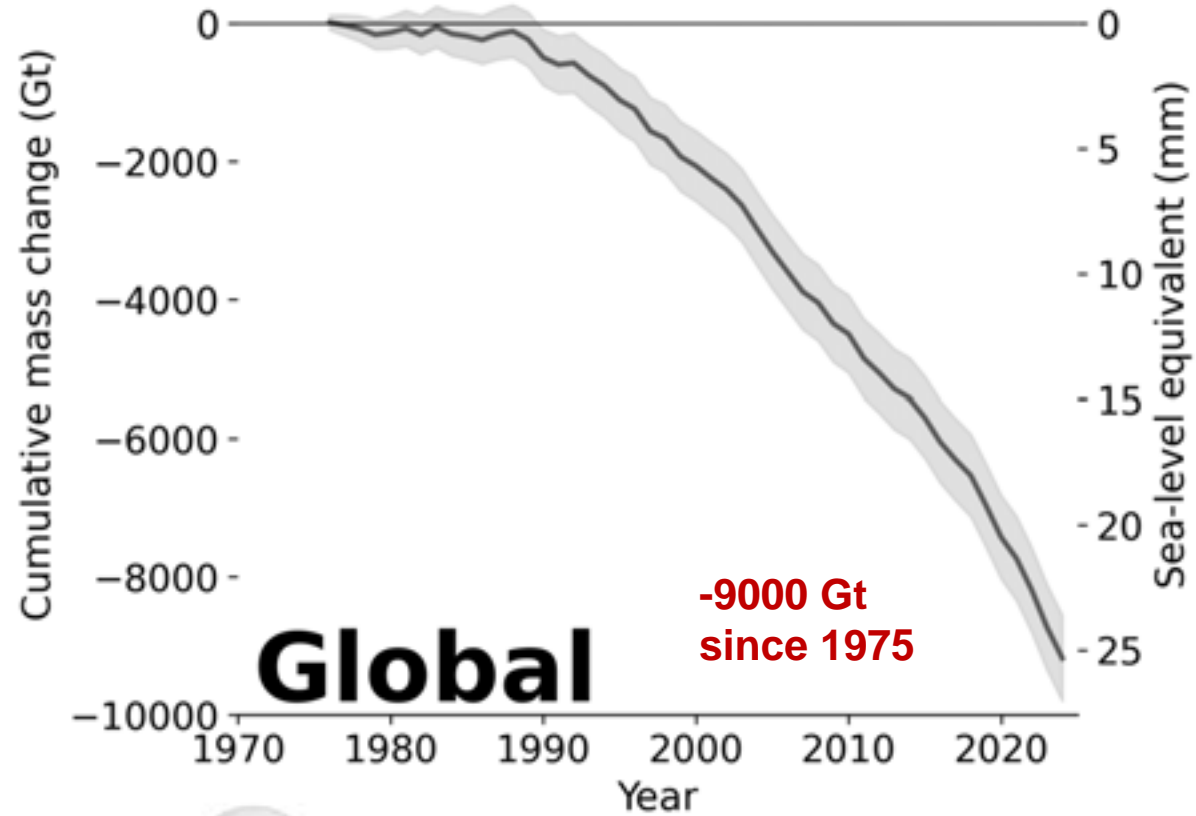
Aletschgletscher, M. Zemp



Fluctuations of Glaciers database



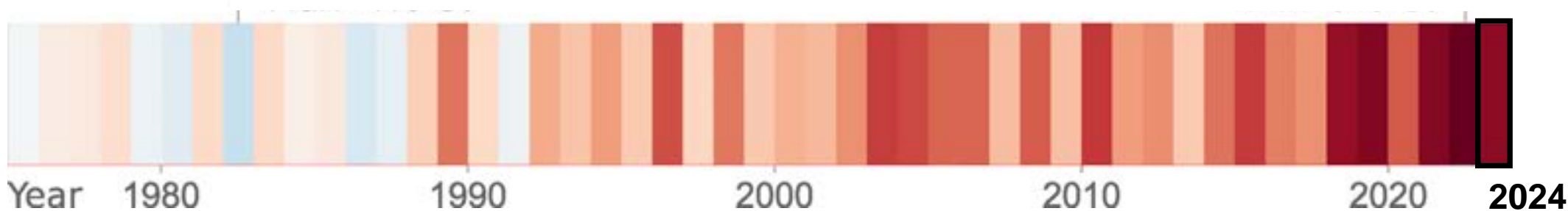
How fast are glaciers melting?



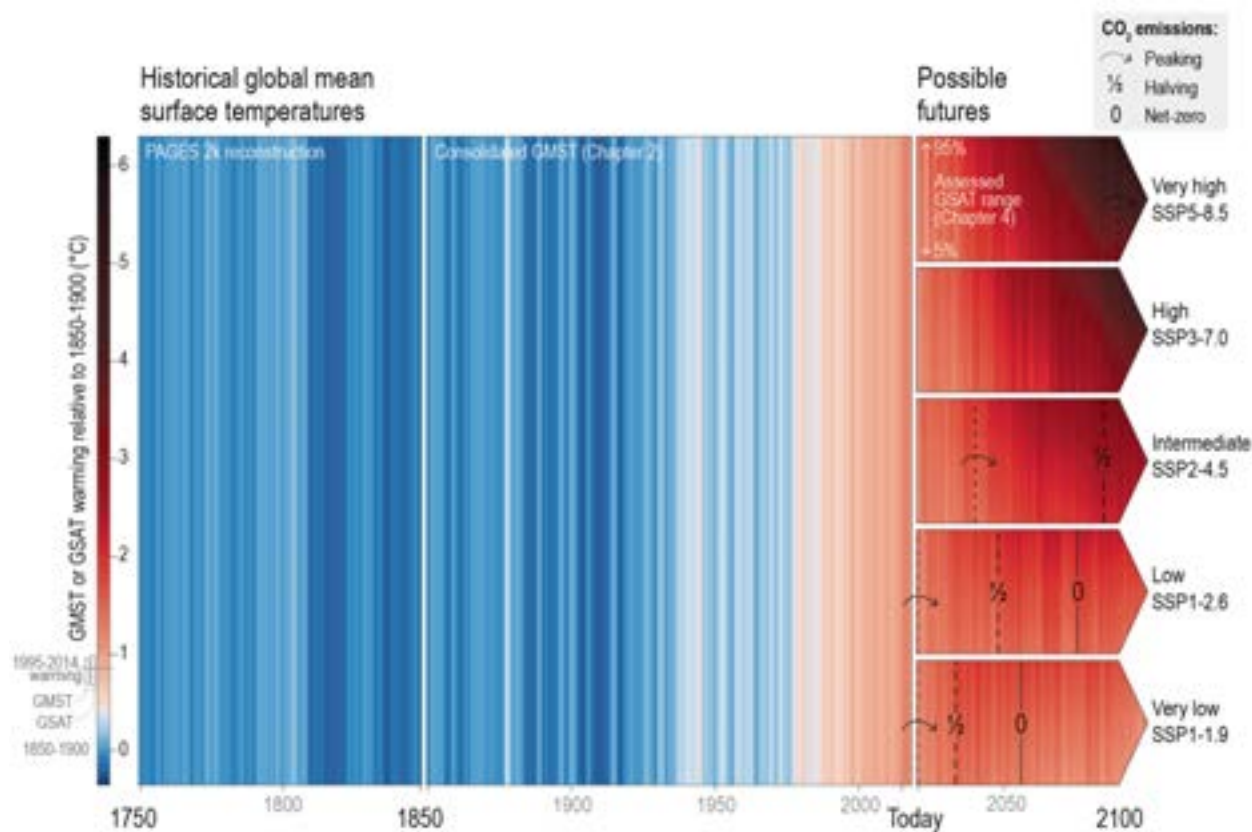
Dussaillant et al. (2025, in review)



How fast are glaciers melting?



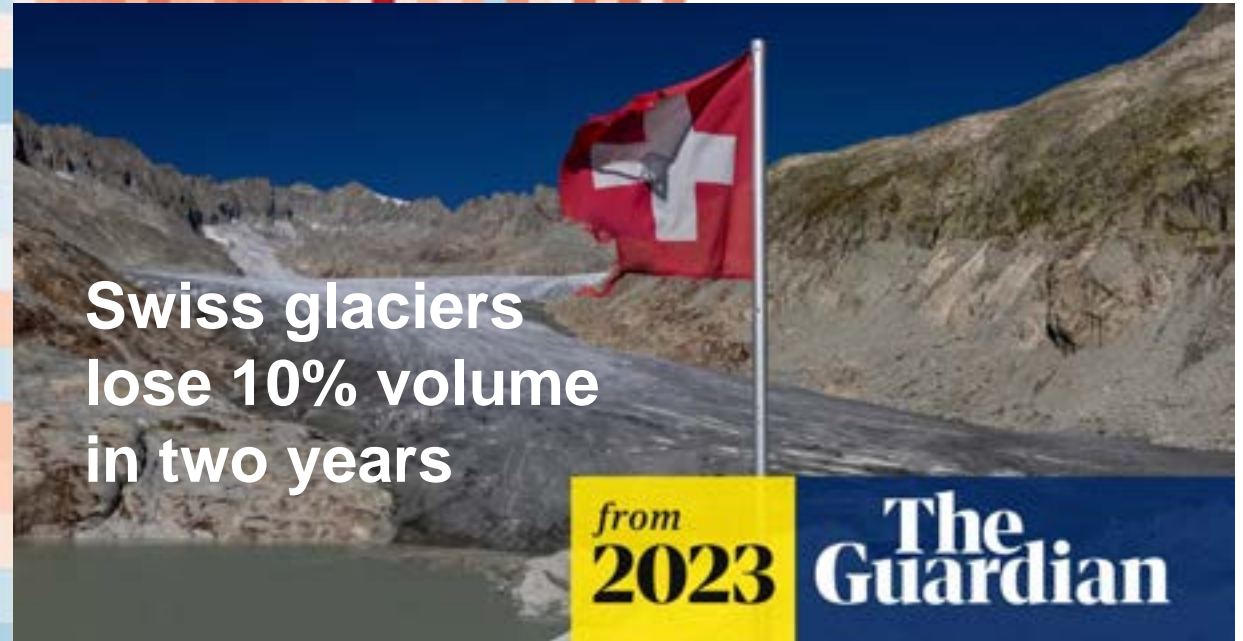
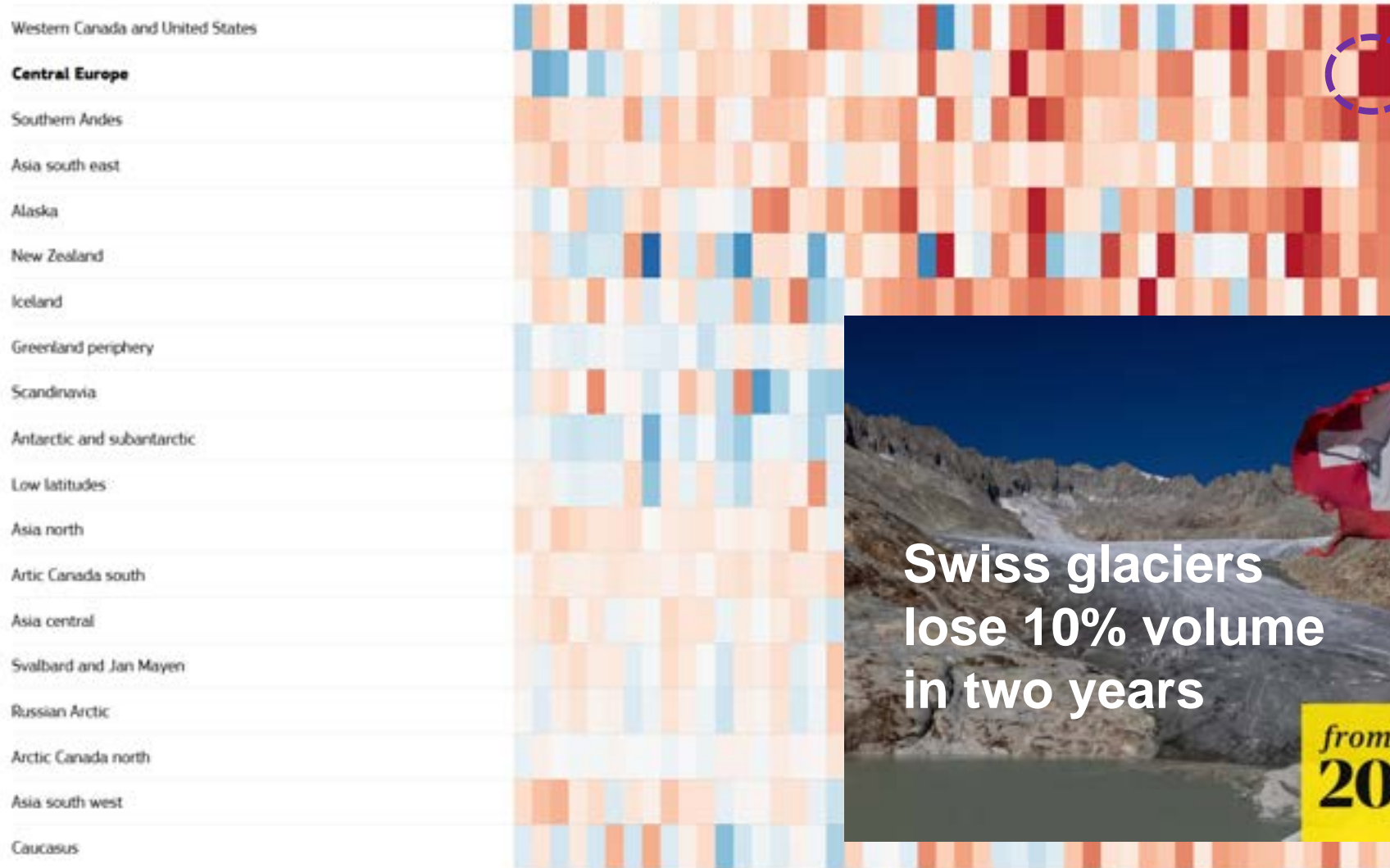
-450 Gt



IPCC AR6 (2021)

The glacier crises

Year (1976–2023)



Swiss glaciers
lose 10% volume
in two years

from
2023
The Guardian

Why does glacier melting matter?



Global Water Storage



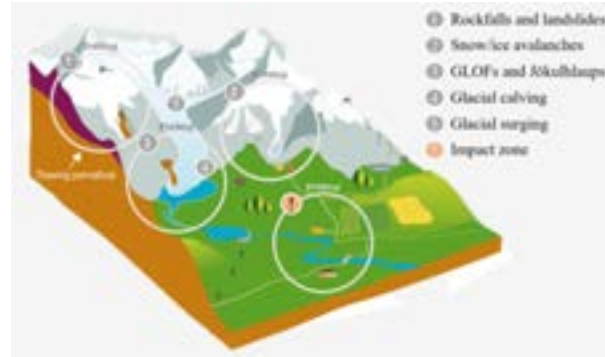
Von Schuckmann et al. (2023)

Global Heat Inventory



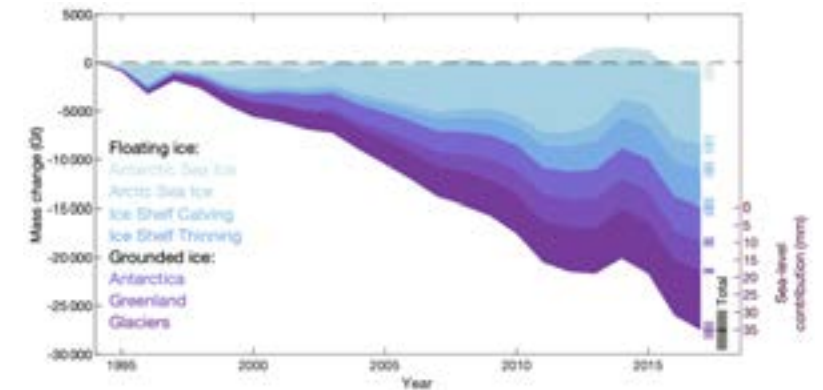
Dorigo et al. (2021)

Local Geo-Hazards

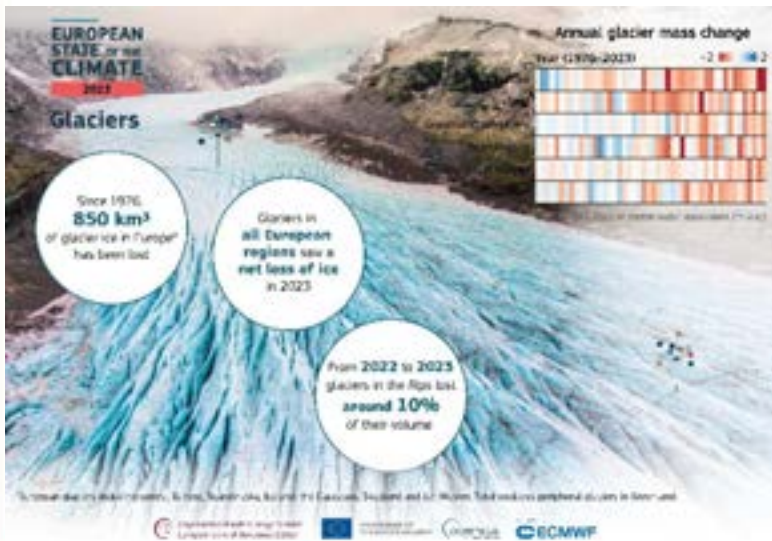


IPCC SROCC (2019)

Global Sea-level Rise



Slater et al. (2021)



Can we still preserve our glaciers?

Year (1976–2023)



COP21 • CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE



-10% in 2 years



Time to act!!!





Photo: I. Gärtner-Roer



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World Day for Glaciers, 21 March

Decade of Action for Cryospheric Sciences 2025-2034

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