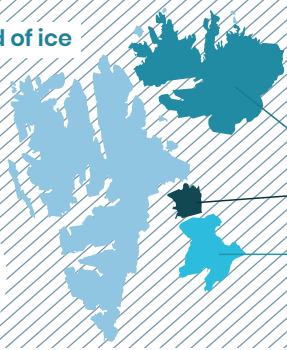


GLACIERS IN SVALBARD

THERE ARE MORE THAN 2100 GLACIERS ON SVALBARD

Svalbard: A land of ice



The largest glaciers on Svalbard are on the islands of

- Nordaustlandet
- Barentsøya and
- Edgeøya



60% of Svalbard is covered by glaciers.

36 600 KM² ice volume 7000 km³

The glaciers on Svalbard are around 3000 to 4000 years old.

The largest ice cap in Svalbard is Austfonna on Nordaustlandet, which has a total area of **8120 km²** and a volume of around **1900 km³**

why glaciers are so important ?

Glaciers form the largest reservoir of fresh water on the planet. They store 75% of the world's fresh water.

This water is crucial for humans, used for drinking, agriculture, navigation, energy, and industry.

10% of the world is covered by glaciers.

With the **Albedo** phenomenon, glaciers act as a climate regulator: **80%** of the sun's rays reflected on the ice are reflected directly into space.

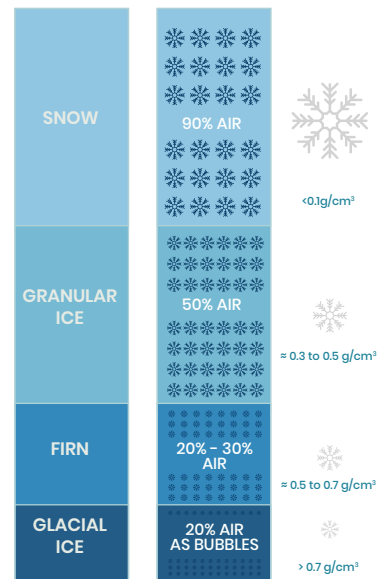
75%

The largest reservoir of fresh water on the planet.



HOW GLACIERS FORM

GLACIERS FORM IN SVALBARD BECAUSE MORE SNOW ACCUMULATES EACH YEAR THAN MELTS AWAY.



SNOW FALLS : BEGINS TO COMPRESS



SNOW CHANGES : LIGHT FLUFFY CRYSTALS TO HARD ROUND ICE PELLETS



NEW SNOW FALLS AND BURIES THIS GRANULAR SNOW



THE HARD SNOW BECOMES EVEN MORE COMPRESSED, FORMING A DENSE, GRAINY ICE CALLED FIRN.

TYPES OF GLACIERS

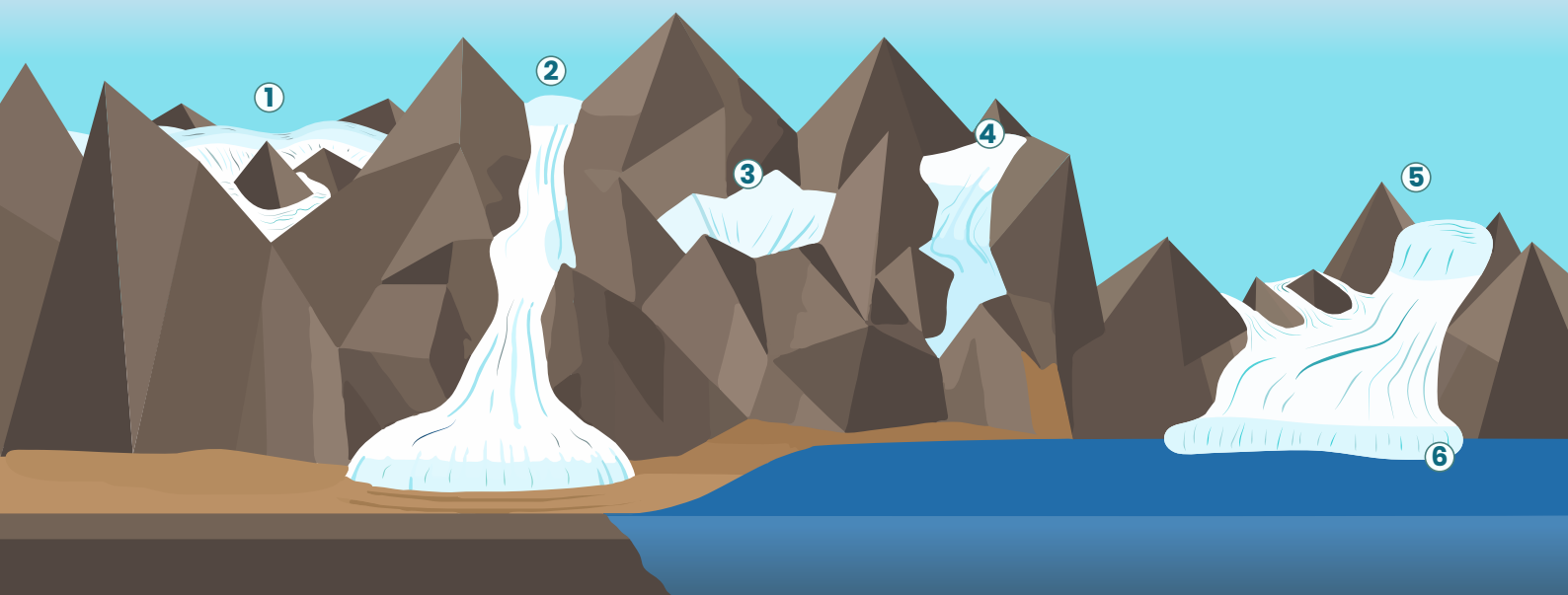
In Svalbard, there are several types of glaciers.

- 1 Ice cap or Ice field, like the Austfonna
- 2 Piemont glacier
- 3 Cirque glacier
- 4 Valley glacier, like the Longyearbreen or the Larsbreen
- 5 Spitzberg glacier, like Von Postbreen
- 6 Tidewater glacier, like sveabreen

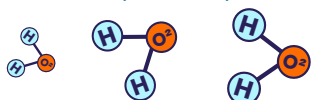
Spitzberg glaciers are large contiguous ice masses divided into a multitude of smaller streams of ice and termini by mountain ridges and nunataks. Nunataks, arêtes, and horns are the result of glacial erosion in areas where multiple glaciers flow in multiple directions

Glaciers are natural archives used to reconstruct & understand past climate changes:

- From **Dust**: changes in the environment.
- From **air bubbles**: atmospheric composition and concentration of green house gaz in the air.
- From **water molecules**: temperature



Ice is made of H₂O molecules. Analysing the proportion of **heavy / light** molecules give us info about past temperatures



GLACIERS AND ICE SHEETS ACT AS TIME CAPSULES.

A BETTER UNDERSTANDING OF THE PAST TO BETTER PREDICT THE FUTURE !

Student Editors : Matteo Michael Cuscaden Cobeta, Oscar Samuel Stohr Virag

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