

# **GLACIERS AND CLIMATE CHANGE**

A high-altitude mountain landscape featuring jagged, rocky peaks and glaciers. The foreground shows a large, textured glacier surface. The sky is a clear, deep blue. The text "What's a glacier?" is overlaid in the center in a white, sans-serif font.

**What's a glacier?**

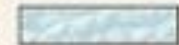
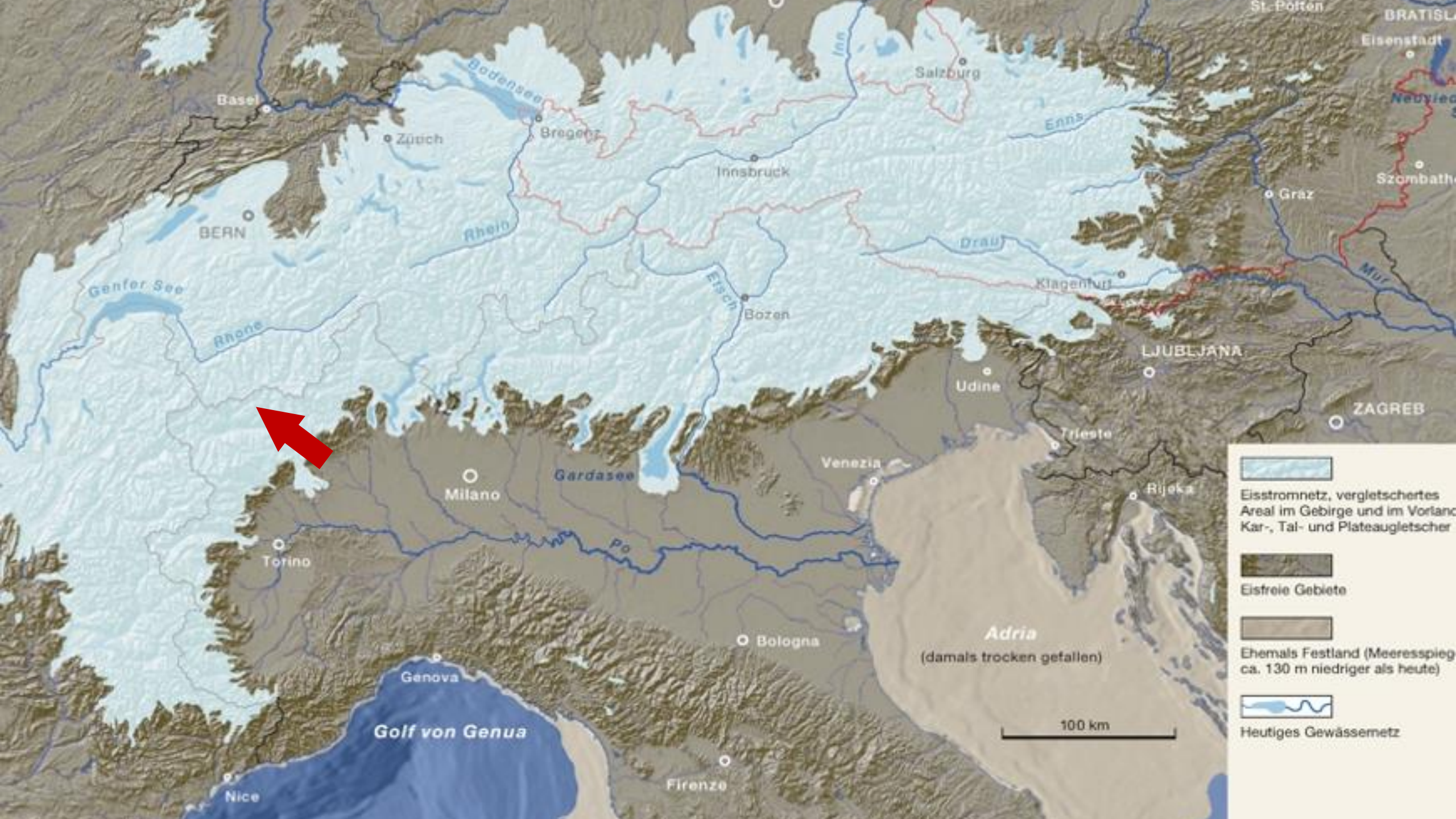


**Areas covered by ice masses**

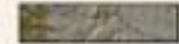


**Ice age**





Eisstromnetz, vergletschertes Areal im Gebirge und im Vorland  
Kar-, Tal- und Plateaugletscher



Eisfreie Gebiete

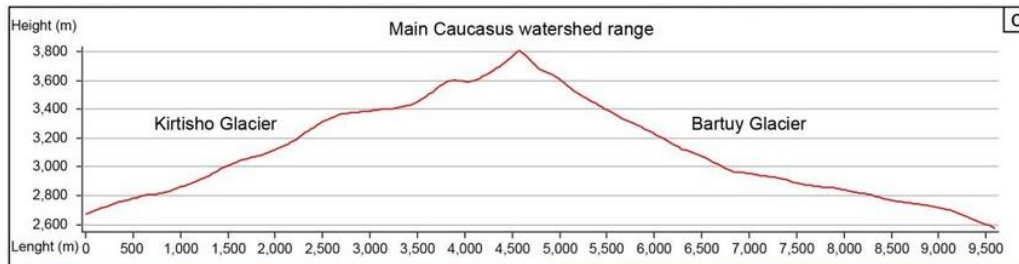
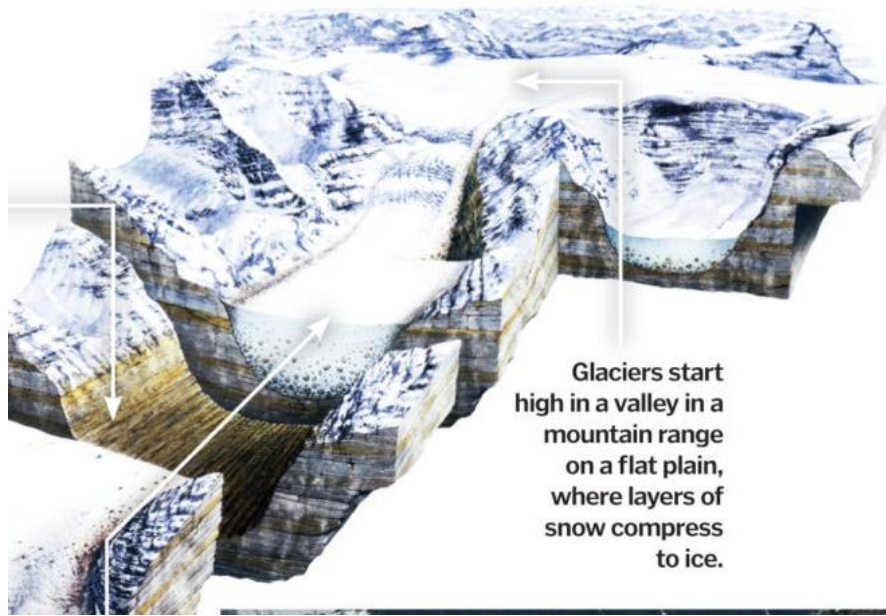


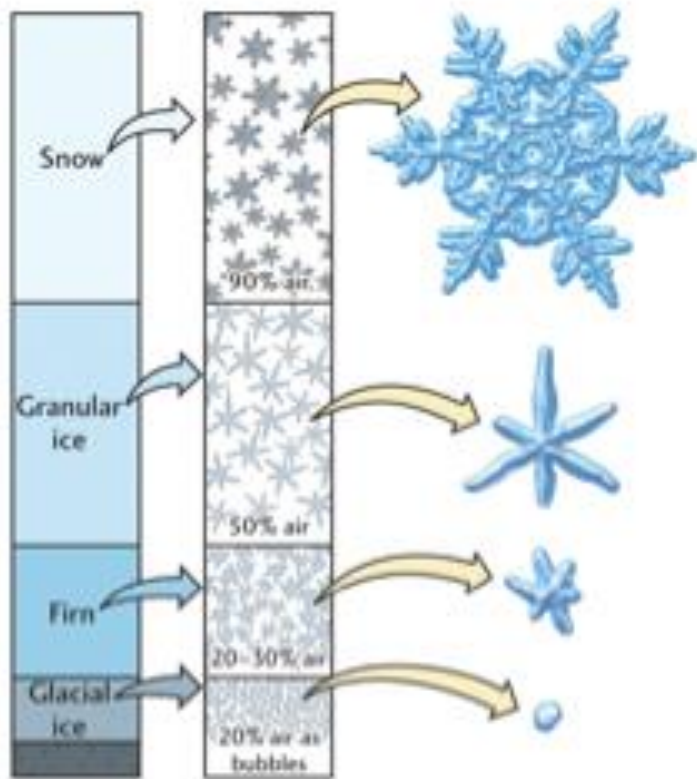
Ehemals Festland (Meeresspiegel ca. 130 m niedriger als heute)



Heutiges Gewässernetz

100 km







**Rock glacier**



**Valley glaciers**



**mountain glaciers**



**Greenland**



**Antarctic**



**Foothill glaciers**



# Aosta Valley

A photograph of a vast, rugged mountain landscape in the Aosta Valley. The scene is dominated by a large, greyish-blue glacier in the foreground, which appears to be a moraine or a large remnant of a former glacier. In the background, steep, rocky mountain peaks rise against a clear blue sky. Some of the peaks are covered in patches of snow and smaller glaciers. A red metal railing with yellow safety caps is visible in the lower right corner, suggesting the viewer is on a viewing platform or a high-altitude trail. The overall atmosphere is one of a high-altitude, alpine environment.

More than 200 glaciers

19.000 hectares

# Monte Rosa

- Lysglacier (valley glacier)
- Colle del Teodulo (outlet glacier)

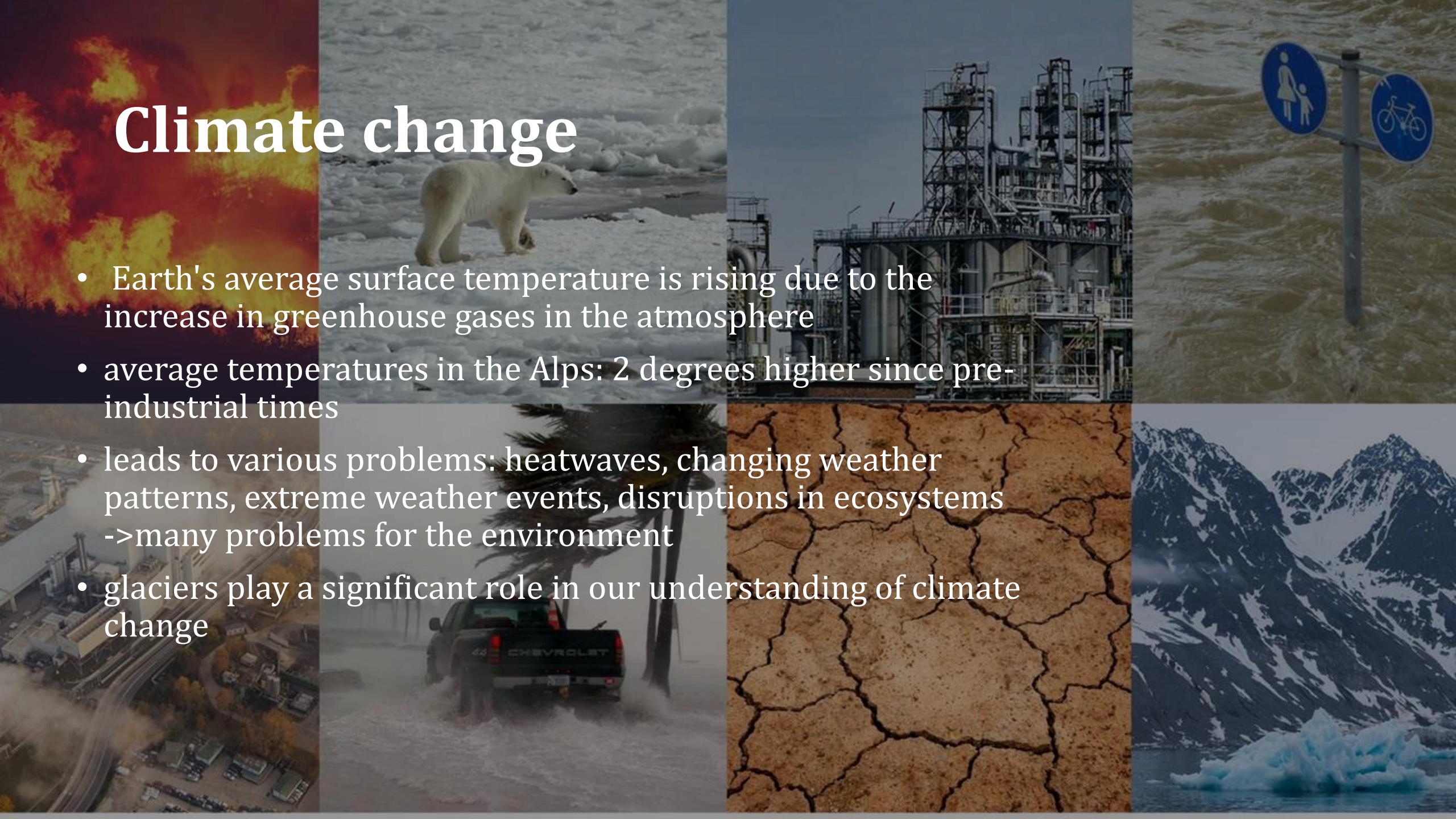


# Mont Blanc



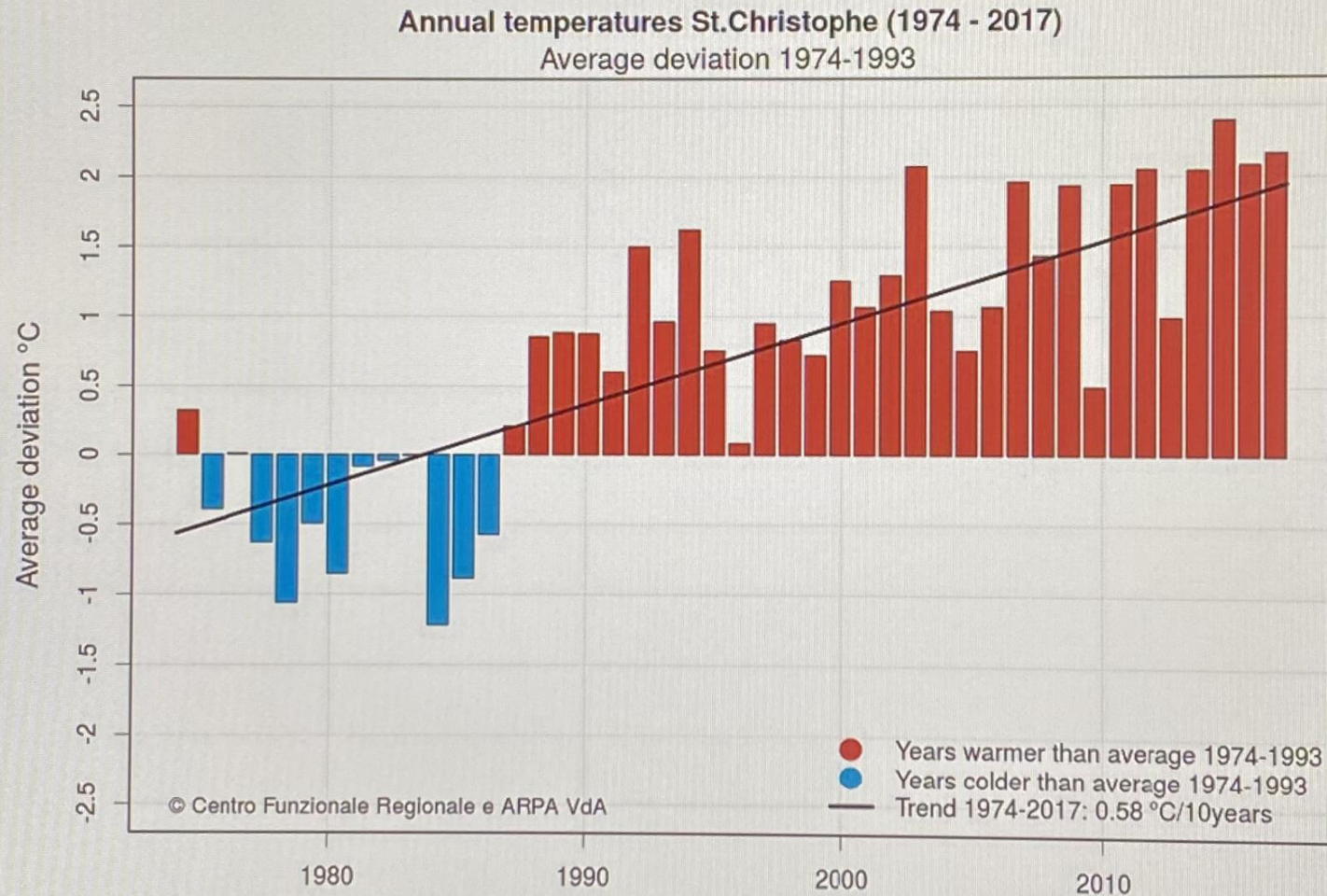
# Climate change

- Earth's average surface temperature is rising due to the increase in greenhouse gases in the atmosphere
- average temperatures in the Alps: 2 degrees higher since pre-industrial times
- leads to various problems: heatwaves, changing weather patterns, extreme weather events, disruptions in ecosystems  
->many problems for the environment
- glaciers play a significant role in our understanding of climate change



# Average annual temperatures evolution 1974 - 2017

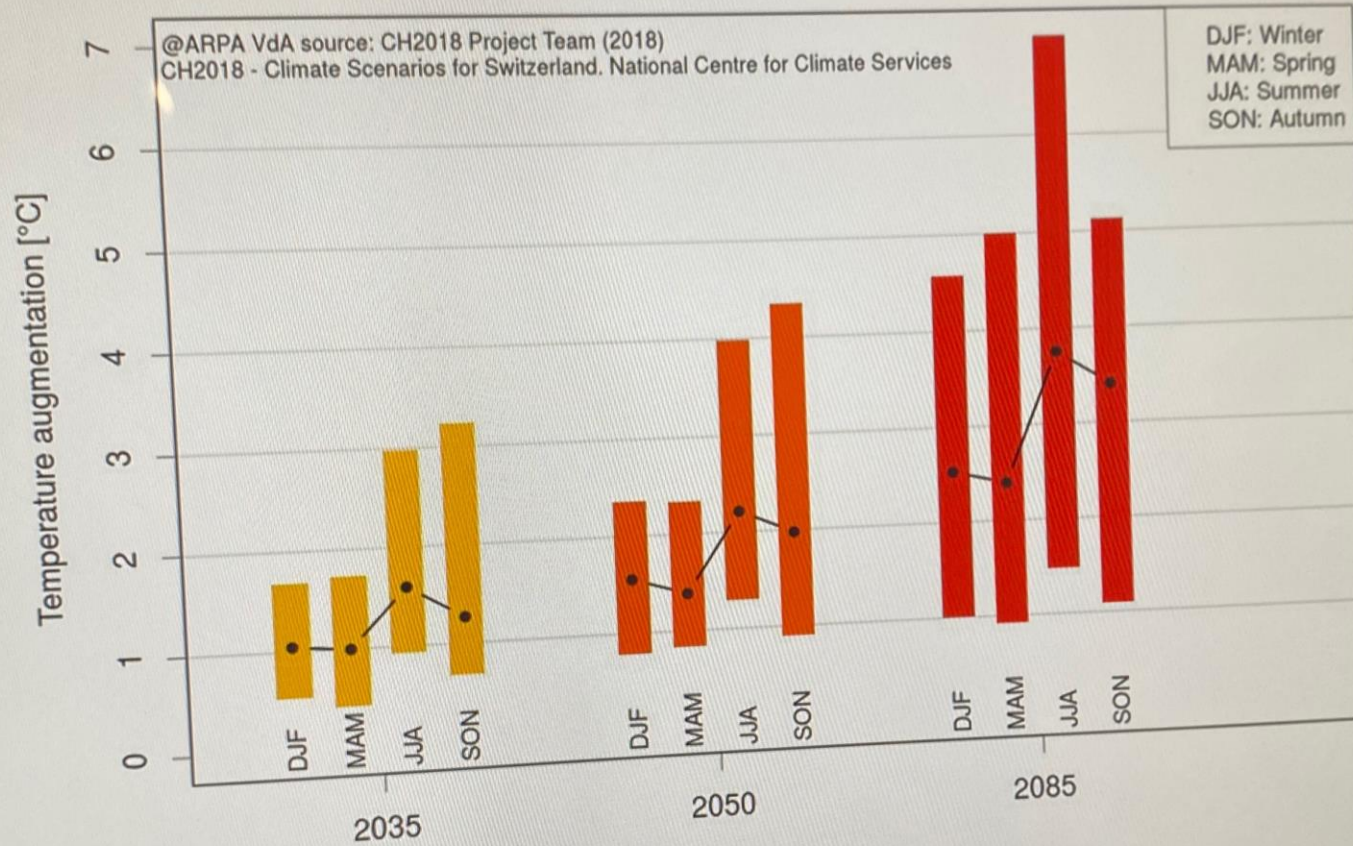
The columns represent the percentage variation in the temperatures recorded at St. Christophe between 1974 and 2017 compared to the average for the period 1974 - 1993. The steady and progressive increase in variation is evident.



# Temperature increase forecasts 2035 - 2050 - 2085

The ranges of temperature variation forecasts according to the four seasons and the three climate scenarios. V  
100% clear, a certain temperature rise is evident, especially in the worst-case scenario.

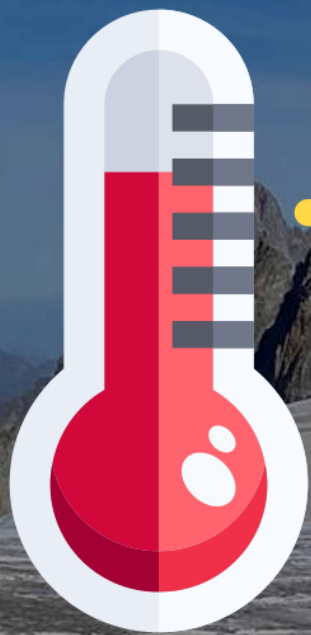
## Temperature augmentation



# Effects of Climate change

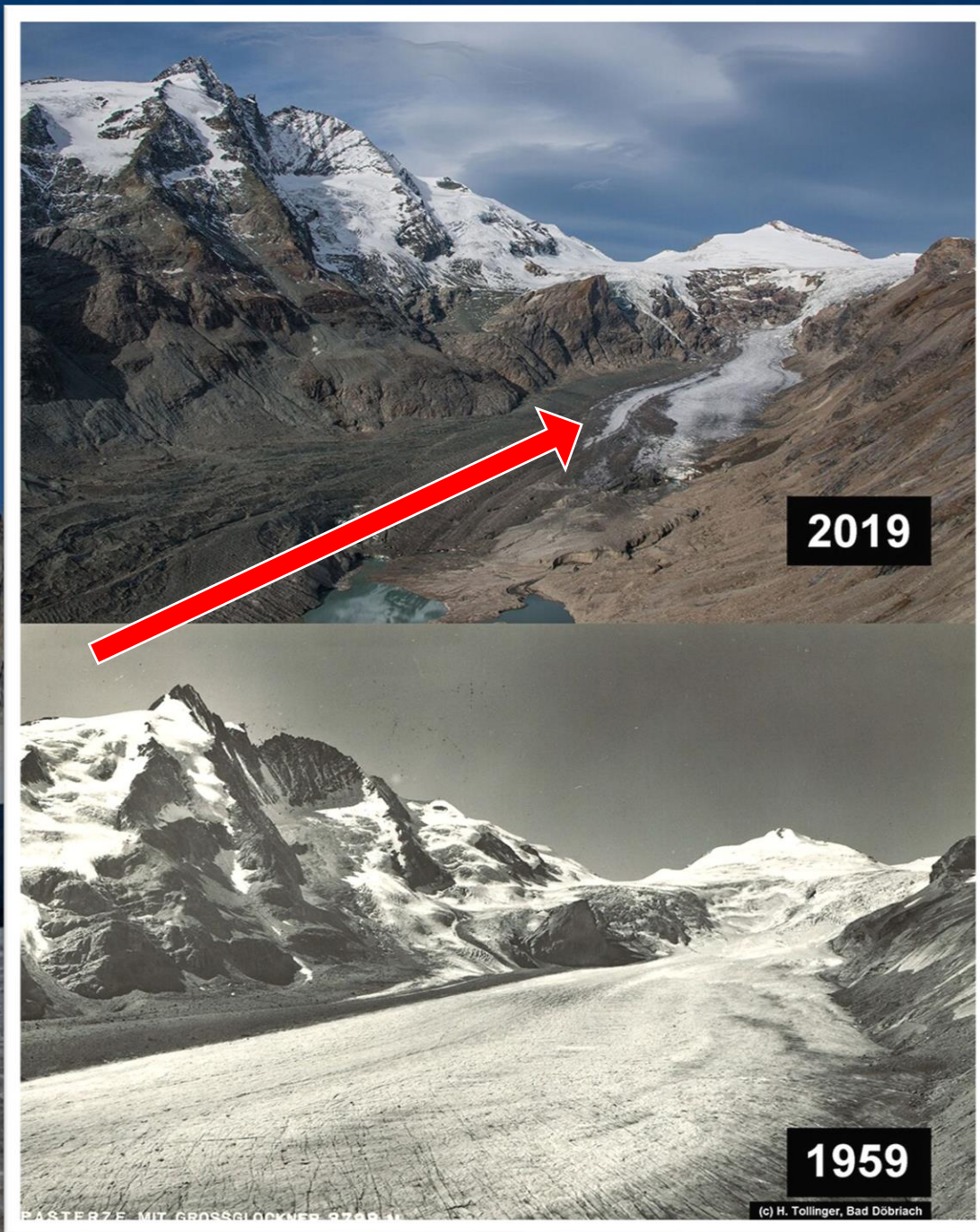


# 1. Ice is melting



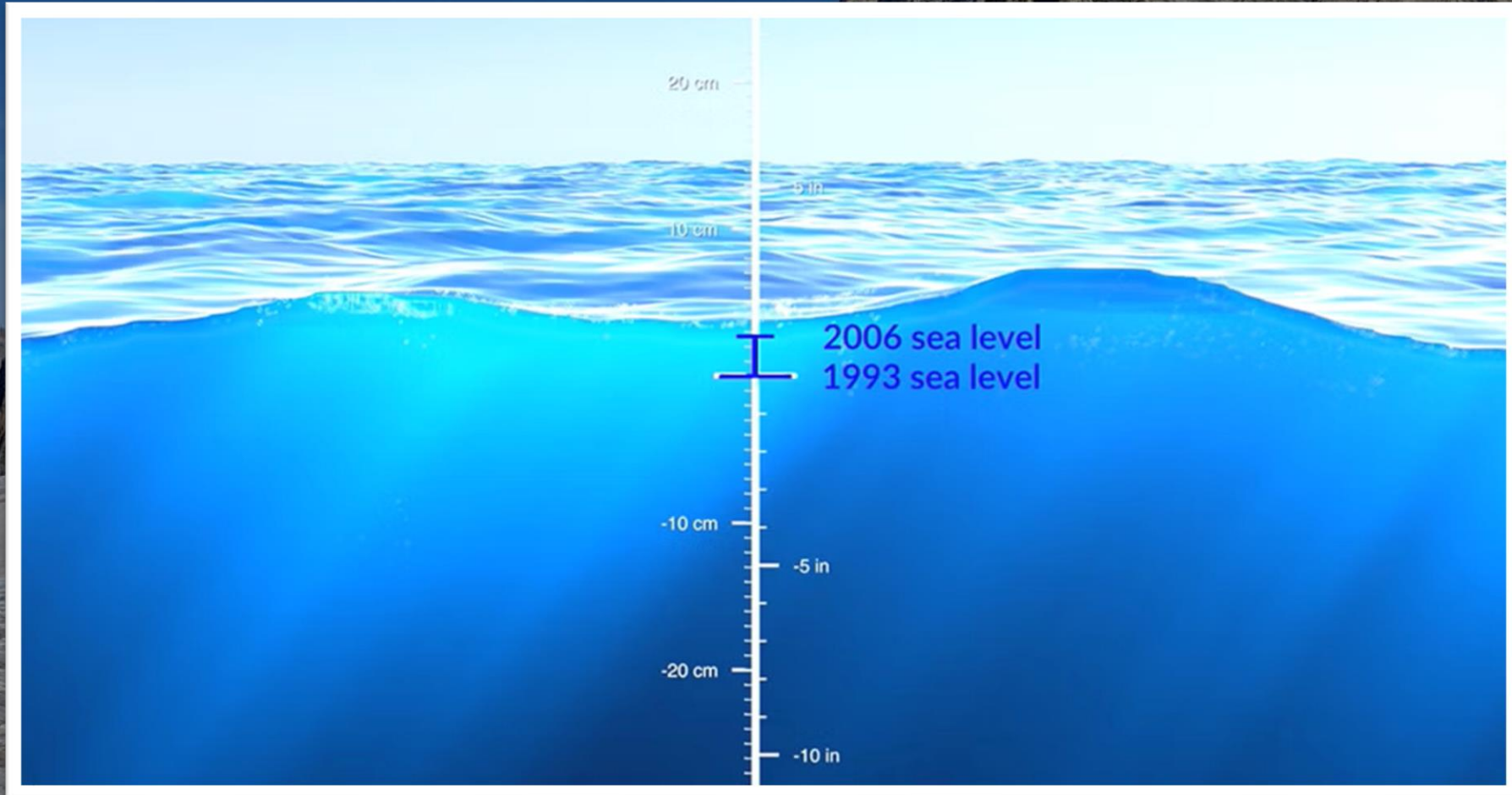


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- rising sea level



# 1. Ice is melting

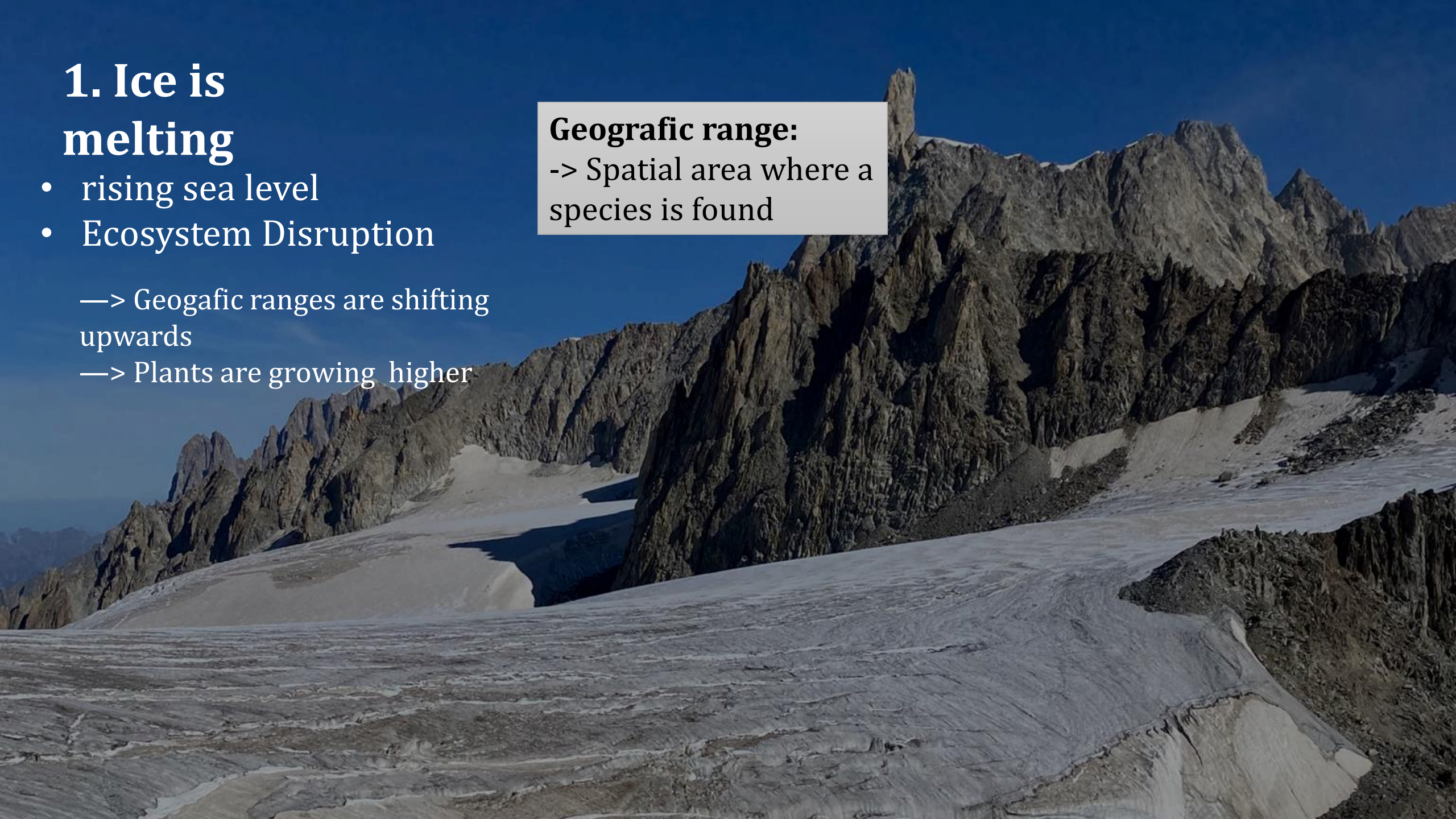
- rising sea level
- Ecosystem Disruption

—> Geogafic ranges are shifting upwards

—> Plants are growing higher

## Geografic range:

-> Spatial area where a species is found



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- rising sea level
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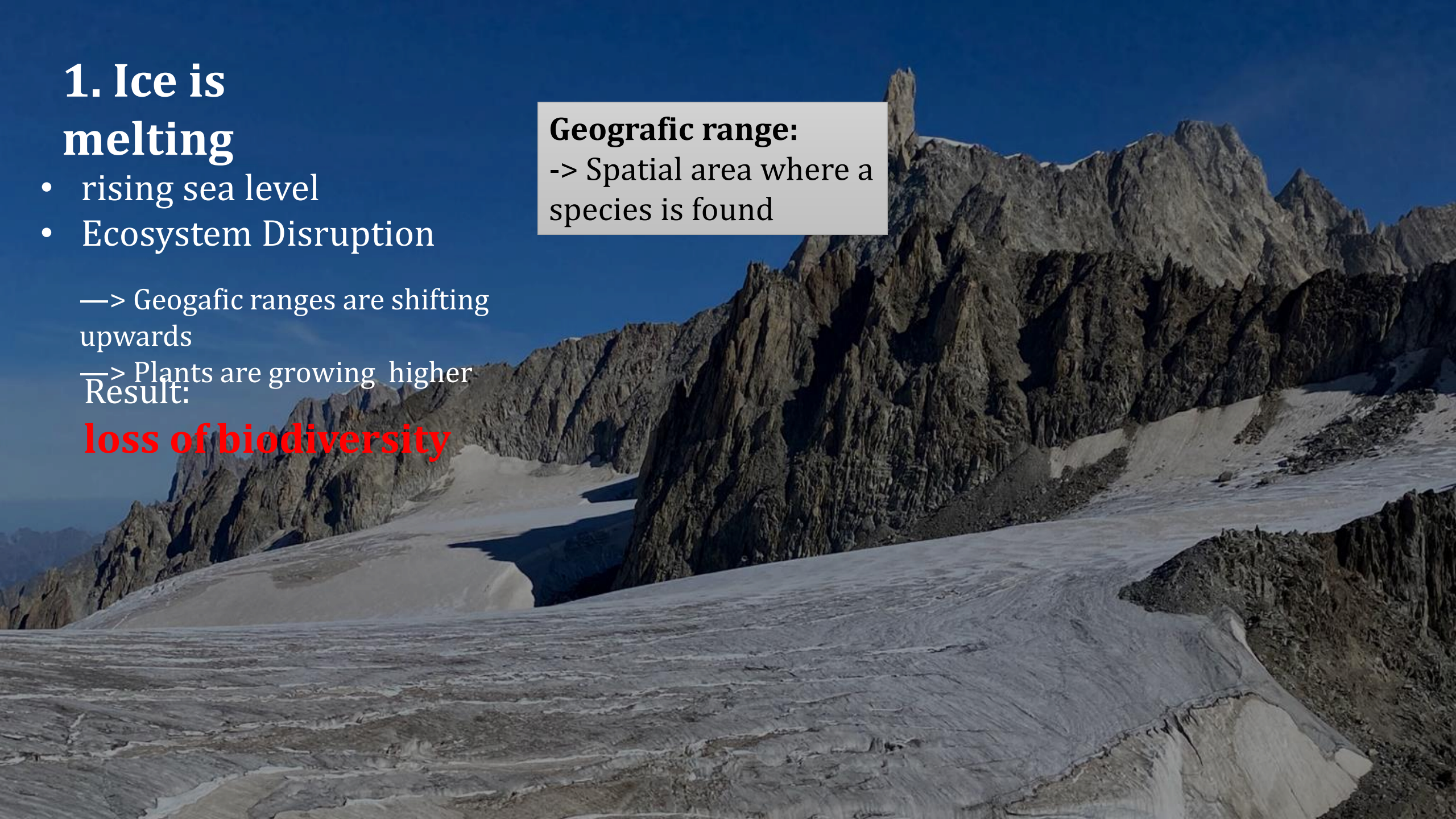
—> Plants are growing higher

Result:

**loss of biodiversity**

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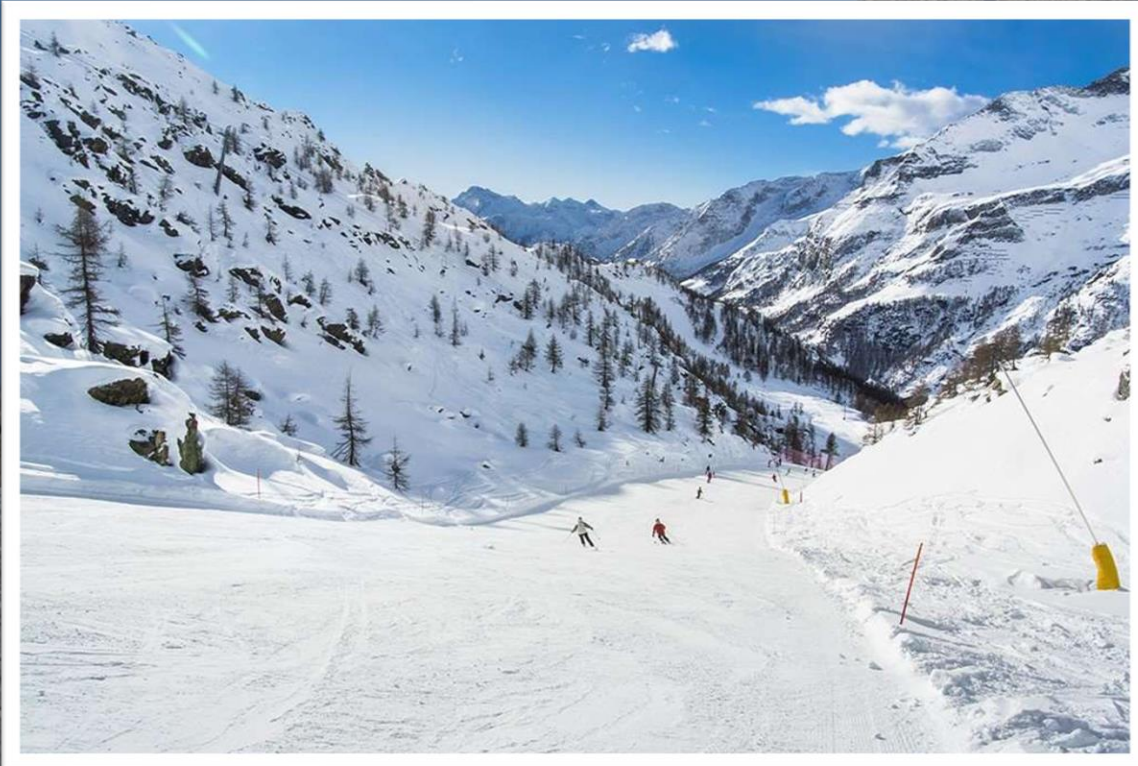
# 1. Ice is melting

- rising sea level
- Ecosystem Disruption
- Natural Desasters



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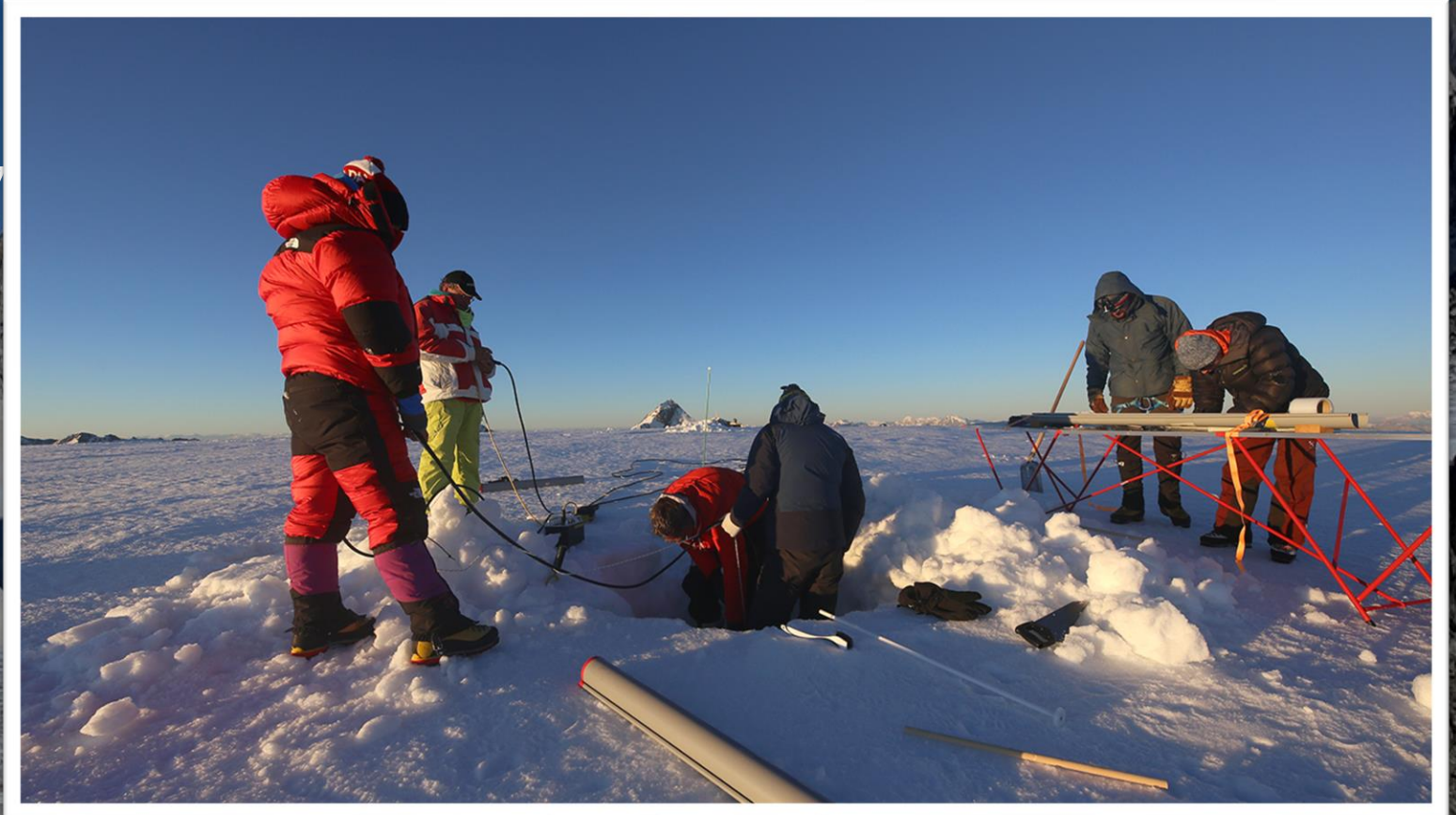
- rising sea level
- Ecosystem Disruption
- Natural Desasters
- Problems for local economy



- Not much snow for skiing
- Artificial snow is polluting, remains on the ground and requires a lot of water
- Snow cover will last less of the ground  
->especially in Aosta Valley tourism is the most important economic sector

# 1. Ice is melting

- rising sea level
- Ecosystem Disruption
- Natural Desasters
- Problems for local economy
- Scientific research



# Conclusion/Solution

- Addressing climate change is a global challenge that requires international cooperation & comprehensive adaptation strategies
- Solving the problem will require politic initiatives, technological innovation & changes in individual and collective behaviour





# sources

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