Vanishing Glaciers and Rising Seas: Veneto's Climate Story

Veneto is a picturesque region in northeastern Italy, it is known for its rich history, diverse landscapes, and vibrant culture. However, beneath its beauty lies a pressing issue: climate change is reshaping the region's natural environment and weather patterns.

This story explores how Veneto's climate has evolved over time, the impact of these changes, and the measures being taken to safeguard its future.

How is Veneto's temperature evolving?

How much have sea levels risen? What's happening to the glaciers?

What is the air quality like today?

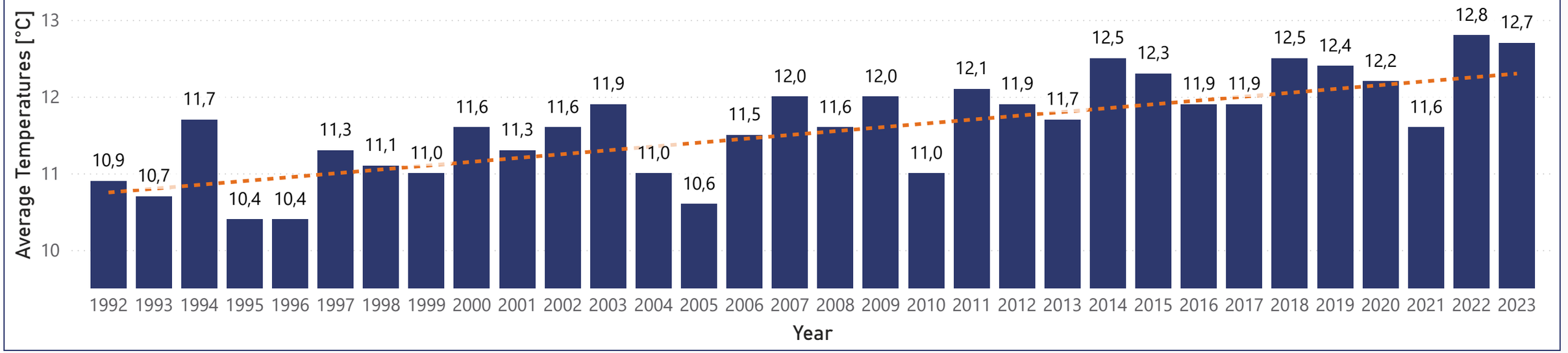
Dataset:
https://indicatoriambientali.isprambiente.it/it
https://www.arpa.veneto.it/dati-ambientali/open-data
https://statistica.regione.veneto.it/index.jsp
https://www.comune.venezia.it/it/content/dati-e-statistiche-

Rising Heat and Unpredictable Rains: Key Shifts

Historical meteorological data from different stations indicate a steady increase (**+0.57°C per decade**) of the annual temperatures.

Average Temperature (°C) in the years 1992-2023

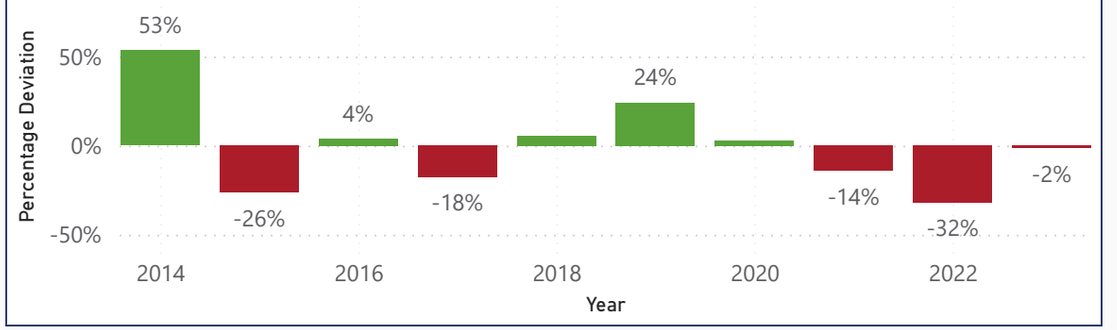
Fahrenheit (°F) | Celsius (°C)



The average annual precipitation, referred to the period 1991-2020, is 1.127 mm.

During the year 2023, an **average of 1.110 mm of precipitation** is estimated to have fallen on the Veneto region, which is **1.5% lower than the average of the period 1990-2020**.

Rainfall percentage of the last 10 years with respect the average of the period 1991-2020



2023

1110

Rainfall (mm)

2023

-1,51%

Rainfall %

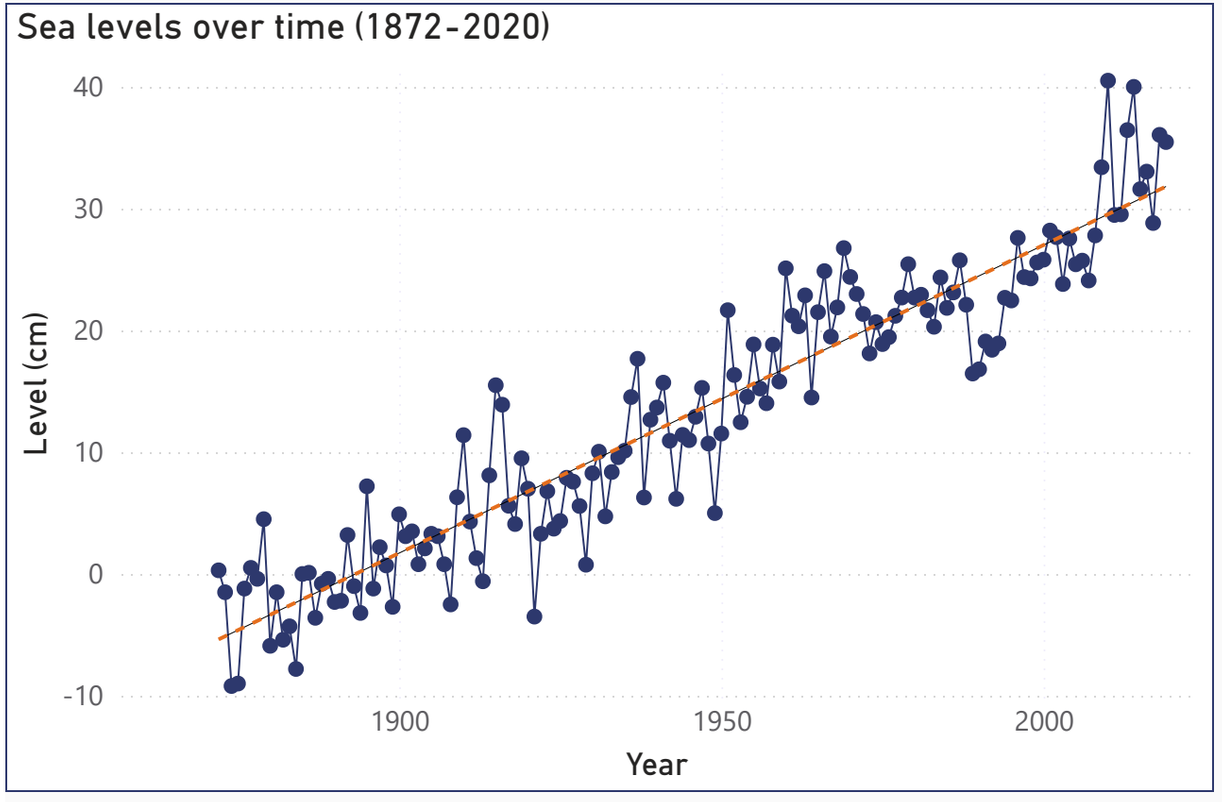
Along the Coast and Towards the Mountains: Sea and Glacier Trends

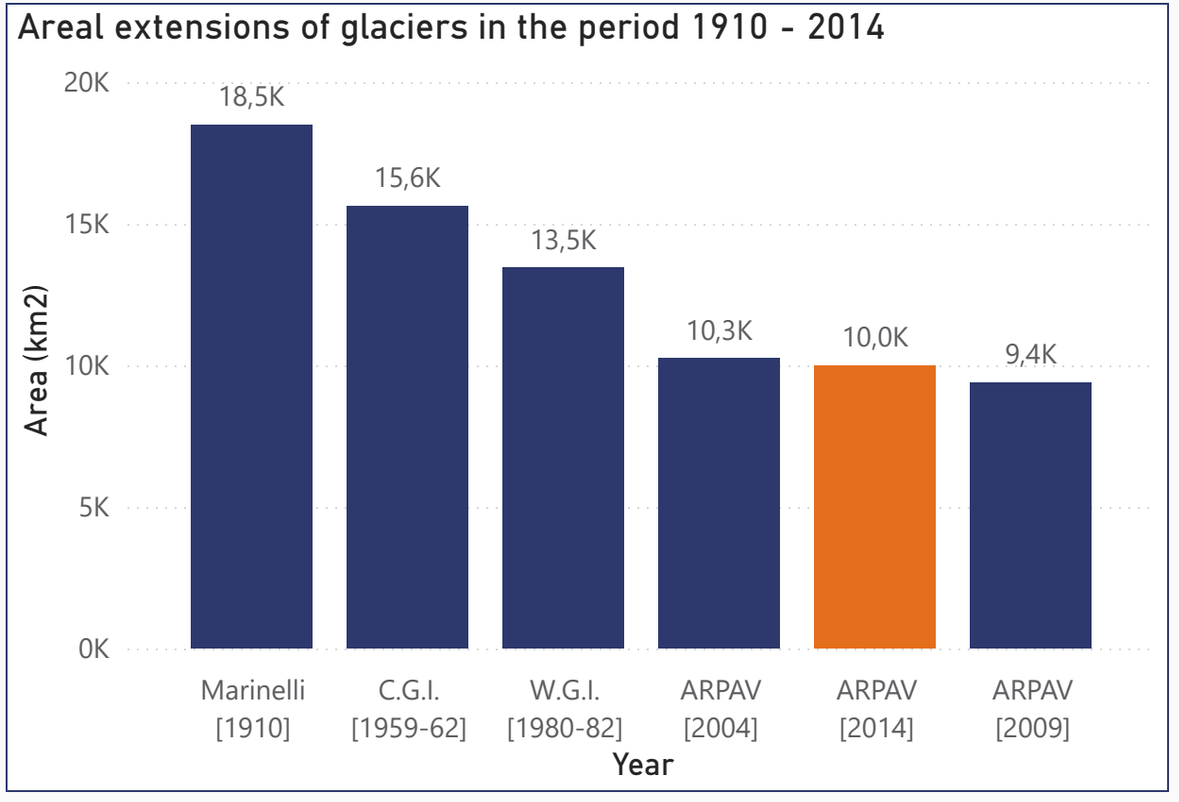
The indicator measures the **rise in the mean sea level in Venice** and is of fundamental importance for studies and conservation interventions in the city of Venice.

In Venice, the **mean sea level has tended to increase** since the beginning of records: **in the period 1872-2020 the level increased on average by 2.5 mm/year**, with a trend that was not always constant and uniform over time.

The change of glacial area from 1910 to 2014 was, on average, -45.9%.
The variation from 1910 to 1980 (70 years) was -27.3%. From 1980 to 2014 (34 years) it was -25.7% (see figure).

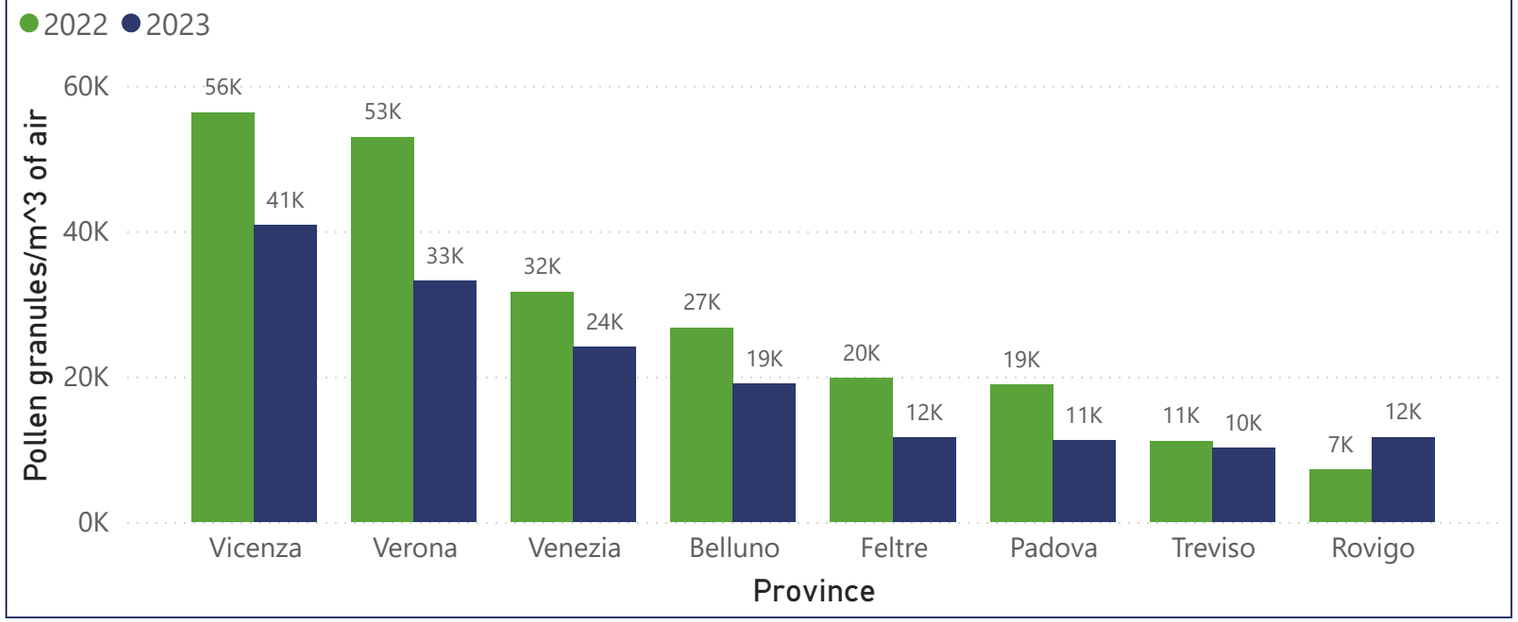
The relative stabilisation between 1999 and 2014 is mainly **attributable to the positive effects of some particularly snowy winter seasons** that occurred in the early years of the 21st century.



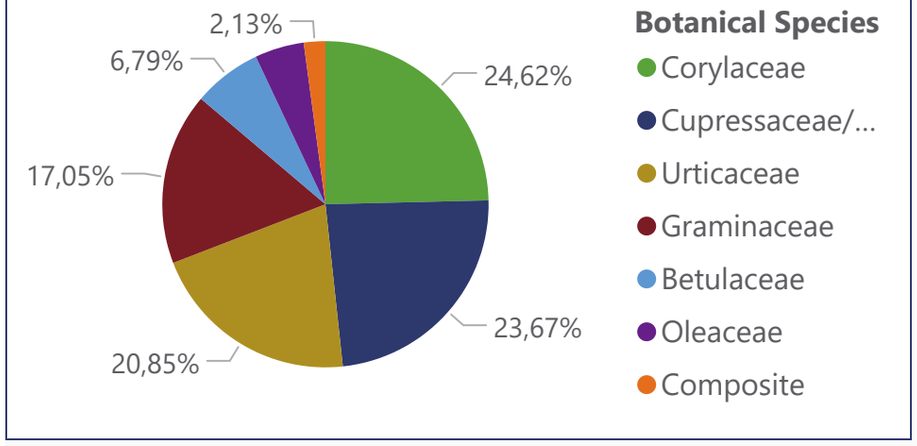


What about the air we breathe? What do data tell us about 2023?

Comparison of pollens granules between years and province



Pollen granules/m3 of air by botanical species



Comparing the two-year period 2022-2023 pollen granules **higher in 2022 than in 2023.**

The Coylaceae family is the one with the highest pollen production (**24.62%**).

PM10 are particulate pollutants in the air.

75% of the Veneto population is exposed to PM10 levels above the daily limit value 50 µg/m^3.

Percentage of the population exposed to PM10 above the daily limit value