

Visualised: glaciers then and now

Explore an interactive database that reveals how the climate crisis is reshaping glaciers around the world

Niko Kommenda

Thu 29 Apr 2021 06.00 BST

The world's glaciers are melting at an ever-increasing pace, with one report suggesting the rate of ice loss roughly doubles every 10 years. Scientists are saying the rapid disappearance of mountain glaciers - separate from the Greenland and Antarctic ice shields - is one of the most dramatic signs of global heating.

Now, a Guardian visualisation makes these stark changes visible to the naked eye. The graphics show the outlines of glaciers from Alaska to the Andes shrinking over the course of just a few decades.

The visualisations were generated from a database of glaciers called Global Land Ice Measurements from Space (Glims). Scientists around the globe are continually adding new records to Glims, building a comprehensive inventory of glaciers and how they are changing over time.

Researchers have reconstructed these glacier outlines from satellite images, aerial photography and ground surveys. Some shapes resemble withering plants; some once monumental glaciers have broken up into small fragments.

In some cases, an apparent change in a glacier's extent can be caused by different teams of researchers measuring it differently. But the vast majority of glaciers are losing more ice than they accumulate because global temperatures are much higher today than they were in pre-industrial times.

Glacial melt drives a fifth of global sea level rise, and a 2019 report suggested that up to a quarter of the world's population depended on glaciers functioning as "natural water towers", storing water in winter and gradually releasing it in summer.

Niko Kommenda

Thu 29 Apr 2021 06.00 BST