Glaciers in the Alps are on track for record-breaking ice loss

Report from Switzerland by Alec Luhn, feature writer, *New Scientist* weekly magazine, Aug 27, 2026 (print issue of Sept 5, 2026 #3611)

Glacier loss could break the 2022 record after a series of heatwaves this summer, raising the risk of falling river levels and deadly ice avalanches

I am climbing Switzerland's Rhône glacier when I feel a thump deep under my feet, then another. The glacier is shifting and cracking as it slides down the mountain, opening new crevasses within.

Dazzling blue melt streams grow and multiply across the sooty ice. Every few minutes, melting glacial remnants on the valley wall unleash rocks that crash down with the rumble of cannon fire, raising clouds of dust. Suddenly, the 20 metres of ice under my crampons doesn't feel very solid.

A four-metre aluminium tube has emerged so far from the ice that it has nearly tipped over. Andreas Bauder at ETH Zurich (Laboratory of Hydraulics, Hydrology and Glaciology) in Switzerland pulls it out. For two decades, he has been drilling stakes into glaciers to measure how much of the surface melts away during the warm months. But this year caught him off guard.

"I make sure that they're drilled sufficiently that they survive. Except when we have some special conditions like this summer," he says. "There was too much melt."

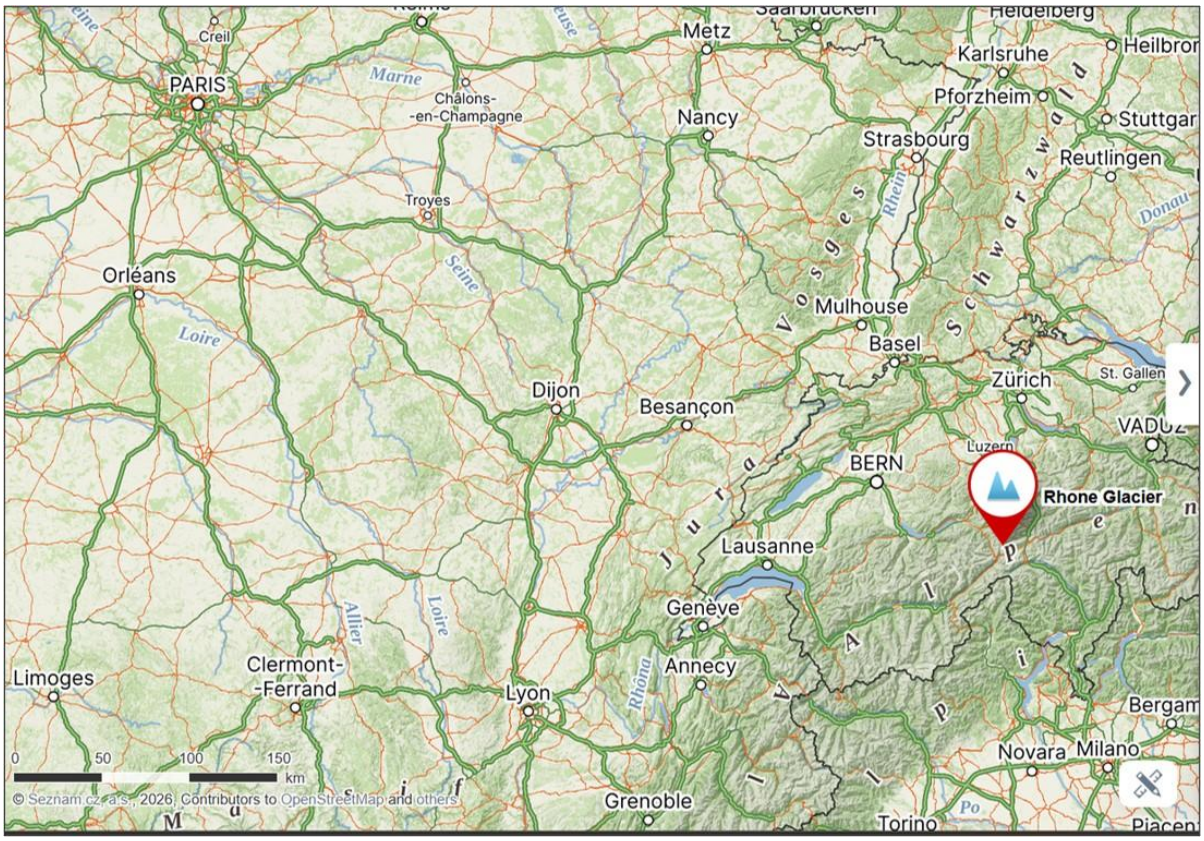
A series of heatwaves have hit Europe this season, including the continent's worst-ever heatwave in June. As a result, more than nine metres of ice have melted off the surface of the Rhône glacier. While the stifling weather finally broke in mid-August, forecasters warn temperatures could remain above average through autumn, and another heatwave is possible.

If that happens, glaciers in the Alps will probably experience record ice loss this year, says Bauder, beating even 2022, when dark Saharan dust blown across the Mediterranean sped up the melt. This would mean another six per cent of all glacier ice in the Alps would disappear.

"No final answer, but we are definitely on the way to break the record, or at least come close to [it]," says Rainer Prinz at the University of Innsbruck, who has been monitoring glaciers in Austria.

Bauder and his colleagues were taking measurements on the Rhône glacier as part of ETH Zurich's long-term monitoring of more than 100 glaciers. Extreme melt years are occurring more frequently in the Alps, unleashing devastating avalanches of ice and rock and threatening to shrink major rivers. More than 1000 Swiss glaciers – 40 per cent of the total – have vanished in the past 50 years. Another 30 glaciers could join them this summer, in what the Swiss media has dubbed a "massacre".

The bright face of the mountains is dimming. The world's last year-round ski area has temporarily closed due to unsafe conditions on the glacier under the Matterhorn's distinctive rock fang, and a famous ice tunnel passing through a glacier in Chamonix has had to be closed.



The Rhône glacier has lost 30 million tonnes of ice this year, enough melt to fill 12,000 Olympic swimming pools. A hole dozens of metres across has torn open the glacier's lower flank. At its bottom is a river of silty, grey water dotted with boulders and chunks of ice.

As we climb the glacier, we have to circumvent the hole, hopping across a spiderweb of crevasses. Members of the team start setting up a ground-penetrating radar to detect water flows at the bed. Meltwater trickling down through vertical shafts has formed a subglacial river that collapsed the ice here, says Ilaria Santin at ETH Zurich.

The Rhône glacier features in the 1964 James Bond film *Goldfinger* as a steep cascade of gnarled white ice next to the Belvédère Hotel. Today, it has retreated almost two kilometres back into the valley and the hotel has been abandoned.

A glacier's lifeblood is snowfall. In summer, the snow starts melting at lower elevations, exposing the ice underneath to warm air and sunlight. If the melt has only reached midway up the glacier by the next winter, new ice can form above it when fresh snowfall compacts the older snow. The flow of new ice from the top compensates for ice melt below.

But snowfall was scarce in the Alps this winter, and the melt began early due to an unusual May heatwave. Glacier loss day, the point when summer melt in the Swiss Alps exceeds winter snowfall, came on 2 July. “It should be in late September,” says Prinz.

Glaciers disappearing

We climb a steep icefall to almost 2600 metres, where we find another melt stake falling over. Bauder pulls it out and drills in a new one. In previous decades, the summer melt rarely reached this point. This year, it has crept above 3100 metres and counting.

While the melt line may not reach the top of the Rhône glacier, at 3600 metres, it already has for many lower glaciers. In that case, “it’s just a matter of time,” says Mauro Werder at ETH Zurich. “They will disappear.”

A non-toxic dye is used to track how fast the water is moving beneath the glacier (ETH Zurich/Marcel Karp/SAMCAM)

Under current climate policies, more than 97 per cent of glaciers in the Alps will be gone by 2100, along with most of those in Scandinavia, Russia, the tropical Andes and western Canada and the US. Only 5 per cent of Rhône glacier will be left.

That would deplete many critical water sources. Rhône glacier, for instance, is the source of the Rhône river. This great waterway flows through Lake Geneva and into France, where 19 major hydroelectric power plants line its course. Its waters cool the reactors at four nuclear plants and carry up to five million tonnes of goods on barges each year.

The Rhône also irrigates the Grenache, Viognier and Syrah grapes of famous French wine-making regions like the Côtes du Rhône, as well as much of the country's fruit production.

Glacier-fed rivers like the Rhône, Po, Rhine and Danube have shrunk to record lows this summer, revealing woolly mammoth remains and forcing power plants to shut down. That was mostly due to drought and meagre snow melt. But glaciers in the Alps have already passed "peak water", meaning the melt they contribute to rivers in summer is gradually drying up. Europe will have to consider adaptations like building new reservoirs.

"The situation is really treacherous because, with every day of the heatwave, we're using up the reserves of ice, the stocks that have been built up many decades or centuries ago," says Matthias Huss at ETH Zurich. "Ten or 20 years from now… drought will be even more problematic."

Permafrost, the icy glue that holds the mountains together, is thawing along with the glaciers. This is what increased rockfalls onto the Birch glacier near the Swiss village of Blatten. In May 2025, the glacier fractured, burying the village under 20 million tonnes of rock and ice, and killing a shepherd. Experts monitoring the glacier evacuated 300 inhabitants nine days before the collapse.

Last month, researchers showed that laying a fibre-optic cable across a glacier can detect crevasses hidden 25 metres down, a far cheaper way to monitor fracturing than seismometers. They were surprised to discover that 8 per cent of the volume of a glacier in Valais was empty crevasses. Scientists may be underestimating the damage to glaciers' stability, says Thomas Hudson at ETH Zurich, one of the study's authors.

In the past, monitoring was really all about protecting the glaciers, he says. "We now need to put more of our focus on monitoring for prevention of disasters."

As we take a breather on the glacier, I ask Werder if attempts to preserve glaciers with geotextiles or reflective clay granules could work. He says the outcomes of these geoengineering approaches are highly uncertain.

While ski resorts have covered parts of eight other glaciers with geotextiles, spreading them across Switzerland's large glaciers would cost £1.3 billion a year and only slow ice loss, not stop it. But if humanity could limit global warming to 2°C, the number of glaciers surviving to 2100 would almost double, including 269 in the Alps.

"All other solutions are pretty desperate," says Werder. "We really should just reduce CO2 fast."