

Climate

Scientists fear Nepal's disaster is just a glimpse of the carnage climate change could cause

Global warming contributes to conditions that make a glacier collapses, floods more likely, experts say

[Nick Logan](#) · CBC News · Posted: Aug 29, 2026 4:00 AM EDT | Last Updated: 6 hours ago



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Nearly 600 people were confirmed dead as of Friday after a flash flood caused by a glacier collapse inundated villages in Nepal's Himalayas. Disaster scientists say human-caused climate change made the collapse all the more likely. (Rajesh Kumar Singh/The Associated Press)

Geoscientist Jakob Steiner says it looks like "someone took a knife," cut a 1,300-metre-wide chunk from the lower part of a glacier on Nepal's Himalayas and "dropped it off the mountain cliff."

The researcher at the University of Graz in Austria says the "blast" of ice, rock and sediment that came crashing down 1.2 km, from a height of 5,000 metres above sea level, temporarily dammed the river below and created a lake.

Once that lake filled with the enormous amount of water released from the glacier, Steiner says the dam breached and unleashed the violent torrent that pummeled downstream villages on either side of the border and buried them in mud.

Additional lakes formed in the aftermath of the initial calamity could soon rupture as well, potentially worsening the death and destruction. So far, [at least 579 people have been killed](#), with about 1,400 others unaccounted for in Nepal, including 32 Canadian citizens and permanent residents.



This satellite image captured on Thursday shows the destruction at the community of Syapru Besi, after a massive piece of a glacier broke off a day earlier, causing a deadly flash flood that swept over villages downstream. (Vantor/The Associated Press)

Indigenous people in the area have long warned climbers that the mountain, Langtang Lirung, is an "angry mountain," Steiner [told CBC News Network in an interview](#) from Dhaka, Bangladesh. "They are proven right every year, again and again."

Some climate scientists are [cautious about prematurely linking](#) human caused-climate change as the sole trigger of this specific collapse.

But experts who research both glacier hydrology and the effects global warming is having on the frozen parts of the planet known as the cryosphere say this was the kind of catastrophe they've been warning about for years, particularly in the Himalayas.

IN PHOTOS | Satellite imagery shows devastation of Nepal flash floods

Nepal flash flood death toll climbs to 579, with 32 Canadians, permanent residents among missing

John Pomeroy, director of the University of Saskatchewan's Centre for Hydrology, says horrific events like this are becoming much more frequent as the effects of climate change are "destroying our natural infrastructure."

"And it's happening in a wink of an eye in Earth's history and too fast for humans to easily adapt," he said.

How climate change set the stage for tragedy

Manjueet Dhakal, a climate scientist in Nepal's capital Kathmandu, had passed through the devastated region on a family trip just days before the collapse.

It was hard for him to see areas he had just visited completely washed away, including the country's largest solar power generation plant.

He says the Himalayas are a "very complicated landmass" that's part of the greater Hindu Kush Himalaya region stretching from Myanmar to Afghanistan and containing [more than 63,000 glaciers](#).

PHOTOS | Aftermath of devastating glacier collapse, flood in Nepal's Himalaya region:

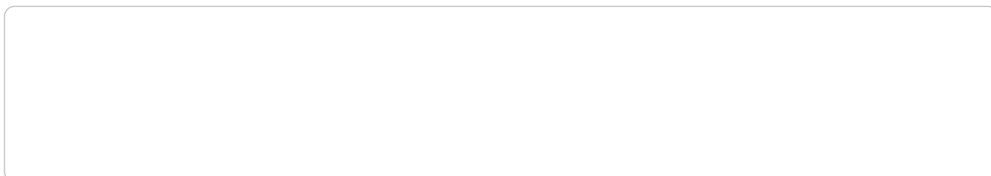


The death toll continues to rise and more than 1,300 people are missing, including 30 Canadian citizens and permanent residents, after an avalanche of ice and rock triggered massive flash floods that swept through parts of Nepal on Wednesday. (Niranjan Shrestha/The Associated Press)

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Warmer global temperatures, linked to emissions from the burning of fossil fuels, have "stressed" the mountain region," Dhakal said in an interview with CBC's What On Earth.



That includes altering precipitation patterns, increasing snow melt, triggering more avalanches and drastically accelerating glacier retreat.

"The glaciers are disintegrating," said Pomeroy, explaining that the Himalayas have already lost 21 per cent of their glacier coverage in the first quarter of this century as a result of the planet heating up to the point it's at now.

It's also thawing the permafrost, which he says is what "holds these high mountains together."

"All these things together mean that we'll get events like this every year, somewhere in the world," he said in a separate interview with What On Earth guest host Leisha Grebinski.

WATCH | CBC's Johanna Wagstaffe explains the violent collapse of a glacier in Nepal:



The science behind Nepal's violent flash flood

► August 27 | 2:39

An entire river valley along the Nepal border was wiped out in seconds... but local radar showed no rain, and it wasn't an earthquake. CBC Meteorologist Johanna Wagstaffe breaks down how a massive glacier collapse triggered a violent inland tsunami—and why geologists warn this unfolding climate disaster isn't over yet.

Global concern about glaciers

There was a glacial flash flood in this same Nepal-Tibet border region [last year](#), but it wasn't the result of a massive piece of a glacier breaking off. It was due to what's known as a glacial lake outburst flood (GLOF), something that happens frequently around the world — including in Canada.

GLOFs happen when water held back at the edge of a glacier by a natural dam made of ice and sediment, called a moraine, overflows or breaches the barrier.

A glacial lake in B.C. is at risk of bursting — again. How climate change has raised this risk

What caused the 'shocking' landslide that destroyed a Himalayan village?

Sometimes that's due to sudden and intense downpour, like the one that [destroyed a village in India's Himalaya region](#) in August 2025. Other times it can be the result of an avalanche or landslide at a higher elevation that crashes into the pooled water.

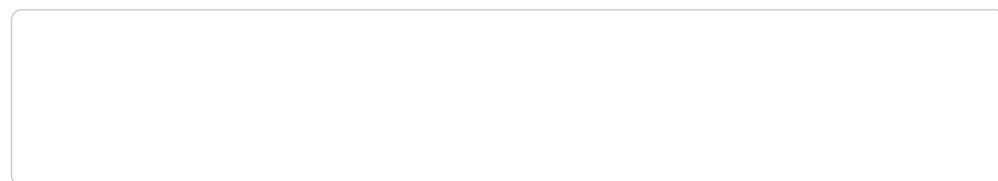
They can also happen when pooling meltwater dammed by the glacier itself eventually drains from the bottom of the basin, where the ice meets the bedrock. This [happened at the Place Glacier](#), near Pemberton, B.C., in June.



A child walks in mud from the aftermath of flash floods in Devighat in the Nuwakot district in Nepal on Thursday. (Nirajan Shrestha/The Associated Press)

While GLOFs are naturally occurring, they have become more of a threat, according to research [published by Nature in 2023](#), because global warming is contributing to greater ice loss and subsequently increasing the volume of glacial lakes.

That study estimated some 15 million people are exposed to the risks of GLOFs within 50 kilometres of where they live — largely in the Himalayas, but also the Andes region of South America and the Alps in Europe.



It's a "critical situation" in places like the mountain villages of Nepal, says Slobodan Simonović, director of engineering works with the Institute for Catastrophic Loss Reduction and professor emeritus at Western University in London, Ont.

He says those communities are "nested" very close to the streams and rivers fed by melting water from glaciers, leaving them more exposed.

LISTEN | Why climate scientists say they have been warning about a disaster just like this:



What On Earth 26:23

The disaster in Nepal as a 'wake-up call from Mother Nature'

The damage and loss of life these floods can cause is tremendous, Simonović says, noting the effects can be long-lasting and create "a bad situation on so many fronts."

Glaciers are a vital source of water for drinking and irrigation, and he says a collapse like this week's means communities downstream of the initial deluge will have a limited supply in the coming seasons.

WATCH | Further flood risk in devastated Nepal region after deadly glacier disaster:



Lake formed from glacial debris poses new flood threat at Nepal-Tibet border

▶ August 28 | 15:09

A new lake formed from debris from the glacial collapse on Wednesday has begun to overflow, Nepalese authorities say, posing a new flood risk for areas downstream.

Act, don't adapt

Steiner, the geoscientist from the University of Graz, says the disaster in Nepal could have been prevented, but only if governments had "made different decisions 15 years ago on how we use our resources."

Though he says "climate change had a role" in this event, Steiner notes that it's also a matter of being better prepared and having early warning.

10 Toronto residents on a trek in Nepal unaccounted for after deadly flash floods: non-profit group

He says he and other scientists had been working with Nepalese authorities on this front, but it was difficult because of domestic politics and the fact that it's a trans-boundary area, meaning there needs to be co-operation and co-ordination with Chinese agencies on the Tibetan side of the border.



A resident surveys the devastation left by flash flooding in Nepal's Nuwakot district on Thursday. (Rajesh Kumar Singh/The Associated Press)

Even with more monitoring and warning systems, the University of Saskatchewan's Pomeroy says we also need to limit further global warming.

He says he hopes the scenes from this catastrophe help to "galvanize the world" to work to reduce greenhouse gases rather than just expecting people to adapt to climate change.

"You cannot adapt to a 20-metre wave of water chasing you down the street that's about to wipe you out."

With files from Lauren Pelley, Molly Segal, Jennifer Wilson, Leisha Grebinski, Mark Carcasole and Reuters

