

No glaciers, no future



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The Earth's surface is made up of 19 percent of land, 71 percent of water and 10 percent of ice. The vast majority of water, over 96 percent, is non-drinkable saline water in the oceans. Just 3.5 percent is freshwater, but only a minuscule amount — about one percent — are in lakes and streams. The bulk of freshwater, almost 70 percent, is trapped in ice and glaciers. While ice is mainly concentrated in Greenland, the Arctic and Antarctic regions, some of it is scattered around in the form of mountain glaciers in Iceland and Alaska, as well as in many mountain ranges in Europe, North and South America, and Asia — most notably the Himalayas. Cold, powerful, immense and beautiful as they are, these remnants of the past Ice Age are an inherent feature of our planet.

three degrees. Air temperatures in the high mountain region from the Hindu Kush to the Himalayas have already risen by nearly two degrees since the start of the 20th century. In response, glaciers are retreating and melting, permafrost is thawing, and weather patterns are becoming more erratic in India, Pakistan and Bangladesh.

Several research suggests that the Himalayan glaciers have already shrunk by nearly 40 percent since the industrial revolution. The melting could accelerate further over the next few decades due to increased air pollution. That is because the dirty air deposits black carbon and dust on the ice, speeding up the melting. Depending on the level of global warming and air pollution, studies project that at least another third, and as much as two-thirds of the region's glaciers could vanish by the end of this century.

Glaciers are a natural data bank and act as sentinels of climate change. Because they manifest changes in weather and climate over long periods of time, glaciers are considered the gold standard for understanding changes in the climate. They are the linchpin of life on Earth, too. As giant reservoirs of freshwater, they support our day-to-day life by feeding many of the world's important river systems, including the Ganges, Indus, Mekong, Irrawaddy, Yellow and Yangtze in Asia. Over a billion people depend on these rivers for their livelihood and sustenance.

Global warming is taking a heavy toll on the glaciers. Since the early 20th century, most of the glaciers around the world have been retreating at unprecedented rates. Indeed, some of the glaciers are retreating so rapidly that they may disappear within a matter of decades. Although atmospheric warming is the main driver of glacier melt, local topography, complex interactions between wind and circulation patterns of warmer ocean currents are also shaping the pace of retreat.

A study published in January 2023 in the journal Science finds that even if the rise in global temperature is restricted to the ambitious target of 1.5 degrees Celsius, up to half of the world's glaciers will disappear by 2100. If the temperature rises by two degrees, 60 percent of all glaciers will vanish, while more than 70 percent will melt if the temperature rises by

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The impacts of glacier-melting will hit not just those living near the mountains, but also hundreds of millions of people living in the valleys below, as they will be vulnerable to flooding and the destruction of crops. Last year's record breaking glacial melt in the Hindu Kush mountain range caused catastrophic floods in Pakistan, submerging cities and farmlands and killing nearly 1,500 people. Additionally, as glaciers melt, the excess water leads to the creation of



Ruth Glacier (1,707-metre elevation) at the Sheldon Amphitheater of Mt Denali in Alaska, US.

lakes on top of the glaciers or at their lower snouts. Since the late 1970s, the number of glacial lakes across the Himalayas in Nepal has more than doubled. These lakes hold so much water that they can — and have — burst through the rock piles holding them back, resulting in devastating floods. Moreover, as steep slopes that had been locked in place by frozen soils have thawed, rock falls, collapsing terrain and avalanches have become more common.

Another effect is the loss of freshwater. The less ice there is, the less water there is for human use. Species are also at risk. Many land and sea animals rely on glaciers as their natural habitats and as they disappear, so does the rich ecological life they shelter.

Glaciers act like air conditioners for our planet. Their white surfaces reflect a substantial fraction of sunlight, helping to keep our climate mild. When they melt, the darker exposed surfaces absorb more heat, thus raising the surrounding temperatures.

According to a paper published by an international team of scientists in this month's Nature Communications, there will be an irreversible loss of glaciers and ice sheets leading to a "rapid acceleration of sea level rise," unless the global

temperature rise is not kept below 1.8 degrees. A joint study by the British Antarctic Survey and the US Antarctic Program concludes that if one of the

world's fastest melting glaciers — the gigantic Thwaites — in The White Continent melts completely, it will raise global sea levels by half a metre.

CROSSWORD BY THOMAS JOSEPH

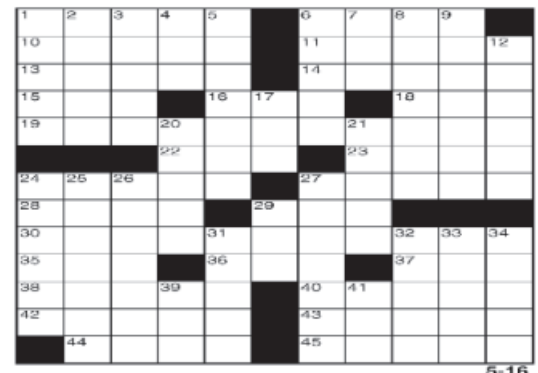
ACROSS

- 1 Took to the slopes
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10 Painter Matisse
11 Mayhem
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14 Make blank
15 41-Down, in Spain
16 Mariner's place
18 Sprint
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DOWN

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- dish
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36 Pod veggie
37 Spanish gold
38 Fill with joy
42 Seth of "Neighbors"
43 Make law
44 Orderly
45 Cars' scars



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গণপ্রজাতন্ত্রী বাংলাদেশ সরকার
বাংলাদেশ পুলিশ
পুলিশ সুপারের কার্যালয়
পিরোজপুর
উন্মুক্ত দরপত্র বিজ্ঞপ্তি নং-০৪/২০২২-২০২৩
আবেদন নং/পিরোজপুর (বেসন)/৮-৭৬/ই

বাংলাদেশ গবেষণা ইনস্টিটিউট
(বাংলাদেশ চা বোর্ডের একটি অঙ্গ প্রতিষ্ঠান)
শ্রীমঙ্গল-৩২১০, মৌলভীবাজার।
"বেশী বেশী চা পান করুন, স্বাস্থ্য সুন্দর সতেজ রাখুন"।
"বেশী বেশী লিকার চা পানো ক্যান্সার, হৃদরোগ হার মানো"।