

# Pandemic lockdowns resulted in reduced snow and ice melt in Indus River Basin

April 27 2021, by Bob Yirka

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A team of researchers from the University of California, Santa Barbara and the University of Colorado, has found that the COVID pandemic lockdown resulted in reduced snow and ice melt in the Indus River Basin last year. In their paper published in *Proceedings of the National Academy of Sciences*, the group describes their study of dust and soot in

the region last year and the impact it had on how much ice and snow melted.

The Indus river gets its start in Tibet, moves northwest for a bit and then flows southwest through Pakistan, near its border with India, before finally emptying into the Arabian Sea. It is fed by mountain springs and snow and [ice melt](#). Prior research has shown that over the past century, pollutants have settled on the snow and ice, increasing the amount of heat that is absorbed. The rising heat has led to an increase in melting, and resulting increases in [water flow](#) and therefore flooding. In this new effort, the researchers have found that the lockdowns enacted last year to slow the spread of COVID-19 led to reductions in [air pollution](#) and corresponding reductions in ice and snow melt.

The work involved studying [satellite data](#) for the region, comparing snow cover last year with previous years—they looked at both the cleanliness of the snow and its extent. In so doing, they were able to see that snowpack for 2020 was 30% cleaner than in the 20 years prior to the pandemic. They calculated that the reduction in light-absorbing particles on the snowpack resulted in delaying the melting of 6.6 cubic kilometers of water—most of it eventually melted later in the season.

The researchers conclude that the pandemic lockdown had a dramatic impact on pollution levels in the region, which greatly improved air quality while reducing the amount of soot and other particles settling on snow and ice in the Himalayas. They also note it sets a stark example of the impact of human behavior on the water supply for billions of people.

**More information:** Edward Bair et al. COVID-19 lockdowns show reduced pollution on snow and ice in the Indus River Basin, *Proceedings of the National Academy of Sciences* (2021). [DOI: 10.1073/pnas.2101174118](#)

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