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Connections between climate change and rockfall

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The climate is changing worldwide, with air temperatures in most mountains increasing more than they do on a global average. The average global temperature has increased by about 0.6 ° C in the 20th century. Nature Scientists are increasingly confronted with the question of whether there are more rockfalls due to climate change. Existing literature has been revisited to study how climate change influences the factors that trigger rockfall. Which different trigger factors exist for rockfall and how are they influenced by climate change. In addition, the expected changes in rockfall were quantified and predicted. The three main factors that are likely to increase rockfall most in the future are the thawing perma-frost during heat periods, the factor of tension concentrations, which will increase as the glaciers continue to decline, and the increasing days of frost change in the high alps. According to the climate adaptation strategy of the Swiss Confederation, fall processes are likely to occur more frequently in the coming decades. This is justified by the gradually thawing permafrost and with increasingly exposed sediment (BAFU, 2012). These assumptions are based on further global warming, but which no-one can predict with certainty. Rockfall has always existed and has very different triggering factors, which are variously influenced by climate change. Mountain hikers should be very careful to be in the right place at the right time, which will certainly reduce their exposure to rockfall compared to someone who is travelling in a hot period or during a thunderstorm with heavy rain.

BAFU (2012). Anpassung an den Klimawandel in der Schweiz. Ziele, Herausforderungen und Hand-lungsfelder. Federal Office for the Environment (FOEN/BAFU), Bern.