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## Avalanches in history – a history of avalanches

From the earliest reaches of history, avalanches have had a way of humbling even the most heroic human endeavours. In 218 BC, the Carthaginian general Hannibal left southern Spain with some 90'000 soldiers, 12'000 horsemen and three dozen elephants. They crossed France and climbed into the Alps on the way to attack Rome. After defeating their foes in a number of terrible skirmishes, Hannibal's army reached a pass, and to cheer his troops, Hannibal made a speech, declaring they were almost there - in Rome, that is. The trouble was that the Alps on the way down to Italy proved far steeper than on the way up from France. Worse, November storms had covered them with snow. Although they encountered no enemies during their descent, thousands of soldiers and horses were lost to avalanches.

In 1499, Kaiser Maximilian ordered 10'000 soldiers to invade the Engadin Valley; as the army crossed a high mountain pass, four hundred men were carried away by an avalanche.

Able to bury entire armies and lonely wanderers alike, avalanches were particularly terrifying because they seemed to come crashing and foaming out of the mountains with no predictability and no warning. Worse, in most cases they erased all traces of their victims, causing even the level-headed to think they had been brought on by some sort of black magic. The record of a 1652 Swiss witch trial states plainly that "witches are the causes of avalanches." In Uri, an old woman dressed in black already under suspicion for witchcraft met a dire fate when villagers reported seeing her riding down a hillside on the wave of an avalanche, quietly turning her spinning wheel. Just as she began praying in thanks for her deliverance from the slide, townspeople grabbed her, threw her on a pile of wood, and burned her alive.

*from "White Death" by McKay Jenkins*

## Moritzli

Legend has it that it was in fact not a Saint Bernard but a terrier that first pioneered the use of dogs in modern avalanche search. In 1937, when a Swiss rescue team went looking for avalanche survivors, one of the rescuers took along his dog Moritzli. All the avalanche victims had been discovered except one, when it was noticed that Moritzli kept sniffing around and returning to the same spot in the snow. When he began to bark and whine, the rescuers began to dig and found the last victim - alive.

*from "White Death", by McKay Jenkins*



## Sawdust slows rate of melting snow

Artificial snow, here shown in summer, piled up in a valley near Davos

Snow can be stored over summer at relatively low altitudes, the Swiss Snow and Avalanche Research Institute has revealed.

An experiment in Davos found that a thick layer of sawdust reduced the rate of melting better than fleece, which is also used to conserve glaciers.

In June researchers in Davos, which lies at an altitude of 1,560 metres, shovelled 2,500 cubic metres



of snow into a seven-metre high pile. Half was covered with fleece and half with a 40cm layer of sawdust.

The sawdust method turned out to be significantly superior,

the institute said. Around three-quarters of the snow remained under the sawdust, whereas only a fifth was left under the fleece.

Although fleece is already used to slow the speed at which glaciers melt, other challenges exist when storing snow at 1,500 metres, which is on average five to eight degrees warmer than at glacier level.

At that low altitude, simply keeping snow or ice out of sunlight isn't enough, said the researchers - a layer of insulation is also needed to reduce the effects of the surrounding air temperature.

Sawdust fulfilled this task better than fleece, although admittedly, fleece was easier to transport and store than sawdust.

Storing snow is worthwhile for a tourist resort particularly if it is tied in with a specific event or training session at the start of the season.

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