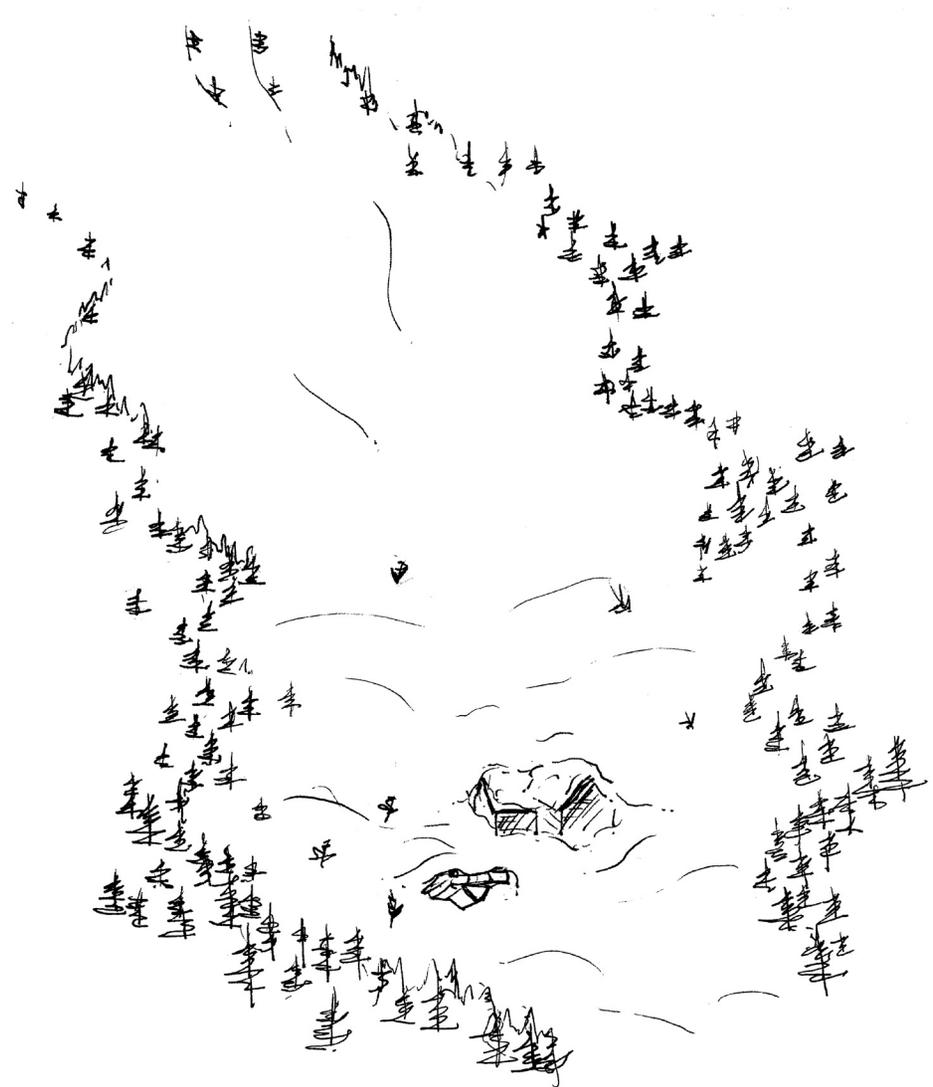


avalanches

An avalanche is a falling mass of snow that may contain ice, rock, or soil (McClung and Schaerer 1993). An avalanche occurs when driving forces, such as gravity, outweigh resisting forces, such as the bonding between snow grains. There are four elements to every avalanche: snow, a weak layer in the snow cover, a steep slope, and a trigger. Nearly 90% of avalanches occur on slopes of 30 to 45 degrees. Most avalanches happen on slopes above the tree line that face away from the prevailing wind (Utah Department of Public Safety 3 Dec. 2004). However, an avalanche can occur anywhere the four elements are present.

Avalanches generally affect people by causing injury or death. However, avalanches can cause property damage and affect the environment. They can cause an interruption in transportation on highways and railroads. Buildings and utility lines can be damaged or destroyed by avalanches. Tourism can also be harmed by avalanches in recreation areas. Past avalanches may cause anxiety to tourists and deter them from spending vacations in some areas. Direct costs from avalanches are usually associated with property damage (McClung and Schaerer 1993). Costs associated with road closures and clearing of debris are often incurred by the municipality responsible for the road.

Comprehensive planning is the best way to avoid avalanche damage. Restricting development on steep slopes prone to avalanches is one way to mitigate. If development is to occur in areas with avalanche potential, steps should be taken to avoid removing vegetation which could further increase the chance of an avalanche occurring. In instances where development in areas with avalanche hazards cannot be avoided, care should be taken to educate the public about emergency procedures associated with avalanches and their prevention.



Developing in avalanche prone areas can have disastrous effects.

references and further reading:

McClung, David, and Peter Schaerer. The Avalanche Handbook. Great Britain: Cordee, 1993.

Utah Department of Public Safety. 2004. Avalanche Information. 3 Dec. 2004. <<http://des.utah.gov/hazards/avalanche.htm>>.