



\* Landslide

\* A landslide, also known as a landslip, is a geological phenomenon that includes a wide range of ground movements.





## \*Causes

- \*groundwater (pore water) pressure acting to destabilize the slope

- \*soil nutrients, and soil structure (e.g. after a wildfire - a fire in forests lasting for 3-4 days)

- \*erosion of the toe of a slope by rivers or ocean waves

- \*Landslides are aggravated by human activities, such as: deforestation, cultivation and construction

- earthwork which alters the shape of a slope, or which imposes new loads on an existing slope

- \*in shallow soils, the removal of deep-rooted vegetation that binds colluvium to bedrock

- \*Construction, agricultural or forestry activities



# \* Historical landslides

- \* Hope Slide landslide (46 million cubic metres) near Hope, British Columbia on January 9, 1965.[16]
- \* The 1966 Aberfan disaster
- \* Tuve landslide in Gothenburg, Sweden on November 30, 1977.
- \* The 1979 Abbotsford landslip, Dunedin, New Zealand on August 8, 1979.
- \* Devil's Slide, an ongoing landslide in San Mateo County, California
- \* 2011 Rio de Janeiro landslide in Rio de Janeiro, Brazil on January 11, 2011, causing 610 deaths.[18]
- \* 2014 Pune landslide, in Pune, India.
- \* 2014 Oso mudslide, in Oso, Washington





\* consequences

- \* Broken pipes, houses, roads, cause serious damage to farmland. The worst of the consequences of these disasters - loss of life.
- \* Signs of approaching landslide: Doors and windows in rooms jammed. Because of the slope with a landslide that hit, the water

