

plagirism report

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- 1- Mass Movements can move at various speeds, from imperceptible slow to as fast as freight train. Describe the relative speed of movement of the following types of mass movement and order them from the slowest to the fastest. Then take three of these mass movements and describe the factors involved in initiating movement and which of these factors can be controlled to increase the factor of safety on the slope? Look at debris avalanches, soil creep, rockfall, rock slide, and lahars.

Mass wasting can be described as the strength by which specific landforms like earth, dirt, and stone, and this structure of coarse fabric covering the rock of the world make downslope. The change is not at fragments but en masse, mainly under the influence of gravity but often impacted by food and water content as in submarine environments and mudflows. When peoples of rock, land, or debris go down the side, there is a landslide. This move may be smaller or significant, slow, or at a higher pace, carrying along with its considerable amount of land. These are unexpected moves, and with the result of geological agents, e.g., food, weather and will make the change of earth (Shanmugam, 2018).

Mass movement is an essential topic of discussion in the field of physical geology. Physical geology is interested in the study of rocks, and mass movement defines how these rocks move down slopes into the response to the pull of the gravity. There are various types of mass wasting and also their causes and even effects. Global Climate Change is also another important topic in the field of geology.

When the mass of rock, land, or debris goes down the side, there is a landslide. This move may be smaller or a bit larger, slow, or else at a higher pace, carrying along with its larger amount of land. These are unexpected moves, and with the result of geological agents, e.g., food, weather and will make the change of earth. Also, the so-called the dust flows, the mudslides, particularly after heavy rain or else cloud fire, are as well running a mass of the stone, the land, plus extra dust flooded with the water causing a big body wasting or else mass movement. When water quickly accumulates within the soil, during rapid snow melting, it shifts the surface of the region into a flowing stream of soil. This diversity of downslope the big mass movements reflects the variety of elements that are in charge of their initial origin. These factors regarding slope conditions can frequently mix with climatic factors, e.g., weather and ice action, to create downslope mass change.

Debris avalanches move at a speed of about 10m/s. some large flows can, however, reach much higher speeds. Soil creep is the slowest mass movement that can go for years or even centuries. It moves at a speed of about 1cm per year. Gravity accelerates rock fall to at 9.8 meters per second (Marshak, 2013). Rockfall can run at speeds of about 200 to 300 km/hour. Lahars, on the other hand, can move at speeds of over 80 km/h. Therefore, the arrangement of the slowest to the fastest mass movement is as follows: soil creep, rockfall, debris avalanche, lahars, and then rockfall.

Soil creep is mainly triggered by increased water. It is caused by the expansion of materials like clay when exposed to water. Clay soil then dries, and the particles loosen and may shift from the place they occupy down the slope. External forces, such as moving vehicles and earth movements, can also trigger soil particles to move downwards. Rockfalls are triggered by mechanisms such as water, earthquakes, human activities, and ice (Marshak, 2013). These

mechanisms are the final forces that cause unstable rocks to fall. Eruptions might trigger lahars through melting snow or else through removing water from the Crater Lake. Then pyroclastic movements can also trigger lahars when enormously hot, the moving rock debris erodes and mixes thoroughly with a snow as it travels down steep the slopes. Factors that can be controlled include human activities through vegetation to control soil creeps.

The diversity of the downslope entire mass movements as well reflects the variety of elements that are in charge of their initial origin. Such elements comprise Weathering or else erosional debris covering on the slopes, which is normally susceptible to mass change; the role also the composition of the rocks, e.g., resistant penetrable beds inclined to slipping because of the underlying impervious stones; the separation of this vegetation back, which then increases the incline's condition to body change via reducing its steadiness; the artificial or else natural increases within the slope's steepness, Which can normally cause body change; earthquake tremors, which alter the slope structure as well as increase the probability of mass change; also falling surface water, which exerts a force on the soil particles as well as damages slope stability. Also, these factors regarding slope environments can frequently mix by many climatic factors, e.g., weather and ice action, to create downslope mass change (Peakall et al. 2020).

In conclusion, a mass movement is an important topic to discuss in geology. Mass movement explains the downslope movement of materials such as soil, rock, or mud. Therefore, it is essential to study such a topic in order to understand what is happening today in terms of climate change.

Reference

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