

## Question

Topic: Summary of information about website

<http://www.tulane.edu/~sanelson/geol204/masswastproc.htm>

Pages: 3

Sources: 4

Format: APA

Deadline: 24 hours

Instructions:

Prepare a summary of the information that you find at the following website. Please provide details on what you see as illustrations, graphics and charts that enhance the subjects covered in the text. And, if applicable, how might this website be helpful to you in your everyday life Mass-Wasting and Mass-Wasting Processes

(<http://www.tulane.edu/~sanelson/geol204/masswastproc.htm>).

Your responses must be complete, using terminology and concepts.

Be sure to cite your resources and provide the references using APA format. Remember to reference all work cited or quoted by the text authors. You should be doing this often in your responses to the Mass-Wasting and Mass-Wasting Processes at the website below.

(<http://www.tulane.edu/~sanelson/geol204/masswastproc.htm>)

As human populations expand and occupy more and more of the land surface, mass-wasting processes become more likely to affect humans.

"One of the resources should be McKnight's Physical Geography a Landscape Appreciation (Tenth Edition).

**Solution**

Article Summary

Student Name:

Institution:

The article *Mass Movements and the Human Impacts* provides an overview of the geographical activities happening on the earth surface and their impacts on the human activities. Therefore, according to the article Mass Movement is referred to the bulk downslope relocation of bulk segments of soil, rocks, and regolith found on the earth surface in response to the forces of gravity. This process can occur slowly, spontaneously or very vigorously and in that regard it can cause damage.

Also, according to the article, a landslide is the detectable down slope movement of soil and rocks, and it has adverse effects on human life. This is illustrated in the article using a table which shows different types of countries and the number of deaths caused by landslides in various periods. As a result, some countries like China and Peru seem to record the highest number of deaths in different years (200, 000 and 75000 respectively). In comparison, Austria and Taiwan registered less number of deaths (below 400). Other, countries like the U.S records an estimated damage of up to \$ 2 billion and an average of 25 to 50 deaths, in a typical year (Nelson, 2014).

Less developed countries seem to experience more damages from landslides as compared to the developed countries. Most of these countries are densely populated, and also lack enough resources like emergency responses programs and zoning laws to countermeasure the effects of landslides (Haddow, 2017).

Mass movements comprise of Slope failures and Sediment flows. Under slope failures, there are different forms of mass movement which include slumps, falls, and slides. Firstly, Slumps occurs whereby the rocks are arranged in a concave shape forming layers. And,

therefore, upon disturbance, the surface layer starts to fall leaving the first layer intact. This effect can be caused human activities like through construction of roads along the slope or due to erosion below the cut-slope leading to slumps. The second type is Falls; it occurs when rocks or debris attached to a cliff is dislodged from its point of attachment on the slope. This can happen due to human activity, heavy rains, or other free falls hence leading to the collision of rocks along the cliffs which finally dislodges them making them fall. It can also be associated with dropping of a mixture of soil, vegetation, and rocks to the surface of the cliff thus forming a fallen material at the base known as talus.

Lastly, Slides happens on a sloping surface which comprises of fractures caused by expansion of rocks during cooling. As a result, the fractured rocks on the surface start to fall down the slope to the base of the cliff.

Sediment Flow is the other type of mass movement. It occurs when debris slides down a slope mixed with air and a liquid due to pressure from excessive force. There are two forms of sediment flows including slurry and granular flows. Slurry flows occur due to excessive water in the sediment content hence forcing it to flow down the slope. It usually comprises of 20% to 40% water thus making the mixture to flow downstream. Granular flows consist of the low percentage of water in the mixture content hence it remains fluid-like. Therefore, it is not-saturated with water like slurry flows (Nelson, 2014).

Slurry flows,

- i. Solifluction, It flows for extended periods. Hence, have high velocity.
- ii. Debris flows occur at higher velocities as compared to solifluction. It usually happens due to heavy rains which increases its water content. It flows at a speed of about 100 meters per hour.

iii Mudflows- They occur at higher velocities than Debris. It is highly saturated with water and hence highly vicious. It can flow at an average rate of 1 km/hr. It is also caused by heavy rains and volcanic eruptions (Hsieh et al., 2017).

Granular flows include:

- i. Creep- This happens slowly but in almost all slopes for example in bent trees.
- ii. Earth flows- It usually caused by heavy rains and it typically moves at an average speed of 100 m and above per day. Therefore, it forms tongue-like structures as it flows down the cliff.
- iii. Grain flow low saturated by water hence it is more of dry material. It comprises of a sand dune which is moved down slope by human activity or heavy winds.
- iv. Debris Avalanches- They are caused by volcanic eruptions and have very high velocity flows.
- v. Snow Avalanches – They have a high content of ice hence more dangerous than debris avalanches.

Mass movements can also happen in cold climates which are associated with ice conditions. In this state, the ice can move hence contributing the formation of rock glaciers which are ice-cemented and usually confined between blocks as they flow down the slope. It also leads to Frost Heaving which is generally caused by the freezing soils which are highly saturated by water. Mass movements can also occur in oceans basins leading to three forms of actions which include submarine slumps, debris flows and turbidity currents.

This article is of great importance to my daily practices. It enables one to understand various effects of mass movements and how they occur. This knowledge forms a basis towards

mitigation processes of the adverse impacts of multiple forms of mass movements like Snow avalanches and landslides which are has caused numerous deaths worldwide (Smith, 2013). In that regard, human activities have been attributed to various mass wasting events hence through this article I have able to learn to regulate my activities which leads to soil erosion and slumps like road construction along slopes.

## References

Nelson S. (2014). “*Mass movements and Their Human Impact*”. Tulane University.

[https://www.tulane.edu/~sanelson/Natural\\_Disasters/masswastproc.htm](https://www.tulane.edu/~sanelson/Natural_Disasters/masswastproc.htm) Accessed on  
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Smith, K. (2013). *Environmental hazards: assessing risk and reducing disaster*. Routledge.

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Hsieh, M. L., Hogg, A., Song, S. R., Kang, S. C., & Chou, C. Y. (2017). A mass-wasting  
dominated Quaternary mountain range, the Coastal Range in eastern Taiwan. *Quaternary  
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