

Landslides

INTRODUCTION

A landslide is a sudden movement of rocks, debris or earth down the slope of a mountain or hill. Generally, these are very small and hardly noticeable. However, sometimes, these can be massive and sweep away everything in their path. Landslides occur in all states of the United States. But, they are most common in mountainous or coastal regions.

There are many different events capable of triggering a landslide. However, these always have two things in common, an unstable slope and the force of gravity. The following events are common causes of landslides.

The most common cause of landslides is heavy rainfall. The water makes the slope of a mountain very heavy making it unstable at the same time.

Trees make mountain slopes more stable because their roots hold the soil together. When trees are removed from a slope, the soil loosens and makes the slope unstable.

Earthquakes can trigger landslides as they move the soil and weaken slopes.

Erosion can also cause landslides when the base of a slope is slowly removed by rivers or ocean waves.



Landslides

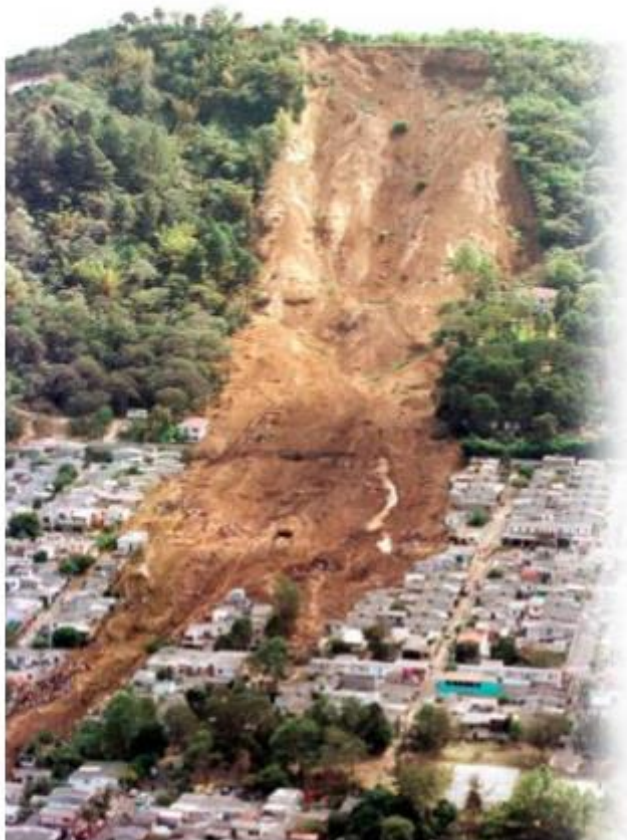
DIFFERENT TYPES

Landslides can be classified in many different ways. The main types of landslides are falls, slides, and flows.



Falls occur when rocks or ground suddenly fall from a steep area. This kind of landslide is also called a topple. Falls are extremely dangerous and can be very destructive. Most falls happen near quarry highways, vertical roadcuts and stream cut banks.

A slide is a kind of landslide that happens when a part of a slope suddenly moves downhill. This kind of a landslide is formed when a weak part of a slope separates from the ground underneath. Slides are a common type of landslide which usually happen when the base of a slope is removed.



Flows happen when a mix of water, soil and rocks rapidly moves downhill. Most flows develop slowly and are caused by heavy rainfall. When the base of a slope is too wet to absorb additional water, it will run off the surface and gather dust, dirt and rocks. These kind of landslides are also called mudslides. Flows can be very powerful and capable of destroying entire villages.

Dangerous Landslides

IN HISTORY

In 1920, the deadliest and most destructive landslide in history happened in China, near the border of Tibet. It happened because of an earthquake which triggered many huge landslides. Hundreds of towns and villages were destroyed and more than 180,000 people were killed.

One of the deadliest landslides in America occurred in the state of Washington. A part of a hill suddenly collapsed in small town called Oso. The disaster took place in 2014 and killed 43 people.



America's largest human-caused landslide occurred near Salt Lake City, Utah. The landslide happened in 2013 and sent 165 million tons of soil into a mile-deep pit. The massive slide was so powerful that it triggered 16 small earthquakes!



The largest known landslide occurred in 1980 after the eruption of Mount St Helens in the state of Washington. The volcanic eruption triggered a massive landslide. Enough debris was moved to fill 250 million dump trucks.

Exercise 5: Are the statements below true (T) or false (F)?

1) The most destructive landslide in history happened in the USA. ()

2) The largest landslide in history was caused by an earthquake. ()

3) More than 180,000 people died in history's deadliest landslide. ()

4) America's deadliest landslide happened in Washington D.C. ()

5) Volcanic eruptions can trigger landslides. ()

6) 250 million tons of soil was moved in the largest known landslide. ()

Things to know

ABOUT LANDSLIDES



Every year, landslides cause about \$3.5 billion in damage and kill between 25 and 50 people in the United States.

Landslides not only occur on our planet but also on Mars and Venus. Scientists have special satellites to detect landslides that occur on other planets in our solar system.

Most casualties of landslides in the United States are primarily caused by falling rocks.

Most landslides travel between 10 and 25 miles per hour. However, the fastest landslide ever recorded moved at an amazing speed of 186 miles per hour!

Areas where the vegetation is destroyed by humans or wildfires are especially vulnerable to landslides during and after heavy rainfall.

Revision

Exercise 8: Choose the best answers for the questions below.

- 1) In which of the following states of the USA do landslides occur?
 - a. California
 - b. coastal states
 - c. none of the above
 - d. all states
- 2) Which of the following is not a type of landslide?
 - a. flash
 - b. topple
 - c. slide
 - d. fall
- 3) What can cause a landslide?
 - a. rainfall
 - b. an earthquake
 - c. erosion
 - d. all of the above
- 4) Why are trees important to prevent landslides?
 - a. because they block debris moving downhill
 - b. because their roots stabilize slopes
 - c. because they absorb water
 - d. none of the above
- 5) What is the most common cause of landslides?
 - a. rainfall
 - b. earthquakes
 - c. erosion
 - d. volcanic eruptions
- 6) What is erosion?
 - a. excessive rainfall
 - b. cutting trees
 - c. a process of removing soil
 - d. none of the above

- 7) Which kind of landslides can you see below?



- 8) Which kind of landslide is also called a topple?
 - a. slide
 - b. fall
 - c. flow
 - d. none of the above
- 9) Which kind of landslide is caused by an unstable slope?
 - a. slide
 - b. fall
 - c. flow
 - d. all of the above
- 10) Which type of landslide is also called a mudslide?
 - a. slide
 - b. fall
 - c. flow
 - d. flash
- 11) In which country did the deadliest landslide in history occur?
 - a. United States
 - b. Brazil
 - c. Russia
 - d. China
- 12) Which kind of landslide causes most casualties in the United States?
 - a. slide
 - b. fall
 - c. flow
 - d. none of the above