

Effects Of Possible Earthquake On Oregon Washington Coast

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Introduction

Earthquakes refer to the shaking of the earth's surfaces. When the rock below the earth's surface breaks, it results in shaking of the ground. Earth, like the human body, is built of energy, and sometimes it releases energy. Thus, when the energy in the underground cannot hold any longer, it explodes. Therefore, the explosive energy underneath the earth's surface is responsible for shaking. The earthquake is caused by compressional stress, tensional, and shear stress. The compressional stress happens when the rocks under earth service compress, i.e., push together and press into each other. This creates a stress compressional stress, which can result in explosive since there is no space between the rocks. Consequently, the rocks can explode due to the tensional stress. This type of stress occurs when the rocks are moved away from each other, i.e., being pulled apart. Thus, being pulled away from one another creates tensional stress, which results in them exploding. Lastly, the rock can explode due to shear stress. The rocks slide past each other, causing friction. The purpose of this paper is to highlight the possible effects of the earthquake on Oregon and the Washington Coast and outline possible mitigations.

The possible sequences of the earthquake in Oregon, Washington coast include the following:

Loss of life and Properties

Earthquakes result in the destruction of properties and loss of human and animal lives. Most shaking earth ground-related deaths are a result of massive collapse and demolition of buildings and infrastructure. Thus, the collapse of buildings in which people are living causes death tolls. Since Oregon's coast is no different from other places, the earthquake has occurred. For instance, in Southern Italy, an earthquake resulted in the death of more than 100,000 people in 1909. Most of the deaths were a result of building collapse. Historically, deaths from earthquakes were a result of building collapses (Oregon, 1997). Therefore, an earthquake causes loss of life and property.

Ground displacement

One of the main hazards of the earthquake is ground displacement along the earth's fault. Thus, the earthquake causes the ground movement (Lisa, 2012). If there are structures along the fault, like railways and roads, the earthquake could cause displacements. This could cause massive destruction

of properties, resulting in the death of people using those structures.

Flooding

Also, earthquakes can result in flooding in human inhabitant areas. An earthquake can change river directions or break dam water, thus resulting in flooding the area of fault (Bruce, 2018). These can cause building and infrastructure destruction as well as loss of life of people and animals through drowning. Since Oregon, Washington is near the coast, an earthquake could result in a Tsunami. This type of impact could be fatal. Tsunamis are a vertical offset of the ocean floor by earthquakes or landslides. Therefore, tsunamis could cause deadly effects on people and buildings along the ocean shores. Tsunamis raise water higher than its normal ground level. This can cause flooding and other fatal effects.

Fire

An earthquake could easily cause a fire. This is one of the main effects of the earthquake. The fire can be a result of broken gas lines, petroleum pipelines, and power lines. The emergence of fire can cause a lot of problems for the people living in the area. For instance, during the Great San Francisco Earthquake, the earthquake was responsible for the fire, and the city burned for three consecutive days (Oregon, 1997). A substantial amount of property was destroyed, and more than 250000 people were left homeless. Therefore, an earthquake could lead to a fire outbreak in Oregon, Washington.

Other notable effects of earthquakes are landslides, liquefaction, economic and business losses, and trauma due to stress associated with these types of calamities.

Possible Mitigation Measures that can reduce Earthquake Sequence

No one is capable of preventing an earthquake since it is either a disaster or God's act. Although no one can stop an earthquake, we can put in place mitigation measures that could reduce the damages caused by the earthquake.

Preparing Structures for the Earthquake

Preparing infrastructures and buildings for calamities such as an earthquake can help in preventing massive loss of property and lives. Thus, during an earthquake, a building responds to shaking by resisting the force due to movement (Bruce, 2018). Thus, these accelerations are transmitted to weak joints of the structure, causing the building to collapse. Therefore, the building should be built so that

inertia force does not impact it directly. Thus, this will help in mitigating the impact of an earthquake since infrastructure and building collapse cause the most earthquake-related deaths.

Construction of Seismic Hazard Maps

The map is responsible for detecting any shaking that might happen and warning the area where the earthquake might hit. The charts help for planning purposes. The peak acceleration measures the intensity of the ground shaking. Therefore, detecting shaking will help in effective planning.

Conclusion

The earthquake has fatal effects on properties and human and animal lives. The earth-shaking can result in the loss of lives and properties and have negative economic consequences. After the earthquake, it is hard for the economy to peak. Therefore, it is important to develop structures that can resist the earth's shaking.

References

Bruce A. Bolt, "*Earthquake*" Published by Encyclopedia Britannica, Inc. March 5, 2018, retrieved from <https://www.britannica.com/science/earthquake-geology>

Oregon Geology Volume 5 (1997) Retrieved from <https://www.oregongeology.org/pubs/og/p-OG.htm>

Lisa Wald, USGS, "*earthquake*" (2012) Retrieved from [usgs.gov/research/eqproc/grdshaking.php](https://www.usgs.gov/research/eqproc/grdshaking.php)