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Part -1

An article published in Newsweek titled "COULD CALIFORNIA EARTHQUAKES TRIGGER VOLCANIC ERUPTIONS? 'NO IMMINENT THREAT' SAYS USGS," written by Chris Morran. In June, California faced a high magnitude earthquake. On July 4, an earthquake of magnitude 6.4 shook Southern California. Moreover, the very next day, on the night of July 6, an earthquake of magnitude 7.1 occurred, which became the strongest since 1999. It happened 17 kilometers from the city of Ridgecrest, which is 202 kilometers from Los Angeles.

The reason for the increased seismic activity in the region is its tectonic structure. Both earthquakes, which occurred on July 4-5, took place in the Eastern California landslide zone. The notorious San Andreas Fault is located, where the Pacific Plate collides with the North American Plate. The site is strewn with cracks caused by the movement of closely spaced tectonic plates. The events that took place last week were provoked by the fact that the tectonic plates shifted somewhat and began to rub one by one. This caused tremors (as previously reported, over the period from July 4 to 7, their number was more than 4,700).

Even though there were no casualties (neither the dead nor the wounded are known), however, the earthquakes were powerful enough to form cracks in the roads and cause "vibrations" of buildings in the region so strong that goods rained from store shelves. Two earthquakes that occurred in California, and fears of a possible third, "serious," led many to think about the threat that increased seismic activity in the region. It would contribute to the eruption of a giant super volcano located in Yellowstone National Park in the United States. The latter can have truly catastrophic consequences for the climate. To the point that global temperature will drop, humanity will no longer be able to grow plants on Earth, and there will be little food.

Part-2 Reflection

Geologists note that earthquakes - at least the first - were quite atypical. For example, what happened on July 4 was characterized by changes in two fault sections at once. However, how substantiated are they? The National Geographic noted that usually, a powerful earthquake could give rise to several "successors" - significantly inferior in strength. This happens because a severe shock causes tension in the region. Furthermore, earthquakes are the way the Earth gets rid of this built-up underground energy.

The San Andreas Fault usually causes severe earthquakes every 150 years. The Yellowstone Super Volcano has not erupted for 70 thousand years. Last time it was a vast outpouring of magma, not a catastrophic explosion. For all this time, according to simple calculations, there were about seven thousand earthquakes of magnitude more than seven.

Moreover, none of them caused an eruption. Caldera did not explode in 1992, when the Landers earthquake in Southern California (M7.3) happened, and in 1999 during the earthquake in the Hector mine in the same region (M7.1). Moreover, tremors did not provoke eruptions of other volcanoes, including the Long Valley super volcano, which was much closer to the epicenter of seismic activity than Yellowstone is now.

According to geologists, there may be several causes of secondary earthquakes. Seismic waves may cause fluid coming from magma reservoirs to move underground, destroying the rocks. Another explanation is the increase in fluid pressure in hydrothermal systems, in which the pressure is already at a critical level. As a result, microcracks and weak earthquakes occur. Perhaps, both scenarios are often implemented.

Nevertheless, Yellowstone does pose a real danger but not quite the same as many news articles, websites, documentaries, and videos talk about it. Hydrothermal explosions pose the most urgent threat when overheated, and under high-pressure, water escapes to the surface with a large number of rock fragments with the formation of a crater.

Work cited

Morran, Chris. “Could California Earthquakes Trigger Volcanic Eruptions in the Region?”

Newsweek, Newsweek, 6 July 2019, https://www.newsweek.com/could-california-earthquakes-trigger-volcanic-eruptions-no-imminent-threat-says-usgs-1447896.