

# The chile earthquake 2010

Business



South America woke up to a powerful earthquake on the 27th day of February, 2010. The earthquake, which has gained wide acceptance as one of the most powerful to ever have occurred in all of history, had its epicenter off the Coast of the Chilean town of Pelluhue. The earthquake not only shook the foundations of the nation, but it also shook the core principals of science and it ruffled up the recordings of history. The earthquake introduced new dimensions to the field of seismography and other earth sciences as well. This paper will go over this seismic event and explore both its historical and social impacts.

**The Social and Historical Context** The earthquake wracked the earth with a magnitude of 8.8, which was measured according to the moment magnitude scale. According to the National Geographic, this was the fifth strongest earthquake to ever have been recorded (Than, 2010). Chile is a country with a rich history in earthquakes. The country lies in a volatile tectonic zone, and the tectonic plates off its shore keep moving and thus causing the earthquakes to occur recurrently. In fact, the country holds the record of the strongest ever earthquake to have been measured.

Although the history of recorded earthquakes in Chile dates back to the sixteenth century, there are few which surpass or even measure up to the magnitude of the one that took place on the 27th day of February, 2010. Although the death toll of the earthquake was far less than those of the earthquakes that took place in 1868 and 1939, the destruction was worth a lot. Thankfully, the death toll was not commensurate to the strength of the earthquake. This has been attributed largely to the fact that the epicenter of the earthquake was away from populated places. However, the

infrastructural and social cost of the earthquake was significant. According to the New York Times, the count of the people who were displaced as a result of the earthquake was about 1.

5 million (Barrionuevo, Alexei; Robbins, Liz, 2010). The Impact upon our Scientific Understanding of the Natural World The magnitude of the February 2010 earthquake in Chile had tremendous dimensions. This inspired some scientists to explore the possible effects of the earthquake on the planet as we know it. Some of the findings of the scientists were intriguing. Perhaps the most fascinating fact about this earthquake is that it had the power to not only alter the speed with which the earth rotates, but it also altered the angle of inclination of the earth upon its axis.

NASA's geophysicist, Richard Gross, performed some complex calculations and came up with captivating facts about the effects of the earthquake on the rotation of the earth. According to the geophysicist, the earthquake caused the earth to spin a little faster, albeit by just over a millionth of a second (Than, 2010). In effect, this led to the shortening of the day by an equally short period of time. Gross' calculations also led him to conclude that the earth's axis also deviated a little from the normal position. The earthquake also set up tsunamis that travelled thousands of miles away from the epicenter off the Chilean coast to beaches thousands of miles away. These titanic waves are usually a major concern on their own, apart from the earthquake itself.

According to some scientists, these waves, together with the earthquake itself, caused a major ecological upset that caused species that had

disappeared for ages to reappear. In a nutshell, the 2010 earthquake in Chile inspired a novel understanding of the natural world. Analysis Support The findings by various scientists who have brought up new “ facts” surrounding the Chile earthquake are pretty radical in their nature, and they would, therefore, require immense proof that they are, indeed, true. This section will briefly attempt to prove the scientists right in their new findings. The findings by Gross have been demonstrated by a seismologist, Keith Sverdrup. He used the image of a spinning skater holding a rock in the hand to explain the events that take place in the surface of the earth since the earthquake.

The seismologist likened the shortening of the day to what happens to the skater when she begins to spin. The rotational axis of the skater shifts slightly in the direction of the hand holding the rock (Than, Ker, 2010). This scientist was not among those involved in the NASA calculations, but his predictions of what would happen to earth were quite consistent with those of the scientists from NASA. Besides the earthquake causing slight changes in the circadian rhythm, some scientists also believe that the earthquake shook up some of the ecology of the earth, leading to reappearance of species that had disappeared for several years, leading to the assumption that they had gone extinct. According to researchers from the Southern University of Chile and the University of California, despite the high mortality of intertidal life, the ecological recovery at some of the beaches was remarkable (National Science Foundation, 2012).

Therefore, all in all, the earthquake altered not only the geological understanding of the planet, but also its ecological understanding. This is

what makes the 2010 earthquake, despite its low death toll, one of the earthquakes with the most far-reaching effects in all of history.