Excellence

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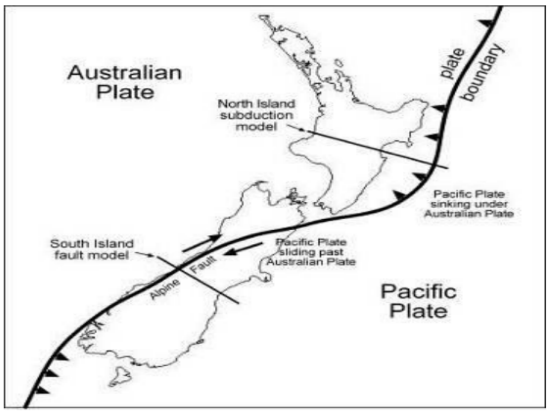
The spatial pattern that the earthquakes in New Zealand follow is a linear pattern it follows the Australian and Pacific plate boundaries. There is a transform boundary at the top of the South Island Wellington/Marlborough regions with the two plates sliding past each other. A convergent boundary at the east of the north island by the Hawkes Bay/Gisborne region with the Pacific plate sinks under the Australian plate. West of the bottom of the South Island is another subduction zone where the Australian plate sinks under the Pacific plate. The plates' sub-pattern varies depending on the plate tectonics

Other examples of spatial distribution in New Zealand would be clustered and dispersed. An example of clustered earthquakes would be when there are harder earthquakes and they are clustered around the top of the South Island/bottom of the north island, in the Marlborough/ Wellington area. An example of dispersed earthquakes in New Zealand would be on the East Coast of the South Island and the west coast of the north island because there frequently aren't earthquakes in those parts of New Zealand there are earthquakes dispersed all over New Zealand.



In this picture, it shows what the plate boundary is and where it is. In this picture, it shows that the plate boundary on the east coast of the north island is a subduction zone. In the South Island, it shows that the plate boundary is to the west of the alpine fault. The tectonic plates are sliding past each other making it a transform boundary. On the east of the North Island, the Pacific plate is sinking under the Australian plate making it a subduction boundary. The factors contributing to the spatial distribution of earthquakes in New Zealand would be the fault lines running through New Zealand and where the tectonic plates meet and which boundary they have. These plates pushing on each other creates friction which builds up pressure when the plates slip it releases the built-up energy shaking the crust. An example of this would be in the subduction zone with the plate sinking under the Australian plate building up pressure and creating more earthquakes, this is the same with transform boundaries with the plates rubbing past each other also building up pressure also building up pressure. Because there is pressure being built up in these areas more earthquakes would create more patterns. A linear pattern of earthquakes follows the plate boundary where the Australian and Pacific plate meet.

Continental drift also affects the distribution of earthquakes, Continental drift is the concept that the world's continents were once connected. This affects the earthquakes because the continents originally moved because of plate tectonics, and the movement of the plate tectonics cause earthquakes. The tectonic plates are part of the earth's crust, and under the

earth's crust, there is the asthenosphere, which is partially melted. Next are the mantle, outer core, and inner core.

For this section of the assessment, I will make judgements and examine the significance of the 2016 Kaikōura earthquake and the 2011 Christchurch earthquake on a national scale. Earthquakes can greatly affect the environment. They can affect the environment by creating landslides, tsunamis, eruptions and other natural disasters they can also cause liquefaction in the ground, damage buildings and damage more cultural features.

The most significant economic impact of the 2016 Kaikōura Earthquake was the increased transportation costs, In the earthquake around about 38,000 houses and businesses. This meant there were insurance claims were well over $900 million. This impacted the national GDP of $450-$500 million. The estimated reduction for Canterbury was $110-$130 million (25% of the total cost) and the estimated reduction for the rest of New Zealand was $ 340-$370 million (75% of the total cost).

The most significant environmental impact of the 2016 Kaikōura earthquake would have been that it created landslides and tsunamis. This meant many birdnesting and colony areas were covered and ruined many pāua habitats. A consequence of this would have been that bird numbers decreased and many pāua died.

The environmental impact of the 2011 Christchurch earthquake would have been the liquefaction that occurred damaging sewer systems which meant made the area inhabitable. Because most of the town had been previously built on a former wetland swamp, in the earthquake caused silt and sand to seep through the cracks. many houses had to be demolished. This is the most significant because most of east Christchurch will never be able to be habited again.

The most significant social impact of the 2011 Christchurch would have been that it killed 185 people. 70,000 people left the city because their homes became inhabitable. many sewer systems took years to restore. Many towns around Christchurch's population grew and the school numbers increased. The social impact of the Christchurch 2011 earthquake was that it damaged many houses and killed 185 people. Because many houses were damaged it caused many people to move to towns outside of Christchurch. The significance of this for people could have been that many died; it could have caused depression and anxiety throughout the community. In the Christchurch earthquake, many schools got destroyed. This meant some of the schools had to merge. In the Christchurch 2011 earthquake, many buildings collapsed, and thousands of people were injured and crushed in the rubble 185 people died. This is because this earthquake was at 12.57 pm so many people were at work or on lunch breaks and Christchurch is New Zealand's second most populated city. This was significant because so many people died, and many people remember it. Compared to the Kaikōura 2016 earthquake only 2 people died, this is because the earthquake occurred at 11.58 pm and because Kaikōura isn’t as populated as Christchurch.

The most significant economic impact of the Christchurch 2011 earthquake was that it caused over $77 billion dollars in damage. This led to many people claiming insurance, so they could rebuild which took 6 years to rebuild. For people, this is significant because it caused anxiety, loss of money, and many people had to relocate.