Earthquakes and Landslides
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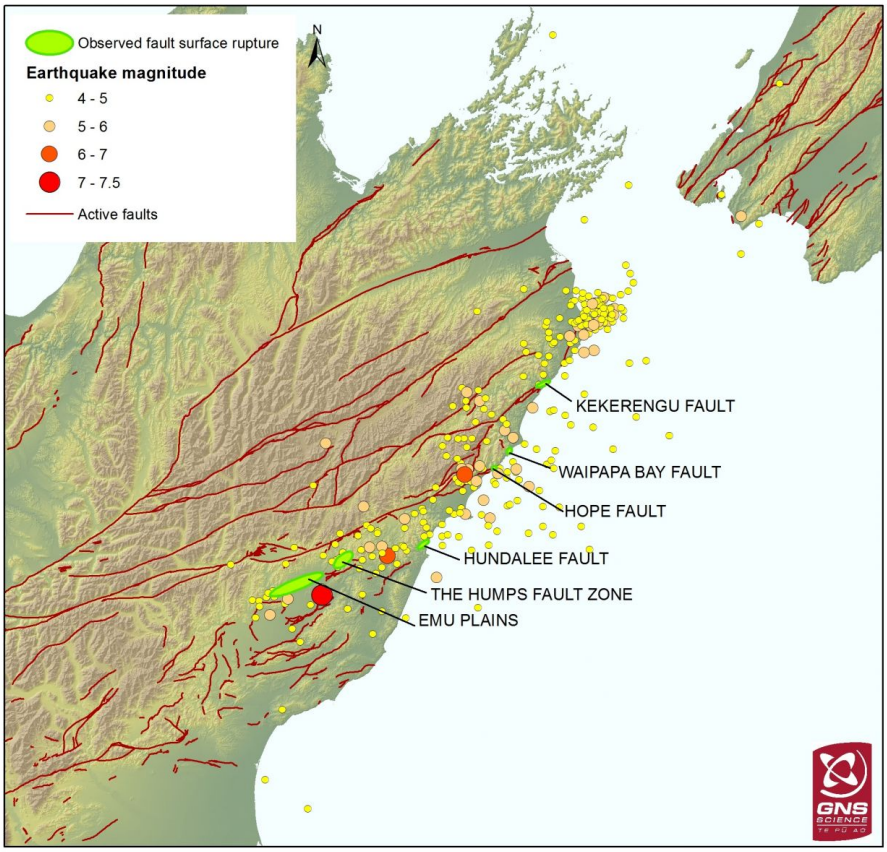
We may live on the East Coast and earthquakes do not pose a strong hazard to us; however the recent November 2016 earthquake in New Zealand proved a powerful hazard. The earthquake left thousands stranded and caused an estimated 80,000 to 100,000 landslides! These landslides were caused by liquefaction of the soil, essentially when soil turns to a fluid due to intense shaking.



This map on the left shows the active faults and earthquakes that took place in relation to the November 2016 Kaikoura earthquake. The largest red dot is the location of the November 2016 Kaikoura earthquake.

This is an image of the landslides located further inland and not along the coastline of Kaikoura.

Landslides can deliver massive amounts of sediment to streams building natural dams and knickpoints. Some questions that a sedimentologist might try to answer are what grain sizes have been deposited in the river? How will this influence the velocity of the flow? Will the velocity increase causing more particles to be in suspension leading to greater erosion or will velocity decrease causing particles to drop out of suspension? Or will velocity stay constant with the suspended particle size remaining the same?

These questions are important because changing the velocity of the flow could influence flooding. Also with less vegetation on the slopes, more sediment will be entering the streams and rivers. In addition, with less vegetation on the slopes, rainfall will enter the streams quicker as there isn't trees or shrubs to retain it. This could lead to greater chances of flooding. This type of natural disaster shows that hazard maps (flooding, shake maps) need to be revised to reflect the changes in sediment routing.