On November 2016 the South Island of New Zealand was hit by a magnitude 7.8 earthquake — one of the most powerful recorded in this region. The geomorphological expression of this event was spectacular. In the days that followed, newspapers around the world showed graphic images of huge ground cracks, uplifted marine platforms, mass movements on hillslopes, and lateral shifts of land. The photograph shows a major landslide that damaged the railway and blocked State Highway 1 on the east coast of South Island, cutting off the town of Kaikoura.

GeoNet is the official source of geological hazard information for New Zealand — its web pages provide a rich source of data on the Kaikoura earthquake (www.geonet.org.nz). This earthquake has been documented in great detail and provides a fascinating case study of how landscapes can respond to tectonic processes at a range of scales. Between 80,000 and 100,000 landslides were triggered by the earthquake. Some of the largest landslides blocked valleys and dammed rivers, creating the secondary geohazard of dam burst flooding.

Field surveys reported major ruptures on at least six faults and one of these, the Kekerengu Fault, moved more than 10 m. New Zealand has a network of GPS stations that monitor ground movements and GeoNet reported some remarkable data. Cape Campbell — the northeast tip of the South Island — is now more than 2 m closer to the North Island than it was before the quake. An intensive programme of data analysis and modelling is underway so that we can better understand both earthquake hazard and landscape evolution in this region.

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