

INFORMATION RELEASE

27th February 2010

Seismic interpretation of the Chile earthquake

Scientists at the British Geological Survey (BGS) were alerted by their automatic earthquake location software 11 minutes after the earthquake struck Chile. Data has been received by the BGS from all over the world including seismic stations in the UK. Since then BGS seismologists have been examining the data and investigating why Chile was struck by an earthquake of this size.

SEISMIC ALERT: OFFSHORE CHILE, 27 FEB 2010, 06:34 UTC, 8.8 MAGNITUDE

DATE : **27 February 2010**
ORIGIN TIME : **06:34 15s UTC**
LAT/LONG : **35.85° South / 72.72° West**
DEPTH : **35 km**
MAGNITUDE : **8.8**
LOCALITY : **Offshore Maule, Chile**

The earthquake occurred on the boundary between the South American and Nazca tectonic plates. The Nazca plate is moving east at around 8 cm per year and is being thrust down beneath the South American plate, resulting in great earthquakes along the boundary between the two.

Dr Roger Musson, Head of Seismic Hazards at the BGS, said:

"This earthquake fills in an identified seismic gap - no previous large earthquake had occurred in this area since 1835, when a large earthquake was observed by Charles Darwin. Since then, an estimated 10 metres of potential displacement has accumulated on this segment of the plate boundary."

Chile has a long history of very large earthquakes, and today's earthquake is northeast of the magnitude 9.5 earthquake that struck Chile in 1960. This was the largest earthquake ever recorded and resulted in a destructive tsunami that killed over one thousand people in Chile and travelled as far as Hawaii and Japan where hundreds of people were killed.

A tsunami warning has been issued for Chile, Peru, Ecuador, Colombia, Antarctica, Panama and Costa Rica. (Source: Pacific Tsunami Warning Centre).

Dr Brian Baptie, Head of Seismology at the BGS, said:

"A 1.3 metre tsunami wave was observed at Valparaiso, 200 km north of the epicentre about 20 minutes after the earthquake. Tsunami waves in the deep ocean travel about the same speed as a jet plane and would take about 15 hours to reach Hawaii and about 20 hours to reach the other side of the Pacific."

More information and images at www.earthquakes.bgs.ac.uk

Ends



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Notes for Editors

The British Geological Survey

The British Geological Survey (BGS), a component body of the Natural Environment Research Council (NERC), is the nation's principal supplier of objective, impartial and up-to-date geological expertise and information for decision making for governmental, commercial and individual users. The BGS maintains and develops the nation's understanding of its geology to improve policy making, enhance national wealth and reduce risk. It also collaborates with the national and international scientific community in carrying out research in strategic areas, including energy and natural resources, our vulnerability to environmental change and hazards, and our general knowledge of the Earth system. More about the BGS can be found at www.bgs.ac.uk.