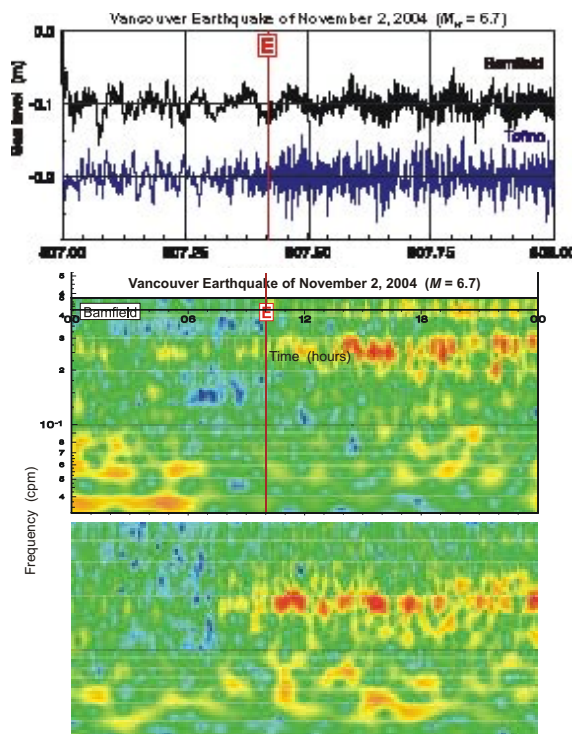


# WEST COAST VANCOUVER ISLAND, CANADA, $M_W=6.7$ , 2 NOVEMBER 09:30 UTC

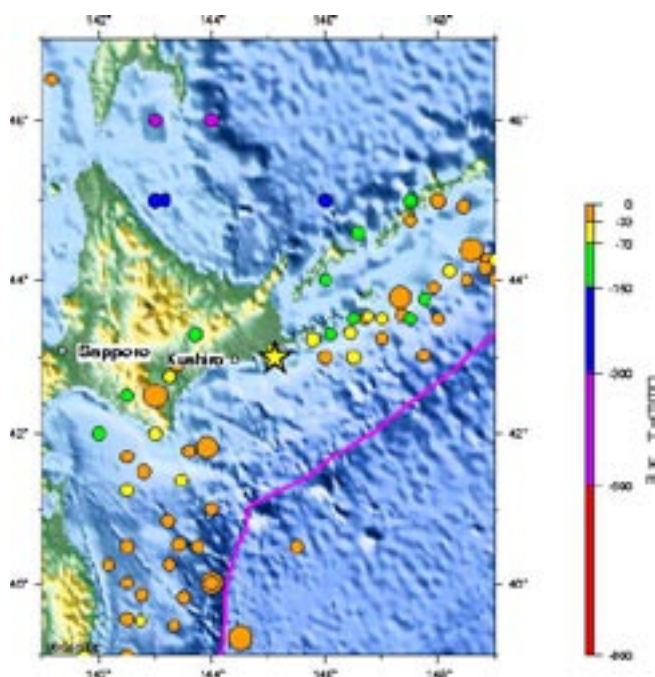
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A series of earthquakes occurred off the west coast of Vancouver Island, beginning at 9:30 UTC on November 2, 2004. The main shock with magnitude  $M_w = 6.7$  occurred at 10:02:12 UTC at a depth of 9 km (Pacific Geoscience Centre CMT solution). The epicentre of this earthquake was located in the Explorer Plate region, off the west coast of Vancouver Island (lat/long 49.012 N, 129.181 W) about 230 km west from Tofino. The event was reported as being mildly felt at Port Alice, Bamfield, and Alert Bay, B.C. Careful examination of the digital records of nearby tide gauge stations by the Canadian Hydrographic Service (Tofino, Winter Harbour, Bamfield, Port Hardy and Victoria) revealed that this earthquake generated a weak tsunami that was recorded at two stations: Tofino and Bamfield (see plots, wave arrival indicated by line labeled as "E"). The tsunami travel time to Tofino is about 30 min, very close to theoretically estimated (for Bamfield it is not clear), tsunami trough-to-crest wave heights are 11 cm in Tofino and 6.5 cm in Bamfield. The relatively short observed periods of the recorded tsunami waves (5-6 min for Tofino and 3.5-4 min for Bamfield) indicate that the source length was not more than 40-60 km.



Sea level records from  $M_w 6.7$ , 2 November 2004 local earthquake (top). Tsunami arrival times were distinguished after spectral analysis. Higher spectral amplitudes with wave periods of 3.5-6 minutes (reds) were observed starting at 1000 Z (bottom).

# HOKKAIDO, JAPAN $M_W=7$ , 28 NOVEMBER 18:32 UTC



Historical seismicity ( $M > 7.0$ ) since 1900. Location of the 28 November 2004 earthquake shown by yellow star.

An earthquake of magnitude  $M_w 7.0$  (HRV) occurred at 18:32 UTC on November 28, 2004 about 60 km east of Kushiro, Hokkaido, and 990 km north-northeast of Tokyo, Japan. The Harvard CMT solution indicated thrust faulting at a depth of 47 km along the northeast-southwest trending fault. At least 24 people were injured with damage observed to roads, docks and buildings. The Japan Meteorological Agency (JMA) issued a Tsunami Attention four minutes after the earthquake for the eastern part of the Pacific Coast of Hokkaido, but cancelled the Attention at 1950 UTC. Small tsunamis were recorded at Hanasaki and Kushiro, Hokkaido closest to the earthquake source. (Data courtesy of JMA.)

## Tsunami observations

Station	Beginning time	Maximum height	
		Time	Height cm
Hanasaki	28/ 18:54	28/ 20:03	12
Kushiro	28/ 18:56	28/ 19:06	7