

FEBRUARY 6, 2013 SOLOMON ISLANDS EARTHQUAKE AND TSUNAMI

Updated: February 6, 2013 at 23:30 UTC, 4:30 pm MST

The 6 February 2013 magnitude 8.0 Mw Santa Cruz Islands, Solomon Islands earthquake (10.738 S, 165.138 E, depth 29 km) generated a tsunami that was observed all over the Pacific region and caused deaths and damage locally. According to news reports, the worst damage was observed approximately 75 km from the epicenter on the western part of Ndeni (Ndeno) Island where 1.5 meter waves caused 9 deaths, destroyed 460 homes across 5 villages, and damaged the airport at Lata. In 2007, a magnitude 8.1 Mw earthquake located approximately 900 km from this event generated a tsunami that caused 52 deaths.

According to the USGS, the 6 February 2013 earthquake occurred as a result of shallow thrust faulting on or near the plate boundary interface between the Australia and Pacific plates. In the region of this earthquake, the Australia plate converges with and subducts beneath the Pacific plate, moving towards the east-northeast at a rate of approximately 94 mm/yr.

FEBRUARY 6, 2013 INSTRUMENTAL RECORDINGS

The highest instrumental recording for this tsunami was 1.04 meters (zero-to-peak amplitude, tide removed) observed at Lata Wharf, Ndeni Island. Tide gauges in New Caledonia observed waves of 0.77 m (Hienghene), 0.57 m (Ouinne), and 0.51 m (Mare Island). All other tide gauge recordings were less than 0.5 m amplitude. The tsunami was observed at DART® stations all over the South Pacific ... NGDC will continue to update the historic tsunami database as eyewitness and field survey reports are received.

HISTORICAL EARTHQUAKES AND TSUNAMIS IN THE SOLOMON ISLANDS

At the time of this event (February 6, 2013), according to the NOAA National Geophysical Data Center / World Data Service for Geophysics / (<http://ngdc.noaa.gov/hazard>) Global Historical Tsunami database, 2,155 tsunamis (validity $\geq 1^+$) have occurred in the world since 2000 B.C. and 288 (13%) of these tsunamis caused deaths. In the Solomon Islands region, 35 tsunamis (validity $\geq 1^+$) have been observed since 1926. The majority of the Solomon Islands tsunamis were generated by earthquakes (89%), the remainder resulted from volcanic eruptions and unknown causes. Tsunamis generated near Papua New Guinea (1899) and New Caledonia (1901) also caused deaths in the Solomon Islands. The following Solomon Islands earthquake-generated tsunamis caused damage or deaths locally:

- 1926 tsunami caused **damage** on Guadalcanl Island
- 1931 tsunami **destroyed 18 villages and caused 50 deaths** on San Cristobal Island
- 1939 tsunami caused **12 deaths** on Russell Island
- 1959 tsunami caused **damage** on Baga Island, New Georgia Islands
- 1974 tsunami caused **damage** on Choiseul Island near Papua New Guinea
- 1988 tsunami caused **1 death and washed away 100 homes** on San Cristobal Island
- 2007 tsunami caused over **52 deaths and destroyed several villages** in the New Georgia Islands
- 2010 tsunami caused over **damage** on Rendova and Tetepare Islands in the New Georgia Islands

* Data are collected from the US NOAA National Weather Service Tsunami Warning Centers, the US Geological Survey National Earthquake Information Center, the US NOAA National Data Buoy Center, International Tsunami Information Center/IOC/UNESCO and news organizations. Refer to the NGDC event page for data and their sources (http://ngdc.noaa.gov/hazard/tsu_db.shtml). For more information on this event please see <http://www.ngdc.noaa.gov/hazard/recenttsunamis.shtml>.

⁺ A validity score or confidence designation is assigned to each tsunami event ranging from -1 for erroneous entries to 4 for definite or confirmed tsunamis.