

FEBRUARY 6, 2013 SOLOMON ISLANDS EARTHQUAKE AND TSUNAMI

Updated: November 26, 2013 at 20:00 UTC, 02:00 pm MDT

The February 6, 2013 magnitude 7.9 *Mw* Solomon Islands earthquake (10.766 S, 165.114 E, depth 24 km) generated a tsunami that was observed all over the Pacific region and caused deaths and damage locally*. Maximum wave heights up to 3 m were observed on Nendo Island in the Santa Cruz Islands region. On the islands of Malo, Nendo, Nibanga Noi, and Tomotu Niabona, the tsunami caused 10 deaths, 14 injuries, and damaged or destroyed more than 700 houses.

According to the USGS, during the month leading up to the February 6 earthquake, there were dozens of earthquakes in the epicentral region – in the preceding 7 days, 7 of these were larger than magnitude 6. There were numerous aftershocks following the *Mw* 7.9 event. An *Mw* 6.8 aftershock on February 8, 2013 at 11:12 UTC damaged the wharf in Lata and approximately 4 hours later an *Mw* 7.0 aftershock at 15:26 UTC caused additional damage to the coast. The *Mw* 7.0 aftershock also generated a 9 cm tsunami at Lata Wharf, Nendo Island.

FEBRUARY 6, 2013 EYEWITNESS AND INSTRUMENTAL RECORDINGS

Field survey results indicate the highest runup height was 3 meters (tide removed) at Nela Village, Nendo Island (10.7247 S, 165.7866 E). Runup is the difference between the elevation of maximum tsunami penetration (inundation line) and the sea level at the time of the tsunami. The tide gauge at Lata Wharf, Nendo Island recorded a 1 meter wave and 0.3 to 0.8 meter waves were observed at tide gauges in Vanuatu and New Caledonia. The tsunami was recorded on DART buoys in the western Pacific from the Tasman Sea to Hawaii. NGDC will continue to update the historic tsunami database as eyewitness and field survey reports are received.

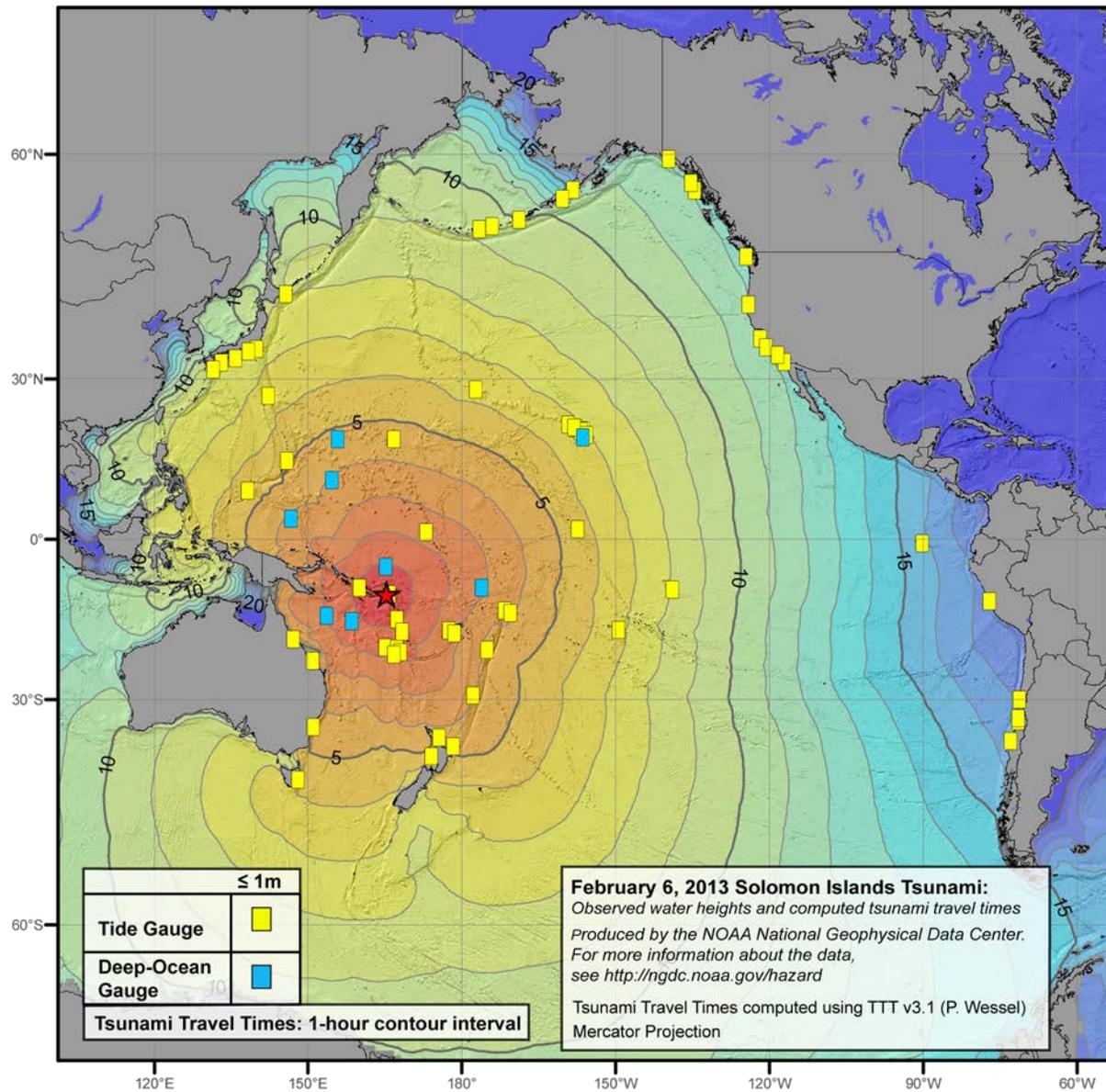
HISTORICAL EARTHQUAKES AND TSUNAMIS IN SOLOMON ISLANDS

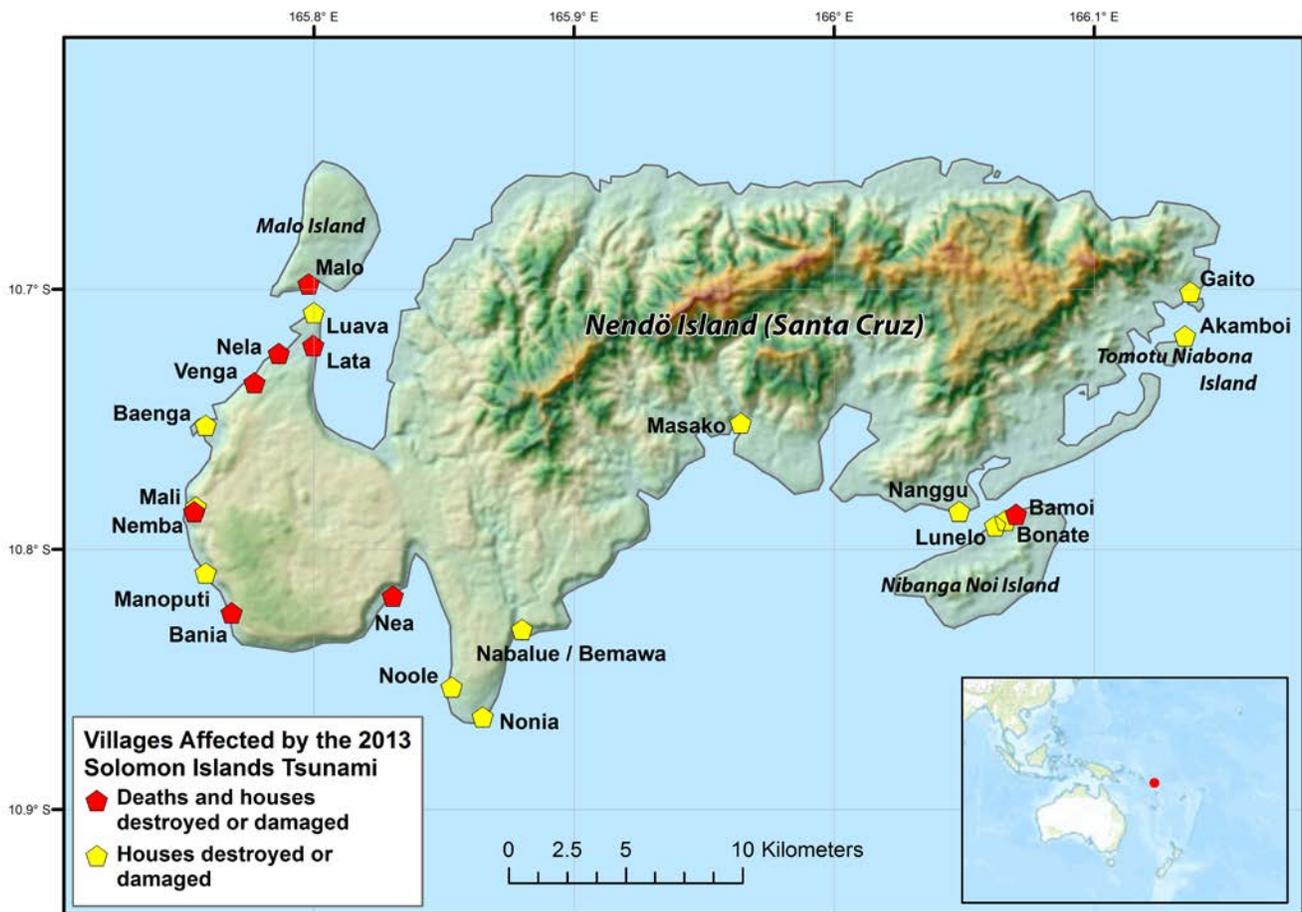
At the time of this event (6 February 2013), according to the NOAA National Geophysical Data Center / World Data Service for Geophysics / (<http://ngdc.noaa.gov/hazard>) Global Historical Event databases, 2,179 tsunamis (validity $\geq 1^{\dagger}$) had occurred in the world since 2000 B.C. and 293 (13%) of these tsunamis caused deaths. In the Solomon Islands region, 37 tsunamis (validity $\geq 1^{\dagger}$) have been observed since 1931 A.D., and 5 of these events caused deaths locally. The majority of the Solomon Islands tsunamis were generated by earthquakes (87%), the remainder resulted from volcanic eruptions and unknown causes. All fatal Solomon Islands earthquakes and tsunamis since the beginning of the twentieth century are listed below:

- 1931 earthquake-generated tsunami caused **50 deaths**
- 1939 earthquake-generated tsunami caused **12 deaths**
- 1977 two earthquakes caused a total of **52 deaths** and generated small tsunamis
- 1988 earthquake-generated tsunami caused **1 death**
- 1996 earthquake caused **1 death**
- 2007 earthquake and tsunami caused **54 deaths**

*Data are collected from the US NOAA National Weather Service Tsunami Warning Centers, US NOAA-IOC International Tsunami Information Center, US Geological Survey National Earthquake Information Center, US NOAA National Data Buoy Center, Solomon Islands National Disaster Management Office, 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/06feb2013.html>

[†]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.



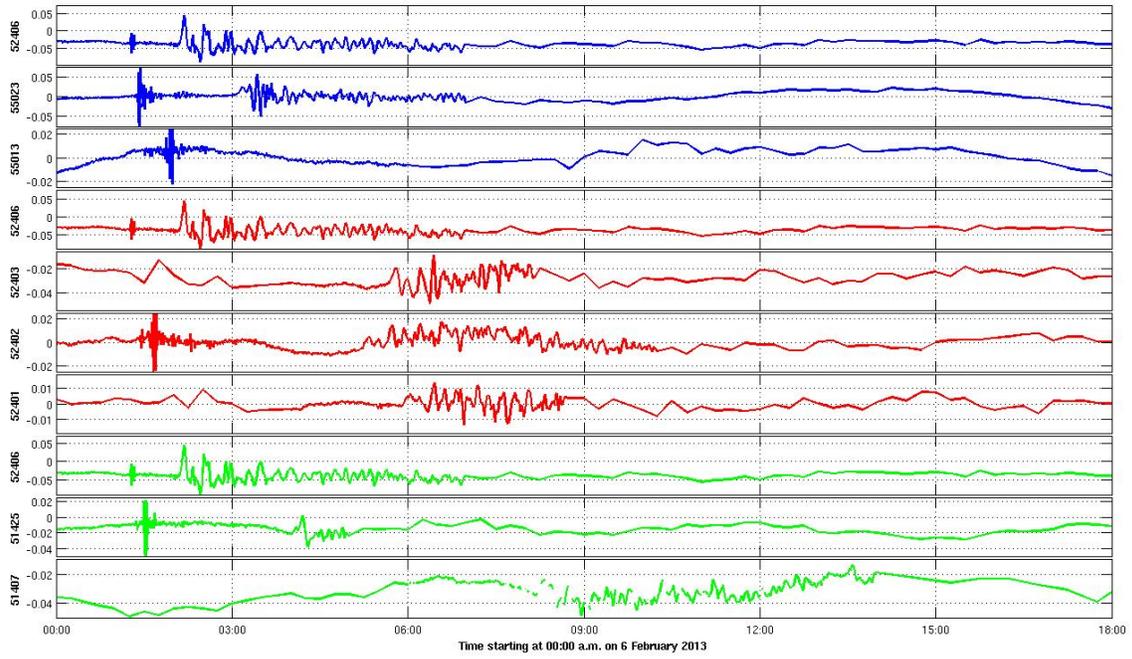


Plot of villages on Malo, Nendo, Nibanga Noi, and Tomotu Niabona Islands, Solomon Islands, that experienced deaths and damage from the 6 February 2013 tsunami. (Source: Joint Solomon Islands National Disaster Management. Background map is SRTM data.)

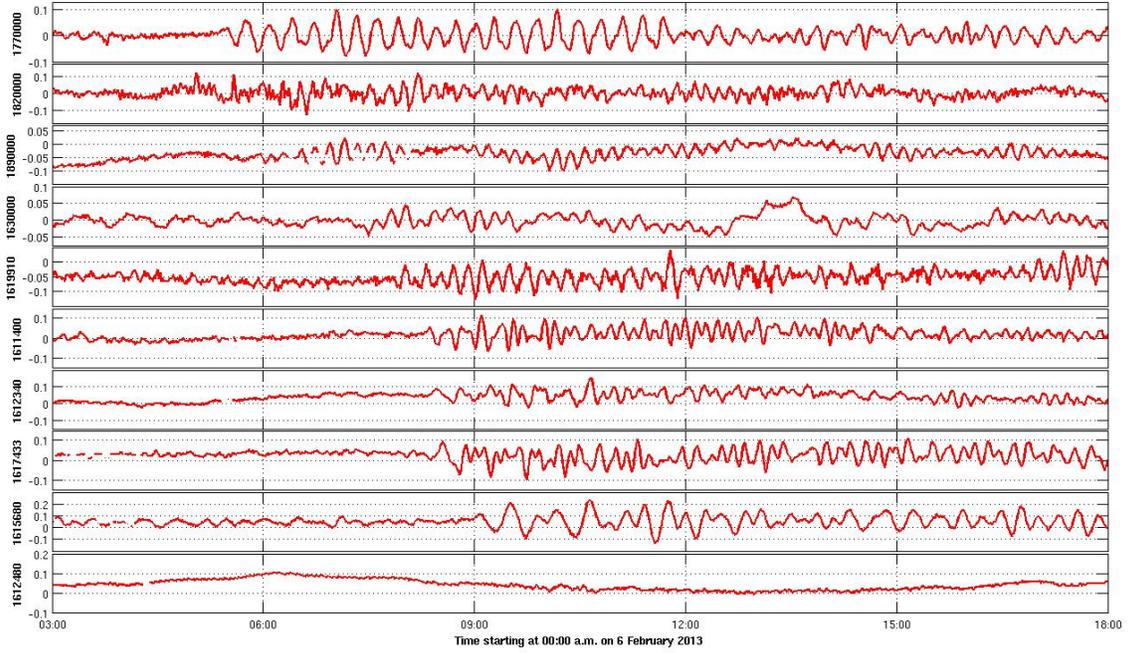


Aerial photograph of west Nendo Island (Santa Cruz Island), showing damage to homes from the 6 February 2013 tsunami. (Source: Solomon Islands National Disaster Management Office, Royal Australian Air Force)

Records of Solomon Islands tsunami 6 Feb. 2013 at NOAA DART stations in Western Pacific



Records of Solomon Islands tsunami 6 Feb. 2013 at NOAA Pacific Islands tide-gauges



Records of Solomon Islands tsunami 6 Feb. 2013 at NOAA Alaska tide-gauges

