Development of the Philippine Historical Tsunami Catalog

By

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This catalogue is the first tsunami catalog for the Philippines. It puts together tsunami reports from 1589 to 2006 derived from historical records, previous catalogs and recent earthquake reports. There are 74 candidate tsunami events but only 38 earthquake events are confirmed to have had associated tsunamis. Each candidate historical event was evaluated based on eyewitnesses' accounts, specificity of reports naming places affected and clarity of tsunami description. The results of the review show that the areas affected by tsunami and their years of occurrences are: Batanes group of islands including northern Luzon coasts (1970, 1983, 2000), western coast of Luzon (1924,1934,1990, 1999), Metro Manila shores (1828,1863), Eastern Luzon (1880, 1937,1968,1970,1973), southwest Luzon (1928,1994), Bicol peninsula (1840), Visayan region (1869,1923,1925,1925,1928,1948,1975,1990,1995,2003), eastern Mindanao (1921,1924,1929,1952,1992), western Mindanao (1897) and southern (1917,1918,1923,1976,2002). The triggering earthquakes had Ms between 5.5 to 8.4, earthquake depths between 15 to 60 km generating tsunami heights between 1-9 m. The largest tsunami events occurred at Celebes and Sulu Seas in southern Philippines. Some areas had been affected by tsunami more than once and among these are the Celebes Sea area, Manila Bay, Calauag Bay and Caraga Bay. At least one transPacific tsunami event had affected the Philippines. This was the 1960 Chile earthquake that reportedly reached heights between 1-3 m and killed about 20 people. The search for more documents continues and it is very probable that the number of confirmed tsunami events may still increase. The results of this catalog are presently being used in tsunami hazard modeling and mapping in the Philippines. At the same time, in terms of these studies, it is also important for our neighbor countries such as Taiwan, China, Vietnam to know about tsunamis originating from the Manila Trench and Indonesia and Malaysia for those tsunamis originating from the Sulu and Cotabato Trenches so that they can use these data in their own tsunami hazard studies.

Keywords: historical tsunamis, Philippines, Manila Trench, seismic hazard, tsunami modeling