

Seminar Geosains Kebangsaan 2007 (NGC 07)
Universiti Malaysia Sabah, Kota Kinabalu, Sabah
7 – 9 June 2007

P1B-2

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ABSTRACT

A study of the regional tectonic setting and a review of historical data on earthquakes and tsunami indicate that there is no threat from local tsunami to the coastal areas of west Sabah fronted by the South China Sea. Distant tsunami, generated by earthquakes along a subduction zone marked by the Manila Trench at the northeast end of the South China Sea, also do not pose a threat to the coastal areas of west Sabah in view of the wide continental shelf that will lead to insignificant run-ups (<0.5 m). There is also no threat of local tsunami to the coastal areas of northeast Sabah fronted by the Sulu Sea, though distant tsunami generated by large magnitude ($M_s > 7.0$) earthquakes with shallow foci (<33 km depth) along the subduction zone marked by the Negros Trench at the north end of the Sea may reach these coastal areas. The wide continental shelf fronting the northern and central sectors of northeast Sabah will, however, result in insignificant run-ups (<0.5 m) of these distant tsunami, though the narrower continental shelf off the east Dent Peninsula may result in locally significant run-ups (>0.5 m). Tsunami that have occurred in the Sulu Sea, however, have so far only been of a local significance. There is also no threat of local tsunami to the coastal areas of east Sabah fronted by the Sulawesi Sea, though distant tsunami generated by earthquakes along subduction zones marked by the Cotabato, and North Sulawesi, Trenches along the north and south edges of the Sea, respectively, may reach these coastal areas. The relatively wide continental shelf along most coastal areas of east Sabah will, however, result in insignificant run-ups (<0.5 m) of these distant tsunami, though the narrow continental shelf fronting the coastal areas of the Dent and Semporna Peninsulas may lead to locally significant run-ups (>0.5 m high).

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Tsunami that have occurred in the Sulawesi Sea, however, have so far only been of a local significance and have been generated by large magnitude ($M_s > 7.0$) earthquakes with shallow foci (<33 km depth) along the subduction zones marked by the Cotobato and North Sulawesi Trenches.