



METEOROLOGICAL SERVICE NETHERLANDS ANTILLES AND ARUBA

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PRESS RELEASE

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Earthquakes in the Caribbean Area

During the late afternoon of January 12, 2010, (5:53 P.M. Antillean Time), a strong earthquake occurred near Haiti. The epicenter of the earthquake was located at about 25 kilometers southwest of Port-au-Prince at a depth of about 13 kilometers. The magnitude of this strong earthquake was 7.0. A local tsunami watch was issued by the Pacific Tsunami Warning Center (PTWC) for the immediate area. Based on this information, the Meteorological Service of the Netherlands Antilles and Aruba (MDNAA) issued an Informative Bulletin, containing details of this earthquake. This bulletin also assured the population and authorities of the Netherlands Antilles and Aruba that no threat of a tsunami existed to these islands. At 7:35 P.M., the local tsunami watch was cancelled by the PTWC.

Since the devastating tsunami of December 26, 2004 in the Indian Ocean, three regional Intergovernmental Coordination Groups (ICG's for the Indian Ocean, the North-East Atlantic and Mediterranean as well as the Caribbean) were established by IOC/UNESCO. The Meteorological Service also takes part in the ICG meetings and working groups, setting up regional and national early warning systems for tsunami hazards for the Caribbean Area. One of the objectives of the ICG is to create a network of seismographs and sea level sensors in the Caribbean Area. This would be the best way to monitor and centralize the information of tsunami hazards.

Seismicity maps of the Caribbean Area indicate that the area is prone to (significant) earthquakes. The seismicity pattern between the SSS Islands and ABC Islands differs in terms of earthquake density and depth distribution due to differences in tectonic setting. Even with today's monitoring technology, earthquakes (and tsunamigenic earthquakes) cannot be forecasted, as it is with weather phenomena. Based on literature, nowadays probability of earthquake occurrence can be given for a certain region using historical (and present) observations and model studies.

In 2006, three seismometers were installed in St. Maarten, Saba and St. Eustatius in cooperation with the Dutch Meteorological Institute (KNMI). The data recordings are sent in real-time to and monitored by the University of Puerto Rico, KNMI, IRIS-DMC, the Seismic Research Unit of Trinidad, PTWC and MDNAA. In the event of an earthquake, information will be processed and sent to other Caribbean seismic observatories. In case an earthquake has been felt in one of the islands of the Netherlands Antilles and Aruba, the MDNAA will issue an Informative Bulletin, containing relevant information on that specific earthquake. In case an earthquake is capable of generating a tsunami in the Caribbean Area, the PTWC will send watch or warning bulletins to the MDNAA. The MDNAA will then immediately pass on any relevant information to authorities and the general public. In case a strong earthquake is felt at your location and you are at or near the shore, you are strongly urged to seek higher ground and to listen to official information.

Recently MDNAA has installed in Curaçao a real-time monitoring system which connects to a large number of seismic stations. This system is capable to give a preliminary location and estimate of the magnitude of an earthquake in the Caribbean region, within minutes.

As is usually the case, the Meteorological Service will closely monitor the occurrence of seismic activity in our region. In case it's necessary, the MDNAA will issue watches or warnings for the authorities and the general public of the islands.

Figure 1: Seismicity map of the Caribbean Area (1972 to present) indicating the location and depth of earthquakes (source USGS)

