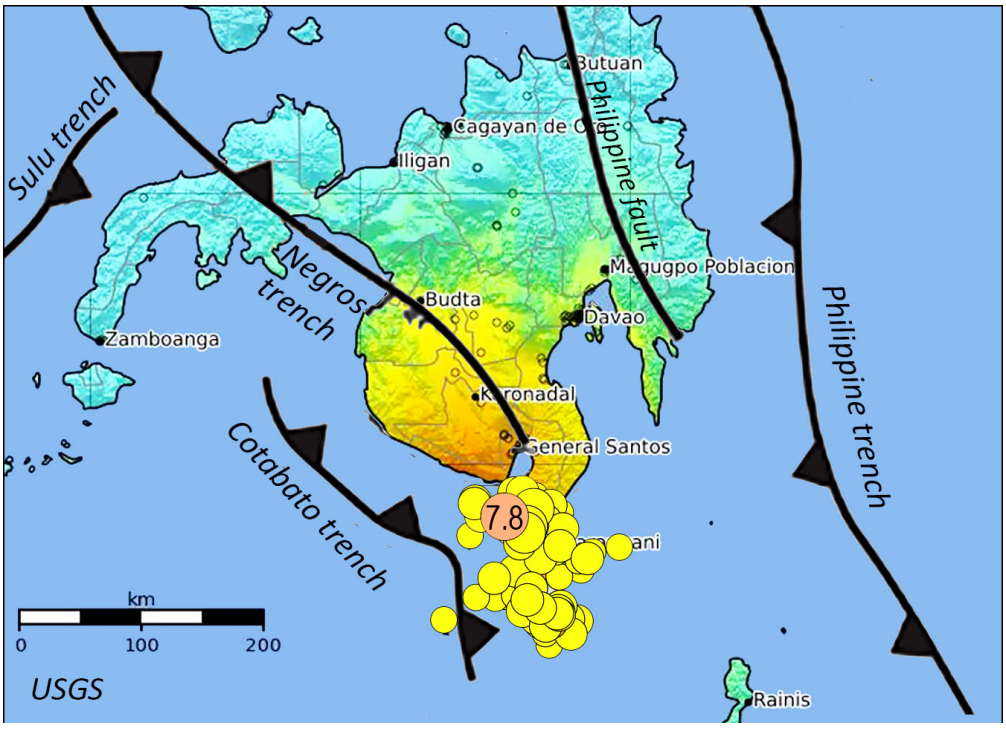
Times Standard

Not My Fault: The largest earthquake of 2026 causes significant shaking damage and a tsunami in the

Lori Dengler for the Times-Standard

Posted June 13, 2026
https://www.times-standard.com/2026/06/13/lori-dengler-2026s-largest-earthquake-causes-significant-damage-tsunami-in-the-philippines/



This map shows the location of the June 3 M7.8 earthquake and aftershocks that have occurred over the past week. Colors are the modeled shaking strength, the areas in orange are intensity VII and VIII, where the most damage occurred. Black lines show the major faults in the region.

Last Sunday, a major earthquake struck just off the south coast of the Philippine's southernmost island of Mindanao. Originally estimated at a magnitude of 8.2 by the Pacific Tsunami Warning Center (PTWC), the earthquake caused major damage and triggered tsunami alerts in the Philippines, Indonesia, and Japan. A modest tsunami was recorded as far away as Guam and Japan's main Island of Honshu.

I learned about the earthquake when a text message popped up on my phone reporting that an earthquake of magnitude 8.2 had occurred five minutes earlier and that PTWC had issued a tsunami threat message for areas of the Pacific within roughly 1500 miles of the epicenter. A tsunami Advisory was issued for Guam, the only U.S. territory within this radius. An Advisory means the potential for strong currents in harbors and near beaches but no need for large-scale evacuations of coastal areas. The threat to other areas of the Pacific including the West Coast was still under evaluation. The good news is that the location was far away from here and it

would take a tsunami over 14 hours to travel here – plenty of time for a more detailed assessment.

An 8.2 raises alarm bells for me. Mindanao is the seventh most populated island in the world, and the location was less than 30 miles from General Santos City where over 720,000 live. Significant damage and casualties were likely. It's also capable of producing a large tsunami especially on nearby coastlines. I wasn't too concerned about a Pacific-wide tsunami that could affect us, but preliminary magnitudes sometimes underestimate the true size of great earthquakes. It's harder to get an accurate magnitude in the first minutes after very large earthquakes as it may take five or more minutes for the rupture to end and the long duration complicates usual magnitude estimation techniques. I'm always wary that the true magnitude might be much larger and could pose tsunami concerns over a much larger area.

I breathed a small sigh of relief when the USGS magnitude came in ten minutes later with a magnitude of 7.8. This makes it the largest earthquake to date in 2026. It is a major earthquake and capable of causing a tsunami, but the impacts will be more localized and the odds of it causing a tsunami that could affect our coast were much diminished, especially when the location put it behind Mindanao from our perspective. I wasn't surprised when the National Tsunami Warning Center issued a "No Tsunami Danger" statement for the West Coast and Alaska for 40 minutes after the earthquake.

The USGS analysis also included a more detailed picture of the source. Philippine tectonics is complex, caught in a vise between two major subduction zones to both the east and west, numerous subplates interact. The earthquake was on a north south oriented thrust fault about 35 miles deep, caused by compressional stress on the Cotabato trench, the subduction zone that accommodates ongoing convergence between the Sunda subplate and main part of the Philippines. This area has been the site of major earthquakes in the past including a M8.3 in 1918 and a M8.0 in 1976. It is considered one of the most likely fault systems to produce a major tsunami in the region. The 1976 earthquake produced a tsunami that reached a height of nearly 30 feet and is estimated to have killed 6800 people.

Sunday's earthquake caused major damage in southern Mindanao and was felt as far away as Malaysia over 500 miles away. The USGS PAGER analysis estimates over 9 million people experienced very strong to violent ground shaking. The hardest hit area was General Santos City and surrounding communities. As I write, 61 deaths and over 1200 injuries have been reported, but a number of people are still unaccounted for so these numbers may rise. It is not only the largest earthquake of 2026 but also the deadliest. The earthquake triggered numerous landslides in the steep terrain that caused additional damage and complicated response and relief. Property damage in General Santos City is estimated at over $20 million dollars. Damage occurred in much of southern Mindanao and was also reported on the Indonesian Island of Sulawesi about 300 miles away where over 100 homes partially collapsed, and one person died.

PTWC has the responsibility for providing tsunami threat information to 46 countries in the Pacific and Caribbean through an agreement with UNESCO. They issued an initial bulletin five minutes after the earthquake and over the next four hours five updates with refined estimates of the threat as more information about the earthquake and water level measurements became available. PTWC forecast water heights up to 9 feet were possible in the Philippines and 3 feet in Indonesia.

PTWC does not have the authority to issue tsunami warnings for foreign countries. That responsibility lies in the sovereign nations. PHILVOLCS, the Philippine agency that monitors weather and geologic hazards, operates its own system of seismographs and tide gauges and, in combination with the PTWC information, issued a tsunami warning for coastlines in southern and central Mindanao and neighboring islands soon after the earthquake. Warnings were distributed via cell phones and public media. Some areas have installed sirens operated by local authorities. Malaysia and Indonesia also issued tsunami warnings to coastal residents. The Japan Meteorological Agency issued a tsunami advisory (water heights less than 3 feet) for some areas in the western part of the country. At least 20,000 people are estimated to have evacuated in response to both feeling the earthquake and receiving warning alerts.

The earthquake did produce a tsunami that was recorded at 40 locations in the western Pacific. The highest water levels at just under 5 feet were recorded at a tide gauge on the southern coast of Mindanao about 40 miles from the epicenter, although some eyewitness and video suggest water heights up to 10 feet. Media reports that two swimmers drowned and one is still missing in the aftermath of the tsunami. No significant damage has been attributed to the tsunami.

This earthquake is not over. All large earthquakes are followed by aftershocks, and the Mindanao quake is no exception. Sixty-eight aftershocks of magnitude 4.5 or larger have been recorded to date, all large enough to be felt by many. Three have been in the M6 range, strong enough to cause some additional damage. Aftershocks are likely to continue for at least a year and likely longer. It's not just the shaking that continues. Many communities are still without power and much of the rubble has yet to be cleared. Civil authorities in the Philippines estimate over 500,000 people have been directly affected by the earthquake, some displaced from their homes, and many others suffering from food and water shortages. Many schools and other public infrastructure were damaged and many businesses throughout the area are closed.

It could have been far worse. There are several factors that kept this earthquake from being a catastrophe. The first is the earthquake itself. Although close to a major urban area, the focus was not shallow. Many large subduction zone earthquakes are in the 15-to-20-mile depth range. The Mindanao quake was only 15 miles deeper, but the additional depth attenuates high frequency vibrations that are particularly damaging to structures. The deeper the earthquake source, the less deformation of the sea floor which means less potential to produce a major tsunami.

Just as important are the actions that the country has taken to reduce disaster impacts. The Philippines have modern building codes comparable to those in the United States and most structures are resilient to strong shaking. Government institutions, particularly PHILVOLCS, are focused on disaster prevention, including monitoring, hazard zone mapping, and education. It's a country that experiences volcanic eruptions, typhoons and other weather disasters where the need to evacuate hazardous areas is relatively frequent.

The only direct impact on the U.S. was the tsunami advisory issued by PTWC for Guam. It never triggered the emergency alert system and was canceled after two hours when the modeling made it clear the tsunami would be too small to cause impacts on the island. The tsunami was recorded on Guam, but it was only a few inches high.

There was never a threat to California. But a few ignorant or irresponsible people did use the earthquake to post “Run for the hills” messages on social media. When an earthquake occurs far away from us, there is time to assess the threat and find out if you need to take any action from a reliable source. If a tsunami warning had been issued for our area, you would have heard about it from a variety of sources including radio, television, and text/email/phone notifications. And most of you live and work outside of a tsunami zone which means even if there had been a warning, you are safe where you are so please stay put.

Lori Dengler is an emeritus professor of geology at Cal Poly Humboldt, and an expert in tsunami and earthquake hazards. The opinions expressed are hers and not the Times--Standard’s. All Not My Fault columns are archived online at https://kamome.humboldt.edu/taxonomy/term/5 and may be reused for educational purposes. Leave a message at (707) 826-6019 or email Kamome@humboldt.edu for questions and comments about this column or to request copies of the preparedness magazine “Living on Shaky Ground.”