

# Tsunami earthquake sound record was not shared to the world

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(CNN) -- Scientists are gaining insight about December's devastating earthquake and tsunami from the actual sounds of the magnitude 9.3 quake in the Indian Ocean.

"It's really quite an eerie sound to hear the earth ripping apart like that. We hear it on smaller earthquakes quite frequently but something of this scale that goes on for eight minutes is very much unprecedented," said Maya Tolstoy, a marine geophysicist at Columbia University's Lamont-Doherty Earth Observatory.

"It really gave me the chills when I first heard it," she said.

The dramatic soundtrack of the rupture of the Sumatra-Andaman Fault comes from a little known, and sometimes hard-to-access resource. The microphones that captured the sound are part of a global network of instruments that monitor compliance with the Comprehensive Nuclear Test Ban Treaty.

The microphones that picked up this earthquake were located in Diego Garcia, an island more than 1,700 miles from the epicenter of the quake.

The sounds suggest two distinct stages of the underwater temblor.

"What we are able to see is very clearly two phases in the speed of the rupture," said Tolstoy.

"The first third is much faster, the second two thirds slower," she said. The length of the rupture was about 750 miles.

"I look at it mathematically and I study the change in direction of the earthquake," she said. "We are able to tell how long it ruptured, how fast it went, and those are important things to know for disaster mitigation," she said.

Tolstoy and other scientists have had some access to data from the monitoring group, The Preparatory Commission for the Comprehensive Nuclear Test Ban Treaty Organization (CTBTO). In the past researchers have obtained the sounds of other earthquakes, and even the noises made when icebergs

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cracked.

But a spokeswoman for CTBTO, headquartered in Vienna, Austria, says the group does not have the capability to act as a disaster alert system.

"Our mandate is watching for nuclear weapons testing," said Daniela Rozgonova. "We don't share data directly with scientists. Our data is collected and analyzed, and goes to member states. They decide what to do with it," she said. A total of 121 countries have ratified the nuclear test ban treaty, agreeing "not to carry out any nuclear weapon test explosion or any other nuclear explosion, and to prohibit and prevent any such nuclear explosion at any place under its jurisdiction or control."

But because of the deaths and destruction of last year's Asian tsunami, Rozgonova did say the organization would now share seismic observation data with UNESCO, the United Nations Educational, Scientific, and Cultural Organization. That group is working with many countries that are trying to improve early warning systems for tsunamis. But she stressed there is no way the information could be relayed "real time."

"It's a very sensitive issue obviously because you are monitoring the globe and you can hear relatively small sounds, and so countries are very sensitive about having that information openly released," said Tolstoy.

Tolstoy's research based on the earthquake sounds is published in the July/August issue of Seismological Research Letters.

She said she and other scientists, like many people around the world, felt a real helplessness in watching the effects of the tsunami.

"We obviously can't prevent earthquakes but we'd like to be able to help prevent as much of the damage as possible from a tsunami by providing warning where it's possible. So in the long term we want to better understand how these events happen so we can better mitigate against them," she said.

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