

# Times Standard

## **Not My Fault: ShakeOut 2023: a Roast and many Toasts**

Lori Dengler for the Times-Standard

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*Practicing Drop, Cover, and Hold On is fun for kids – knowing what to do makes earthquakes less frightening. Illustration by Amy Uyeki.*

ShakeOut 2023 is in the books. Thanks to everyone and all the organizations that participated in the annual Drop, Cover, and Hold On drill. This year there were new participants and some extra activities packaged into the ShakeOut mix.

I start with the one notable goof in 2023. I've been pushing the MyShake earthquake alert App in many of these columns. MyShake is one way earthquake early warnings can get to you. Those of you who have downloaded/activated the App on your smartphones have probably gotten several notifications to "expect shaking" a few seconds before or during recent quake activity.

MyShake was launched for all of California during ShakeOut 2019. It expanded to Oregon in 2021 and Washington in 2022. The USGS plans for ShakeAlert, the system that powers MyShake, to be instituted nationwide over the next decade. ShakeOut provides an annual opportunity to test the MyShake App and increase awareness of what the ShakeAlert system can provide.

Only someone goofed in 2023. Over a million people have downloaded MyShake and many received an unwelcome wakeup call at 3:19 AM Thursday morning. The audible announcement did state it was only a test, but many weren't too happy with the predawn message, especially North Coast folks who had felt a couple of real earthquakes at the same hour last Monday morning.

I didn't experience the early wakeup call. I leave my phone downstairs at night where I can't hear it. I knew what the mix-up was the moment I saw the notification in the morning. 3:19 AM is seven hours earlier than Pacific Daylight Time. That's Coordinated Universal Time (UTC), the time that corresponds to the Prime Meridian that goes through Greenwich, England. Seismologists use UTC in the listing of earthquakes to avoid the confusion of the dozens of different local times around the planet. Whoever programmed the MyShake test announcement had a momentary lapse, confusing UTC with PDT.

Fortunately, this human error did not have the consequences that NASA's 1999 Mars Climate Orbiter did. The \$125 million probe smashed into the Mars surface when the Lockheed Martin engineers who designed the robot used English units such as pounds and feet and the navigation team from the Jet Propulsion Lab used metric units (newtons and meters). That failure to pay attention to basic units resulted in the complete loss of the mission. Fortunately, the MyShake goof only interrupted sleep and did serve to remind people that earthquakes don't always happen at a convenient time.

Human error is often the problem when technology goes awry. The ShakeAlert system in its normal operational mode is completely automated. Seismic instruments detect earthquakes, a processing algorithm analyses data, a message is written, and cell phone providers send the message to you – all in about five to eight seconds' time. There are no human decisions made in the process. But ShakeAlert is still relatively new and not all areas are as densely instrumented as the ideal. The automated system sometimes underestimates or overestimates the earthquake magnitude and likely shaking area. That means you might get a message and not feel anything or feel an earthquake that didn't trigger a ShakeAlert message.

If you haven't downloaded MyShake or don't use a smartphone, you may still get an alert for our next moderate to strong earthquake. The Wireless Emergency Alert system (WEA) distributes ShakeAlert messages to all cell phones for earthquakes likely to produce moderate to strong shaking at your location. If your phone is turned on, is not in airplane mode, and has cell tower coverage, you will get an alert whether you have downloaded MyShake or not. WEA alerts were not part of the ShakeOut test.

A loud raspberry to the nameless soul who confused UTC and PDT. But that's my only roast for this year's ShakeOut. There were many more efforts that deserve commendation and here's a few of them.

Kudos to the more than 10 million Californians who participated in the Drop, Cover, Hold On drill and especially the nearly 50,000 registered participants in the North Coast region. Leading the way were K – 12 schools. Some schools included other preparedness activities such as putting together Grab and Go bags and how to put an emergency plan together. A loud shout out Academy of the Redwoods at CR for looking at school hazards, and to Redwood Coast Montessori for including a tsunami evacuation drill after the "pretend earthquake" was over.

Cal Poly Humboldt tested their emergency notification system (available to all students and staff – just make sure your contact information is up to date on your MyHumboldt page). They also sent a safety flyer to everyone in the community, hosted a campus scavenger safety hunt, and a movie showing of always amusing "2012".

Humboldt County tested their emergency notification system. Let me clarify the difference between notification systems like those used by counties/cities/universities and MyShake. Many California counties use Everbridge to send out alerts when a situation requires action, such as evacuations in the case of wildfire or tsunami, or precautionary actions like sheltering in place when neighborhood threats arise. These systems won't send you earthquake alerts like MyShake.

The county notifications are not automated and are only issued after careful consultation. They also require YOU to SIGN UP IN ADVANCE to receive them. They are sent to cell phones, land lines, or email addresses that you have designated when you enroll. If you did not get a test message yesterday, it is because you haven't signed up, your contact information has changed, or something happened in the system. ShakeOut is always a good time to make sure all of your contact information is current. It's easy to do online at <https://humboldt.gov/2014/Emergency-Notifications> or call your local County Office of Emergency Services.

I spent ShakeOut at the NWS forecast office on Woodley Island. This year a ham radio exercise was added to the drill. We are fortunate to have many amateur radio enthusiasts on the North Coast. Cell phones, land lines, and other forms of communication are likely to be out in the immediate aftermath of a major earthquake. The ham folks will still be able to run their line-of-sight network within the most devastated areas. Including them in ShakeOut is a natural extension of what to do during and in the immediate aftermath of an earthquake. This year's test ferreted out a few microphones that weren't working properly.

The Clarke Museum in Eureka featured an earthquake preparedness display for ShakeOut. It will continue through November, with a special nod to World Tsunami Day (November 5) for the second month. The Museum plans to make this an annual ShakeOut month event.

I want to thank media partners for giving ShakeOut a little extra boost this year. KMUD, Humboldt Hot Air, and Redwood News all featured expanded ShakeOut stories. And thanks always to the Times-Standard for allowing me this space.

No one on the North Coast needs ShakeOut to remind them that we live in earthquake country. Last Monday morning, many of you may have felt the 4.8 near Petrolia and/or a 4.1 offshore of Eureka. Neither of these quakes was an aftershock of the December 20, 2022 Ferndale earthquake, but both are a result of the same tectonic processes and a reminder that our next strong quake could be centered anywhere and happen at any time.

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Lori Dengler is an emeritus professor of geology at Humboldt State University, 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](mailto:Kamome@humboldt.edu) for questions and comments about this column. Downloadable copies of the North Coast preparedness magazine "Living on Shaky Ground" are posted at <https://rctwg.humboldt.edu/prepare/shaky-ground>.

