

Times Standard

Not My Fault: That's a wrap on Tsunami Preparedness Week 2025

Lori Dengler for the Times-Standard

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Humboldt Bay Fire CERT team out in force in Eureka's Old Town last Wednesday to inform locals and visitors about the tsunami drill and how to evacuate safely. From left to right: Humboldt Bay Fire CERT member Patrick Lynch and team leader Gene Bass with Linda Nellist, Humboldt County CERT coordinator.

California's 2025 Tsunami Preparedness Week is in the books. What did it accomplish? Three things: a test of North Coast county's emergency notification system, an opportunity for California emergency managers to practice responding to a tsunami event, and a time to bombard you with information about tsunamis and what to do when one approaches. For some of you it did something even more important – on Wednesday you walked your evacuation route, developing the muscle memory to respond when a major tsunami arrives.

There is a reason why California chooses the last week in March to focus on tsunamis. This marks our worst historic tsunami disaster. On March 27 at 5:36 PM local time in Alaska, a small crack formed near the north shore of Alaska's Prince William Sound. As that crack grew, the ground shifted around it changing the coastline of southern Alaska forever. When the rupture finally stopped more than a minute later, a 500-mile-long fault had ruptured causing the land around it to uplift and subside. The 1964 rupture caused very strong shaking in Alaska that immediately severed communications, transportation, and power infrastructure. The seafloor deformation triggered a tsunami that reached populated areas of Alaska within minutes to tens of minutes. The tsunami traveled outwards from Alaska, hitting areas of Southeastern Alaska an

hour to two hours later, Vancouver Island Canada in two and a half hours, and Washington's Olympic Peninsula in three hours.

In another half hour the first tsunami surges had reached central Oregon and still packed a punch at the four-hour mark when it hit Crescent City. By the time it traveled to the Port of Los Angeles after another hour, tsunami water heights were only about a foot and a half high, but the currents were still strong enough to cause a ship in the harbor to snap a cable and crush a longshoreman working nearby. The final tsunami tally was 124 lives lost. It was the second largest earthquake ever recorded on modern instruments yet only nine deaths were caused by shaking impacts. The tsunami delivered the biggest blow.

California's usual tsunami week focus has been to test our alerting systems when we are far from the area of shaking and the tsunami arrives silently with no natural warning. It makes sense for us because the North Coast's most damaging tsunamis have come from far away. But that's only from our near-sighted perspective of the last 175 years of written records. The Wiyot, Yurok, Tolowa, and native peoples of the Pacific Northwest document far larger tsunamis in the longer past, now well-corroborated by scientific studies.

Our 2025 tsunami week focus was to flip the tables so to speak – to pretend what happened in Alaska in 1964 was here and Alaska got our tsunami four hours later. Geologic evidence suggests more than a dozen of these earthquakes have occurred over the last several thousand years ranging in magnitude from the upper 8s to 9. The most recent was on January 26, 1700. The source is the Cascadia subduction zone extending from Cape Mendocino to Vancouver Island Canada. It's much more difficult to prepare for a Cascadia earthquake and tsunami than for a repeat of what happened in 1964 or in 2011 when we had more than 9 hours before the Japan tsunami reached us. The 1964 Alaska experience from the Alaska perspective provides useful guidance on what to expect.

- There will be no official warning or guidance on what to do or what to expect. The first thirty seconds of shaking will knock out our power trigger landslides and make roads impassable. No internet, no phones, no one knocking on your door. You will get an alert that something is up – more than a minute of ground shaking. Bob Pate who worked for a radio station in 1964 recorded what you might experience -

[https://kamome.humboldt.edu/sites/default/files/activities/Sounds%20of%20a%20Quake%20March1964 Alaska.mp3](https://kamome.humboldt.edu/sites/default/files/activities/Sounds%20of%20a%20Quake%20March1964%20Alaska.mp3)

- Each community and, in some cases, each household will need to respond independently of one another. In 1964, Alaska wasn't that different from the North Coast today. Small towns separated by gorges and mountain ranges that quickly became impassable after the earthquake. The only first responders were the survivors in each village. It took weeks for outside assistance to reach some areas.

- The tsunami was not uniform from place to place. In some areas it arrived in as little as five minutes, in others the first surges took nearly 40 minutes. Water heights varied too – from only a few feet high in areas of the Cook Inlet and the Kenai Peninsula to a whopping 170 feet near Valdez where an earthquake triggered landslide and local topography amplified the impacts. But in all areas, the tsunami consisted of multiple surges spaced irregularly over many hours.

- Tsunami response was hindered by the shaking damage. Anchorage, the most populated area, was unaffected by the tsunami but suffered major damage to the downtown and port areas due to liquefaction and landslides. Trained emergency personnel were too busy responding to their own situation to travel to or assist coastal towns hit by the tsunami.

Last Wednesday's tsunami drill was attempting to simulate that kind of event. It's hard to do as we can't fake earthquake shaking, what would have been your first notification that a tsunami is on its way. Del Norte, Humboldt, and Mendocino counties used their emergency notification systems at 11 AM on Wednesday. I got a message on my cell phone exactly at 11. It was a simple message designed not to alarm anyone stating a TEST was on and to visit our Redwood Coast Tsunami Work Group web site for tsunami maps. An email arrived at nearly the same time with a somewhat longer message suggesting people in a tsunami zone practice evacuating.

I have no idea how many people actually practiced heading to high ground last Wednesday. The emergency notification systems appeared to have worked well and very quickly. That's good to know – because these are the primary way of learning about floods, wildfires, toxic leaks, or any other hazard that may require you to take action and evacuate. But it's an opt-in system. That means you have to visit a web site or call your county emergency services office to sign up.

This may confuse some of you because on December 5th, you may have received a Wireless Emergency Alert (WEA) on your cell phone for both shaking and the tsunami warning. WEA is an automated system, and you will get alerts on your phone as long as your location service is enabled, whether or not you want them. But WEA cannot be used for drills or tests, won't be activated for tsunami Advisories when the threat is localized to beaches or harbors and includes very limited information. If you did NOT get a county notification last Wednesday, I strongly recommend signing up today.

I understand the need to test emergency notification systems, but it always makes me a little nervous to use them or some other artificial method like sirens to signal a drill. It may implant the idea in your subconscious that you will be notified when a real event is underway. A Cascadia earthquake, like what happened in Alaska in 1964, makes that unlikely. When the ground shifts sixty feet or more even the most hardened communication networks can be knocked out of whack.

I commend the local Community Emergency Response Team (CERT) volunteers who were out in their communities last Wednesday talking to residents and visitors about tsunami safe and hazardous areas. A special thankyou to Joe Bartosik of Redwood News for running a five-part series this week on our tsunami threat and how to evacuate. You can view them at <https://www.redwoodnews.tv/>. And thanks to all of you who took a moment this week to check if your home, work, or favorite recreation areas are in a tsunami zone.

Next time the ground shakes for a long time, I hope it makes you think:

- DROP, COVER, HOLD ON or stay in one spot while the shaking lasts
- Am I in a tsunami zone? If YES evacuate as soon as I can safely move. If NO 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

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