

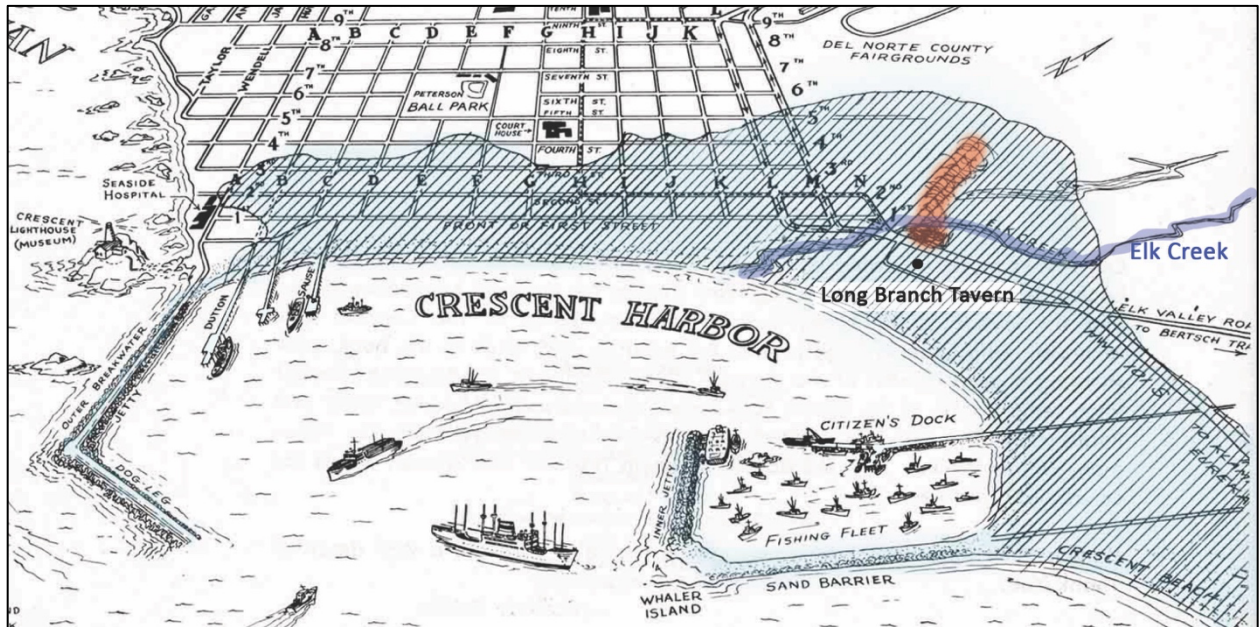
Times Standard

Not My Fault: A Wrap up of this year's Tsunami Preparedness Week

Lori Dengler for the Times-Standard

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Sketch of the maximum inundation of Crescent City, California during the 1964 tsunami showing locations of the Long Branch Tavern, Texaco tank farm fire, and Elk Creek (Wally Griffin, Crescent City Printing).

I attended a 1964 tsunami memorial at the Crescent City Cultural Center on Thursday to mark 60 years from California's worst tsunami disaster. I was asked to give a technical overview of what happened on the evening and early morning hours of March 27th and 28th and City Manager Eric Weir gave a virtual introduction to Crescent City's Tsunami Walking Tour.

I am always struck by survivor accounts and each time I listen, I learn something new. This time it was Gary Clawson's story that resonated, the one I thought I knew well. Clawson's family were safely out of harm's way at home celebrating Gary's father Bill's birthday when they heard the news of the tsunami on the radio. Bill owned the Long Branch tavern, a local bar on 101 just south of Elk Creek and wanted to check on the building and clear the till.

The group headed to the bar and likely arrived in the long quiet spell between the second and third wave. The building appeared fine and in the spirit of continued celebration, the group had a round of beer. But another surge interrupted the festivities and they had to climb first on chairs and then on tables and finally onto the roof as the water rose.

Most people think of tsunamis arriving at high speed with towering waters. That often happens but was not the case in 1964. The surges came from Alaska to the north. The offshore seafloor shape slowed the water closest to the coast causing the waves to swing around the outer breakwater and pour in from the south like an overfilled bathtub. Eyewitness accounts suggest the water rose at the rate of about a foot a minute.

There were seven people in the Long Branch at the time, two employees, a patron, and the four members of the Clawson party. It's not clear to me exactly where things stood in the tsunami timeline when Gary and the patron M. D. McGuire decided help was needed. McGuire had a boat nearby and the two waded to shore to get it. I'm not sure why the whole group didn't leave, but age and strength likely played a role.

Seeing the Tsunami Walk location of the tavern and hearing Gary's story gave me a better reimagining of what happened that night. By the time Gary and McGuire had returned with the boat, the water was near its maximum and very calm. This is typical of major tsunamis – the incoming surge may take 15 or more minutes to arrive and then the water may sit still for 5, 10 or more minutes. In the bright full moon that night it must have looked like a giant lake. Familiar landmarks had disappeared. Highway 101 was completely underwater, as was the Elk Creek channel and the highway bridge over it.

Seven people got in the boat and rowed toward the shore. They were no more than a few boat lengths away when the outflow began. Many people don't realize that the water drawdown can be as strong and sometimes stronger than the rising limb of a tsunami. In Crescent City, the incoming flow was fairly uniform as the water rose and spread onto the land. But the ebbing water quickly rushed into low spots and turned them into torrents.

Elk Creek was one of those torrents and Gary Clawson describes how they were only seconds away from shore when the outflow grabbed the small craft. They weren't the only objects caught in the flow – trees and other debris were also careening wildly towards the harbor and there was a major barrier between them and safety. Highway 101 crosses over Elk Creek and all of the debris became massively entangled beneath the bridge.

McGuire managed to grab ahold of the bridge entrance as they rushed pass and haul himself out. The boat and its remaining passengers were swept into the tangle beneath the bridge. Everything was under water. Gary managed to extricate himself from the debris. Eric Weir surmises that his scuba diving instincts led him to dive deep below the impenetrable mass and make it out alive.

Every story in Crescent City's Tsunami Walk is worth a listen and you can find a link to all of them on our new 1964 earthquake and tsunami web page at <https://rctwg.humboldt.edu/1964-great-alaska-earthquake-tsunami>. Imagine yourself in a similar situation and what decisions you might have made. Hindsight is always clear but when in the midst there were so many uncertainties. The loudest lesson – don't head into a tsunami zone if you are outside of it. In 1964, we had a limited understanding of tsunamis and there was no such thing as tsunami hazard maps.

Last Wednesday, Del Norte, Humboldt, and Mendocino Counties tested the current state of our tsunami communication system. An obvious shortcoming in 1964 was how long it

took for Crescent City residents to learn a tsunami might be on its way. Wednesday's test involved activating the Emergency Alert System, testing county notification systems, and in a few locations, tsunami sirens. It took more than three hours to get an alert in 1964; today our first bullet should arrive in four minutes or less.

A successful test means problems were found that can be addressed, newcomers both to emergency management and the county became more familiar with what tsunamis are, and no one was hurt because they thought it was a real tsunami. I'd say we passed on all these areas.

Some of the problems were ones we've had before. On several cable television stations, the tsunami test crawler became frozen on the tv screen. Pressing clear on remotes seemed to correct the problem in some cases but other folks had to reboot their system. Some county alert notification texts/calls were identified as spam and a few emails ended up in spam files. Email and cell phones mean working with private companies and counties have been trying to solve the problem, but it is still a work in progress.

Sirens are always an issue. Many people still think sirens are the only way to alert people despite how many times I write and say SIRENS ARE SO 1950s. In this third decade of the 21st century there are better notification pathways. The best one is your phone – county notifications and the Wireless Emergency Alert (WEA) will notify almost everyone within or near a tsunami hazard zone if a tsunami warning is issued.

Sirens play a backup role in outdoor areas such as parks and harbors where many people are likely to be. The sirens in Crescent City, the Arcata Marsh, and on King Salmon all worked last Wednesday. The siren on Woodley Island at the NWS office did not. I am not surprised. It is difficult to keep our 1950s mechanical sirens in working order in the foggy and damp sea air.

A friend commented on social media that she got a phone call, a text message, and an email around 11 AM on Wednesday and "waited for the test but nothing happened." That was the test – and for her it worked perfectly. Had it been a real tsunami, she would have been notified. After that it would have been on her shoulders to know if she was in a tsunami zone and follow instructions if evacuations were called.

None of this applies if the earthquake tsunami source is nearby. Earthquake shaking will likely knock out communications and you need to recognize that the shaking is your warning. Print copies of our new Living on Shaky Ground magazine are now available. Read below to find out how.

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 for questions and comments about this column and to request print copies of preparedness magazine "Living on Shaky Ground." A downloadable pdf is posted at <https://rctwg.humboldt.edu/prepare/shaky-ground>.