

Not My Fault: The importance of commemoration

Lori Dengler/For the Times-Standard
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Why is it important to look back on what happened a year, a decade or a century ago? This is a time of 'anniversaries.' March 11 marked a year since the World Health Organization declared COVID a pandemic and we plunged into lockdown. A decade ago, the Great East Japan earthquake struck, spawning a tsunami that ravaged Japan and caused damage across the Pacific. Two other earthquakes made milestones last month – ten years for the M6.2 Christchurch, New Zealand and twenty for the Nisqually quake that caused more than a billion in damages to the Seattle area.

I don't like to apply 'anniversary' to disaster markers. Anniversaries should be for happy occasions –moment that are positive and joyful. Our experience of the past year shows how weak and inappropriate that word is for COVID. I prefer remembrance or commemoration, but these words still don't convey why milestones should be recognized.

It is important to acknowledging the pain and loss of so many. Disaster survivors often feel forgotten, especially when recovery efforts are perceived inadequate. We recognize your loss. You are important, your community matters and we grieve with you for all that is gone. And sometimes, the milestone focus can bring to light recovery issues and renew energy to address them.

Just as important is using this moment to look at what was learned and what we can do to reduce impacts before the next disaster strikes. Let me use the 2011 tsunami as an example.

A few of the lessons learned:

- Great earthquakes (magnitude 8.5 or larger) can occur on any subduction zone. We used to think there was an upper magnitude limit based on age and rate. The Indonesia (2004) and Japan have made it clear all subduction zones can produce a really Big One, capable of generating major ocean-wide tsunamis.
- Hazard assessment requires taking the long view. Japan's maps were based on 400 years. The analysis missed a much larger earthquake and tsunami about 1000 years ago.

- Using structures for vertical evacuation should be a last resort used only when no other options are available. Japan had designated buildings as evacuation sites, but nearly half proved to be not high enough. In many of these locations, a few more minutes of walking would have led people to higher ground.
- If you are out of the hazard zone, don't re-enter. Many of the tsunami victims in Japan returned into the tsunami zone to check on homes and family members.
- Don't use a car to evacuate. 30-40% of Japan's tsunami victims were in their cars and became stuck in massive traffic jams as they tried to escape.
- Time is critical. Even a few seconds of hesitation can make a difference. The shaking is your warning to head to a safe area as soon as you can safely move.
- Consider the tsunami hazard when choosing locations for people with limited mobility. Evacuation by foot may be the only way to escape.

The most important lesson from 2011 is that investing in science, mitigation and education works. In many ways the 2011 Japan experience is a success. The resilience of the built environment was impressive. This was a M9.1 earthquake and produced some of the highest accelerations ever recorded in Japan. The country had strengthened building codes and required seismic retrofitting following the 1995 Kobe earthquake. There were no significant structural failures in 2011. Japan's early warning system automatically stopped high-speed trains before the strong shaking could derail them, saving hundreds including a colleague of mine.

The tsunami death toll in coastal towns and cities was horrific but still represents only a small fraction of the people exposed. 95% of the people in the tsunami zone escaped. This is nearly the inverse of Indonesia in 2004 where the survival rate was 5% and few were aware of the tsunami hazard. Education, drills and planning paid off.

It was different on our side of the Pacific but we learned lessons too. We had the benefit of nine hours to plan a response. Last week I wrote about the 2011 warning on the North Coast. I've been collecting accounts from emergency managers and responders who were on duty that day and I think we did pretty well. We were fortunate in a number of ways. We had the benefit of awareness and planning because of the tsunamis of 2004 (Indonesia), 2009 (Samoa) and 2010 (Chile). In 2008, we installed tsunami signs and began holding tsunami communications tests that fully activated the Emergency Alert System. In 2010, Del Norte County conducted a full-scale tsunami evacuation drill.

We had a notable failure. Dustin Weber, aged 25, was swept into the ocean by the tsunami. Dustin and two companions had gone to the mouth of the Klamath to take photographs. All three were caught by a surge but the others were able to get out. Dustin was new to the area and may have been unaware of how tricky tsunamis can be, that tsunamis last a long time, the first wave isn't the biggest and they aren't breaking waves that are easy to see. He was one of only two 2011 tsunami casualties outside of Japan.

The most important way to honor what was lost in a past disaster is to take these lessons to heart and be better prepared for the next time. 2018 was a notable disaster milestone but I don't recall any commemoration activities. March 11th of that year marked a century since the first virulent influenza cases were noted among soldiers in Fort Riley, Kansas. It was the beginning of the great Spanish flu pandemic. Perhaps if we had used that moment in 2018 to re-examine what happened and look at what we needed to do before a future pandemic struck, this past year might have had a better outcome.

Note: Read accounts of the 2011 Japan tsunami and lessons learned at

<https://rctwg.humboldt.edu/remembering-great-east-japan-earthquake-march-11-2011>

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