Welcome to the 2013

Earthquake - Tsunami Room

Practice DROP, COVER, and HOLD ON beneath the Red Table

Protect yourself and your family BEFORE the next Earthquake or Tsunami strikes

Practice DROP, COVER, and HOLD ON beneath ShakeOut's Traveling Red Table and get a FREE PHOTO

Living on SHAKY GROUND
HOW TO SURVIVE EARTHQUAKES AND TSUNAMIS IN NORTHERN CALIFORNIA

Redwood Coast **Tsunami Work Group** a member of the Earthquake Country **Alliance** *We're all in this together*

Cal OES GOVERNOR'S OFFICE OF EMERGENCY SERVICES

CGS CALIFORNIA GEOLOGICAL SURVEY

NOAA

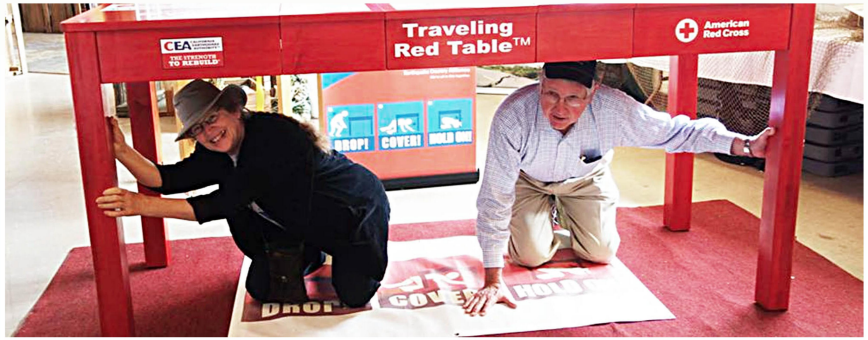
HUMBOLDT STATE UNIVERSITY

California's Traveling Red Table comes to Humboldt County

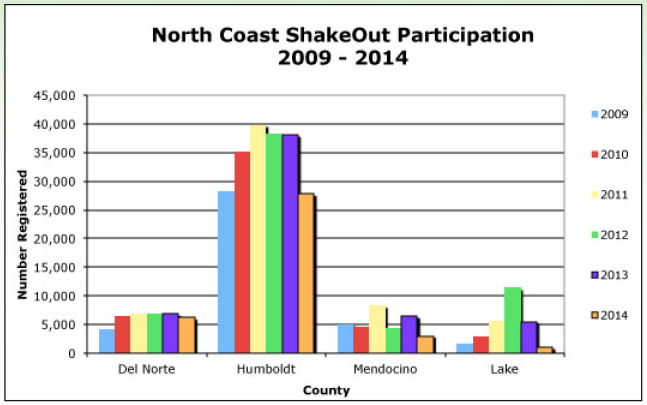
2013 Red Table, ShakeOut and Cascadia Planning

- **California's Moving Red Table comes to the Fair**

The Red Table has been up and down California. In 2013 it made a three-day stop at the fair. The Red Table was made to promote Drop - Cover - Hold On during earthquakes and to promote the Great ShakeOut, held statewide every year since 2009. Each year ShakeOut participation has grown. In 2014, over 10 million Californians participated.



Lori Dengler and HSU President Rollin Richmond under the table in 2013.



The Earthquake-Tsunami Room receives the Fair's 2013 gold award for best non-profit exhibit.

In 2013, the Federal Emergency Management Agency and the California Office of Emergency Services completed a Response Plan for a great earthquake and tsunami on the Cascadia subduction zone. The plan outlines likely impacts of a magnitude 9 earthquake and a framework for coordinating response and relief.

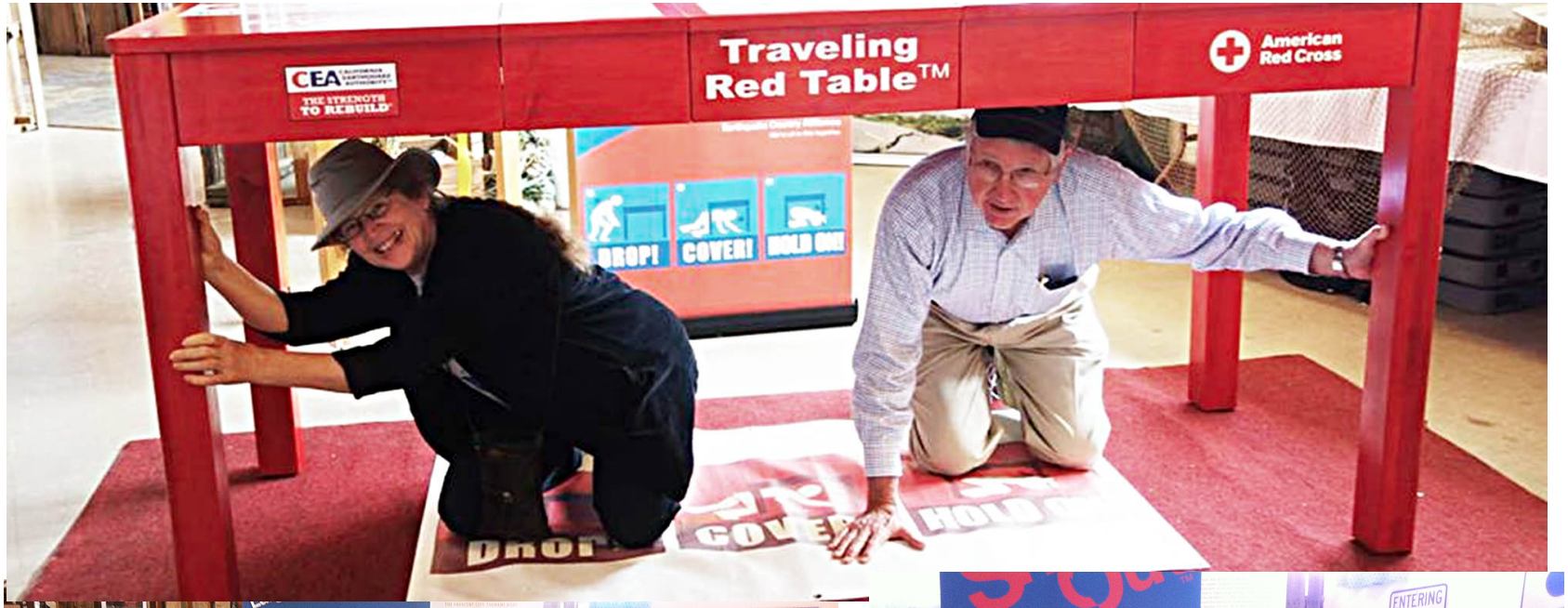
California Cascadia Subduction Zone Earthquake and Tsunami Response Plan

US Department of Homeland Security
Federal Emergency Management Agency Region IX
California Governor's Office of Emergency Services

September 2013 **Public Version**

FEMA

Cal OES


Traveling
Red Table™
American
Red Cross
DROP!
COVER!
HOLD ON!


WARNING
The Great
California
Shake
Out
LEAVING
TSUNAMI HAZARD ZONE
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DROP!
COVER!
HOLD ON!


Register to Participate @
ENTERING
HAZARD
ZONE

The Most Important Take Home Message

1) SURVIVE THE EARTHQUAKE

You can't survive the tsunami if you don't make it through the earthquake first. If you are outside, just drop down to the ground and stay put - try to avoid power lines, tree limbs and anything that could fall.

2) KNOW YOUR ZONE

Are you in a tsunami zone? If YES, then head to high ground or inland away from the coast as soon as you can safely walk. Do take the time to put on your shoes - walking on debris strewn streets can be hazardous. If you aren't in a hazard zone - stay where you are.

3) TSUNAMIS ARE TRICKY

Tsunamis can come from directions you don't expect and just when you think it's all over, another big surge may arrive. The first surge won't be the biggest and it's not uncommon for waves to arrive for 12 hours and sometimes much longer. Stay away from the coast until officials say it is safe to return

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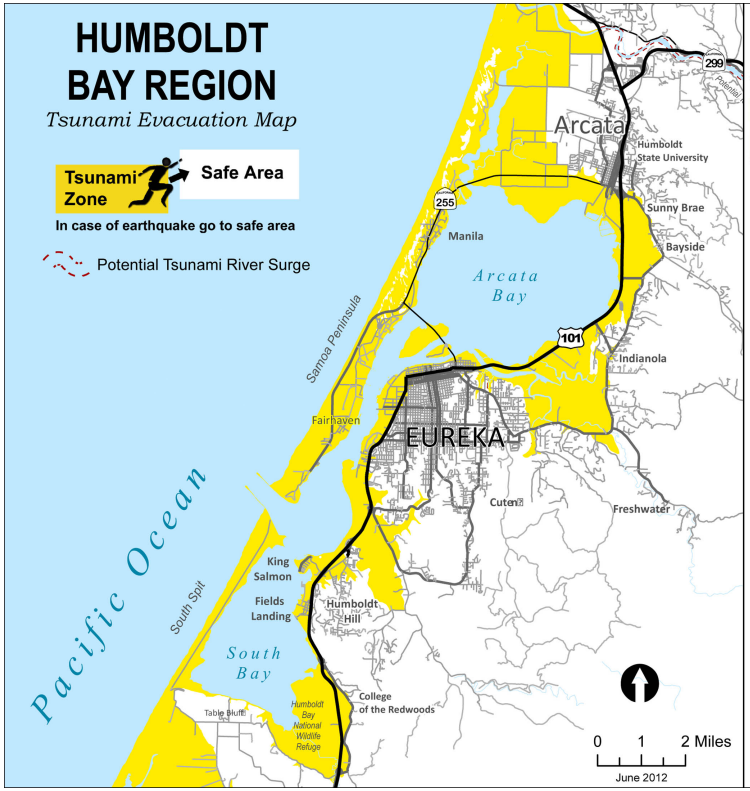
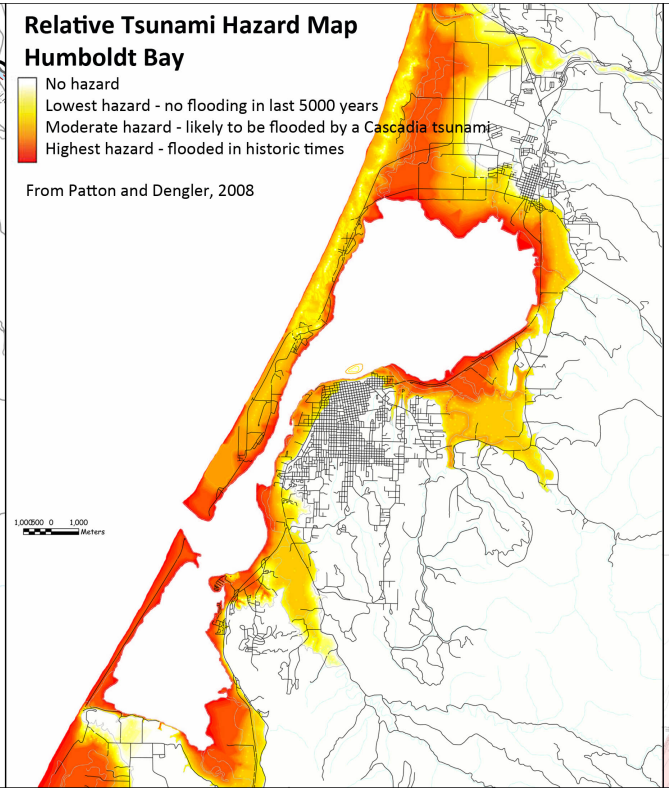
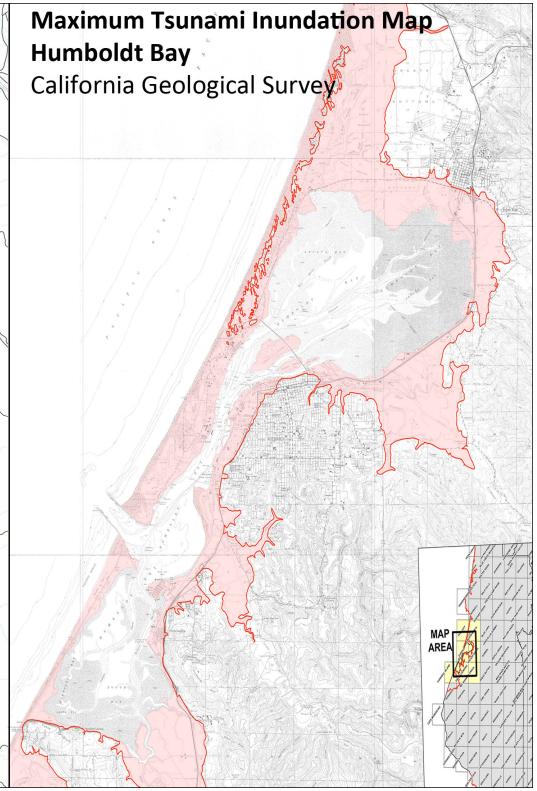
Different maps for different purposes







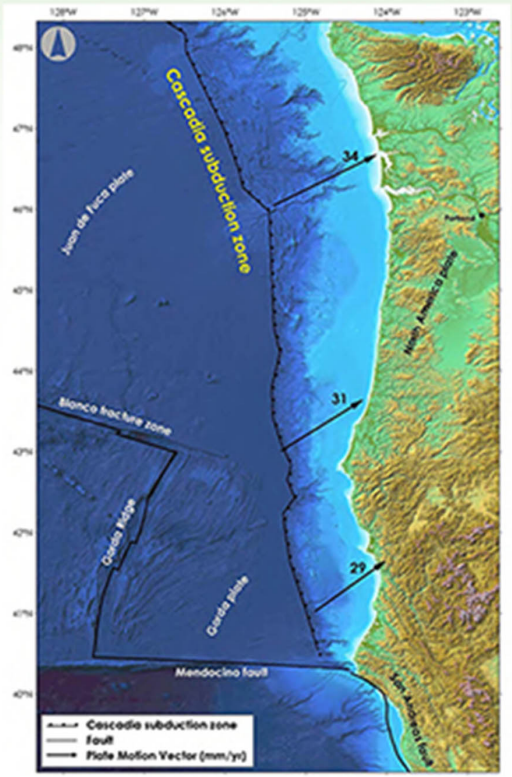
Evacuation maps show areas that are safe (white) and areas that may be hazardous (yellow). They are based on a Cascadia tsunami. The hazard zone is often shown by geographic features like roads

A relative hazard map shows the areas that are most hazardous (red), moderate hazard (orange), and low hazard (yellow). The yellow areas are unlikely to be affected in most tsunamis.

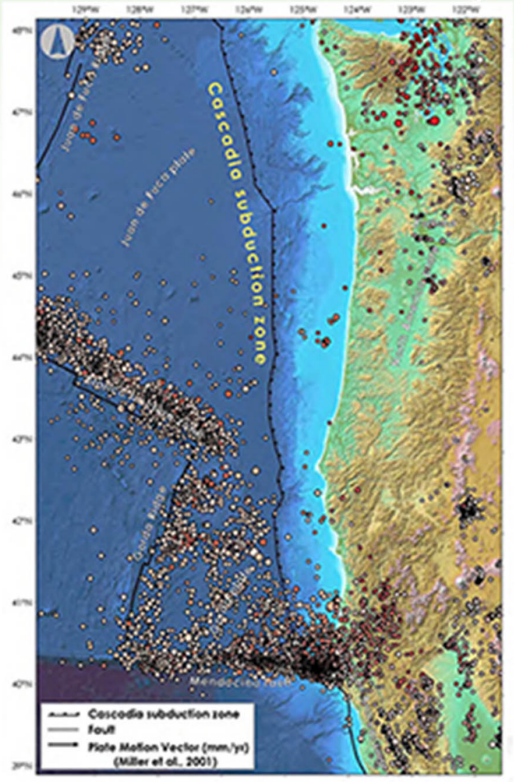
An inundation map is a numerical model of where the water is likely to extend in a specific modeled tsunami. This map shows a Cascadia model.

Not all parts of Cascadia behave the same way

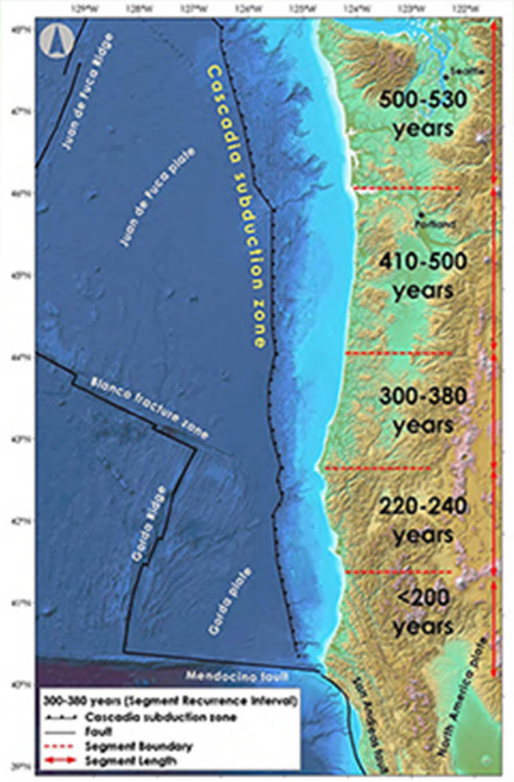
The Juan de Fuca plate behaves differently than the Gorda plate



The arrows show how fast the Gorda and Juan de Fuca plates are moving towards the North American plate. In Washington, the two are converging at 34 mm (1.4 inches) per year. Near Crescent City it slows to 29 mm and it is close to zero at Cape Mendocino.



Very few earthquakes have occurred within the Juan de Fuca plate in the past 30 years. The Gorda plate is one of the most seismically active regions of the West Coast of North America.



Offshore studies from Oregon State University show earthquakes that rupture all the way from California to Washington occur about every 500 years. Shorter segment ruptures of the southernmost part of Cascadia may recur about closer to 200 years apart.

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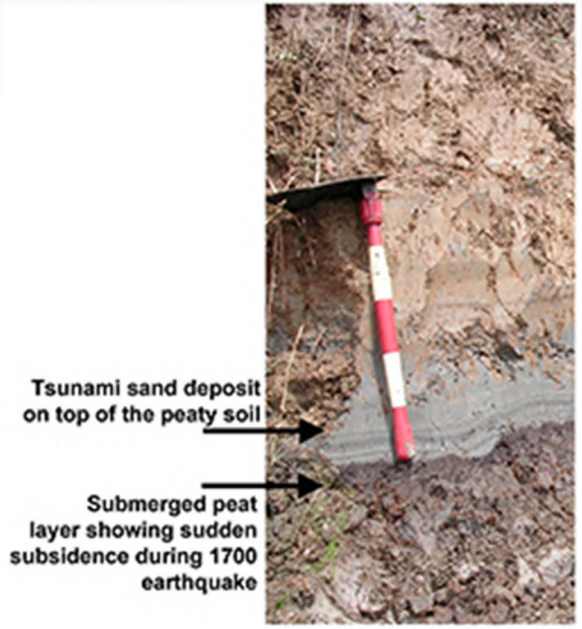
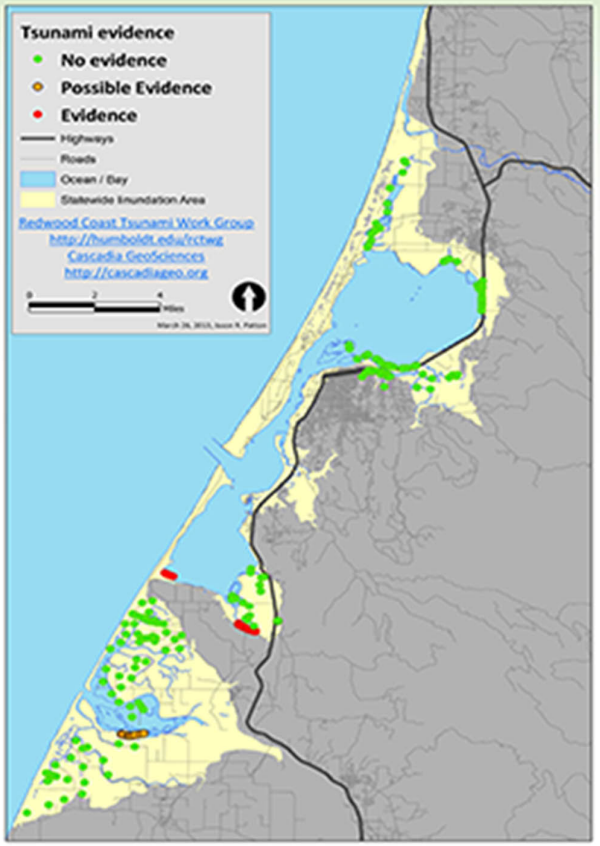
What Tsunami Deposits Say about Humboldt's Tsunami Hazard

Oregon paleotsunami deposit



Manila core shows no tsunami

Typical core from the Mad River Slough shows a buried peaty soil lyer, evidence that a large earthquake suddenly dropped the ground down. There are no tsunami deposits on top of this layer, making it unlikely that the tsunami did not overtop the Samoa Peninsula.



Core sites in the Humboldt Bay region. The red circles in the southern part of the Bay are the only places where tsunami deposits have been found. The green circles show core locations with no paleotsunami evidence.

Only cores taken from the South Bay show evidence of tsunamis in the past 3000 years

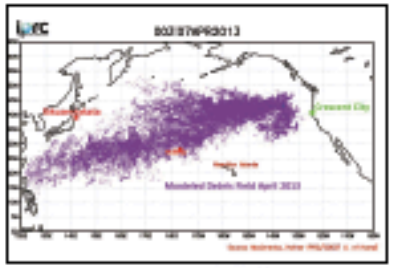
The little boat that could – a story of tsunami endurance

THE CRESCENT CITY TSUNAMI BOAT

On April 7, 2013, a small boat was spotted on the beach just south o Crescent City. Beneath the masses of goose-necked barnacles, decal and Japanese writing could be seen on the side. The decals and Japanes characters connected the boat to Takata High School in Rikuzentakata a city that was devastated by the March 11, 2011 tsunami. After a pos on the City's facebook page and the assistance of the Japanese Consulat in San Francisco, the boat became the first bit of debris found on th California coast to be definitively linked to the tsunami.

As much as 1.5 million tons of debris may have been swept by th tsunami far enough offshore to be caught in the Pacific Gyre, an ocea wide circulation system. Over 1,700 sightings of possible debris have bee made to NOAA's tsunami debris tracking program, but only 29 have bee positively identified as from the tsunami.

The Rikuzentakata boat is one of the few that will be returned to Japan A Japanese shipping company is transporting it home in fall 2013.



The 20-foot panga fishing boat was used in Takata High School's aquaculture program.

A snapshot of the computer-modeled distribution of tsunami debris on the day the boat was found in Crescent City.

The boat was covered with goose-necked barnacles that were very content to hitch hike across the Pacific during the boat's two-year voyage.

The name Takata High School was written on the side of the boat.

Manila Tsunami Drill

Manila is the most recent Humboldt County community to become TsunamiReady!

Manila residents partnering with Redwood Coast Tsunami Work Group members have been working hard to prepare their community for tsunamis.

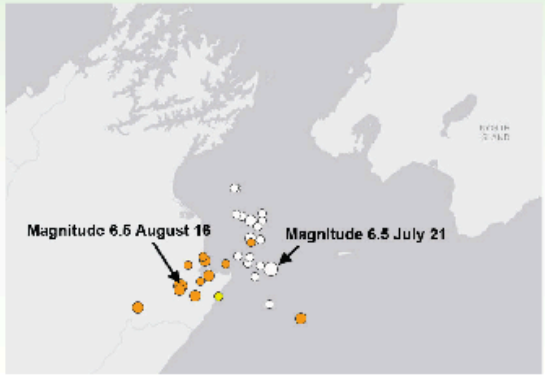
Manila Community meeting - featuring tsunami evacuation maps and spaghetti.

A full-scale tsunami evacuation drill was held on April 13. Safe areas on the peninsula are atop the highest dunes (red circle photo on left). Over 100 residents participated including a cat and a number of goats!

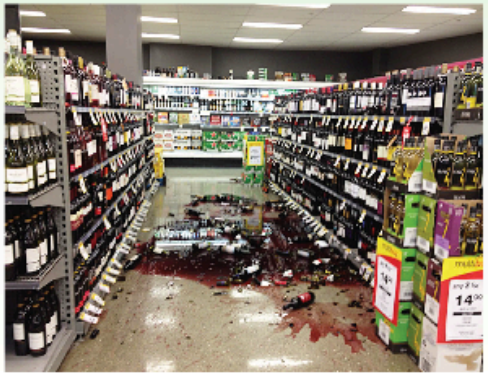
Manila TsunamiReady Planning Team - it all starts with motivated community members.

2013 New Zealand Earthquake Sequence

Magnitude 6.5 earthquakes in July and August show what might happen here



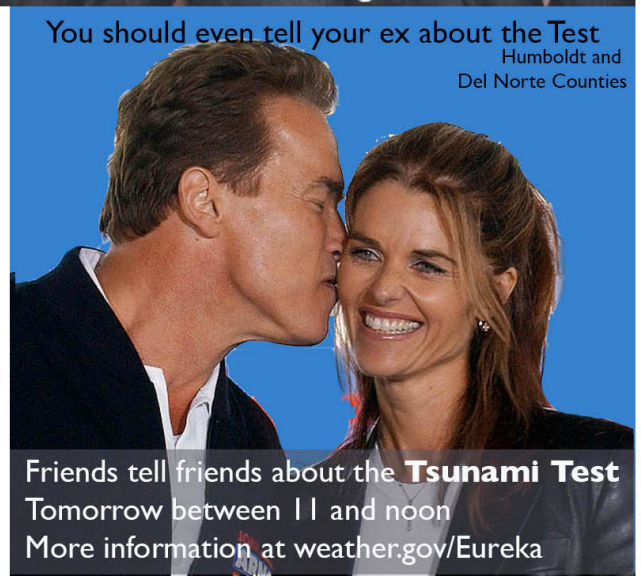
The Cook Straight magnitude 6.5 earthquakes on July 21 and August 16 and their aftershocks were strongly felt in the northern part of New Zealand's South Island and the Southern part of the North Island. The setting and construction is similar to California's North Coast



Most of the damage was non-structural. The earthquake caused many items to fall from shelves.

There were many examples of people doing the right thing during the shaking. Top photo shows Wellington college students dropping under their desks as the shaking started. The bottom photo shows a gymnasium near the epicenter. Most of the children huddled down on the floor. The three children under the table look pretty contented during the earthquake - they practice Drop, Cover, and Hold On at school. The dog doesn't look so happy.

Poster collage for the 2013 Tsunami Communication test



The RCTWG Earthquake-Tsunami Room wins the County Fair award for the best non-profit exhibit

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