

ECA Southern California

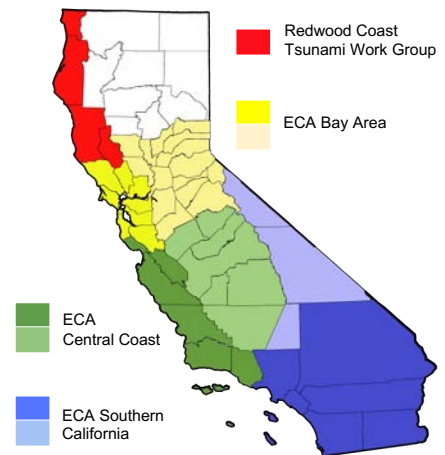
Winter 2024 Online Workshop February 28, 2024



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Earthquake Country Alliance

- 4000+ *Public-Private-Grassroots* leaders
- Subject matter expert *Committees* develop resources and programs
- *Regional Alliances* organize meetings and outreach activities
- California's Office of Emergency Services provides FEMA NEHRP funding for ECA earthquake mitigation activities
- USC's Statewide California Earthquake Center (SCEC.org) administers ECA



Join: EarthquakeCountry.org/join



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Co-Chairs, ECA SoCal Coordinating Committee

Margaret Vinci

Caltech

Heidi Rosofsky

Global Vision Consortium

Alan Hanson

Simpson Strong-Tie, retired

EarthquakeCountry.org/socal

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ECA SoCal Coordinating Committee

Coordinating Committee Chairs:

Heidi Rosofsky (Global Vision)
Margaret Vinci (Caltech)
Alan Hanson (Simpson Strong-Tie)

Media Bureau Coordinators:

Marilyn Jimenez (LA Red Cross)

Mimi Teller

(LA Red Cross)

Participation Bureau Coordinator:
Management)

Pei Lee (Orange County Emergency

Also positions

for each county

Events Bureau Coordinators:

John Hammett & Lance Webster (Volunteers)

ShakeOut Events Coordinator:

Pauline Louie (EPA)

Communications Coordinator:

Open position

Quarterly Workshops Coordinator:

Open position

Membership Coordinator:

Open position

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Today's Agenda

Welcome from the ECA SoCal Chairs

Alan Hanson (Simpson Strong-Tie, retired)

Heidi Rosofsky (Global Vision Consortium)

Margaret Vinci (Caltech)

1964 Alaska Earthquake, evolution of tsunami warning system

Lori Dengler (Cal Poly Humboldt)

Climate Change Effects on Earthquake Risk

Charles Scawthorn (Pacific Earthquake Engineering Research Center and PA Risk LLC)

Earthquake Early Warning / Quake Break

Gabrielle Tepp (Caltech)

EPA's Community Change Equitable Resilience Program

Pauline Louie (United States Environmental Protection Agency)

ECA 2024 Activities & Opportunities: Mini Awards Update, Northridge Earthquake 30th Anniversary / Quake Heroes Expos

Mark Benthien (SCEC/ECA)

Open Discussion, Sharing, and Networking

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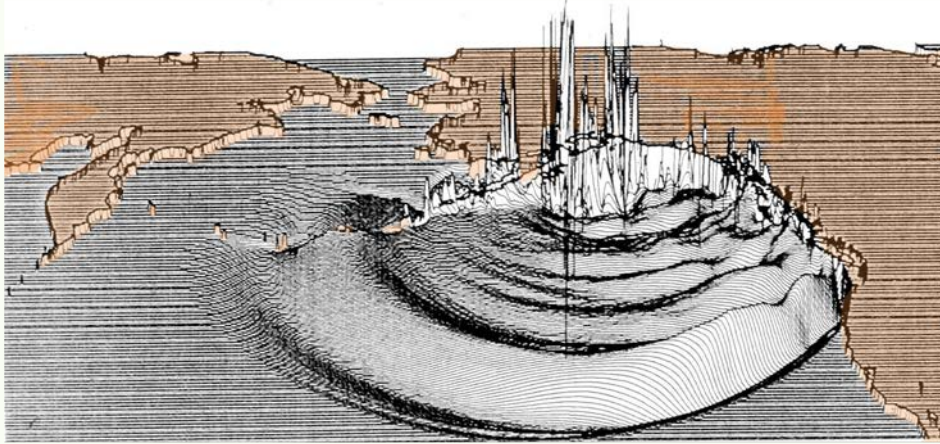
1964 Alaska Earthquake, evolution of tsunami warning system

Lori Dengler

Cal State Humboldt

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The 1964 Alaska Earthquake and Tsunami A California perspective



Lori Dengler, Professor Emeritus, Cal Poly Humboldt
Geology

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The U.S. Tsunami Warning system in

1964

- One tsunami warning center – the Honolulu Observatory
- Established in Hawaii in 1949 in response to 1946 Aleutians earthquake/tsunami
- No telemetered information
- Seismic observatories around the Pacific phone in P-wave arrival times



Honolulu Observatory in 1965

What is a successful alert? People evacuate before wave arrival, no deaths or injuries

Successful alerts issued to Hawaii in 1952 and 1957 Aleutians and Kamchatka earthquakes

Not so successful alert after the May 1960 Chile earthquake – 61 deaths

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What happened in 1964?

Minutes

After quake	Time PST	Honoulu Observatory Log
0	7:36 PM	Earthquake occurs
8	7:44 PM	Alarm sounded. Noted large earthquake.
38	8:13 PM	Requested seismic data from observatories.
44	8:19 PM	Manila Observatory reported seismic data.
47	8:23 PM	Hong Kong Observatory reported seismic data.
55	8:31 PM	Guam Observatory reported seismic data.
57	8:33 PM	Japan Meteorological Agency reported seismic data
60	8:36 PM	FAA reported communications to Alaska out.
62	8:38 PM	Berkeley Observatory reported seismic data.
72	8:48 PM	Tucson Observatory reported seismic data.
76	8:52 PM	Epicenter determined to be at 61°N., 147.5°W., near Seward, Alaska.

One hour and 16 minutes to determine the epicenter

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9:02 PM PST First Bulletin

86 minutes after earthquake

THIS IS A TIDAL WAVE (SEISMIC SEA-WAVE) ADVISORY. A SEVERE EARTHQUAKE HAS OCCURRED AT LATITUDE 61°N., LONGITUDE 147.5°W., VICINITY OF SEWARD, ALASKA, AT 0336Z, 28 MARCH. IT IS NOT KNOWN, REPEAT NOT KNOWN, AT THIS TIME THAT A SEA WAVE HAS BEEN GENERATED. YOU WILL BE KEPT INFORMED AS FURTHER INFORMATION BECOMES AVAILABLE. IF A WAVE HAS BEEN GENERATED, ITS ETA FOR THE HAWAIIAN ISLANDS (HONOLULU) IS 0900Z, 28 MARCH.

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9:30 PM PST Second Bulletin
Almost two hours after earthquake

DAMAGE TO COMMUNICATIONS TO ALASKA MAKES IT IMPOSSIBLE TO CONTACT TIDE OBSERVERS. IF A WAVE HAS BEEN GENERATED THE ETA'S ARE: ATTU 0745Z; ADAK 0700Z; DUTCH HARBOR 0630Z; KODIAK 0530Z; SAMOA 1430Z; CANTON 1530Z; JOHNSTON 1100Z; MIDWAY 0845Z; WAKE 0930Z; KWAJALEIN 1430Z; GUAM 1315Z; TOKYO 1030Z; SITKA 0530Z; **SAN PEDRO 0930Z**; **LA JOLLA 1000Z**; BALBOA 2330Z; ACAPULCO 1300Z; CHRISTMAS 1230Z; **CRESCENT CITY 0800Z**; LEGASPI 1430Z; NEAH BAY 0730Z; **SAN FRANCISCO 0915Z**; TAHITI 1430Z; TOFINO, B. C. 0730Z; VALPARAISO 2200Z; HONOLULU 0900Z; HUALEIN, TAIWAN 1430Z; LA PUNTA 1900Z; MARCUS 1100Z; HONG KONG

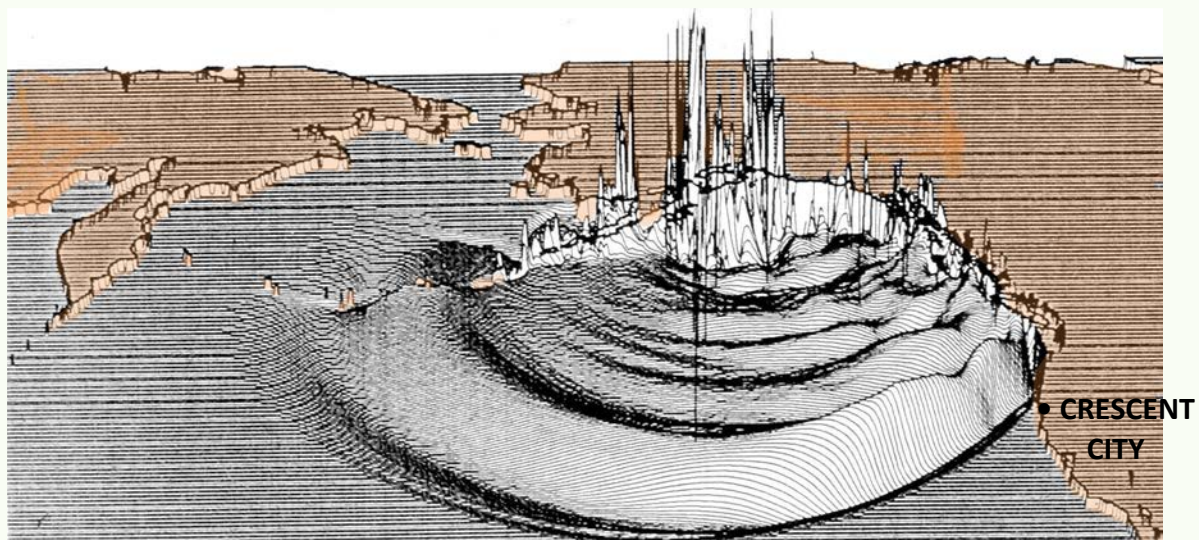
First mention of Crescent City and US west coast. Crescent City arrival time estimated at midnight

The California Disaster Office issues an emergency bulletin at 11:08 PM – received at Del Norte County Sheriff's dispatch office. Does NOT include estimated time of wave arrival.

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Situation in California when California Disaster Bulletin



52 minutes before estimated wave arrival time in Crescent City

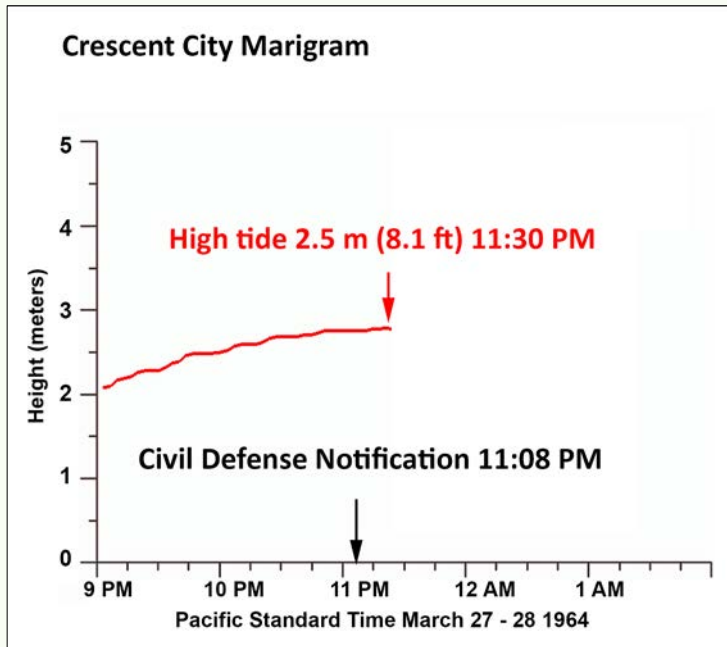
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Ambient conditions
IMPORTANT

High tide

Del Norte County Sheriff's
deputies began
notifications



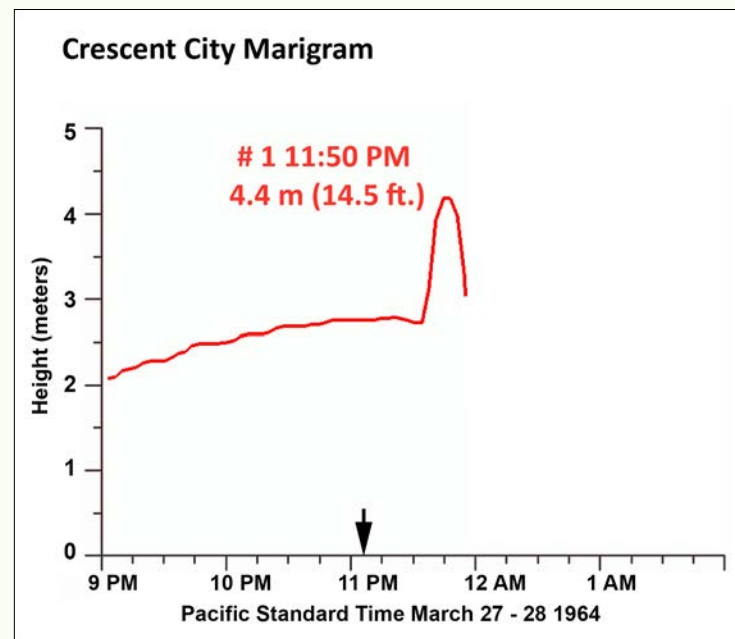
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First surge arrives at the
tide gauge on Citizens Dock
at 11:50 PM PST

Coincides with high tide
Peak water height 14.5 ft.

Notifications not completed
before surge arrives



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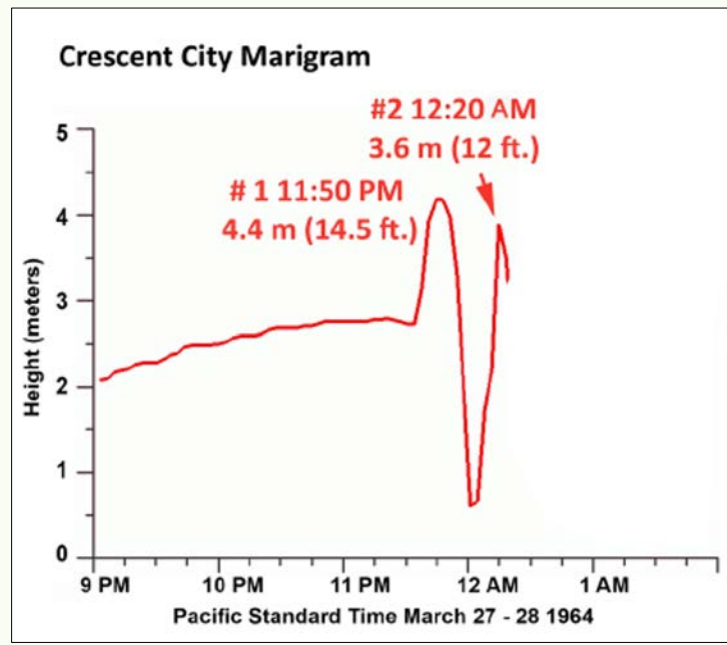
1960 inundation

First surge flooding may have looked like this

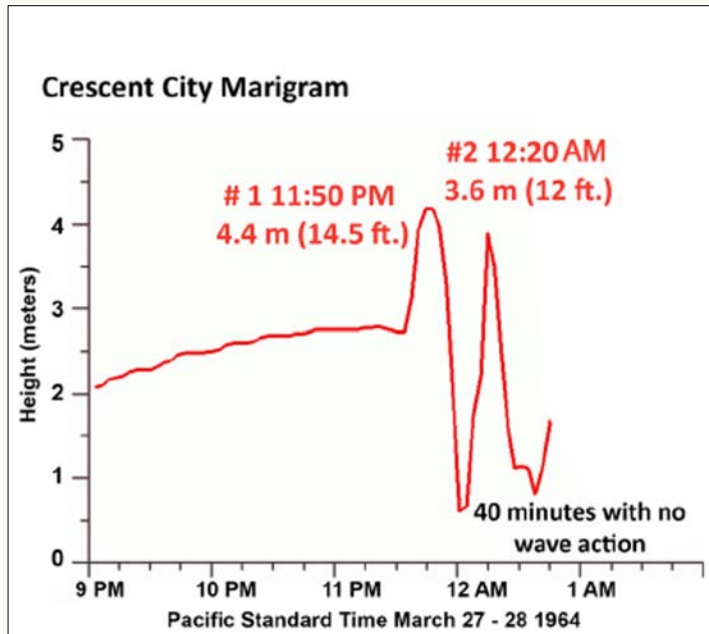
1964 first surge inundation estimated from eyewitness accounts – described as similar to 1960

Second surge at 12:20 AM PST

Smaller than first surge



Long spell with no wave activity

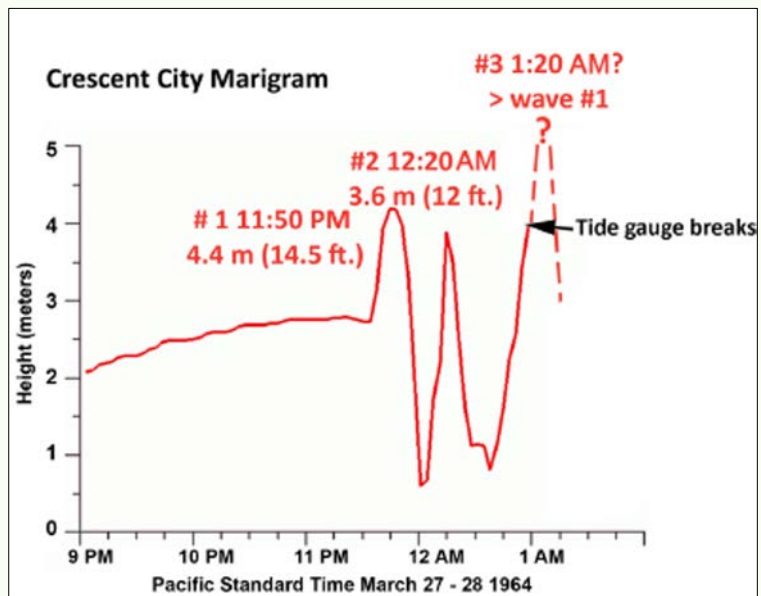


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Third surge begins at 12:45 AM

Gauge breaks at 1 AM

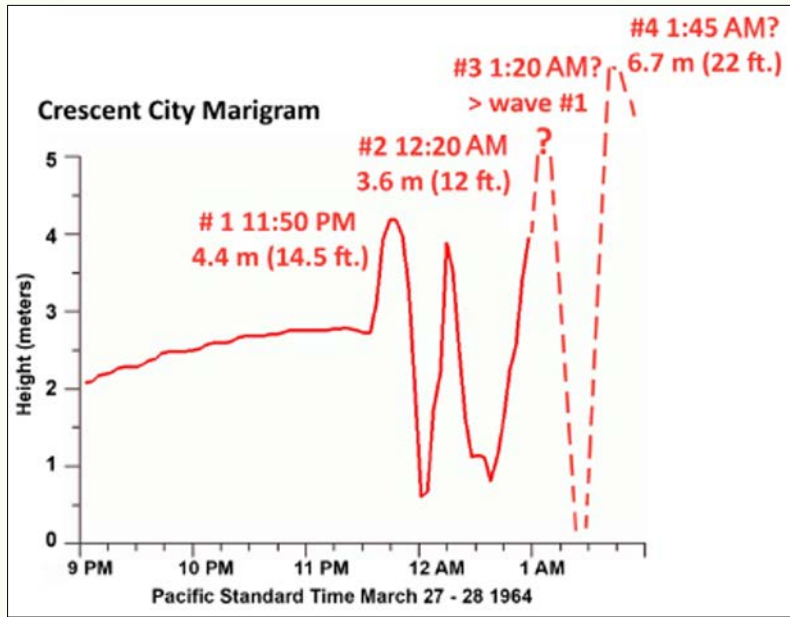


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Most eyewitnesses described four surges.

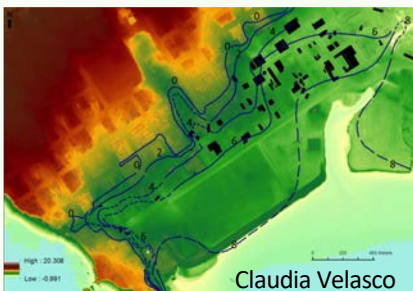
Last surge the highest – height estimated from wave overtopping the barrier



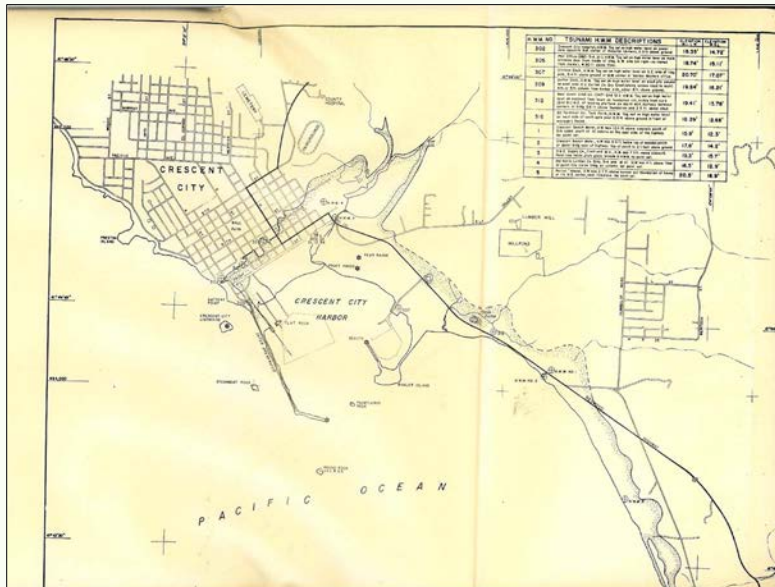
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Orville Magoon, Army Corps Engineer conducted one of first US post-tsunami field surveys

29 city blocks flooded



Claudia Velasco



29 city blocks flooded

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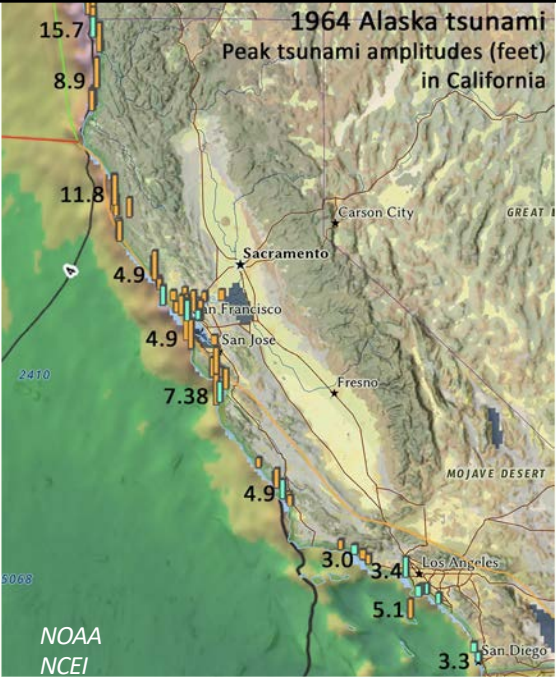
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1964 impacts in California

Deaths

- 10 Crescent City
- 1 Klamath River mouth
- 1 Bolinas
- 1 Port of Long Beach

21 locations in California reported damage - at least \$30 million (1964 \$\$) in losses



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Post 1964 changes in US tsunami warning system

- 1967 three regional centers established in Alaska – one in Palmer Tasked with providing alerts to coastal areas of Alaska after nearby events



National Tsunami Warning Center, Palmer, Alaska in 2021

- 1968 tsunami operations move from Honolulu Observatory to Ewa Beach and becomes the Pacific Tsunami Warning Center (PTWC)

- 1982 Palmer given responsibility for issuing alerts to Alaska or the West Coast for earthquakes centered in Alaska or the West Coast

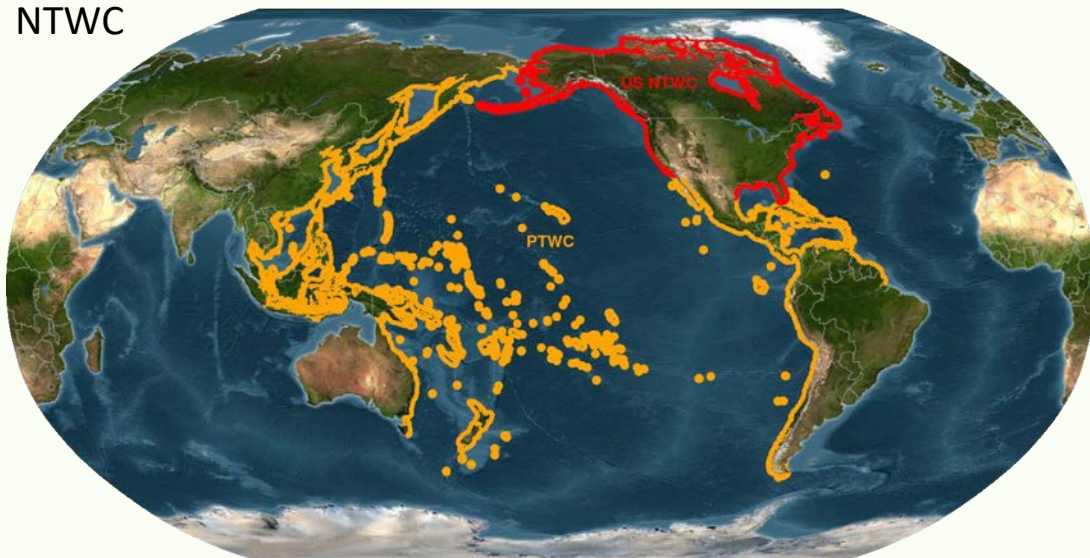
- 1996 Palmer responsible for all alerts to Alaska/West Coast - becomes West Coast Alaska Tsunami Warning Center (WCATWC)

- 2013 Name is changed to the National Tsunami Warning Center (NTWC)

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The U.S Tsunami Warning System in 2024: PTWC and NTWC



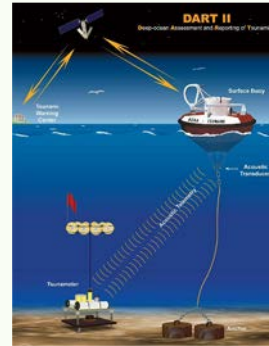
In California, only pay attention to NTWC bulletins!

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Differences between tsunami detection, analysis, and warning dissemination between 1964 and 2024

- National Tsunami Warning Center in Alaska operating 24/7 with hardened communication systems
- Real time seismic and water level data
- DART system of deep ocean water level measurements
- Ability to forecast not only arrival times of first wave but likely peak amplitudes
- Evacuation maps for most west coast locations
- TsunamiReady program strengthening ability of coastal communities to receive tsunami alerts and disseminate
- Exercises for emergency managers
- Numerous tsunami preparedness and outreach programs



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What would happen if 1964 happened today?

- First bulletin issued within 4 minutes of the earthquake
Initial magnitude likely mid-8
 - All of Alaska placed in a WARNING immediately
 - California? Most likely a WATCH
 - Includes ETAs at California locations
- Subsequent bulletins issued every half hour



If DART and analysis data confirm a tsunami threat, areas of California will be placed in WARNING status when ETAs hit three hours

EAS activated when WARNING is issued

Hourly conference calls between State OES, operational areas (counties) and NTWC

Operational areas authorize evacuations as appropriate

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Even with a “perfect” warning system, the biggest challenge is:

Getting people to move off the beach and stay away from the coast

- Short memories
- Changing emergency management personnel
- Confusion of what tsunamis are and the long danger period
- Misinformation and rumors

THE NEXT TSUNAMI WILL BE DIFFERENT FROM THE LAST



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In the future:

- Reorganization of NOAA’s tsunami program to put both tsunami warning centers under the same administrative system, with common platforms and protocols akin to the National Hurricane Center.
- Improved technologies utilizing GPS, enhanced seismic analysis, remote sensing, deep ocean sensors, and Machine Learning/Artificial Intelligence to better detect and forecast likely tsunami wave characteristics.
- Incorporating social science research into how people perceive and respond to tsunami alerts.



DRILL – DRILL - DRILL

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Climate Change Effects on Earthquake Risk

Charles Scawthorn

Pacific Earthquake Engineering Research Center and PA Risk LLC

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Q&A

To be notified of future events and recordings, join ECA (free!):
EarthquakeCountry.org/join

Please take our survey:
SurveyMonkey.com/r/TXFVXCQ

Questions?
info@earthquakecountry.org

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Quake Break: So Cal Seismic Activity

Gabrielle Tepp

Caltech

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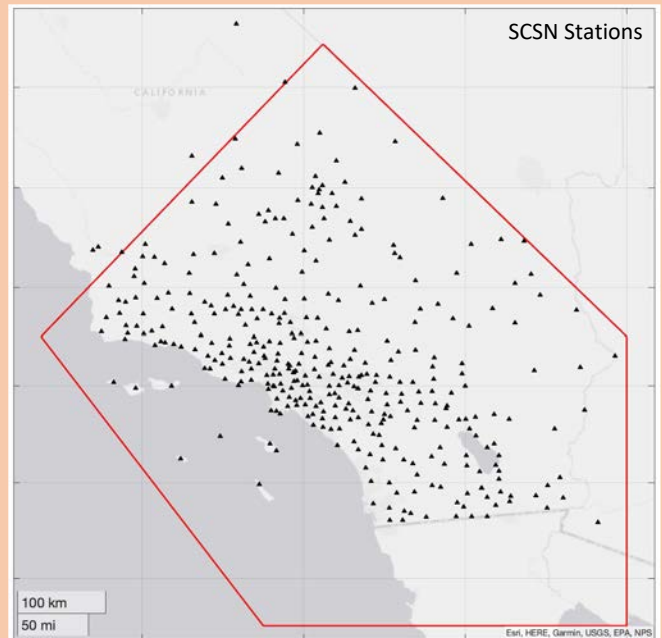
Quake Break –
Southern California
December 2023 – February 2024

Gabrielle
Tepp

SCSN/Caltech

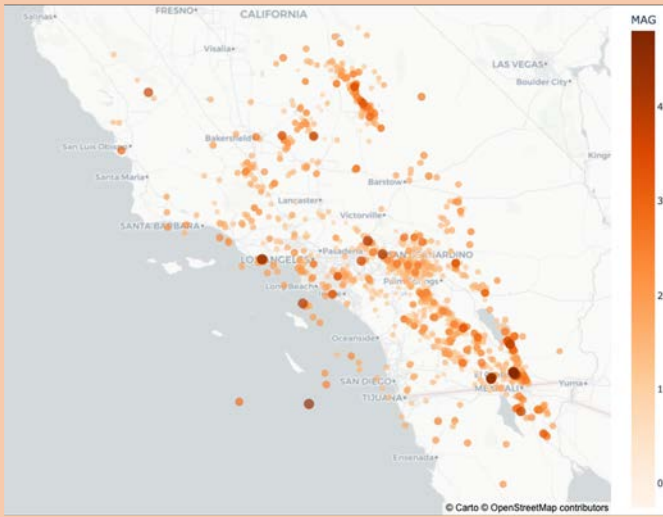


Caltech



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This quarter in Southern California there were:

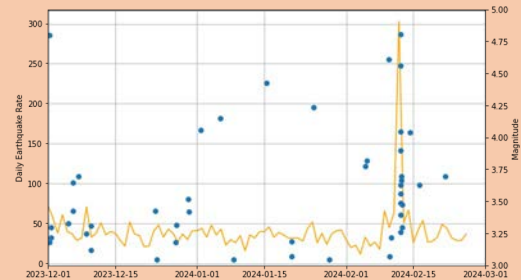


Average daily earthquake rate: 40
Max rate of 303 on 02/12/2024

3,469 earthquakes + 123 quarry blasts

- M>2 – 342
- M>3 – 47
- M>4 – 10

- 12/01/23 – M4.8 - E of Ocotillo, CA
- 01/01/24 – M4.1 - S of Rancho Palos Verdes, CA
- 01/05/24 – M4.2 - W of Lytle Creek, CA
- 01/15/24 – M4.4 - S of San Clemente Is.
- 01/25/24 – M4.2 - SW of San Bernardino, CA
- 02/09/24 – M4.6 - WNW of Malibu, CA
- 02/12/24 – M4.8 - NNW of El Centro, CA
- 02/12/24 – M4.1 - SSW of Imperial, CA
- 02/12/24 – M4.6 - NNW of El Centro, CA
- 02/14/24 – M4.0 - N of Westmorland, CA



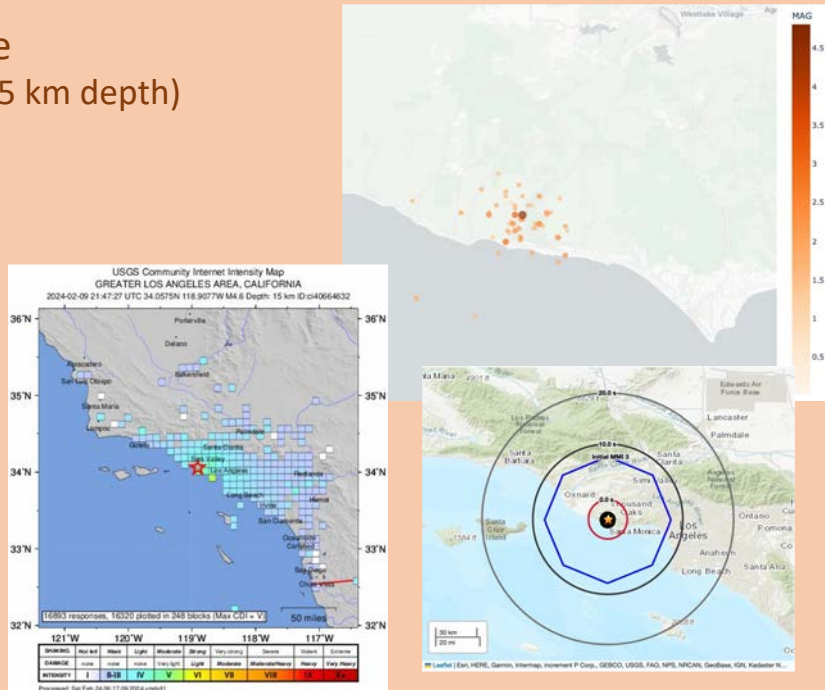
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M4.6 Malibu Sequence (February 9, 21:47 UTC, 15 km depth)

This sequence had 47 aftershocks.

- M3.0, 2/9/24 21:50, 15 km depth
- M3.1, 2/9/24 23:42, 14 km depth

The earthquake occurred near
the Malibu Coast Fault Zone.



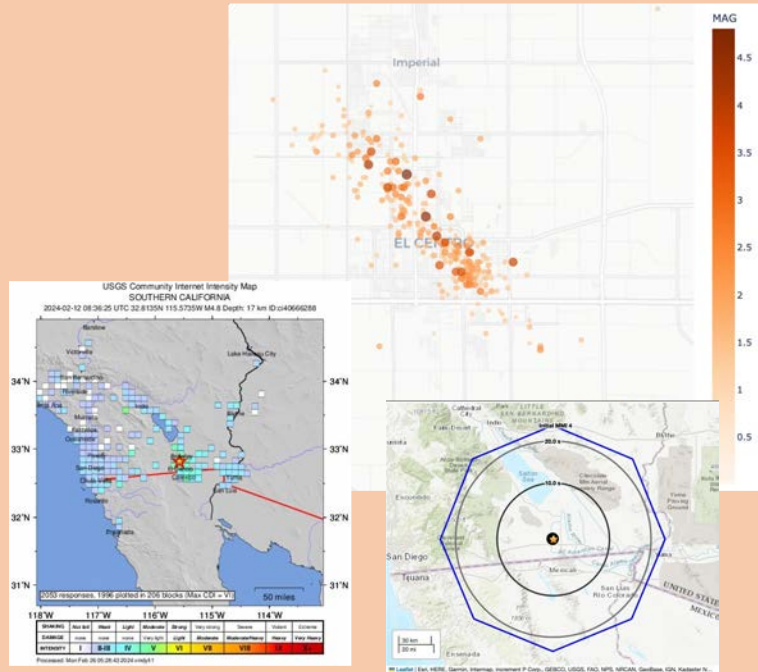
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M4.8 El Centro Swarm (mainly February 12-13)

This swarm included ~300 earthquakes of which
 63 were M>2
 13 were M>3
 3 were M>4

Most notably:

- M4.8 - 2024/02/12 00:36:25, 17.9 km
- M3.6 - 2024/02/12 00:37:47, 11.2 km
- M3.5 - 2024/02/12 00:38:13, 12.1 km
- M3.6 - 2024/02/12 00:38:25, 14.3 km
- M4.1 - 2024/02/12 00:38:34, 13.6 km
- M4.6 - 2024/02/12 00:42:48, 15.8 km
- M3.9 - 2024/02/12 00:59:51, 15.7 km
- M3.7 - 2024/02/12 02:18:35, 15.8 km
- M3.7 - 2024/02/12 02:18:44, 15.9 km
- M3.5 - 2024/02/12 06:15:21, 11.7 km



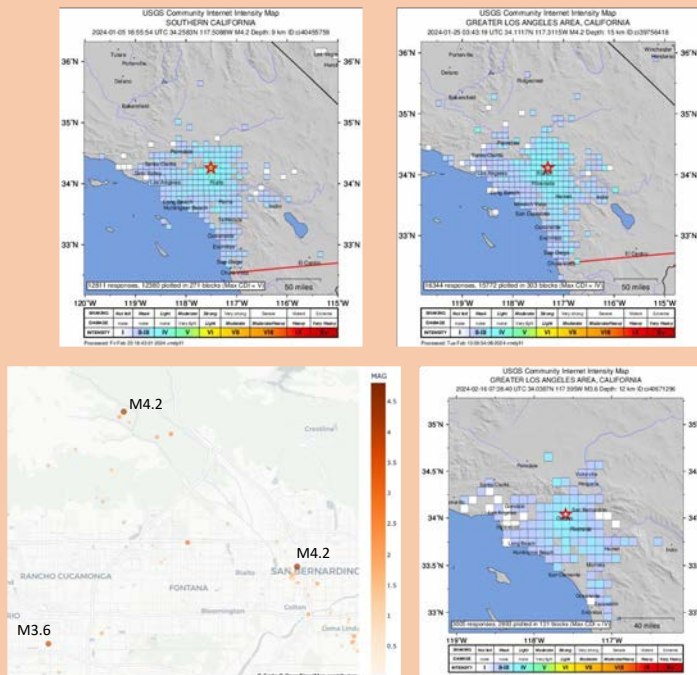
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San Bernardino Earthquakes

01/05/24, 10:56 (PST) - M4.2, 9 km depth
 1km W of Lytle Creek
 San Jacinto fault zone

01/24/24, 19:43 (PST) - M4.2, 16 km depth
 3km SW of San Bernardino
 San Jacinto fault zone

02/15/24, 23:39 (PST) - M3.6, 13 km depth
 3km ESE of Ontario
 Fontana Seismicity lineament



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Q&A

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EarthquakeCountry.org/join

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SurveyMonkey.com/r/TXFVXCQ

Questions?
info@earthquakecountry.org

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EPA's Community Change Equitable Resilience Program

Pauline Louie

United States Environmental Protection Agency

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Lessons from Climate Resilience for Tsunamis & Community Change Equitable Resilience Technical Assistance

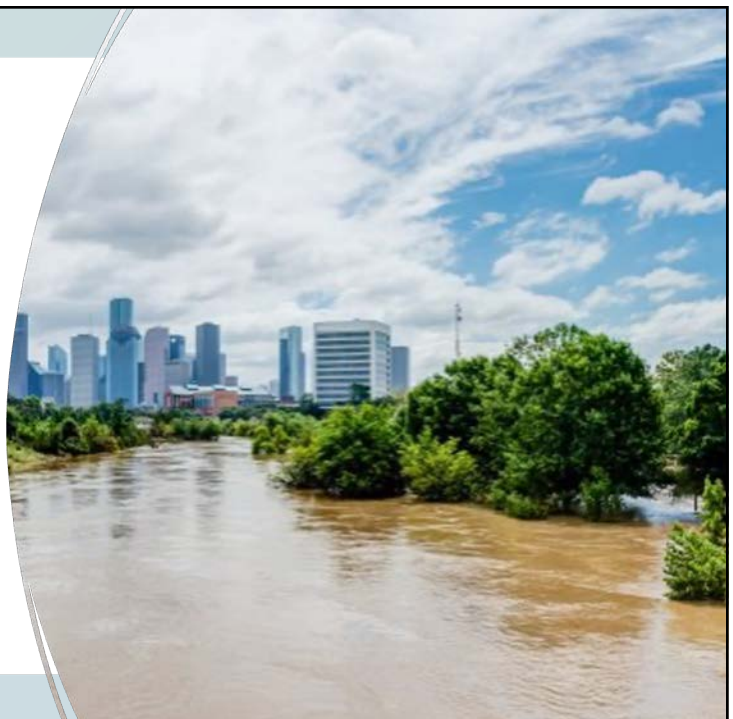
Pauline Louie

US EPA – Office of Policy/ Office of Community Revitalization
Louie.Pauline@epa.gov

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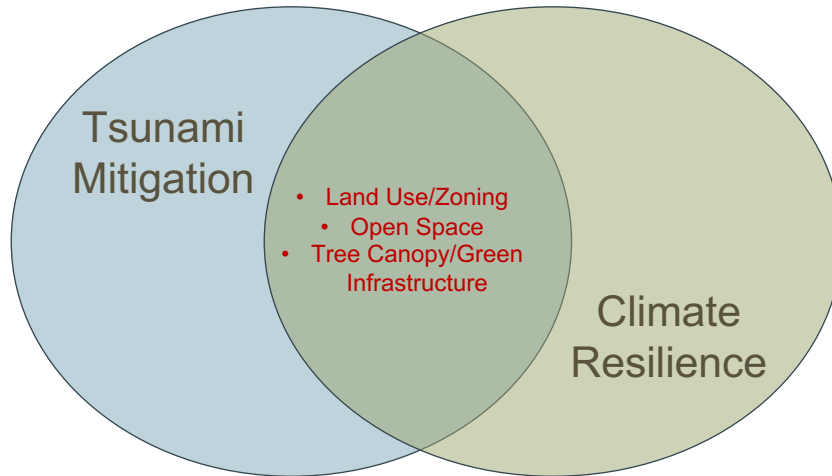
Compromised Coasts

- Coastal Erosion
- Sea Level Rise
- Storm Sturges
- Shoreline Degradation
- Saltwater Intrusion



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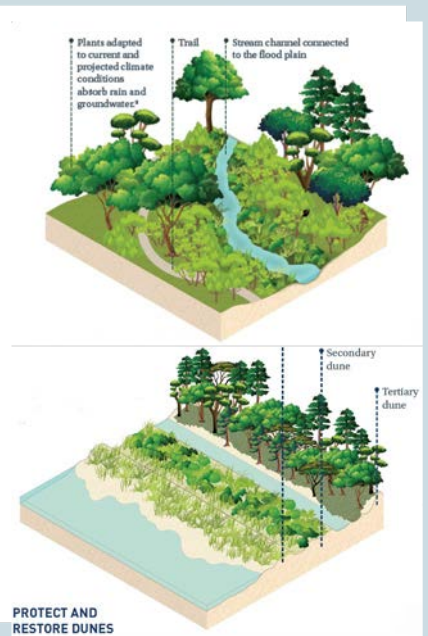
Tsunami Mitigation vs. Climate Resilience



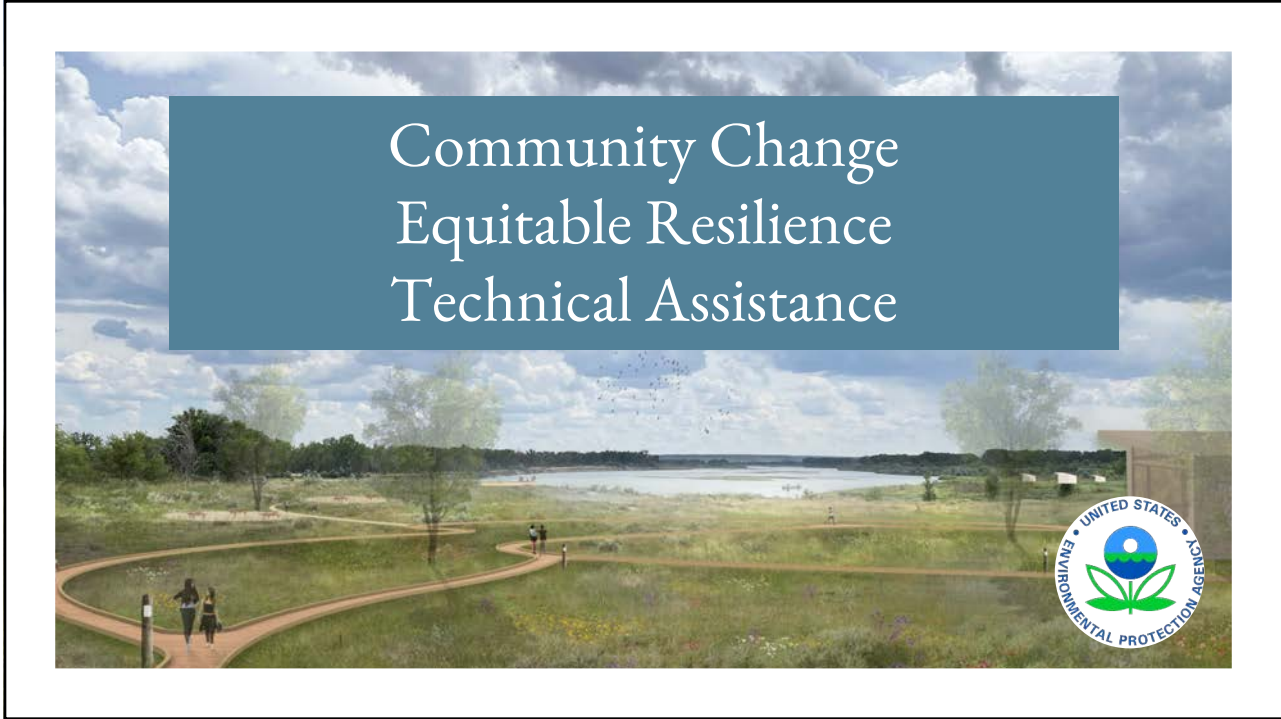
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Lessons from Resilient Design

From EPA "Disaster-Resilient Design Concepts"



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Community Change Grant

Inflation Reduction Act (IRA) \$2 billion in grants between \$10-\$20 million or \$1-\$3 million for engaging DACs in governmental processes.


Disadvantaged Communities

Three Year grant term.

Competition ends November 2024

Range of eligible activities including Climate Resilience & Adaptation

Eligible applicants = Partnership of 2 CBOs, or CBO +local govt, tribes or academic institutions.

A square QR code with a black outline of the state of Texas in the center. The QR code is located on the right side of the slide, next to the text.

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Community Change Equitable Resilience Technical Assistance

- Intended for disaster-prone and disadvantaged communities
- Design assistance, community engagement, and partnership development that result in climate resilience projects eligible for [Community Change Grant](#) funding.
- Up to 50 projects completed by fall 2024

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Timeline

NOVEMBER 21, 2023

- Community Change Grant NOFO released
- Equitable Resilience program opens and EPA will begin accepting TA requests on a rolling basis

NOVEMBER 2023 – FALL 2024

- Technical assistance provided to up to 50 recipients.
- Most TA will be delivered in the first half of the year.
- Projects need to start no later than July 2024

NOVEMBER 21, 2024

- Community Change Grant NOFO Closes & TA completed

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Number & Location of Communities

Northeast, Mid-Atlantic, Puerto Rico, and US Virgin Islands

EPA Regions 1, 2, and 3, including 11 states, 2 U.S. territories, and 25 tribes.

11 projects

Southeast and Gulf Coast

EPA Regions 4 and 6, including 13 states, 72 tribes, and many colonias and border communities.

11 projects

Midwest and Mountain

EPA Regions 5, 7, and 8, including 16 states and 72 tribes.

11 projects

Western, Alaska, Pacific Islands

EPA Regions 9 and 10, including 7 states, 4 territories, and 319 tribes and Alaskan Native Villages.

17 projects

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6-Step TA

1. An **initial call** to identify community assets, challenges, interests, and community engagement strategies that will support the on-site portions of this TA.
2. A **1-day site visit** to conduct a site assessment and confirm 1-3 sites for design work.
3. 6 weeks of **design and community engagement work** to develop initial design concepts and supportive partnerships for the design workshop.
4. A **1-day on-site design workshop** to confirm and select final designs for 1-3 sites.
5. A **final set of design options, preliminary budget, and project summary** that the recipient can use in developing and writing their own grant proposal for a Community Change Grant.
6. Additional support as needed to **troubleshoot grant submission**.

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Request for Technical Assistance

Requests will be submitted using a simple online form, on a rolling basis, until 50 recipients are identified

1. Intent and eligibility to apply for Community Change Grant Program
2. Agreement to host EPA contractors for site visits.
3. 1-3 Project location(s) and Disaster-prone status, using:
 - FEMA Community Disaster Resilience Zone (CDRZ), or
 - Climate Mapping for Resilience and Adaptation (CMRA), or
 - Narrative about additional disaster risk and climate hazards
4. Site description, ownership status, environmental and land use information
5. Potential resilience benefits for disadvantaged community
6. Engagement plans

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Website & Contact

Community Change Grants Program: <https://www.epa.gov/inflation-reduction-act/inflation-reduction-act-community-change-grants-program>

Community Change Equitable Resilience: <https://www.epa.gov/inflation-reduction-act/community-change-grants-technical-assistance>

Email: EquitableResilience@epa.gov

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Q&A

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EarthquakeCountry.org/join

Please take our survey:
SurveyMonkey.com/r/TXFVXCQ

Questions?
info@earthquakecountry.org

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ECA 2024 Activities & Opportunities:

Mark Benthien

Southern California Earthquake Center (USC)
ECA Executive Director

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ECA Statewide Activities

Develop Messaging and Resources:

EarthquakeCountry.org
EarthquakeCountry.org/resources
Terremotos.org



Support Tsunami Preparedness Week:

TsunamiZone.org/california



March
23-31,
2024

Created and Coordinate
The Great California ShakeOut:

ShakeOut.org/california



Oct. 17,
2024

Webinars & other events

EarthquakeCountry.org/calendar

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ECA Sector-Based Outreach Committees

- Businesses
- Public Sector
- Non-Profit & Faith-Based Organizations
- Accessibility
- Healthcare
- Higher Education
- PreK-12 Education

Each meets bimonthly; Join us!

EarthquakeCountry.org/committees

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ECA Accessibility Committee

ACCESSIBILITY RESOURCES

- Guide for People with Disabilities & AFN (8 page)

Available in 16 languages:

- Key Earthquake Tips
- Recommended Earthquake Actions
- Earthquake Protective Actions Graphics

2023 Accessibility Webinar:

- "How to adapt our messaging and reach the whole community"

Abilities Expo

- March 15-17, 2023 @ LA Convention Center
- ECA hosts a large multi-partner booth with resources and presentations all weekend
- Join Us! info@earthquakecountry.org



EarthquakeCountry.org/accessibility

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ECA Events Bureau

Speakers for online/in-person events

- | | |
|--|--|
| ■ The Seven Steps to Earthquake Safety | ■ The Science of Earthquakes |
| ■ Tsunami Preparedness | ■ Earthquake Insurance |
| ■ Earthquake Safety for People with Disabilities | ■ Emergency Planning for Apartment Residents |
| ■ Community Earthquake Preparedness | ■ Is Your Business Prepared for Disasters? |
| ■ Organizing a Community ShakeOut Event | ■ ShakeAlert Earthquake Early Warning System |
| ■ School Earthquake Preparedness | ■ Map Your Neighborhood |

- Booths or info tables at events
- We may simply send materials in advance
- Request presenter or information table:
EarthquakeCountry.org/eca-events



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ECA Mini Awards

- **Purpose:** provide materials for ECA member projects that improve earthquake resilience by promoting mitigation, awareness, and preparedness, and multiply impact of programs
- **Purchases:** \$500 to \$1000 each
- **Eligibility:** Proposals for earthquake **mitigation** and **education** activities
- **Pre-defined packages:** Sets of materials will be available, however you can also customize them or propose other items
- **2024 Awards:** New application opens in March

READYAMERICA
THE DISASTER SUPPLY PROFESSIONALS

Secure WORKPLACE \$500 Package

ITEM #	ITEM NAME	IMAGE	QUANTITY
4160-64	Furniture Strap		15
4740	File Cabinet Strap		15
5040	Bookcase Strap		15
4173	Home Electronics Safety Strap, Black		30
4338	A-Maze-ing Picture Hook, 4 Pack		10
4250	Kitchen & Cabinet Door Latch, 4 Pack		10
88111	QuakeHOLD! Museum Putty		10

Federal |

ECA SoCal Mini 2023 Recipients

Beeyond Prepared
 City of Los Angeles Parks and Recreation
 City of Norwalk Emergency Management
 City of Redlands Fire Department
 City of Upland Emergency Management
 Coachella Valley Disaster Preparedness Network
 Imperial Valley College
 Meals on Wheels
 Menifee School District

Seven Steps To Earthquake Safety

BEFORE

1. Secure Your Space

2. Plan To Be Safe

3. Organize Supplies

4. Minimize Financial Hardship

DURING

5. Drop, Cover, and Hold On

6. Improve Safety

7. Reconnect and Restore

AFTER

EarthquakeCountry.org/sevensteps

Terremotos.org/sietepasos

Updated Materials in 16 Languages

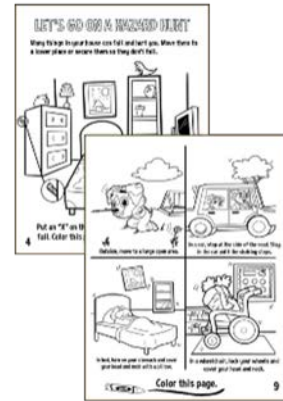
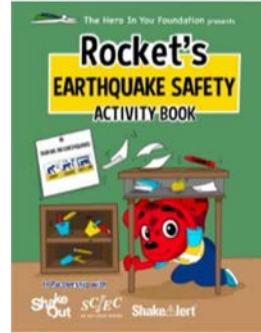
The image displays a collection of 16 language versions of the 'Drop, Cover, and Hold On' poster. Each poster features the same core message and icons (a person dropping, covering under a table, and holding on) but is adapted to the respective language and culture. The languages shown include English, Spanish, Chinese, Vietnamese, and others. The posters are arranged in a grid-like fashion, showing the diversity of the materials available.

EarthquakeCountry.org/languages

Materials for Children Ages 4-9



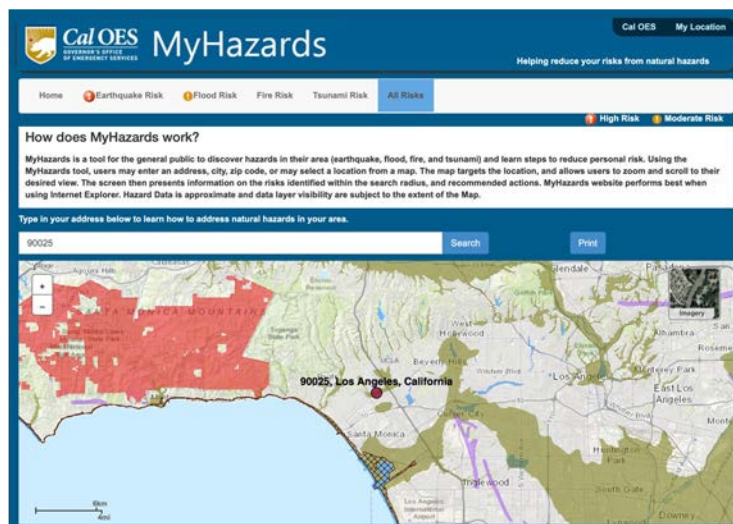
English and Spanish Story Books



Many Languages

RocketRules.org/earthquake (videos & more)

Know Your Hazards



MyHazards.CalOES.ca.gov

- Updated tsunami hazard maps were updated using the best currently available scientific information.
- Maps assist the public and local governments in identifying their tsunami hazard for evacuation planning.
- Use the “find address” box to see if the areas you work, live, visit, or commute are in a Tsunami Hazard Area.

tsunami.ca.gov/map

California Tsunami Maps and Data

County-Specific Page Links

- Alameda [2021]
- Contra Costa [2021]
- Del Norte [2021]
- Humboldt [2021]
- Los Angeles [2021]
- Marin **UPDATED 2022**
- Mendocino [2021]
- Monterey [2021]
- Napa **UPDATED 2022**
- Orange [2021]
- San Diego **UPDATED 2022**
- San Francisco [2021]
- San Luis Obispo [2021]
- San Mateo [2021]
- Santa Barbara [2021]
- Santa Clara [2021]
- Santa Cruz **UPDATED 2022**
- Solano **UPDATED 2022**
- Sonoma **UPDATED 2022**
- Ventura **UPDATED 2022**

California Geological Survey

03/15/2023

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California Tsunami Preparedness Week

- March 23-31, 2024
- Activities coordinated locally across the state
- Register your activities, similar to ShakeOut participation.
- Hold a “Tsunami Walk”
- Become a TsunamiReady Community
- Many ways to participate!

WELCOME TO THE TSUNAMIZONE IN CALIFORNIA

You can register to participate in California's Tsunami Preparedness Week, March 23-31, 2023. Click on the 'REGISTER' link to register. You will receive a virtual invitation to participate in a special media communication about tsunamis - it's up to you. Remember, we'll all be the lighter!

Register your participation

View list of public events that have been submitted (Note: This is not the same list as the ShakeOut website of individuals and organizations.)

98,478 California participants and counting!

Click the map for details about each area

Over 100,000 participants registered!

CALIFORNIA RESOURCES

USGS Tsunami Inundation Maps

California tsunami inundation maps show where areas at risk are inundated during tsunamis. The maps are intended to be used to help people plan how they can get from dangerous areas to safer areas by showing where high, soft ground is located. These maps can be used to identify a path to a safe area. The maps are intended to be used in conjunction with the Tsunami Preparedness Guide for the State of California.

TsunamiZone.org/california

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California Tsunami Preparedness Week

- Attend a publicly organized tsunami walk drill
- **Organize your own tsunami walk drill**
- Participate in a boat evacuation drill
- Attend a Public Lecture
- Put together a preparedness kit
- Make a family plan
- Establish an out of town contact
- Participate in a work-related tsunami exercise
- Attend a commemorative event
- Re-tweet Tsunami Preparedness Info
- Participate in a school evacuation drill
- Watch a tsunami preparedness video
- Attend an open house at museum/government office
- Print out a map of your evacuation zone



TsunamiZone.org/california

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Northridge 30th Anniversary Campaign

- SCEC/ECA is leading the development of a year-long educational campaign to commemorate the 30th anniversary of the Jan. 17, 1994, Northridge earthquake
- Purpose: increase awareness about earthquake hazards, encourage preparedness and mitigation, and inform about self-protective actions and response skills.
- Grant funding and sponsorships, including:
 - Cal OES
 - California Seismic Safety Commission
 - Earthquake Program via FEMA NEHRP Funding (2/3 CSUN Quake Heroes event)
 - California Earthquake Authority
 - Optimum Seismic
 - **Other public/private partners**
- Primary activity: many "Quake Heroes Expo" events.



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- Stories of people who experienced the 1994 Northridge earthquake in Los Angeles, and how they helped others
- Key moments tied to the *Seven Steps to Earthquake Safety*
- Scientists and engineers share how they informed the public about what happened, and learned key lessons for reducing future losses (tuck-under parking buildings are featured)
- Encourages viewers to become trained (CERT, CPR, etc.) so they are prepared to help others
- Production sponsored by FEMA, NSF, USGS, Structural Engineers Association of Southern California, Simpson Strong-Tie, Hero in You Foundation, Safe-T-Proof, and others



RETROSPECTIVE INTERVIEWS



ARCHIVAL NEWS FOOTAGE



CINEMATIC RE-ENACTMENTS

Quake Heroes Expos

- Screenings for large groups
- May include panel discussion before the film with local leaders, scientists, engineers, etc.
- After viewing the film, attendees can immediately take actions at a *Seven Steps to Earthquake Safety* resource/information fair where they can:
 - register for CERT and other trainings
 - receive free or low-cost disaster supplies and earthquake safety fasteners
 - learn about earthquake insurance and retrofitting
 - sign up for alerts
 - experience an earthquake simulator
- Learn more and schedule a discussion at [QuakeHeroes.org](https://www.quakeheroes.org)!



Quake Heroes Events

- International Association of Emergency Managers conference (Long Beach, November)
- YMCA Westchester Quake Heroes Expo (Dec 1)
- Cal State Northridge (Feb 3)
- Coachella Valley (March 30)
- Washington DC, Dept. of State (April 2-4)
- Pomona (Assemblymember Rodriguez- May 18)
- Pacific Palisades American Legion (May 30)
- Santa Clara County COAD: Spring or Summer
- Long Beach (Summer)
- Oakland: Summer (two events)
- Laguna Woods (September)
- Chino (September/October)
- Berkeley Lab (September)
- County of San Bernardino (Oct. 17)
- Many more in the works!



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NR30 Components

NORTHRIDGE 30
1994 → 2024

- **Quake Heroes Expos** (many events across SoCal and statewide, planned with diverse and vulnerable communities (seniors, low-income neighborhoods, in multiple languages) as well as for businesses, faith-based organizations, community centers, government agencies, etc.)
- **Additional Quake Heroes Film Screenings** (smaller venues with essential resources for preparedness)
- **Structural Engineers Association of Southern California Symposium at Caltech on January 17**
- **Northridge 30th Anniversary Commemoration @ CSUN Feb 3** (Quake Heroes Expo with comments from government officials, scientists, and engineers)
- **ASCE/SEAOSC/EERI/ECA Northridge30 Webinar Series (first was February 14)**
- **“Seven Steps” Presentations** (to community groups, houses of worship, small business associations, etc., in multiple languages, covering earthquake preparedness, mitigation, and response).
- **Social Media Toolkit** (Development of a multi-lingual comprehensive social media toolkit for partner organizations to promote campaign messaging).
- **Presentations/Booths** at sector-based conferences and other venues
- **Campaign website at EarthquakeCountry.org/northridge**

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Loma Prieta Earthquake 35th Anniversary

October 17, 2024
(2024 International ShakeOut Day!)

What is being planned?
What could be planned - before?
What could be planned - on Oct. 17?
What could be planned - after? How long?

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Great ShakeOut Earthquake Drills

- Annual opportunity for schools, organizations, and families to practice earthquake safety and other aspects of their emergency plans
- 2024 International ShakeOut Day: **October 17**
- Learn more and register: [ShakeOut.org](https://www.ShakeOut.org)
- How to participate, guides, etc.: [ShakeOut.org/howtoparticipate](https://www.ShakeOut.org/howtoparticipate)

**Shake
Out**TM



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Q&A

To be notified of future events and recordings, join ECA (free!):
EarthquakeCountry.org/join

Please take our survey:
SurveyMonkey.com/r/TXFVXCQ

Questions?
info@earthquakecountry.org

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Short Announcements from Attendees

Please take our brief survey about today's workshop:
SurveyMonkey.com/r/WZN87Y5

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Open Discussion & Networking

Please take our brief survey about today's workshop:
[SurveyMonkey.com/r/WZN87Y5](https://www.surveymonkey.com/r/WZN87Y5)

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What is something that you:

learned
will do
will use
will tell others

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Connect with ECA

- EarthquakeCountry.org
EarthquakeCountry.org/socal
- Terremotos.org
- [Twitter.com/eca](https://twitter.com/eca)
- info@earthquakecountry.org



Please take our brief survey about today's workshop:
[SurveyMonkey.com/r/TXFVXCQ](https://www.surveymonkey.com/r/TXFVXCQ)