

Welcome!

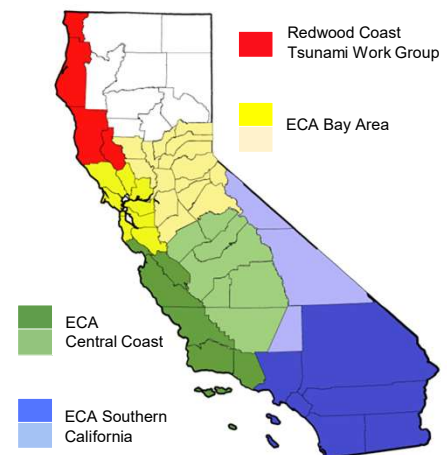


ECA Southern California Spring 2023 Workshop

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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 Southern 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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Today's Agenda

Welcome from the ECA Bay Area Chairs

Alan Hanson (Simpson Strong-Tie, retired)

Heidi Rosofsky (Global Vision Consortium)

Margaret Vinci (Caltech)

February 6, 2023, Kahramanmaraş, Türkiye, Earthquakes

Dr. Bora Gencturk (USC Civil & Environmental Engineering)

Earthquake Early Warning / Quake Break

Margaret Vinci (Caltech)

2023 ECA SoCal Activities and Leadership Opportunities

Alan Hanson (Simpson Strong-Tie, retired)

ECA 20th Anniversary Event

Mark Benthien (SCEC/ECA)

Open Discussion, Sharing, and Networking

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***February 6, 2023, Kahramanmaraş, Türkiye,
Earthquakes***

Dr. Bora Gencturk

USC Civil & Environmental Engineering

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Q&A

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

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SurveyMonkey.com/r/68WTBZZ

Questions?

info@earthquakecountry.org

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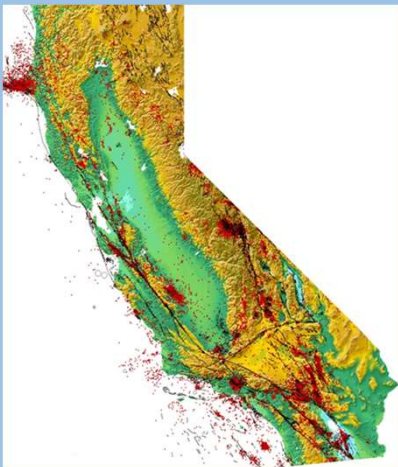
Earthquake Early Warning

Quake Break: So Cal Seismic Activity since last ECA Workshop

Margaret Vinci
Caltech

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Quakes Break



Southern California Seismic Activity Feb – May 2023

Margaret Vinci
Caltech Seismological Laboratory
Office of Earthquake Programs



Caltech

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Southern California experiences an earthquake every 3 minutes Average of 30 a day



5,094 earthquakes this quarter (156 were quarry blasts)

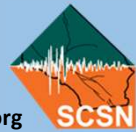
- 435 M2.0+ 6 – M4.0+
- 52 M3.0+ 0 – M5.0+

Events M3.5 and higher:

- 02/28/23 - M3.6 17km SSW of Trona, CA
- 03/18/23 - M3.6 Bombay Beach, CA
- 03/18/23 - M3.4 Bombay Beach, CA
- 03/25/23 - M3.6 48 km E of Trona, CA
- 03/31/23 - M4.2 near Palomar, CA
- 04/08/23 - M3.7 near Progreso, B.C. Mexico
- 04/17/23 - M3.6 near San Miguel Is
- 04/17/23 - M3.6 near Barstow, CA
- 04/25/23 - M3.6 near Banning, CA
- 04/29/23 - M4.1 near Heber, CA
- 04/30/23 - M4.3 Swarm near Niland
- 05/02/23 - M3.6 near Little Lake, CA
- 05/20/23 - M4.3 near Big Pine, CA
- 05/30/23 - M3.6 near Port Hueneme
- 06/8/23 - M3.2 near Sierra Madre – DYFI 9.1% felt – small but under a populated area

SoCal seismicity busier this quarter than last

May 2023 exceeded number of average events per day



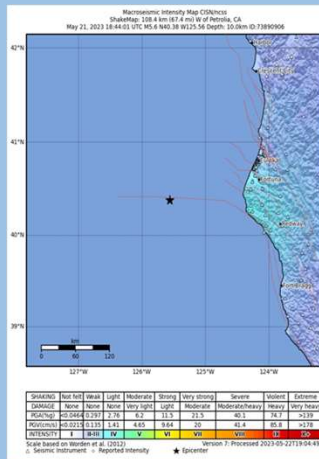
<https://www.scsn.org>

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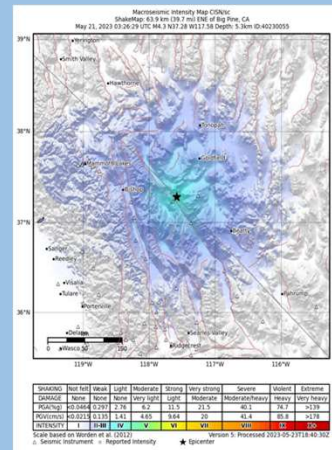


Triggered Events in Western States...2023

- | | |
|----------|--------------------|
| February | - 0 matched events |
| March | - 1 matched event |
| April | - 4 matched events |
| May | - 5 matched events |



Petrolia M5.6 MMI IV



Big Pine M4.3 MMI IV

5/21/23

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Cannot predict earthquakes but ShakeAlert® provides vital seconds of warning that an earthquake is happening and shaking is imminent to save lives, reduce injuries by providing time to take protective actions and protect equipment or infrastructures from damage.



Public Alerting

Individuals can get an alert via smart phone:

- WEA, Android OS
- Apps: MyShake, QuakeAlert USA, SDemergency
- Contains a simple message: "Earthquake Detected! Drop, Cover, Hold On. Protect Yourself."

Alerts delivered only if earthquake magnitude is 4.5+ and shaking intensity is 3.0+



vs. Automated Actions

Organizations can get an alert by a variety of mechanisms, and can take a variety of automatic actions

- e.g., send alert over a PA System, initiate backup generators or slow down trains

Alert contains information on earthquake characteristics and earthquake effects via XML

- Magnitude, Depth, Location
- Expected ground motion (shaking intensity), time until shaking arrives

- ✓ Alert message can be tailored to specific staff or job sites
- ✓ The user defines what magnitude and shaking intensity threshold trigger alerts
- ✓ Connected directly to the ShakeAlert servers

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ShakeAlert.org

ShakeAlert: An Earthquake Early Warning System for the West Coast of the United States

West Coast Earthquake Early Warning System Components

USGS ShakeAlert system → Distribution Partners

ShakeAlert Network & Processing Centers

Coverage Area

How can I get ShakeAlert-powered alerts on my mobile phone? Learn here.

Post-ShakeAlert Message Summaries

Learn more about the Wireless Emergency Alert system (WEA).

Learn about ShakeAlert Technical and CEO

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Education and Training Materials...

Messaging Toolkit

- Short Animations
- Tests, drills and exercises
- Case Studies
- Guide for Inclusive and Culturally Competent Messaging
- One-Page Handouts (FAQ, Cell Phone Apps)
- Multiple languages: Spanish, Chinese, Vietnamese, Tagalog & Russian

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Study: Salton Sea Shrinking may reduce earthquakes

Nature Journal

- Southern portion of the San Andreas Fault runs from the Salton Sea to Parkfield, CA
- Salton Sea was formed in 1905 when the Colorado River flooded and has been feed by agricultural runoff
- Study suggests that major earthquakes along this section of the fault coincide with high water levels in the lake
- Hydrological load caused by high water levels can more than double the stress on the SAF which is likely to trigger earthquakes. Just under 1,000 measurable earthquakes in last month
- At times the lake has held up to 30 times more water than the current sea does. Weight pushes down on Earth's crust, lubricates the faults boosting chances for a big quake. Less water means less pressure on the fault system
- The Salton Sea is drying up and may be delaying the region's next big earthquake as lack of water is reducing stress on the SAF

BEFORE



AFTER

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Study: Salton Sea Shrinking may reduce earthquakes *Nature Journal*

- System locked for 300 years – last major event in 1725; 6 or 7 events over last 1,000 yrs (average 180 years)
- Longer the region goes without a major event, more seismic stress builds up.
- Water is only one factor that influences seismic activity–
- **Plate Tectonics** is the major cause of earthquakes and the Pacific Plate continues to move at 2 inches a year
- **RISK** is still there and Let's not forget that the 1857 Fort Tejon M7.9 earthquake traveled southward along the SAF into the Los Angeles Basin



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Cal OES
GOVERNOR'S OFFICE
OF EMERGENCY SERVICES

Earthquake Early Warning Outreach and Education

- San Jose Earthquakes of Major League Soccer partnership to promote EEW awareness
- Cal OES in the beginning stages of discussing a ShakeOut Tour in October for taking earthquake simulator to various towns around CA
- Earthquake simulator confirmed for
 - National CERT Conference later this month in SF
 - Del Norte County Fair in August
 - San Diego and San Francisco Fleet Weeks
- Was at: LA City Fleet Week and Malibu Preparedness Fair this month

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Earthquake Resources After an Earthquake

So Cal Seismic Network: www.scsn.org

So California Earthquake Data Center: <https://scedc.caltech.edu>

Did You Feel It: <https://earthquake.usgs.gov/data/dyfi/>

ShakeAlert Apps: MyShake, QuakeAlertUSA, Sdemergency, Google android and WEA

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Q&A

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Questions?

info@earthquakecountry.org

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2023 ECA SoCal Activities and Leadership Opportunities

Alan Hanson
Simpson Strong-Tie (retired)

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ECA SoCal 2023 Calendar

June 26–July 14 **Apply for Mini Awards (2nd round this year)**

August 9
USC

ECA SoCal Summer 2023 Workshop @

ECA 20th Anniversary &

Northridge 30th Kickoff

October 19

Great California ShakeOut
Register now at

ShakeOut.org/california

November 8

ECA SoCal Fall 2023 Workshop

More to come: EarthquakeCountry.org/calendar

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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)

Open position

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:

Jeffrey Snoddy (City of Inglewood)

Quarterly Workshops Coordinator:

Open position

Membership Coordinator:

Open position

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ECA 20th Anniversary Event & More

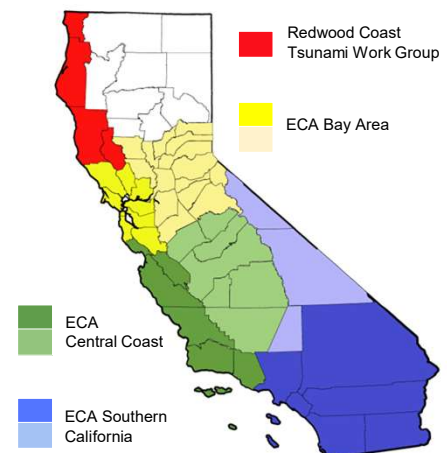
Mark Benthien

Southern California Earthquake Center (USC)
ECA Executive Director

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Earthquake Country Alliance

- First meeting: June 16, 2003 @ USC
 - SCEC invited key regional partners that provide earthquake and preparedness information
 - Planned for the 10th Anniversary of Northridge
 - Launched first version of EarthquakeCountry.org
- 4000+ *Public-Private-Grassroots* leaders
- *Regional Alliances* organize meetings and outreach activities
- California's Office of Emergency Services provides FEMA NEHRP funding for ECA earthquake mitigation activities
- USC's Southern California Earthquake Center (SCEC.org) administers ECA



Join: EarthquakeCountry.org/join



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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
27-31,
2023**

Created and Coordinate
 The Great California ShakeOut:
ShakeOut.org/california



**Oct. 19
in 2023**

Webinars & other events
EarthquakeCountry.org/calendar

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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



AFTER

7. Reconnect and Restore



EarthquakeCountry.org/sevensteps

Terremotos.org/sietepasos

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Updated Materials in 16 Languages

If You Feel Shaking or Get an Alert:
If Possible
DROPI! COVER! HOLD ON!

Kế Hoạch Hành Động
với
Bảy Bước Giữ An Toàn

Pilong Habang sa Paghahanda sa Lindol

Recommended Earthquake Safety Actions

Si Siente Un Temblor o Recibe Una Alerta:
Si Es Posible
AGACHETE! COBRASE! SÚMETETE!

Cov Niam Tswv Yim Pab Thaum Muaj Av Qeeg

Piliang Habang sa Paghahanda sa Lindol

삼정 내 지진 안전 조치

တစ်ခုခုကွဲရင် နေရာကွက် နေပါ

Cov Niam Tswv Yim Pab Thaum Muaj Av Qeeg

大加州 ShakeOut

Kế Hoạch Hành Động

Cov Niam Tswv Yim Pab Thaum Muaj Av Qeeg

大加州 ShakeOut

Kế Hoạch Hành Động

삼정 내 지진 안전 조치

EarthquakeCountry.org/languages

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ECA Sector-Based Outreach Committees

- Public Sector
- Healthcare
- Businesses
- Higher Education
- Accessibility
- PreK-12 Education
- Non-Profit & Faith-Based Organizations
- EPIcenters (Museums, parks, libraries, etc.)

Each meets bimonthly; Join us!

EarthquakeCountry.org/committees

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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/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
- **2023 Awards:** Apply 6/26 - 7/14 @ EarthquakeCountry.org/miniawards

READY AMERICA
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
68111	QuakeHOLD! Museum Putty		10

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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
- 2023 International ShakeOut Day: **October 19**
- **3.5 million** already registered
- Learn more and register: [ShakeOut.org](https://www.ShakeOut.org)

Shake Out™



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ECA 20th Anniversary

- **SAVE THE DATE; August 9, 2023**
- **Location:** University of Southern California
- **Attendees:** ECA SoCal Members, invited speakers, news media
- **Highlights:**
 - Commemorate 20 years of activities, resource development, and collaboration
 - ECA SoCal 2023 Mini Award presentations (group 1)
 - Kickoff Northridge 30th Anniversary Campaign
 - Optional follow-on activity: view *Quake Heroes* documentary

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Q&A

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Questions?

info@earthquakecountry.org

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Short Announcements from Attendees

Please take our brief survey about today's workshop:

SurveyMonkey.com/r/H7LGT3R

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Webinar:
**What do the 2023 Türkiye earthquakes
mean for California?**

Speakers: Ross S. Stein, Ph.D.,
and Volkan Sevilgen, M.Sc.,
Temblo, Inc.

 temblor®

Wednesday, June 21, 9 am PST, 12 pm EST, 6 pm CEST
Hosted by Temblor, Inc.

Register here: <https://us02web.zoom.us/meeting/register/tZMod-quqTlrGdZV1kAyW5uD3ZV03nJixkhh#/registration>

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**Open Discussion
& Networking**

Please take our brief survey about today's workshop:
[SurveyMonkey.com/r/H7LGT3R](https://www.surveymonkey.com/r/H7LGT3R)

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What is something that you:

learned
will do
will use
will tell others

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Connect with ECA SoCal

- EarthquakeCountry.org/socal
- socal@earthquakecountry.org
- Terremotos.org
- Twitter.com/eca
- info@earthquakecountry.org



Please take our brief survey about today's workshop:
SurveyMonkey.com/r/68WTBZZ

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