

Tsunami Advisory in effect

Weather Forecast Office
San Francisco Bay Area
Tuesday, July 29

What

- Tsunami Advisory in effect for coastal regions
- Dangerous currents and waves are possible
- 8.7 magnitude earthquake off coast of Kamchatka at 425 PM.

Where


- All coastal regions in the Bay Area and Central Coast, including San Francisco and San Pablo Bays

When

- Now until further notice
- Estimated time of arrival:
 - ◆ Monterey: 1215 AM on the 30th
 - ◆ San Francisco: 1240 AM on the 30th

Tsunami Advisory Safety

- Stay out of the water!
- Stay away from beaches and waterways!
- Remain away from shore until local officials say it's OK to return.
- Tsunami hazard zone map: <https://www.conservation.ca.gov/cgs/tsunami/maps>

A map of the San Francisco Bay Area and Central Coast of California. The map shows the coastline from Cloverdale in the north to Gorda and Brillee in the south. Major cities and towns are labeled, including Santa Rosa, Ukiah, Concord, San Francisco, Livermore, San Jose, Santa Cruz, Hollister, Monterey, Pinedale NP, Big Sur, King City, Gorda, and Brillee. A yellow line along the coast indicates the tsunami hazard zone.

JULY 2025 TSUNAMI AFTER ACTION REPORT

7.29.2025

Sonoma County Department of Emergency Management

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Executive Summary

Incident Overview

On July 2025 at 1624 PST, an earthquake was detected occurring 74 miles off the coast of Kamchatka, Russia. The earthquake was an 8.8 magnitude, one of the largest ever recorded. The National Weather Service's National Tsunami Warning Center issued Tsunami Warnings for the California Coast from the Oregon border to Cape Mendocino and Tsunami Advisories for coastlines from Mendocino to the Mexican border.

Sonoma County activated its Emergency Operations Center at Level 3 (Enhanced Monitoring) to facilitate coordination, alert and warning, and communications. A Tsunami Advisory Alert Message was issued to at-risk coastal communities, including low-lying beaches, in coordination with State and Regional Parks.

While the Tsunami did cause damage in other parts of the coast, no damage or loss of life was reported in the Sonoma Operational Area.

Incident Timeline

7.29.2025

Time	Event
1624	8.8 Earthquake Detected off the coast of Kamchatka, Russia
1729	EOC Activated at a Level 3
1736	Tsunami Watch Issued by the National Tsunami Warning Center
1744	Sonoma Operational Area Tsunami Coordination Call
1900	Tsunami Advisory Issued by the National Tsunami Warning Center
2030	Second OA Coordination Call
2036	Nixle Issued
2037	SoCo Alert & WEA Issued
2355	Tsunami Impacts begin along Sonoma Coast

7.30.2025

Time	Event
0300	EOC Demobilized
1105	Tsunami Advisory Lifted

Summary of Key Findings

The Sonoma County Department of Emergency Management conducted a Hot Wash on 7.30.2025 with the Sheriff's Office and County Communications to collect feedback on aspects of the incident response which were successful, and areas for future improvement. The following key findings were identified:

1. Integration of Sheriff's Office (SO) into the Emergency Operations Center was Beneficial

Having SO staff physically present in the EOC allowed for smoother communication and coordination, especially in coastal alerting.

2. Cal OES Playbooks contained insufficient information for pre-impact decision making

Cal OES Playbook maps did not share critical information such as the number and location of structures in the inundation zones, roads that might be impacted or outdoor

recreation sites that might be impacted. The sole source of information was a large-scale photomap with insufficient detail.

3. The Tsunami Annex to the Emergency Operations Plan requires an update

The plan was last updated in 2022. Since then, information like the names of partner agencies have changed alongside some best practices in Tsunami response.

After Action Discussion

1. Communications

Best Practices:

1.1: In-person coordination

Having representatives from County Communications and the Sheriff's Office join DEM at the EOC in-person facilitated fast, real-time communication, decision making, and coordinated public messaging.

1.2: Pre-existing Conference Call Scripts

The conference call script in the Tsunami Annex was helpful for running a critical call requiring short-notice participation and information sharing. Though this needs to be updated, it proved its value in this tsunami response.

1.3: Public Messaging

By closely following the lead of National Weather Service, County Communications was able to push a regular stream of updates to the community. Additionally, DEM's ability to quickly update the website with a flash message provided the public with an accurate source of information that the County was aware of the situation and monitoring, while the County Web Team worked on a more detailed message to post.

1.4: Operational Area Conference Call

Holding an operational area partner conference call, in addition to the Tsunami Coordination Call prescribed in the Tsunami Annex allowed DEM to proactively share information and actions with a wider audience of stakeholders. Holding these calls weekly ensured that participants knew what to expect and how to participate. This made for a quick, efficient meeting.

Areas for Improvement:

1.1: Public Messaging

Discussion:

Though public messaging was overall a success in this incident, two areas were identified for improvement:

1. Graphics from NWS/NOAA were only provided in English and Sonoma County staff did not have time to develop Spanish versions given the pace of the incident.
2. Flash Messaging was only available in a generic form – the ability to send out flash messages without web team based on incident-specific templates would improve the caliber of initial public information available on the county website.

Recommendation for Improvement:

1. Advocate to NWS/NOAA for all graphics related to incidents impacting life and safety to go out in English and Spanish
2. Work with the Web Team to develop flash messaging templates available to DEM Duty Officers for no-notice incidents such as tsunami.

Responsible Agency/Organization:

Department of Emergency Management

1.2: Tsunami Coordination Call

Discussion:

Though the call was successful in reaching most key partners, the pre-built list in the Code Red alerting system needs updating.

Recommendation for Improvement:

Though the plan is updated annually, it should also be updated after any incident in which it is activated.

Responsible Agency/Organization:

Department of Emergency Management

1.3: Field Communications

Discussion:

Communications among law enforcement and other public safety partners is critical for life safety in coastal inundation areas during a tsunami incident. Though the Sheriff's Office contracts with Regional Parks for law enforcement services, contact was never made between Regional Parks and the Sheriff's Parks Unit.

Recommendation for Improvement:

Sheriff's Parks Unit should clarify communications protocols with Regional Parks for activation during a Tsunami Incident.

Responsible Agency/Organization:

Sheriff's Office

2. Readiness

Pre-Incident Readiness

2.1: Duty-Officer Checklists

The DEM Operations and Coordination team maintains immediate response checklists for all major incidents – including one for tsunami. The Duty Officer responding to this tsunami incident found the checklist to be a helpful guide.

2.2: Tsunami Annex

The Tsunami Annex was useful in guiding the Duty Officer through the initial phases of a tsunami response. Especially helpful was the call script at the back of the plan.

2.3: Tsunami Response Meeting

A tsunami response meeting was held in May of 2025, gathering key public safety partners to discuss tsunami response readiness. Many of the same attendees participated in this Tsunami incident. This should continue as an annual exercise and should include County Communications.

2.4: Tsunami Public Awareness

A disaster preparation meeting was held in Bodega Bay in January 2025 and did cover tsunami awareness. Tsunami information is available on socoemergency.org. Tsunami signs are posted along the coast.

Areas for Improvement

2.1: Tsunami Annex Update

Discussion:

Though useful in this incident, the Tsunami Annex is due for an intensive review.

Recommendation for Improvement:

Partnering with the Sheriff's Office, DEM should rewrite the Tsunami Annex in 2026.

Responsible Agency/Organization:

Department of Emergency Management

Sonoma County Sheriff's Office

2.2: DEM Department Operations Center vs. EOC Tier 3 Activation

Discussion:

The ongoing update of the Emergency Operations Plan introduces a tier system to EOC activations. The EOC in this incident was activated at level 3 "Enhanced Monitoring" – in person EOC coordination with DEM and select partners. Much of Tier 3 overlaps with the DEM Department Operations Center Concept of Operations.

Recommendation for Improvement:

The Concept of Operations should be deconflicted with the EOP after the latter document's finalization.

Responsible Agency/Organization:

Department of Emergency Management

2.3: Cal OES Playbooks

Discussion:

The Cal OES Tsunami Playbooks are insufficient for Sonoma County's needs, especially lacking in specificity on structural impacts.

Recommendation for Improvement:

The existing Cal OES Playbooks need to be expanded and further developed to better meet the needs of Sonoma County community members at risk of tsunami impacts.

Responsible Agency/Organization:

Department of Emergency Management

2.4: Community Preparedness

Discussion:

Sonoma County was rated as a Tsunami Ready community nearly ten years ago, but the program needs to be updated with the most modern information and this needs to be properly conveyed to the community.

Recommendation for Improvement:

1. Tsunami information signs need to be inventoried and replaced as needed. Additional sign placements in the Sea Ranch area should be considered.
2. Community preparedness should be expanded from just Bodega Bay to incorporate at-risk communities including Jenner, Duncans Mills, Timber Cove and Sea Ranch.
3. The tsunami section of socoemergency.org should be reviewed and updated. Include latest tsunami inundation maps for the public.

Responsible Agency/Organization:

Department of Emergency Management

3. Response

Best Practices:

3.1: Alert and Warning

Alert and Warning saw several successes in this incident:

- The alert sent to Tsunami Stakeholders to attend the Tsunami Coordination call went out smoothly
- The SO Nixle and the DEM SoCoAlerts went out within one minute of each other
- A DEM-created AI alert text generation system saved time in constructing an accurate alert for the incident

- The set-up developed between REDCOM and DEM to tone out fire agencies went smoothly

3.2: Geographic Information System

County staff were able to develop more detailed maps which included threatened structures based on the Cal OES Playbooks quickly and after hours.

Areas for Improvement

3.1: Alert and Warning

Discussion:

Though SO and DEM were closely coordinated, one of the County Fire Protection Districts sent messaging in advance of other County alerts. This could have led to conflicting information.

Recommendation for Improvement:

Convene discussion among SO, DEM, and local fire protection districts to discuss closer coordination on public messaging in future incidents. Consider updating Tsunami Alert and Warning protocols based on Tsunami playbook expansions.

Responsible Agency/Organization:

DEM Community Alert and Warning

3.2: Damage Assessment

Discussion:

It was challenging to obtain real-time information on impacts on the ground.

There was no mechanism for reporting real-time impacts of the tsunami.

Recommendation for Improvement:

Explore using drone technology and partnering more closely with State and Regional Park rangers to provide impact updates.

Responsible Agency/Organization:

Department of Emergency Management

Sheriff's Office

Regional Parks

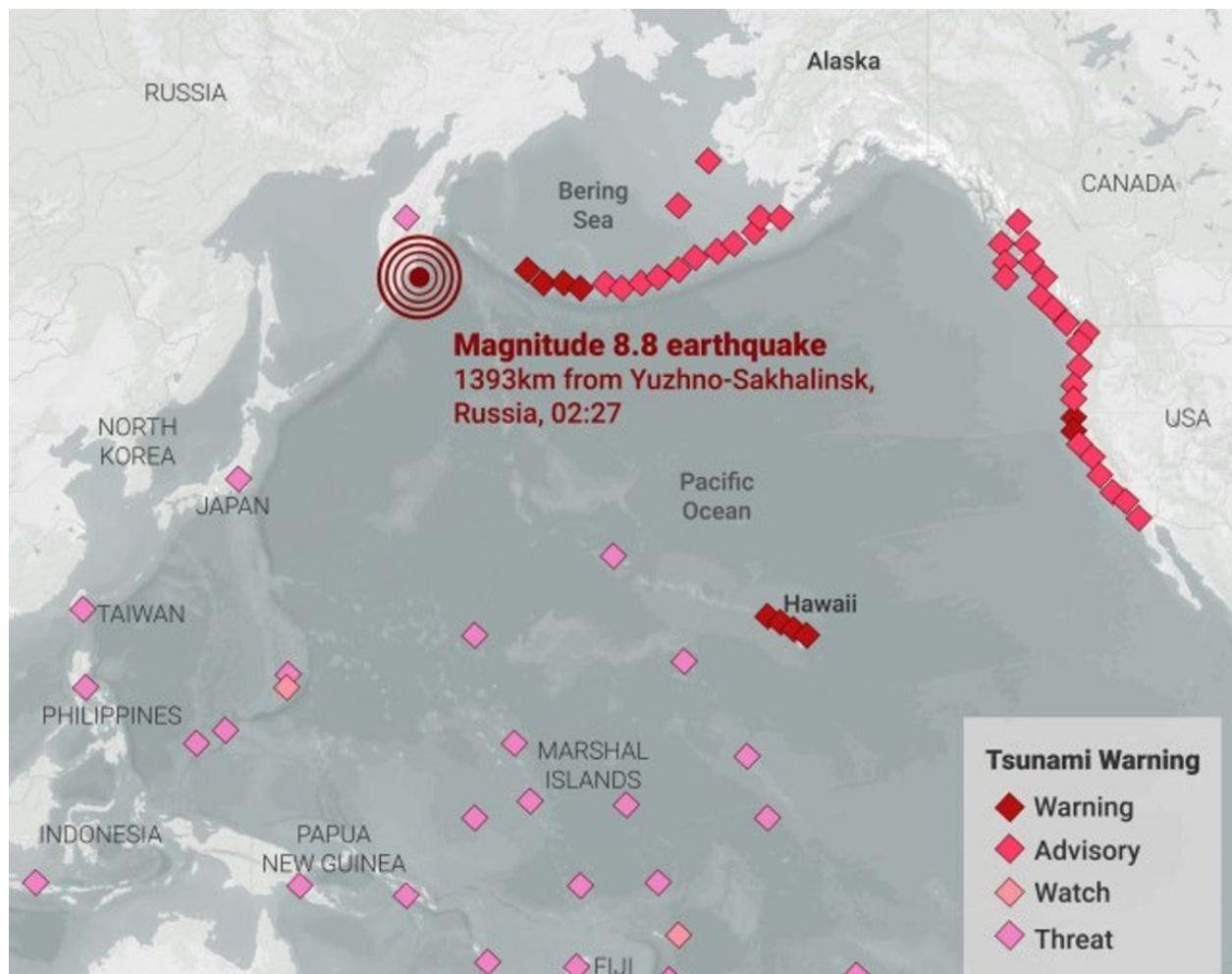
Corrective Action Matrix

Finding Number	Finding	Corrective Action	Responsible Agency(ies)
1.1a	Graphics from NWS/NOAA were only provided in English and Sonoma County staff did not have time to develop Spanish versions given the pace of the incident.	Advocate to NWS/NOAA for bilingual graphics.	Department of Emergency Management
1.1b	Flash Messaging was only available in a generic form – the ability to send out flash messages without web team based on incident-specific templates would improve the caliber of initial public information available on the county website.	Develop flash messaging templates for DEM Duty Officers.	Department of Emergency Management
1.2	Though the call was successful in reaching most key partners, the pre-built list in the Code Red alerting system needs updating.	Review and update the Code Red alerting system list.	Department of Emergency Management
1.3	Though the Sheriff's Office contracts with Regional Parks for law enforcement services, contact was never made between Regional Parks and the Sheriff's Parks Unit.	Sheriff's Parks Unit should clarify communications protocols with Regional Parks for activation during a Tsunami Incident.	Sheriff's Office
2.1	Though useful in this incident, the Tsunami Annex is due for an intensive review.	Begin a rewrite of the Tsunami Annex in 2026 in partnership with the Sheriff's Office.	Department of Emergency Management, Sheriff's Office

2.2	The ongoing update of the Emergency Operations Plan introduces a tier system to EOC activations. The EOC in this incident was activated at level 3 – in person EOC coordination with DEM and select partners. Much of Tier 3 overlaps with the DEM Department Operations Center Concept of Operations.	Deconflict Concept of Operations with the Emergency Operations Plan after finalization.	Department of Emergency Management
2.3	The Cal OES Tsunami Playbooks are insufficient for Sonoma County’s needs, especially lacking in specificity on structural impacts.	Expand and develop Cal OES Playbooks to address structural impacts and Sonoma-specific needs.	Department of Emergency Management
3.1	Though SO and DEM were closely coordinated, Sonoma County Fire District sent messaging in advance of other County alerts. This could have led to conflicting information.	Convene discussion among SO, DEM, and SCFD to improve coordination on public messaging. Consider updating Tsunami Alert and Warning protocols based on Tsunami Playbook expansions.	Sheriff’s Office, Department of Emergency Management, Sonoma County Fire District
3.2	It was challenging to obtain real-time information on impacts on the ground after dark.	Explore use of drone technology and partner with park rangers for nighttime impact updates.	Department of Emergency Management, Sheriff’s Office, Regional Parks

Attachments

Attachment A: Tsunami Warning Map



Attachment B: Alert and Warning Statistics

Tsunami Alerts 7/29/2025

SoCoAlert

- Launched: 7/29/2025 :: 8:37:26 PM PDT
- Final voice call completed at 8:47:46
- Alert Totals
 - o Emails: 3338
 - o Phone Calls: 7954
 - o Text Messages: 1388
 - o TDD: 1388



WEA

- Launched: 7/29/2025:: 8:37:00 PM PDT
- WEA only, no EAS or NWEM



Sheriffs Nixle

- July 29, 2025 :: 8:36:00 PM PDT
- Advisory: The Sonoma County coast is under Tsunami Advisory until 3:30 AM
- County-Wide Alert – 230,000 Texts