

Oregon Department of Geology and Mineral Industries (DOGAMI)

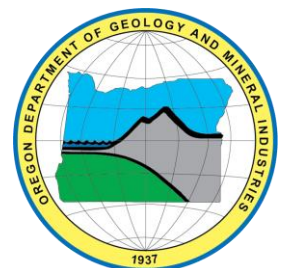
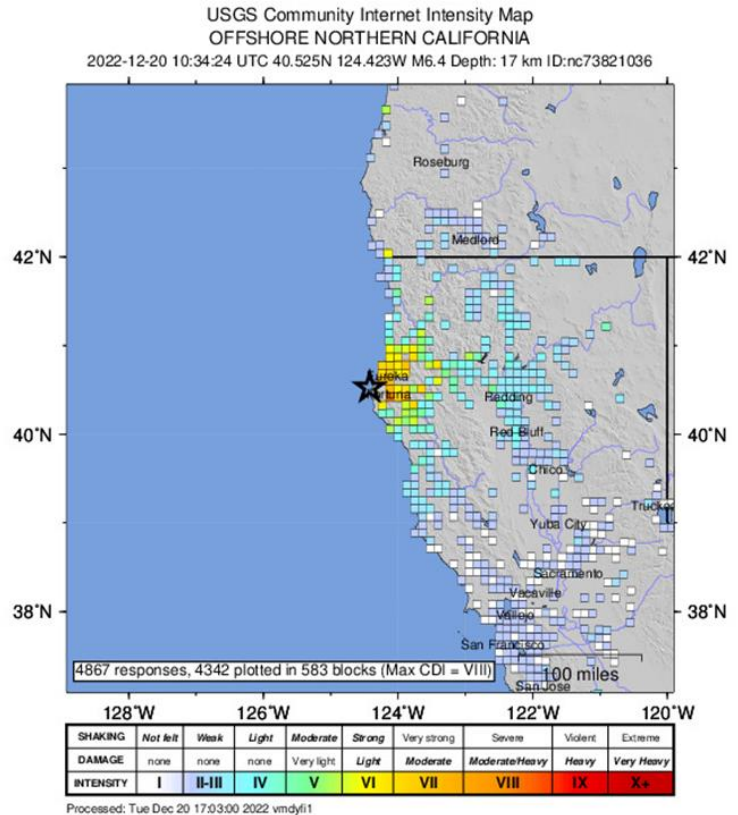
DECEMBER 20TH, 2022, M 6.4 FERNDALE EARTHQUAKE REPORT

A M 6.4 earthquake occurred this morning at 02:34 AM (local time) 22.8 miles SW of Eureka, CA and 104.86 miles south of Brookings, OR, just offshore of Ferndale, CA. The earthquake originated at a depth of 11.12 miles and is interpreted as occurring on a strike-slip fault in the subducting oceanic plate below North America.

No tsunami alerts were issued for this event. Reports from community members in the area indicate that shaking was very strong and inflicted moderate damage close to the epicenter, which translates to a VII (out of X+) on the Modified Mercalli Intensity scale (MMI). Weak to light shaking was felt as far east as Klamath Falls and as far north as Roseburg, Oregon. Reports of shaking across the region are generally consistent with predictions from the USGS ShakeMap model for this earthquake. There is a low likelihood of casualties and damage is possible, however the impact should be relatively localized according to the [USGS report](#). Secondary effects such as landslides and liquefaction have been previously identified with earlier earthquakes of similar magnitude in the region.

This earthquake occurred in the seismically active region where the North American, Pacific, and Juan de Fuca/Gorda tectonic plates meet, also known as the Mendocino Triple Junction. As of 9:50 am, there had been 76 aftershocks. Aftershocks are expected to continue, and there is the potential for the largest aftershocks to be felt in southern Oregon. The chance of an even larger earthquake occurring in the next week is estimated as a 1 in 200 chance. For more information [see the USGS page](#).

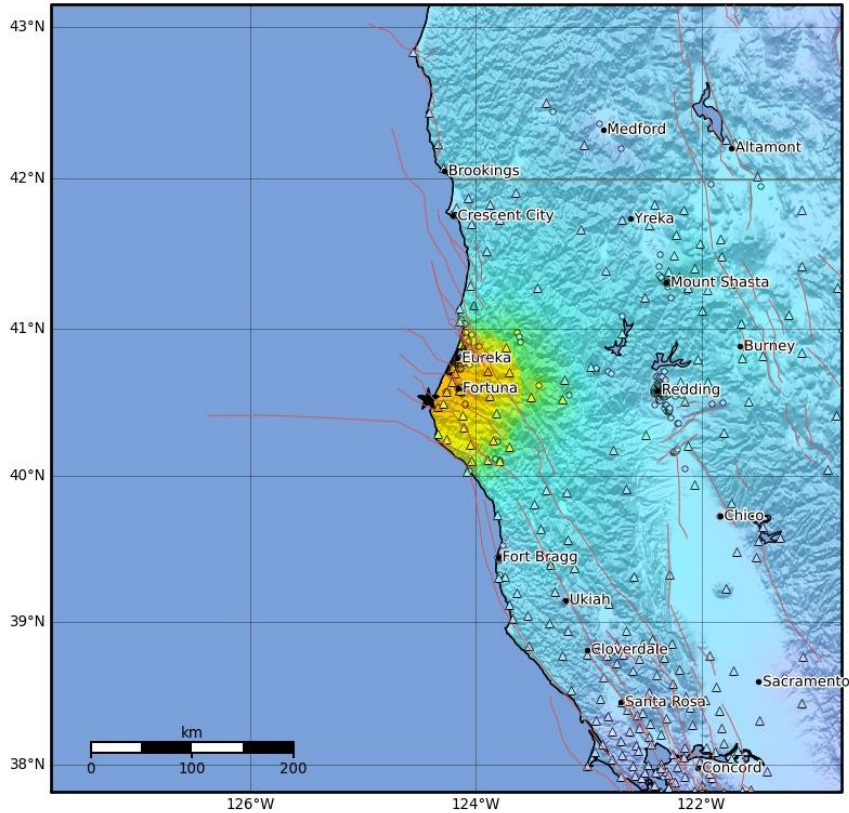
Earthquakes like this are possible across Oregon, and advance preparation is the best way to mitigate risks. For more information see the [Oregon Office of Emergency Management Earthquake hazards page](#).



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Macroseismic Intensity Map CISN/ncss
 ShakeMap: 14.6 km (9.1 mi) WSW of Ferndale, CA
 Dec 20, 2022 10:34:24 UTC M6.4 N40.52 W124.42 Depth: 17.9km ID:73821036



SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
DAMAGE	None	None	None	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PGA(%g)	<0.0464	0.297	2.76	6.2	11.5	21.5	40.1	74.7	>139
PGV(cm/s)	<0.0215	0.135	1.41	4.65	9.64	20	41.4	85.8	>178
INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	IX+

Scale based on Worden et al. (2012)

Version 5: Processed 2022-12-20T16:36:05Z

△ Seismic Instrument ○ Reported Intensity

★ Epicenter

Figure Source:

<https://earthquake.usgs.gov/earthquakes/eventpage/nc73821036/shakemap/intensity>

