USGS science for a changing world

Earthquake Shaking — Orange Alert

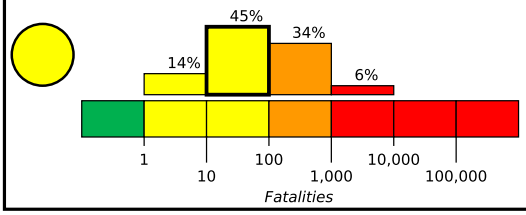
GSN · USAID FROM THE AMERICAN PEOPLE · ANSS

M 8.3, 48km W of Illapel, Chile

Origin Time: 2015-09-16 22:54:32 UTC (Wed 19:54:32 local)
Location: 31.5729° S 71.6744° W Depth: 22.4 km
FOR TSUNAMI INFORMATION, SEE: tsunami.gov

PAGER Version 1
Created: 99 weeks, 1 day after earthquake

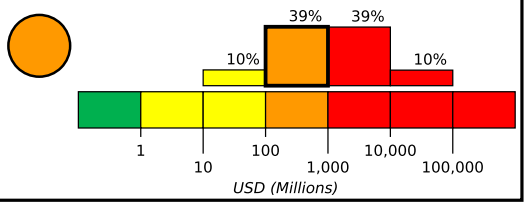
Estimated Fatalities



Orange alert for economic losses. Significant damage is likely and the disaster is potentially widespread. Estimated economic losses are less than 1% of GDP of Chile. Past events with this alert level have required a regional or national level response.

Yellow alert for shaking-related fatalities. Some casualties are possible.

Estimated Economic Losses

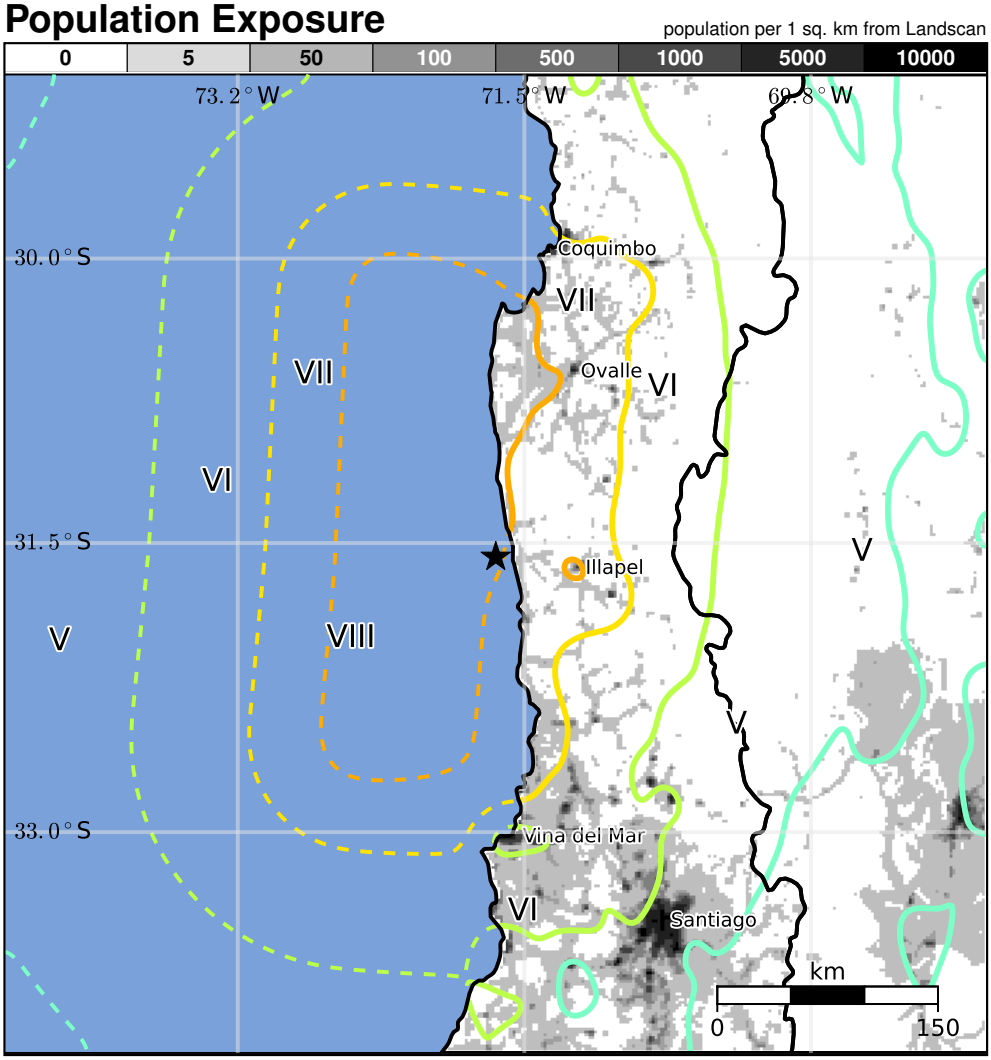


Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		–*	–*	1,149k*	7,238k	1,793k	698k	158k	0	0
ESTIMATED MODIFIED MERCALLI INTENSITY		I	II-III	IV	V	VI	VII	VIII	IX	X+
PERCEIVED SHAKING		Not felt	Weak	Light	Moderate	Strong	Very Strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	Resistant Structures	None	None	None	V. Light	Light	Moderate	Mod./Heavy	Heavy	V. Heavy
	Vulnerable Structures	None	None	None	Light	Moderate	Mod./Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure



Structures

Overall, the population in this region resides in structures that are resistant to earthquake shaking, though vulnerable structures exist. The predominant vulnerable building types are reinforced masonry and adobe block construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1971-07-09	122	7.8	VIII(755k)	83
1977-11-23	374	7.4	IX(20k)	70
1985-03-03	174	7.9	VII(5,319k)	177

Recent earthquakes in this area have caused secondary hazards such as tsunamis, landslides and liquefaction that might have contributed to losses.

Selected City Exposure

from GeoNames.org

MMI	City	Population
VIII	**Illapel**	**23k**
VIII	**Ovalle**	**77k**
VIII	Salamanca	13k
VII	Monte Patria	14k
VII	**Coquimbo**	**161k**
VII	La Ligua	25k
VII	La Serena	155k
V	**Santiago**	**4,837k**
V	Puente Alto	510k
V	Valparaiso	282k
V	Mendoza	877k

bold cities appear on map. (k=x1000)

PAGER content is automatically generated, and only considers losses due to structural damage. Limitations of input data, shaking estimates, and loss models may add uncertainty.

https://earthquake.usgs.gov/earthquakes/eventpage/us20003k7a#pager

Event ID: us20003k7a