USGS science for a changing world

Earthquake Shaking Green Alert

GSN ANSS USAID FROM THE AMERICAN PEOPLE

M 6.4, OFFSHORE BIO-BIO, CHILE

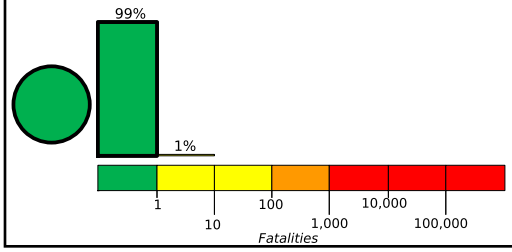
Origin Time: Sat 2015-06-20 02:10:07 UTC (21:10:07 local)

Location: 36.36°S 73.81°W Depth: 11 km

PAGER Version 5

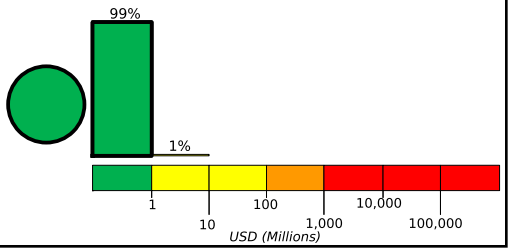
Created: 7 weeks, 3 days after earthquake

Estimated Fatalities



Green alert for shaking-related fatalities and economic losses. There is a low likelihood of casualties and damage.

Estimated Economic Losses



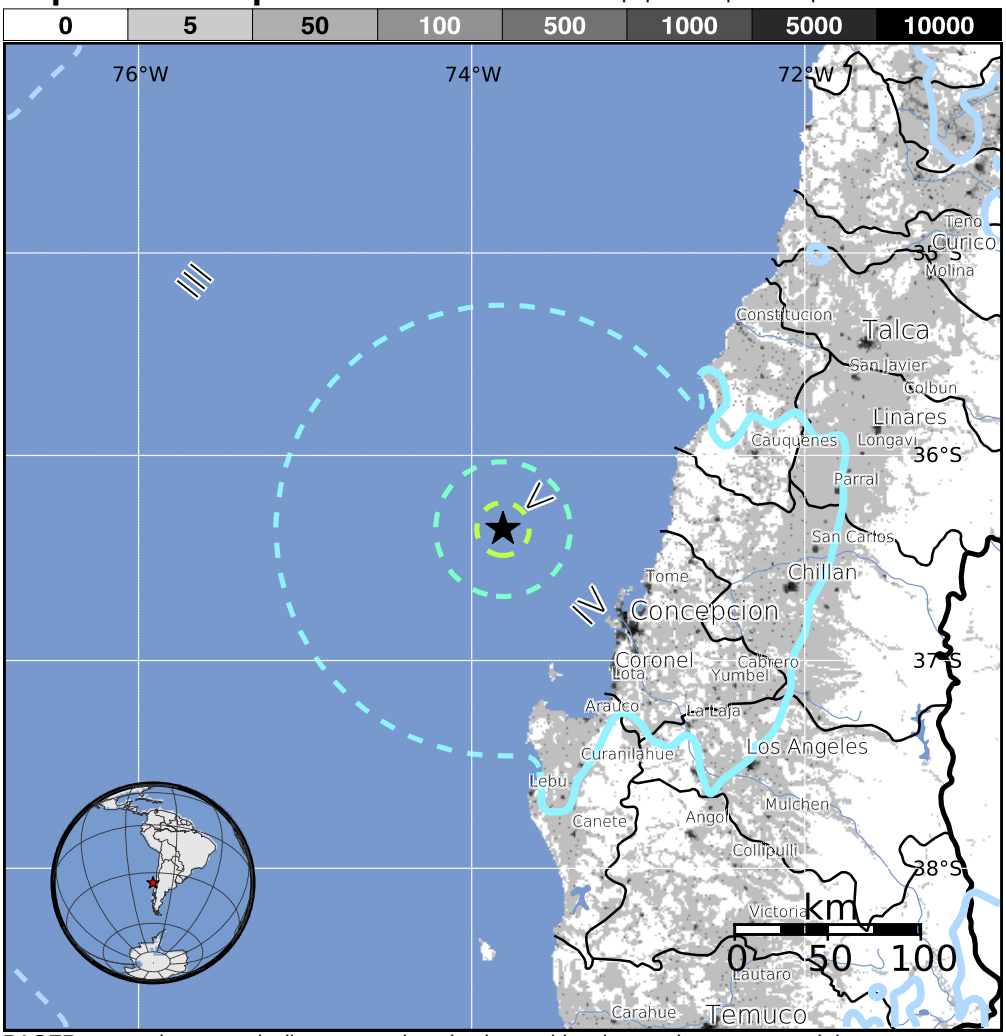
Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k = x1000)		- -*	2,387k*	1,934k	0	0	0	0	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	Moderate/Heavy	Heavy	V. Heavy
	Vulnerable Structures	none	none	none	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy	V. Heavy

*Estimated exposure only includes population within the map area.

Population Exposure

population per ~1 sq. km from Landscan



Structures:
Overall, the population in this region resides in structures that are resistant to earthquake shaking, though some vulnerable structures exist.

Historical Earthquakes (with MMI levels):

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1986-12-19	395	5.0	V(236k)	0
1975-05-10	222	7.8	VIII(69k)	0
2004-08-28	341	6.5	IX(346)	0

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

Selected City Exposure

from GeoNames.org

MMI	City	Population
IV	**Arauco**	**25k**
IV	**Tome**	**47k**
IV	Talcahuano	253k
IV	**Coronel**	**93k**
IV	**Lota**	**50k**
IV	Chiguayante	83k
IV	**Concepcion**	**215k**
IV	**Chillan**	**150k**
III	**Los Angeles**	**125k**
III	**Talca**	**197k**
III	**Temuco**	**238k**

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.

http://earthquake.usgs.gov/pager

Event ID: us10002ke8