USGS
science for a changing world

Earthquake Shaking Yellow Alert

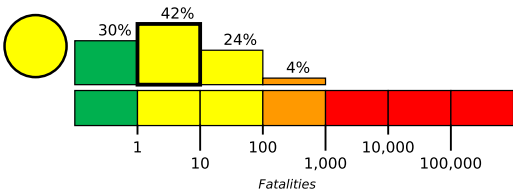
GSN ANSS USAID FROM THE AMERICAN PEOPLE

M 7.1, 33km NW of Bulolo, Papua New Guinea

Origin Time: 2019-05-06 21:19:37 UTC (Tue 07:19:37 local)
Location: 6.9752° S 146.4486° E Depth: 146.0 km
FOR TSUNAMI INFORMATION, SEE: tsunami.gov

PAGER Version 6
Created: 1 week, 3 days after earthquake

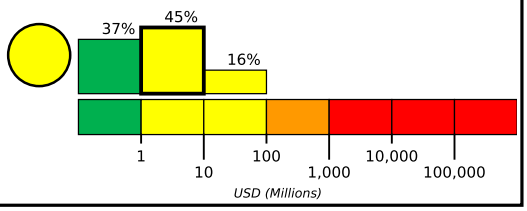
Estimated Fatalities



Yellow alert for shaking-related fatalities and economic losses. Some casualties and damage are possible and the impact should be relatively localized. Past yellow alerts have required a local or regional level response.

Estimated economic losses are less than 1% of GDP of Papua New Guinea.

Estimated Economic Losses



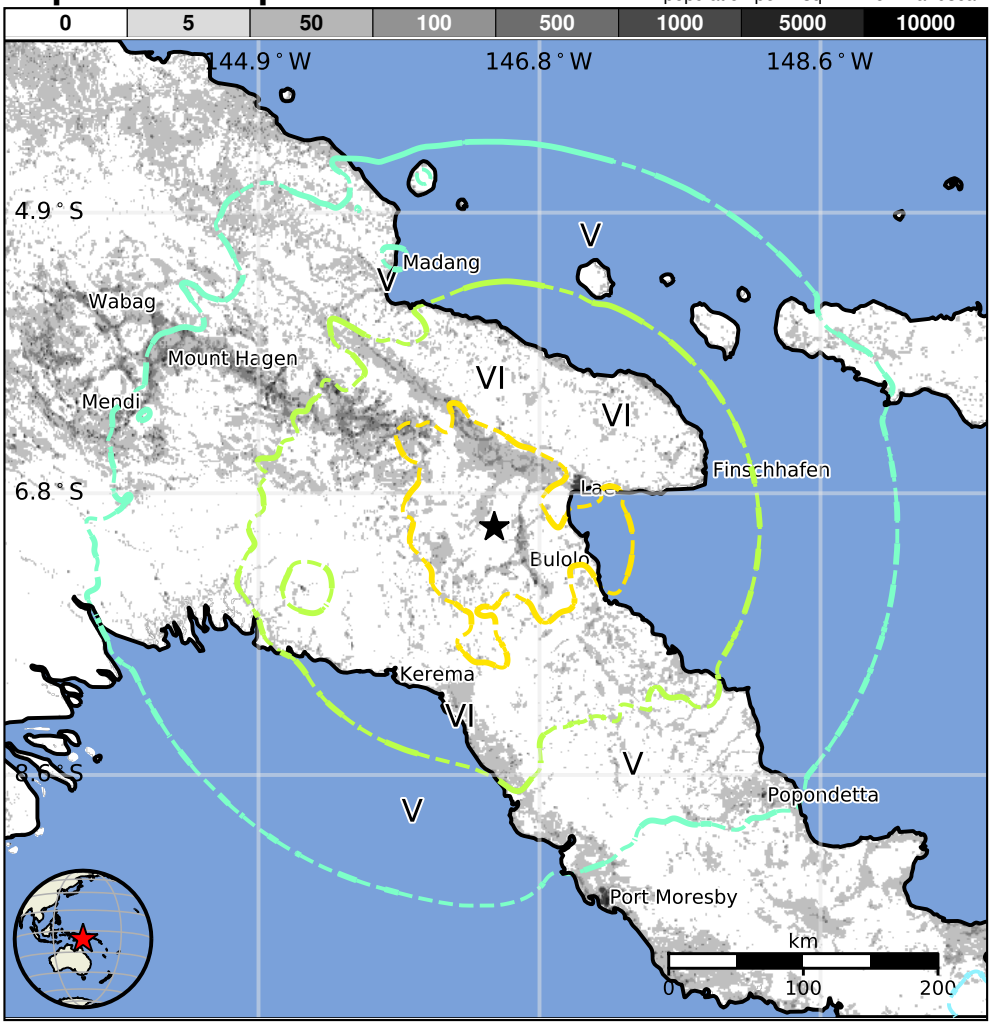
Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		–*	1k*	1,993k*	1,572k	1,059k	449k	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	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

population per 1 sq. km from Landscan



Structures

Overall, the population in this region resides in structures that are a mix of vulnerable and earthquake resistant construction. The predominant vulnerable building types are unreinforced brick masonry and informal (metal, timber, GI etc.) construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1987-02-08	171	7.3	VII(47k)	0
2005-06-04	82	6.1	VII(27k)	1
1993-10-16	123	6.3	VII(75k)	3

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
VII	**Bulolo**	**16k**
VII	Wau	15k
VII	Kainantu	9k
VI	**Lae**	**76k**
VI	**Kerema**	**6k**
VI	**Finschhafen**	**1k**
V	**Popondetta**	**28k**
V	**Mount Hagen**	**34k**
IV	**Mendi**	**26k**
IV	**Madang**	**27k**
IV	**Port Moresby**	**284k**

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/us70003hqb#pager

Event ID: us70003hqb