Earthquake Shaking 〇 **Red Alert**

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M 6.6, CENTRAL ITALY

Origin Time: Sun 2016-10-30 06:40:19 UTC (07:40:19 local)
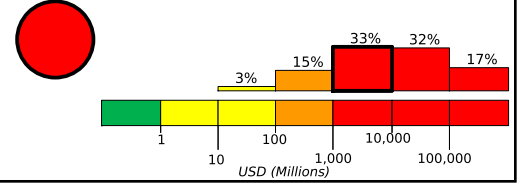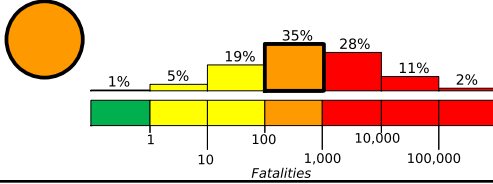Location: 42.85°N 13.09°E Depth: 10 km

PAGER
Version 3

Created: 2 hours, 4 minutes after earthquake

Estimated Fatalities

Red alert level for economic losses. Extensive damage is probable and the disaster is likely widespread. Estimated economic losses are less than 1% of GDP of Italy. Past events with this alert level have required a national or international level response.

Orange alert level for shaking-related fatalities. Significant casualties are likely.

1% 5% 19% 35% 28% 11% 2%

1 10 100 1,000 10,000 100,000
Fatalities

Estimated Economic Losses

3% 15% 33% 32% 17%

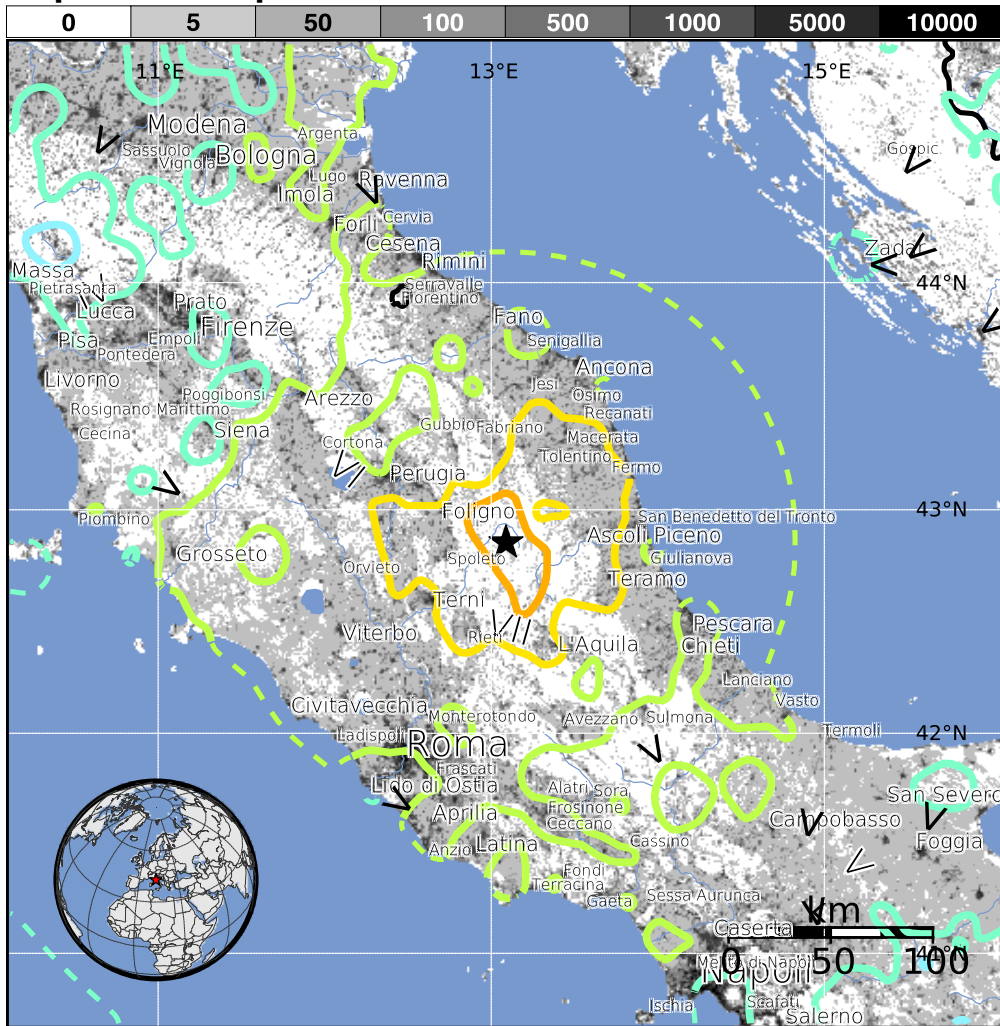1 10 100 1,000 10,000 100,000
USD (Millions)

Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k = x1000)		- -*	50k*	3,665k*	12,806k*	6,838k	1,182k	50k	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

0 5 50 100 500 1000 5000 10000

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 with mud and mid-rise nonductile concrete frame with infill construction.

Historical Earthquakes (with MMI levels):

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1976-09-15	384	6.0	IX(234)	11
1976-05-06	393	6.5	IX(55k)	965
1980-11-23	294	6.9	IX(37k)	2k

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
VIII	Preci	< 1k
VIII	Norcia	5k
VIII	Visso	1k
VIII	Fluminata	< 1k
VIII	Accumoli	< 1k
VI	**Perugia**	**149k**
V	**Roma**	**2,563k**
IV	**Napoli**	**989k**
IV	**Firenze**	**372k**
IV	**Bologna**	**371k**

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/earthquakes/eventpage/us1000731j

Event ID: us1000731j