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Earthquake Shaking Yellow Alert

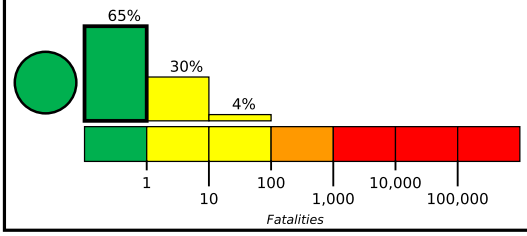
GSN ANSS USAID FROM THE AMERICAN PEOPLE

M 7.0, 27 km ENE of Ishinomaki, Japan

Origin Time: 2021-03-20 09:09:45 UTC (Sat 18:09:45 local)
Location: 38.4752° N 141.6069° E Depth: 54.0 km
FOR TSUNAMI INFORMATION, SEE: tsunami.gov

PAGER Version 6
Created: 4 days, 8 hours after earthquake

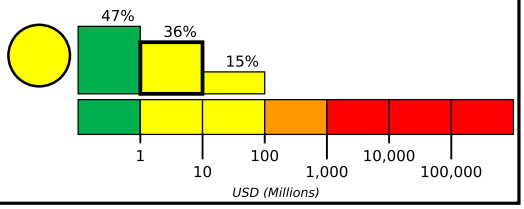
Estimated Fatalities



Yellow alert for economic losses. Some damage is possible and the impact should be relatively localized. Estimated economic losses are less than 1% of GDP of Japan. Past events with this alert level have required a local or regional level response.

Green alert for shaking-related fatalities. There is a low likelihood of casualties.

Estimated Economic Losses



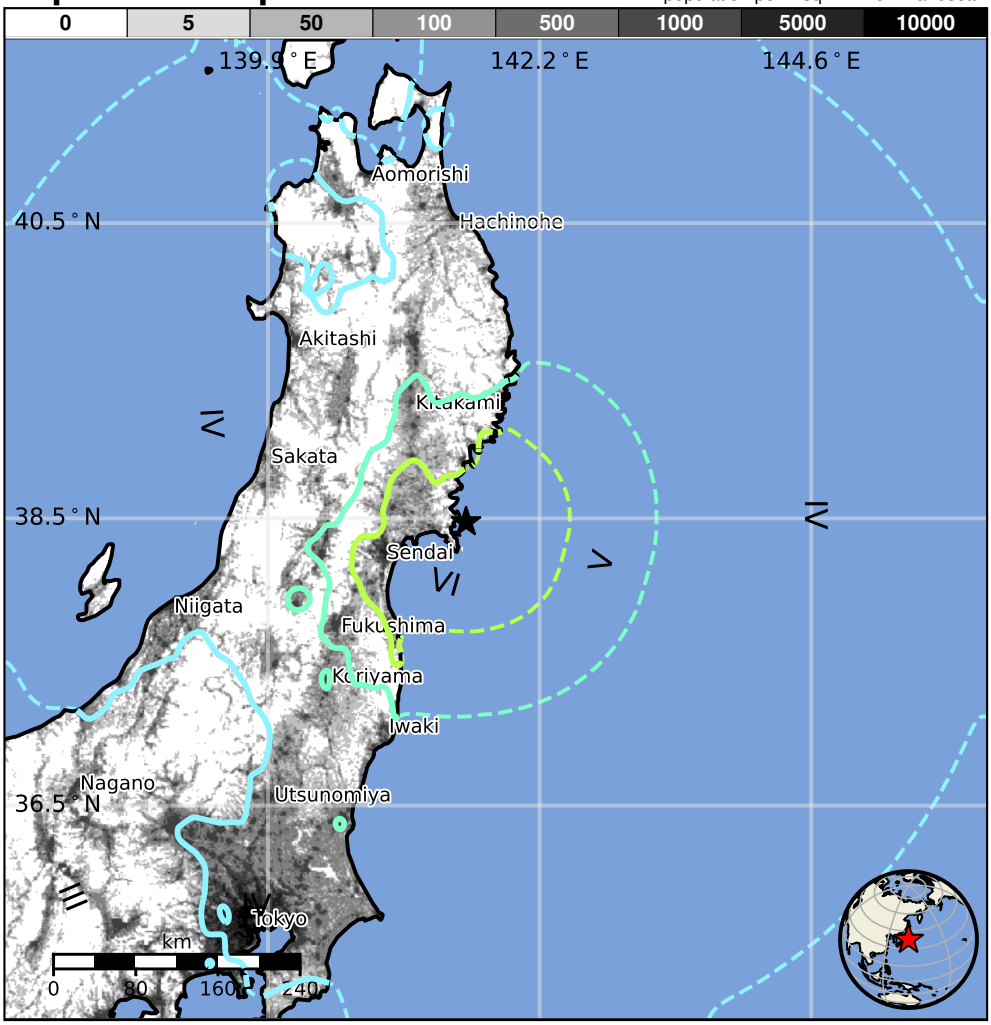
Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k=x1000)		–*	12,049k*	41,438k	2,283k	2,130k	42k	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 resistant to earthquake shaking, though vulnerable structures exist. The predominant vulnerable building types are heavy wood frame and reinforced/confined masonry construction.

Historical Earthquakes

Date (UTC)	Dist. (km)	Mag.	Max MMI(#)	Shaking Deaths
1987-12-17	359	6.5	VII(8,018k)	2
1994-12-28	278	7.7	VII(130k)	3
1983-05-26	309	7.7	VII(174k)	104

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

Selected City Exposure

from GeoNames.org

MMI	City	Population
VII	Ishinomaki	117k
VI	Iwanuma	42k
VI	Yamoto	32k
VI	Watari	36k
VI	Onagawa Cho	<1k
VI	**Sendai**	**1,063k**
IV	Saitama	1,193k
IV	Chiba	920k
IV	**Tokyo**	**8,337k**
IV	Yokohama	3,574k
III	Shizuoka	702k

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/us7000dl6y#pager

Event ID: us7000dl6y