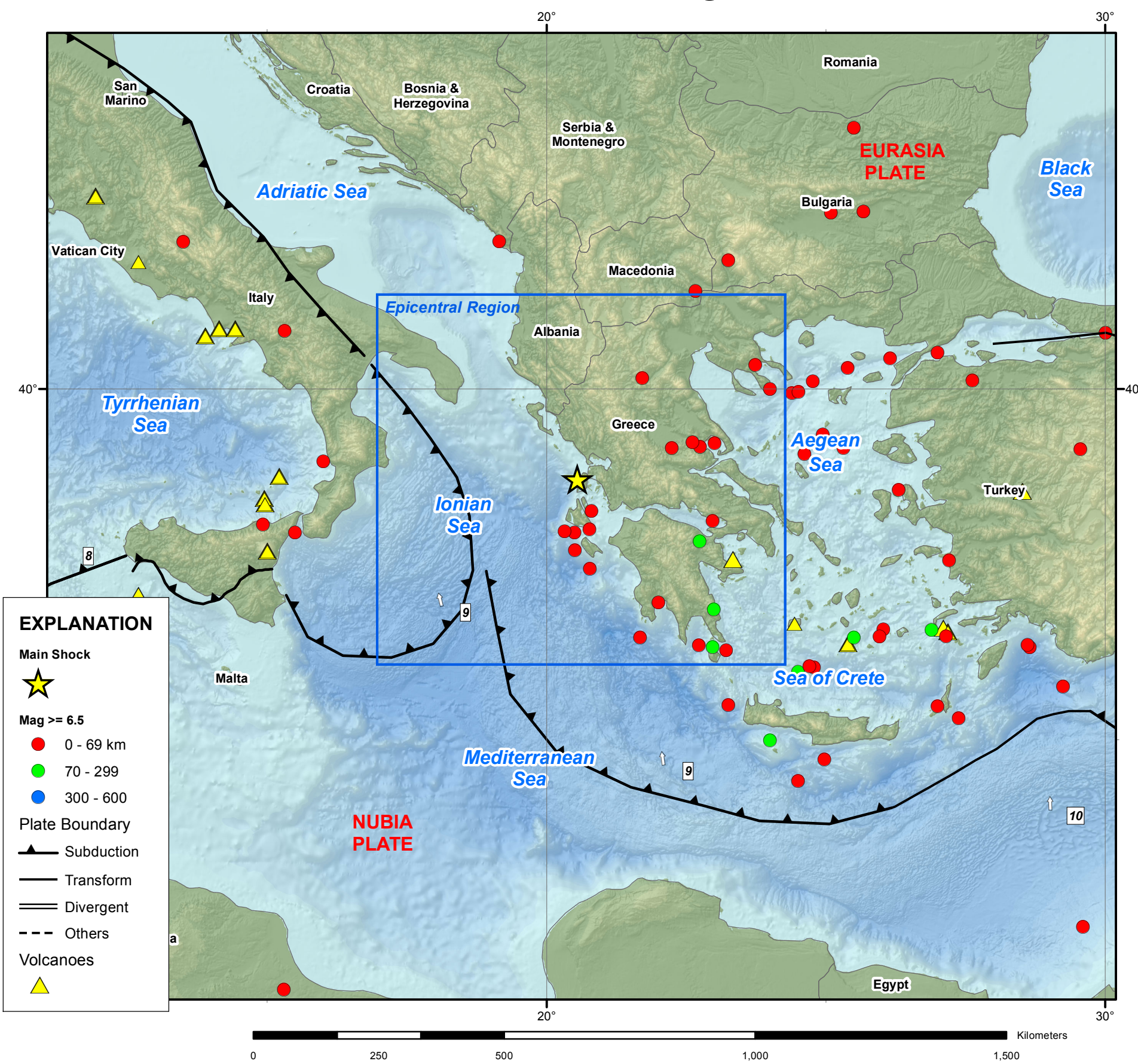


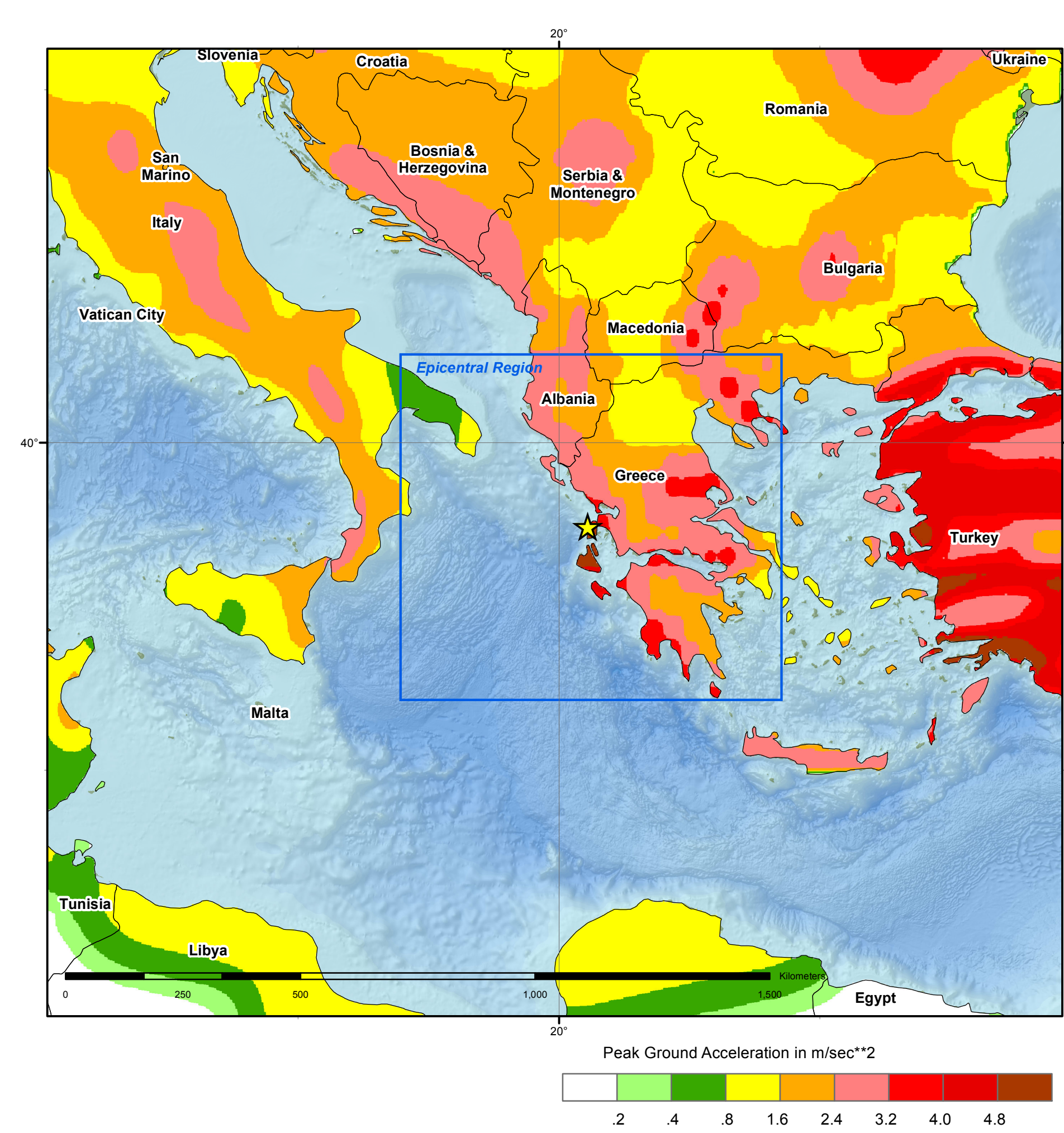
M6.5 Coastal Greece Earthquake of 17 November 2015



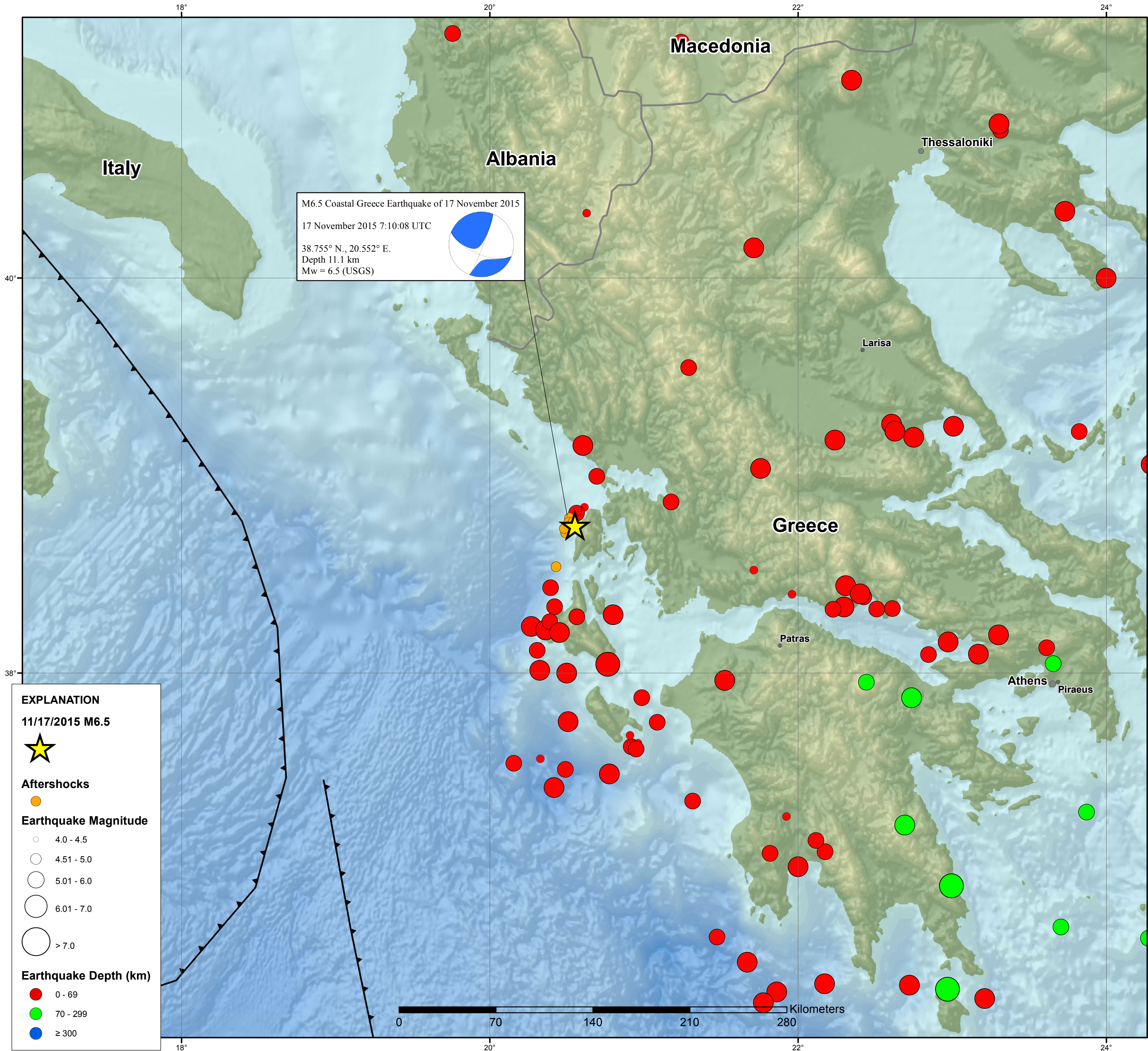
Tectonic Setting



Seismic Hazard



Epicentral Region

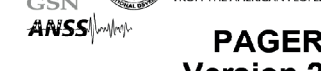


Tectonic Summary

The November 17, 2015 M 6.5 earthquake northwest of Nidri, Greece, occurred as the result of strike slip faulting on or near the regional plate boundary between the Nubia (Africa) and Eurasia plates. At the location of this earthquake, Nubia converges with Eurasia at a rate of 9mm/yr towards the north-northwest. Nubian lithosphere subducts beneath the Aegean Sea along the Hellenic Arc, to the south of Crete and southeast of the November 17 earthquake. Farther west, plate motion becomes more oblique as the plate boundary rotates clockwise, until the boundary is dominantly transform in the region of this earthquake. Preliminary focal mechanisms for the earthquake indicate it occurred as the result of either northwest striking, left-lateral faulting or northeast striking, right-lateral slip. Left-lateral faulting would be consistent with the orientation of the local plate boundary, while right-lateral faulting would align with other regional, non plate boundary faults. Preliminary aftershock locations suggest rupture occurred on the right-lateral, SW-NE striking plane. Further studies will be required to determine the specific faulting structure.

The region surrounding Greece is frequently impacted by moderate-to-large earthquakes like the November 17, 2015 event, and 14 other earthquakes of M6.5 or larger have occurred within 250 km of the November 17 event over the last century. The largest was a M 7.0 in January 1983, 85 km to the south, which did not cause any known fatalities. A M 6.3 event in August 2003, just 20 km to the north-northwest, also did not result in any known fatalities, though a M 6.5 earthquake in June 1995, 160 km to the east of the November 17, 2015 event, resulted in over 20 fatalities and 60 injuries.

PAGER



PAGER
Version 2

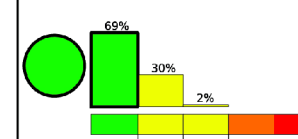
M 6.5, GREECE

Origin Time: Tue 2015-11-17 07:10:08 UTC (09:10:08 local)

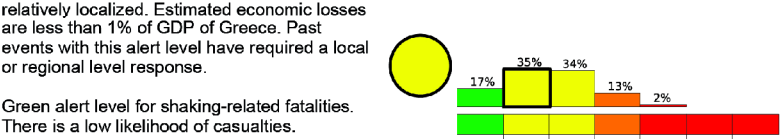
Location: 38.75°N 20.65°E Depth: 11 km

Created: 2 hours, 3 minutes after earthquake

Estimated Fatalities



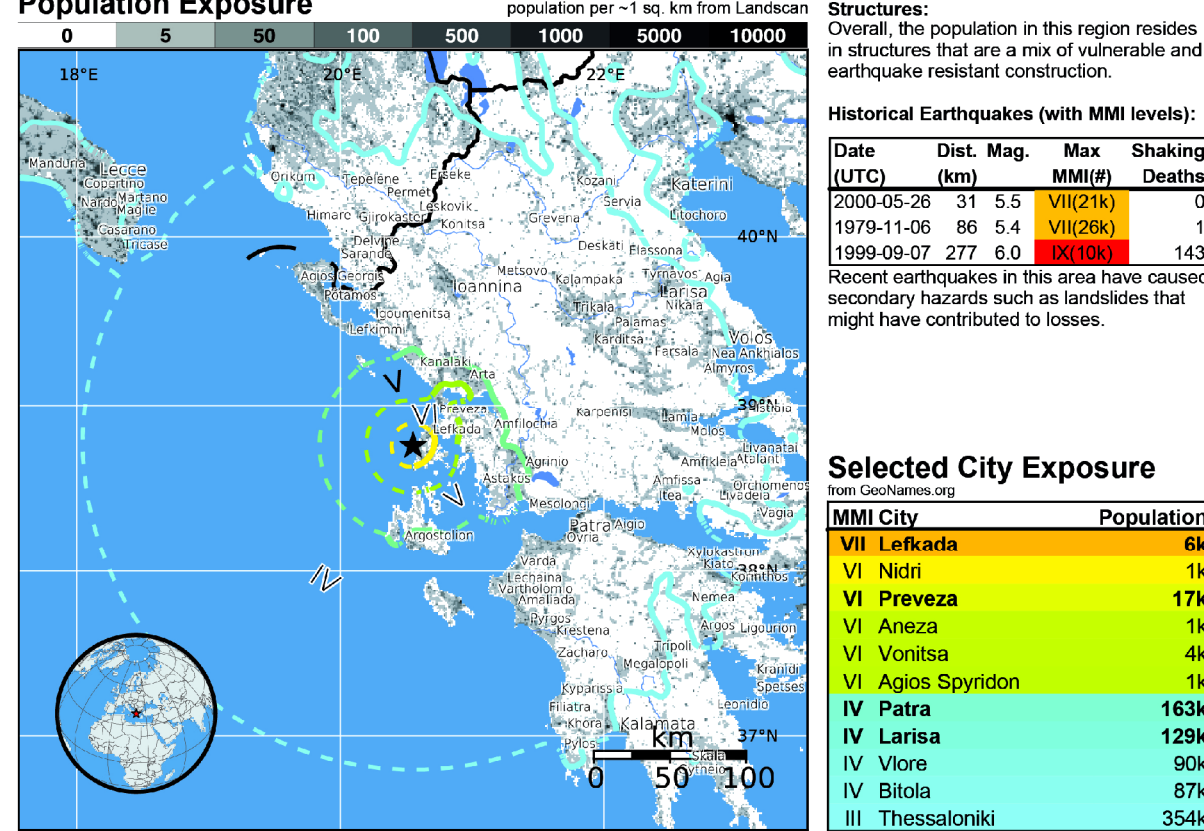
Estimated Economic Losses



Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k = x1000)	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	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy
	Vulnerable Structures	none	none	none	Light	Moderate	Moderate/Heavy	Heavy	V. Heavy

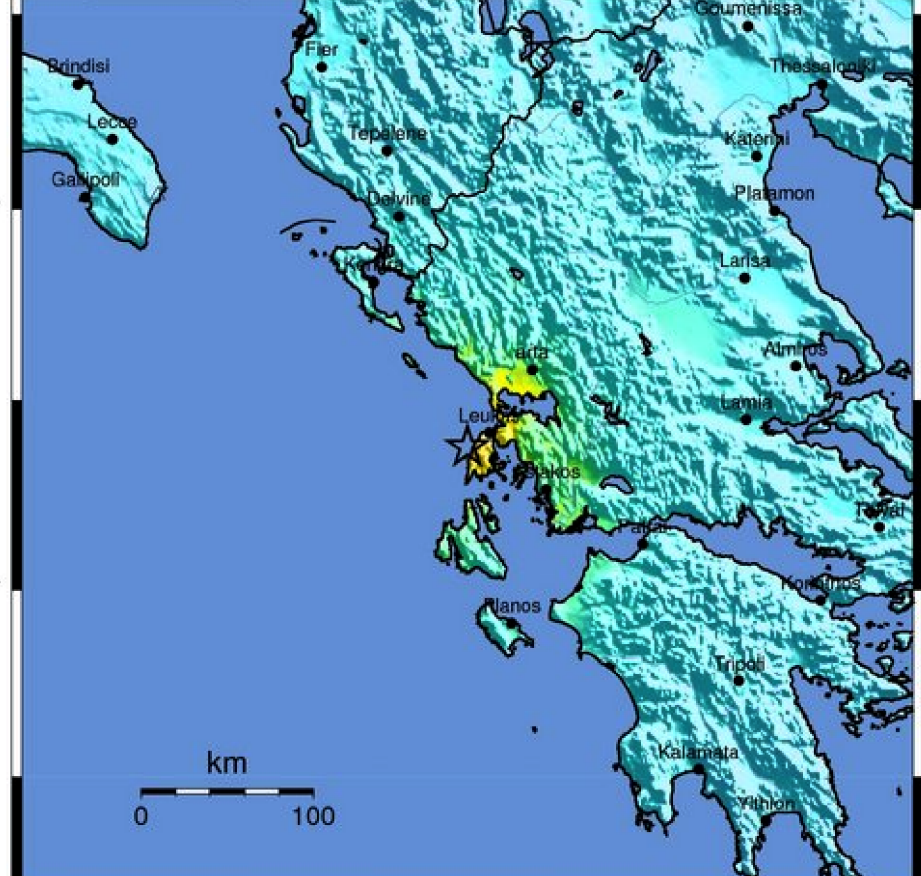
Population Exposure



ShakeMap

USGS ShakeMap : GREECE

Nov 17, 2015 07:10:08 UTC M 6.5 N38.75 E20.55 Depth: 11.1km ID:us10003ywp



Map Version 2 Processed 2015-11-17 09:11:04 UTC

PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Mod./Heavy	Heavy	Very Heavy
PEAK ACG (m)	<0.05	0.3	2.8	6.2	12	22	40	75	>139
PEAK VCL (cm/s)	<0.02	0.1	1.4	4.7	9.4	20	41	86	>178
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X

DATA SOURCES

EARTHQUAKES AND SEISMIC HAZARD
USGS, National Earthquake Information Center
NOAA, National Geophysical Data Center
IASPEI, Centennial Catalog (1900 - 1999) and extensions (Engdahl and Villaseñor, 2002)
EHB catalog (Engdahl et al., 1998)
HDF (unpublished earthquake catalog, Engdahl, 2003)
Global Seismic Hazard Assessment Program

PLATE TECTONICS AND FAULT MODEL
PB2002 (Bird, 2003)
Hayes, G. P., Wald, D. J., and Johnson R. L., 2012, A three-dimensional model of global subduction zone geometries: Journal of Geophysical Research, v. 117, B01302, doi:10.1029/2011JB008524.
DeMets, C., Gordon, R. G., Argus, D. F., 2010, Geologically current plate motions, Geophys. J. Int. 181, 1-80.

BASE MAP
NIMA and ESRI, Digital Chart of the World
USGS, EROS Data Center
NOAA GEBCO and GLOBE Elevation Models

REFERENCES

Bird, P., 2003, An updated digital model of plate boundaries: Geochim. Geophys. v. 4, no. 3, pp. 1027-80.

Engdahl, E.R., and Villaseñor, A., 2002, Global Seismicity: 1900-1999, chap. 41 of Lec, W.H.K., and others, eds., International Earthquake and Engineering Seismology, Part A: New York, N.Y., Elsevier Academic Press, 932 p.

Engdahl, E.R., Van der Hilst, R.D., and Buland, R.P., 1998, Global teleseismic earthquake relocation with improved travel times and procedures for depth determination, Bull. Seism. Soc. Amer., v. 88, p. 722-743.

DISCLAIMER

Base map data, such as place names and political boundaries, are the best available but may not be current or may contain inaccuracies and therefore should not be regarded as having official significance.

Map updated by U.S. Geological Survey National Earthquake Information Center
17 November 2015
http://earthquake.usgs.gov/
Map not approved for release by Director USGS