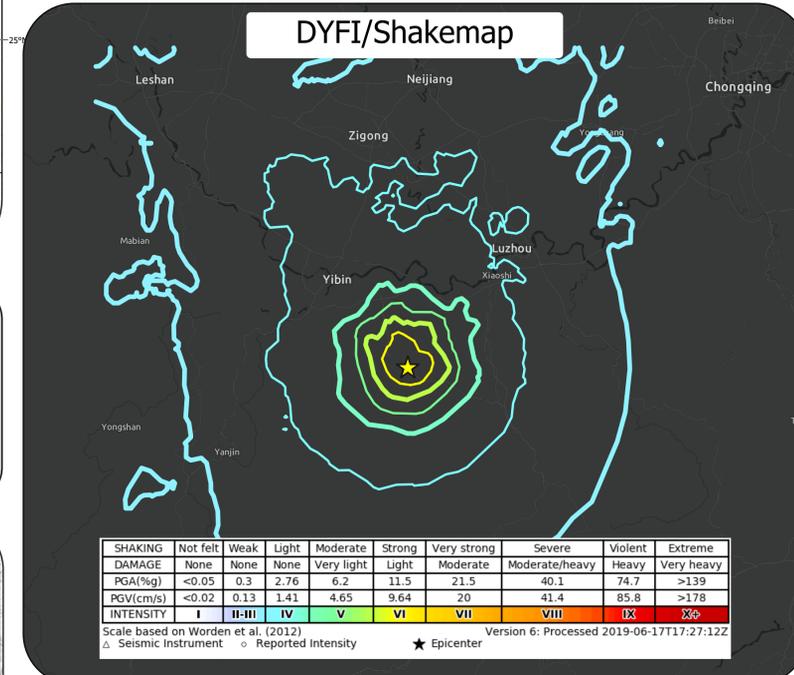
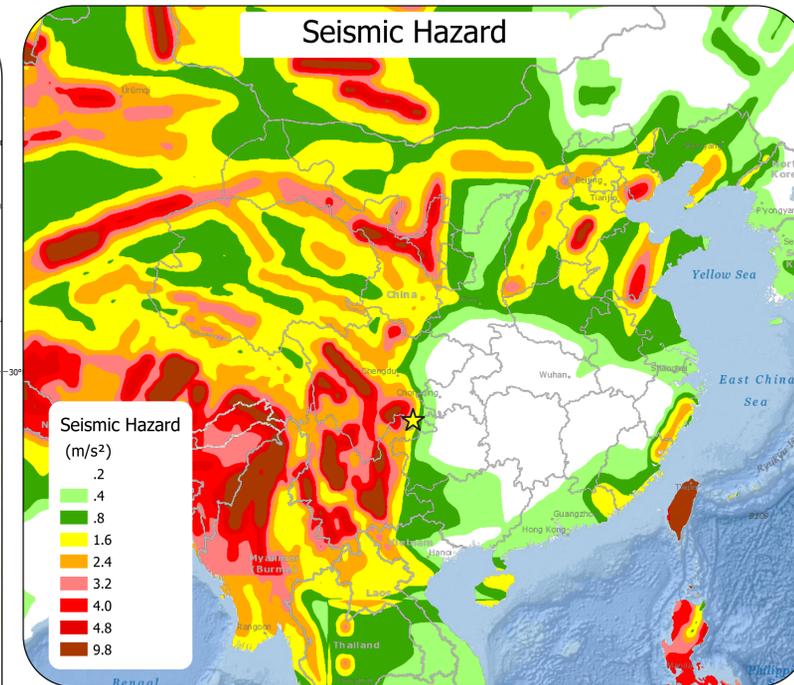
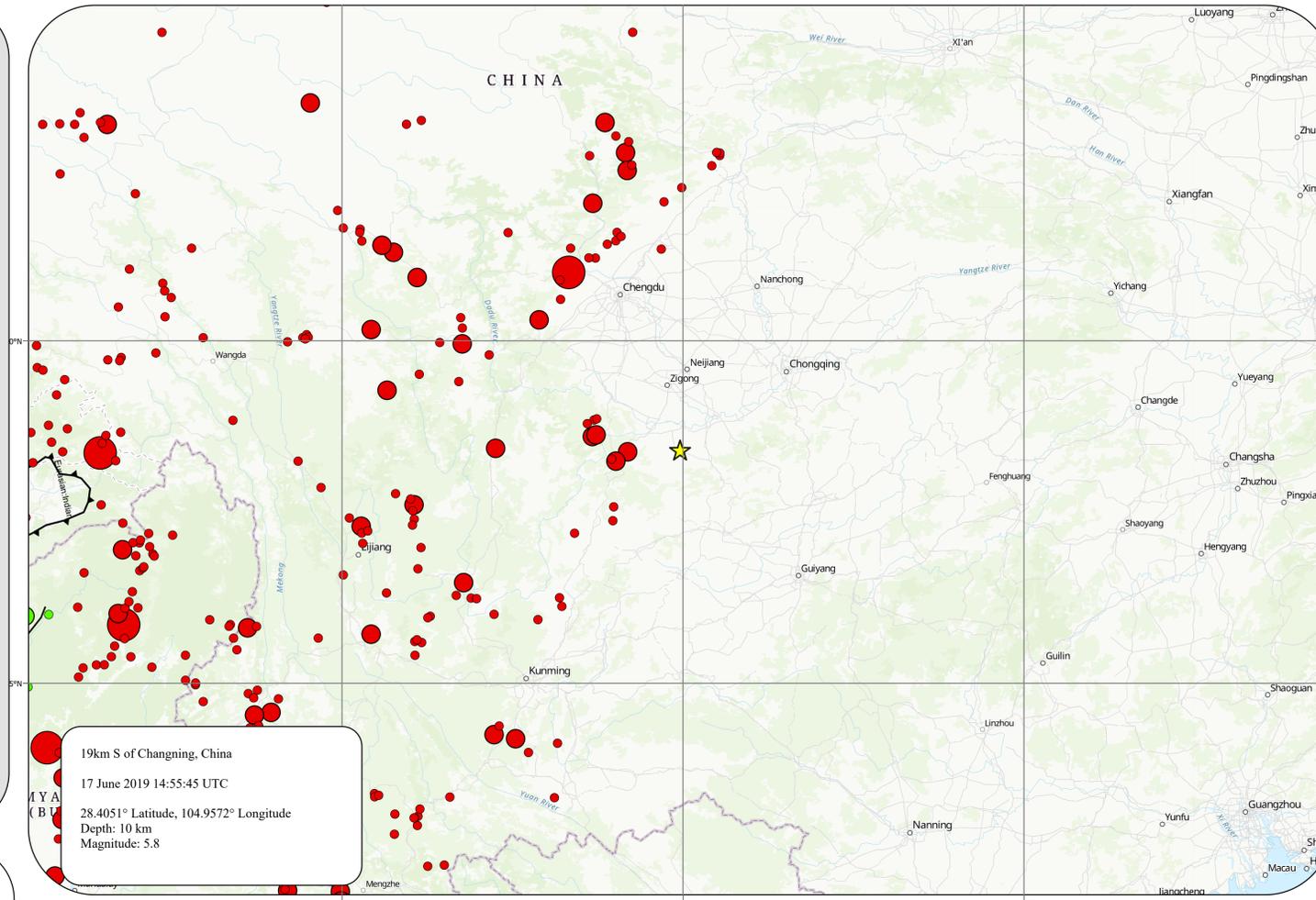


Tectonic Summary

The June 17, 2019, M 5.8 earthquake in the Chinese province of Sichuan occurred as the result of oblique reverse and strike-slip faulting at shallow depths in the crust of the Eurasia plate. Focal mechanism solutions for the event indicate rupture occurred on either a steeply dipping fault striking towards the south, or on a more moderately dipping fault striking towards the northwest. The location, depth and preliminary focal mechanism solution for this earthquake indicate the event occurred as the result of intraplate faulting within the Eurasia plate.

On a continental scale, the seismicity of central and eastern Asia is a result of northward convergence of the India plate against the Eurasia plate at a velocity of about 50 mm/yr. The convergence of the two plates is broadly accommodated by the uplift of the Asian highlands and by the motion of crustal material to the east away from the uplifted Tibetan Plateau. The June 17 event occurred near the edge of a major uplifted plateau to the south and the Sichuan Basin to the north and may relate to the active tectonics of this juxtaposition.

Seismicity in the region is relatively common, with five earthquakes above M 6.0 within 250 km distance since 1900. The most recent such event was the August 3, 2014 M 6.2 event near Wenping China, about 200 to the southwest. Slightly further away, the very large May 12, 2008, M 7.9 Wenchuan earthquake occurred about 330 km northwest of June 17 event. That event killed more than 69,000 people, with an estimated economic loss of 86 Billion US dollars.

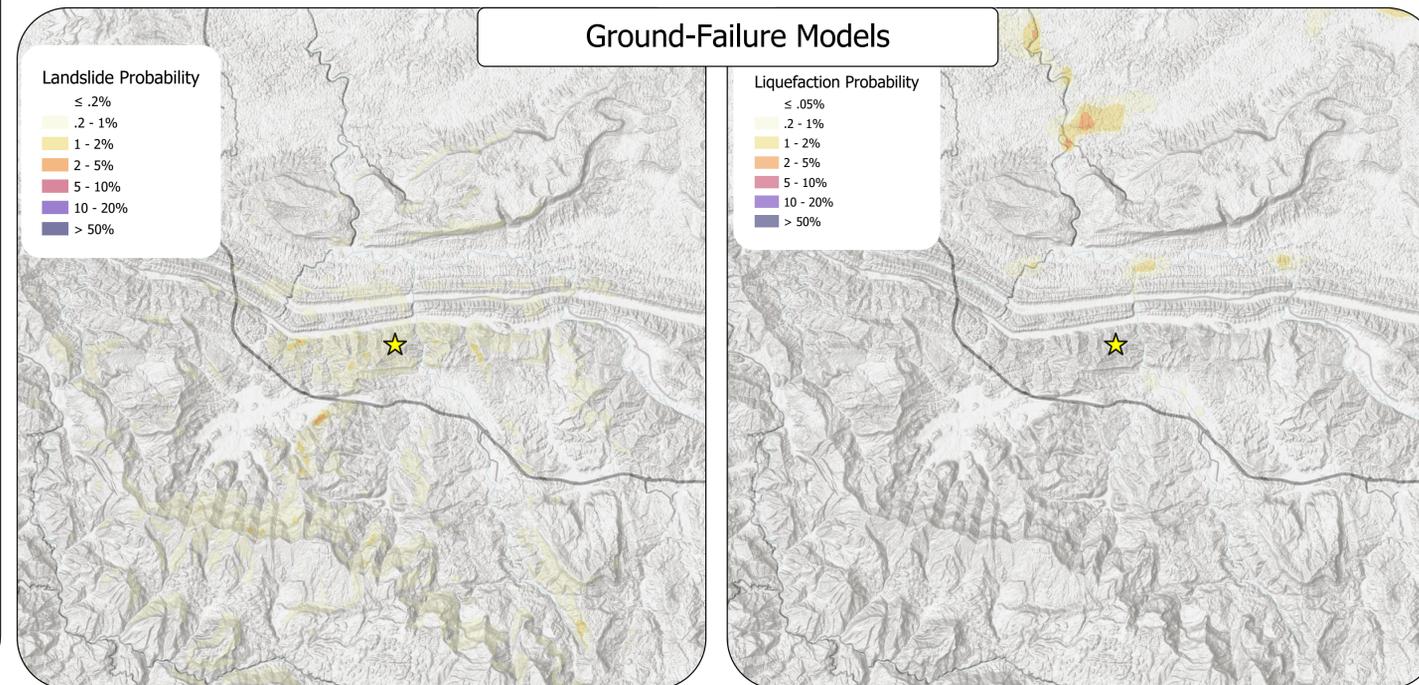
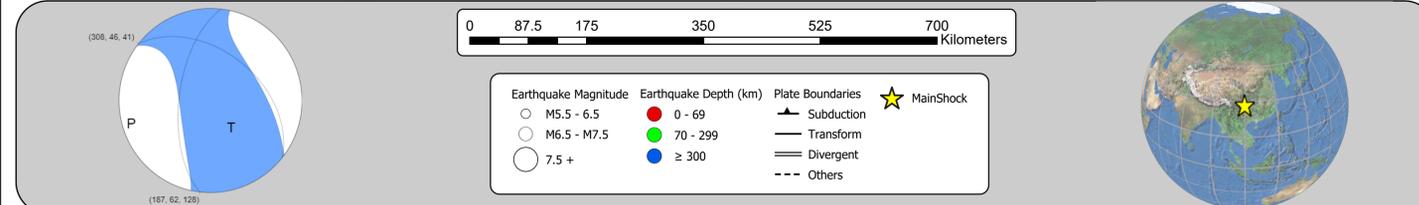


Earthquake Impact

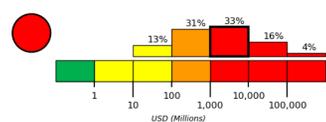
Red alert for economic losses. Extensive damage is probable and the disaster is likely widespread. Estimated economic losses are less than 1% of GDP of China. Past events with this alert level have required a national or international level response.

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

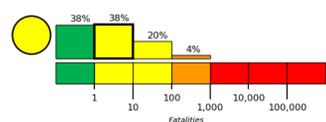
Overall, the population in this region resides in structures that are vulnerable to earthquake shaking, though resistant structures exist. The predominant vulnerable building types are unreinforced brick with mud and adobe block construction.



Estimated Economic Losses



Estimated Fatalities



Ground-Failure

Landslides

- Little or no area affected
- Limited population exposed

Liquefaction

- Little or no area affected
- Little or no population exposed

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
 Volcanoes of the World (Siebert and Simkin, 2002)

PLATE TECTONICS AND FAULT MODEL
 PB2002 (Bird, 2003)
 Ji, C., D.J. Wald, and D.V. Helmlinger, Source description of the 1999 Hector Mine, California earthquake; Part I: Wavelet domain inversion theory and resolution analysis, Bull. Seism. Soc. Am., Vol 92, No. 4, pp. 1192-1207, 2002.
 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

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Bird, P., 2003, An updated digital model of plate boundaries: Geochim. Geophys. Geosyst., v. 4, no. 3, pp. 1027-80.
 Engdahl, E.R., and Villaseñor, A., 2002, Global Seismicity: 1900-1999, chap. 41 of Lee, 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 June 2019
<https://earthquake.usgs.gov/>
 Map not approved for release by Director USGS