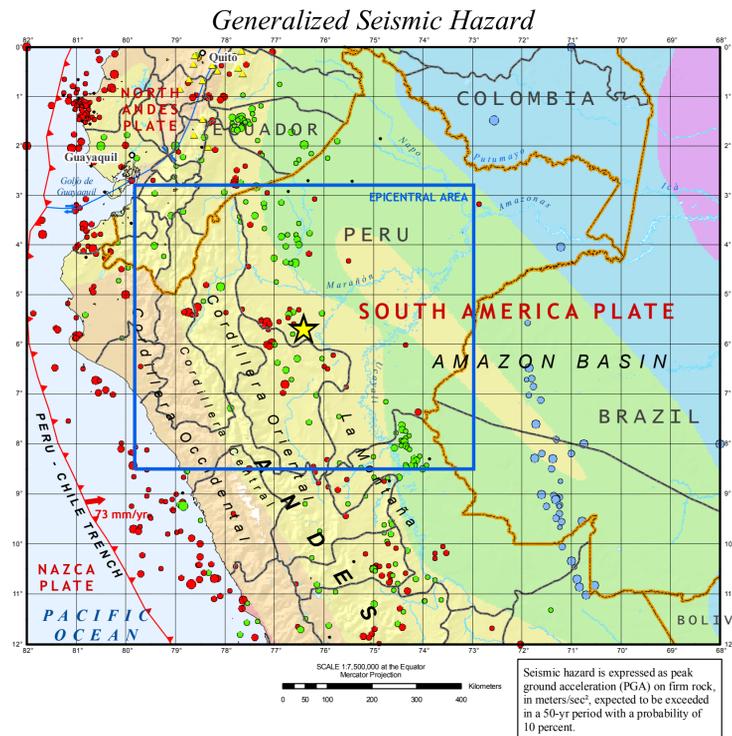


M7.5 Northern Peru Earthquake of 26 September 2005



EXPLANATION

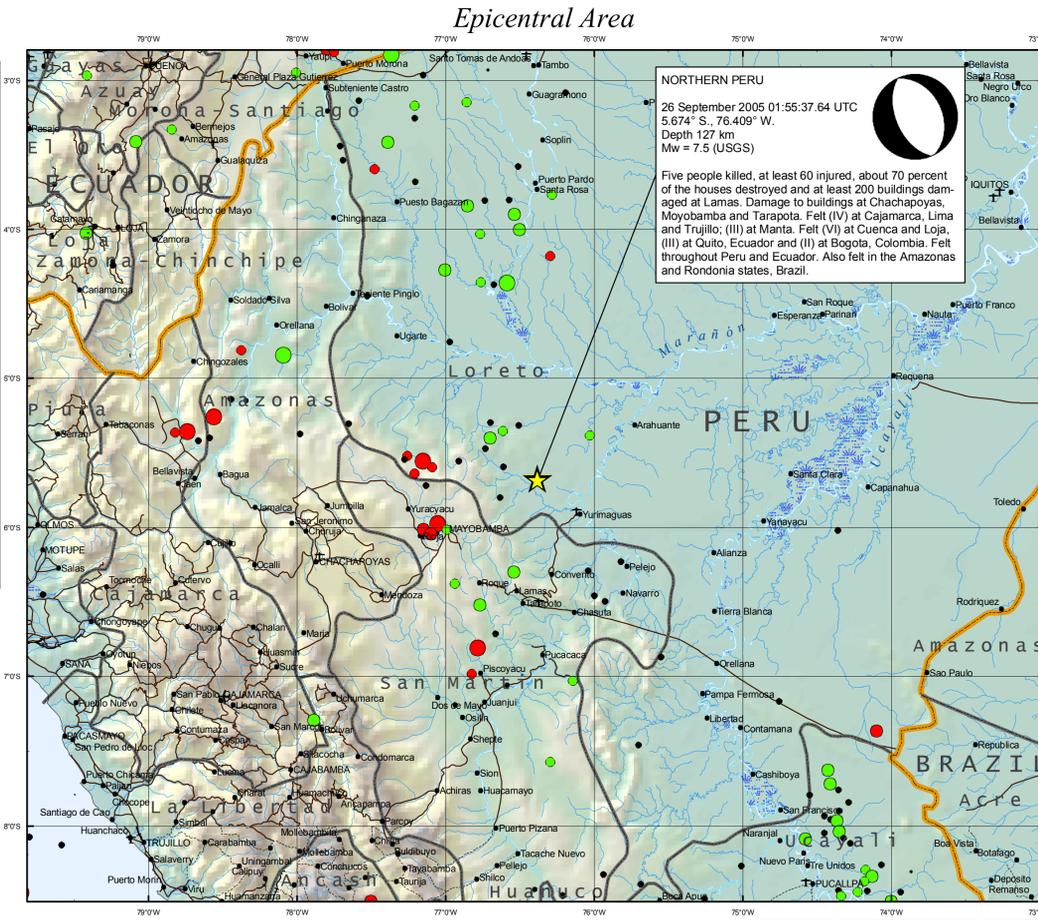
Main Shock
★ 26 September 2005

Seismic Hazard
0.2 - 0.4 m/sec²
0.4 - 0.8
0.8 - 1.6
1.6 - 3.2
3.2 - 6.4
6.4 - 9.0

Earthquakes 1900 - 2005
0 - 69 km
70 - 299
300 - 699

Magnitude Classes
3.0 - 3.9
4.0 - 4.9
5.0 - 5.9
6.0 - 6.9
7.0 - 7.9
8.0 - 8.9

Plate Boundary Type
Continental Compressive
Continental RL Transform
Subduction
Volcano



EXPLANATION

Main Shock
★ 26 September 2005

Earthquakes 1900 - 2005
0 - 69 km
70 - 299

Magnitude Classes
3.0 - 3.9
4.0 - 4.9
5.0 - 5.9
6.0 - 6.9
7.0 - 7.9
8.0 - 8.9

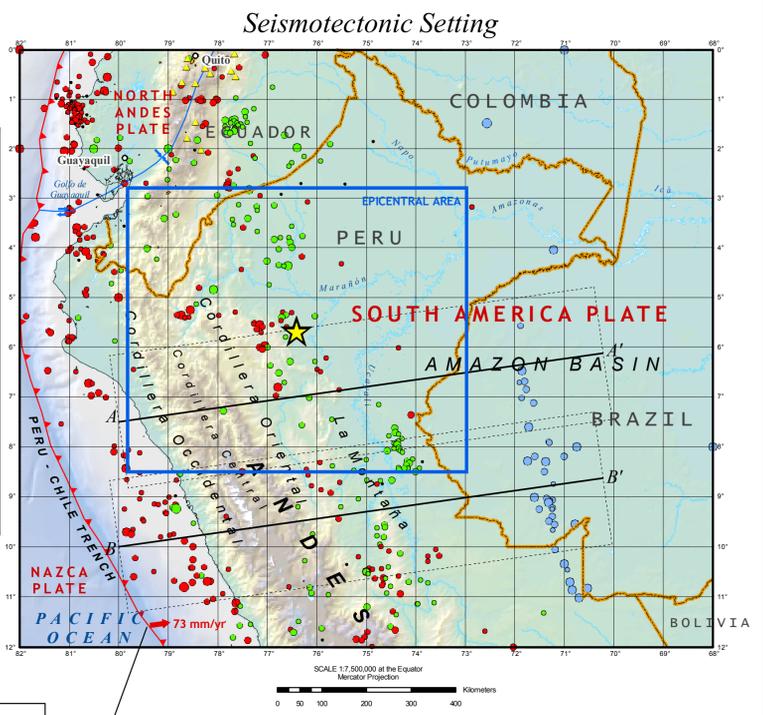
EXPLANATION

Main Shock
★ 26 September 2005

Earthquakes 1900 - 2005
0 - 69 km
70 - 299
300 - 699

Magnitude Classes
3.0 - 3.9
4.0 - 4.9
5.0 - 5.9
6.0 - 6.9
7.0 - 7.9
8.0 - 8.9

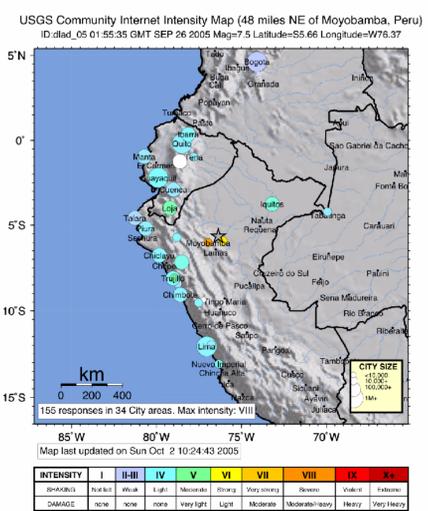
Plate Boundary Type
Continental Compressive
Continental RL Transform
Subduction
Volcano



RELATIVE PLATE MOTIONS

The relative motion of adjacent tectonic plates is depicted on the map by short vectors located at selected points on the plate boundary. In this presentation, the vector therefore represents the direction of the moving plate relative to the adjacent reference plate. The rate of relative motion is labelled next to the vector.

The components of the vector perpendicular and parallel to the plate margin approximate convergent/divergent and transverse direction of motion between the plates, respectively. As viewed from the reference plate, an inward directed component suggests convergence at and near the plate boundary that may be expressed as crustal folding, uplift, thrust faulting, or plate subduction. Similarly, an outward directed component suggests plate divergence such as would be expected at a zone of crustal spreading. Transcurrent or transform faulting would be expected when the predominant vector component is parallel to the plate margin.



INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+
DAMAGE	None	None	None	Very Light	Light	Moderate	Heavy	Very Heavy	Extensive

COMMUNITY INTERNET INTENSITY MAP

The Community Internet Intensity Map (CIIM) summarizes the online questionnaire responses provided by Internet users. An intensity number is assigned to each community from which a filled-out CIIM questionnaire was received; each intensity value reflects the effects of earthquake shaking on the people and structures in the community. The color of each circular symbol on the map represents the average of the individual intensity values from that community; the size of the symbol is related to the population of the community.

DISCUSSION

This major earthquake occurred within the lithosphere of the oceanic Nazca plate. The earthquakes of northern Peru and most of western South America are due to strains generated by ongoing subduction of the Nazca plate beneath the South America plate. The Nazca plate moves east relative to the South America plate at a rate of about 7 cm per year. It is overridden by the South America plate at the Peru-Chile trench, west of the Peruvian coast, and sinks into the Earth's mantle beneath the South America plate. The subducted Nazca plate is seismically active to depths of about 650 km. This earthquake occurred in a segment of the subducted plate that has produced frequent earthquakes with focal depths of 100 km to 150 km beneath the Earth's surface. A magnitude 7.2 earthquake in 1997 was situated 150 km to the north of the 26 September 2005 earthquake, at a similar depth.

Earthquakes that have focal depths between 70 and 300 km are commonly termed 'intermediate-depth' earthquakes, as distinguished from 'shallow-focus' earthquakes, having depths less than 70 km, and 'deep-focus' earthquakes, having depths greater than 300 km. Intermediate-depth and deep-focus earthquakes represent deformation within subducted plates, rather than deformation at plate boundaries. Intermediate-depth and deep-focus earthquakes typically cause less damage on the ground surface above their foci than is the case with similar magnitude shallow-focus earthquakes, but large intermediate-depth and deep-focus earthquakes may be felt at great distances from their epicenters.

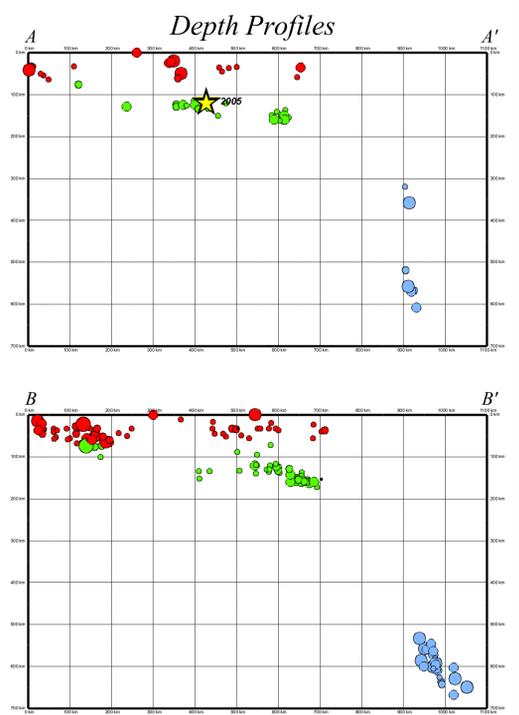


DISCLAIMER

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.

- 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)
IHF (unpublished earthquake catalog) (Engdahl, 2003)
USGS (2003), National Seismic Hazard Maps
Global Seismic Hazard Assessment Program (GSHAP, 1999)
 - FAULTS AND FOLDS
ESRI (1992), Digital Chart of the World
GLOBE (1999)
 - PLATE TECTONICS
PB2002 (Bird, 2003)
 - VOLCANOES
Smithsonian Institution, Global Volcano Program
 - BASE MAP
ESRI (1992), Digital Chart of the World
GLOBE (1999)
IOC, IHO, and BODC (2003)

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- Bird, P., 2003, An updated digital model of plate boundaries: *Geochim. Geophys. Geosyst.*, v. 4, no. 3, pp. 1027-80.
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 - Environmental Systems Research Institute, Inc., 1992, 1993, *Digital Chart of the World: ESRI, Data Dictionary and CD-ROM(4)*, Redlands, Calif., USA.
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 - IOC, IHO, and BODC, 2003, *Centenary Edition of the GEBCO Digital Atlas: CD-ROM(2)*, British Oceanographic Data Centre, Liverpool, UK.



EXPLANATION

Main Shock
★ 26 September 2005

Earthquakes 1900 - 2005
0 - 69 km
70 - 299
300 - 700

Magnitude Classes
3.0 - 3.9
4.0 - 4.9
5.0 - 5.9
6.0 - 6.9
7.0 - 7.9
8.0 - 8.9