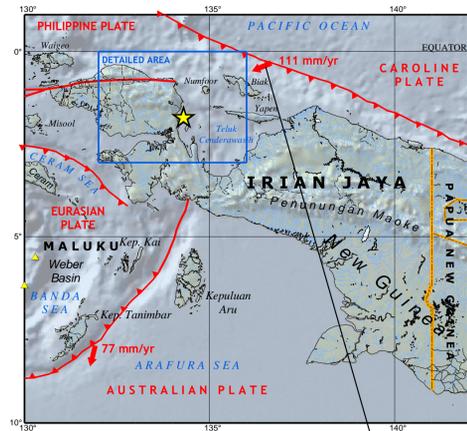


M7.6 Irian Jaya, Indonesia Earthquake of 10 October 2002

Plate Tectonic Setting



RELATIVE PLATE MOTIONS

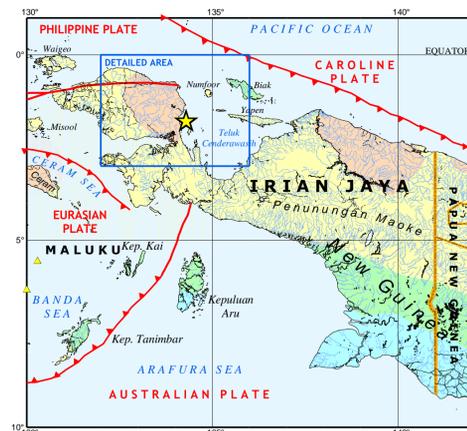
The relative motion of adjacent tectonic plates is depicted on the map by short vectors located at selected locations on the plate boundary. In this presentation, one plate is assumed to be rigid and fixed. The vector therefore represents the direction of the moving plate relative to the fixed plate. The rate of relative motion is labeled 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 rigid plate, an inward directed component suggests compression 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.

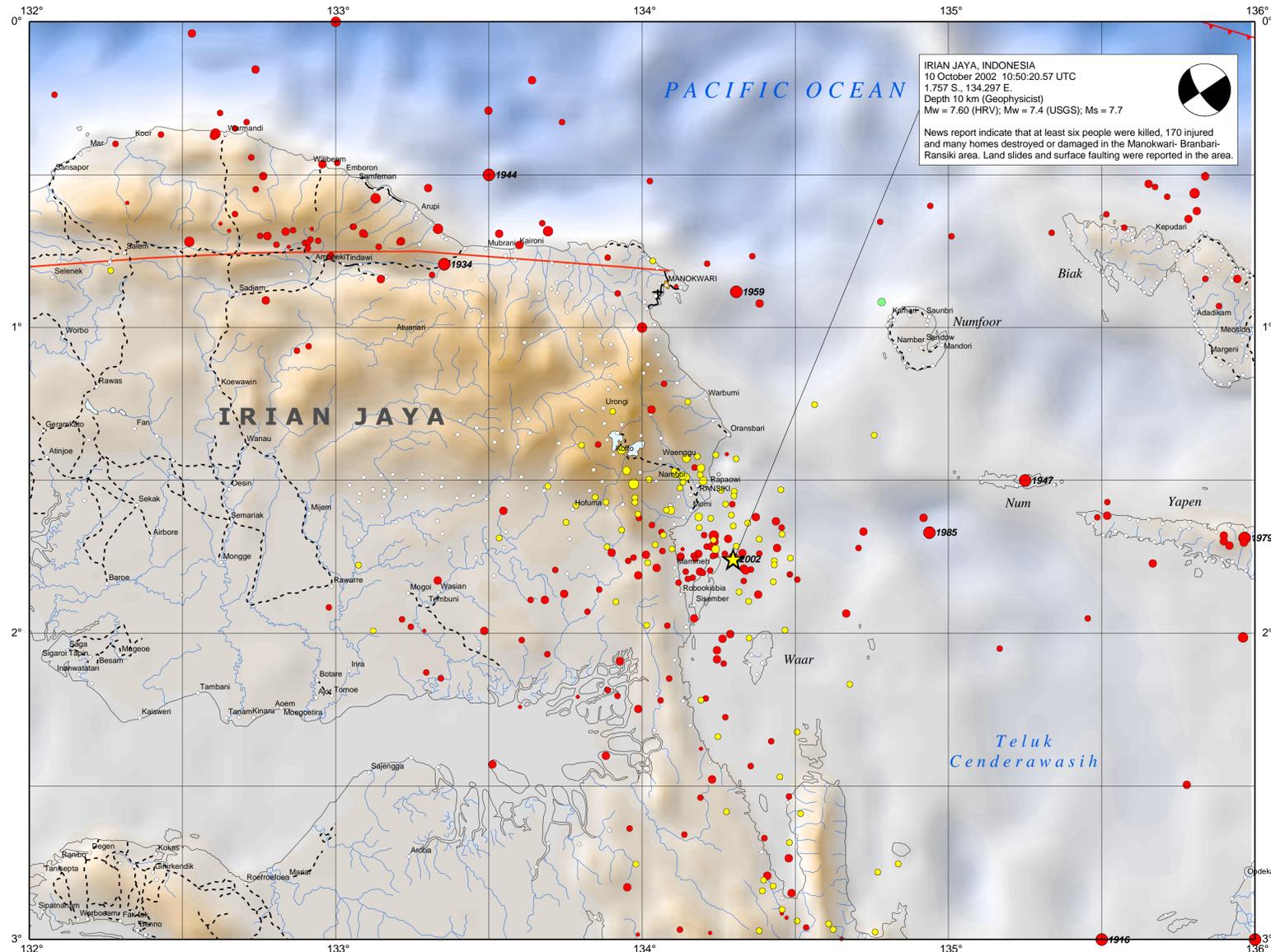
EXPLANATION

Seismic Hazard	Roads
0.5 - 0.8 m/sec**2	— Paved
0.8 - 1.6	— Unpaved
1.6 - 3.2	Plate Boundaries
3.2 - 4.3	— Convergent
Main Shock	— Transform
★ Mw = 7.6	— International
▲ Volcanoes	— Administrative

Generalized Seismic Hazard



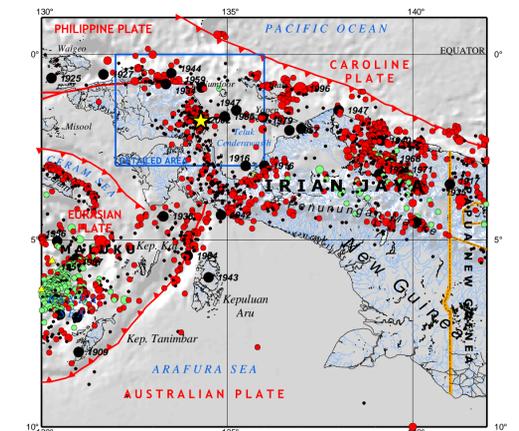
Seismic hazard is expressed as peak ground acceleration (PGA) in meters/sec**2 expected in a 50-yr period with a probability of 10 percent.



IRIAN JAYA, INDONESIA
10 October 2002 10:50:20.57 UTC
1.757° S, 134.297° E
Depth 10 km (Geophysicist)
Mw = 7.60 (HRV); Mw = 7.4 (USGS); Ms = 7.7

News report indicate that at least six people were killed, 170 injured and many homes destroyed or damaged in the Manokwari-Bransiki-Ransiki area. Land slides and surface faulting were reported in the area.

Earthquake History 1900 - 2002



LARGEST EARTHQUAKES (M GE 7.0) 1900 - 2002 IN THE IRIAN JAYA, INDONESIA REGION

Year	M	Lat	Long	Depth (km)
1909	5.30	-8.000	131.000	100
1914	5.26	-2.000	137.000	0
1916	1.13	-3.000	135.500	0
1916	1.13	-3.000	136.000	0
1917	7.29	-3.500	141.000	0
1925	11.10	-0.633	130.269	35
1926	10.26	-3.219	139.097	35
1927	6.3	-7.071	130.960	169
1927	8.10	-0.534	131.673	35
1934	7.19	-0.793	133.354	35
1935	9.20	-3.920	141.330	35
1936	2.15	-4.362	133.285	35
1938	2.1	-5.050	131.620	35
1940	5.28	-2.318	139.150	35
1942	1.27	-6.325	134.838	18
1943	11.6	-6.000	134.500	0
1944	3.31	-7.000	130.500	60
1944	4.27	-0.500	133.500	50
1947	4.2	-1.500	138.000	0
1947	5.27	-1.500	135.250	0
1956	7.18	-5.025	130.422	133
1957	3.23	-5.501	130.933	133
1957	6.22	-2.040	136.676	35
1959	3.1	-0.883	134.307	35
1964	4.23	-5.420	133.939	6
1968	5.28	-2.919	139.411	64
1971	1.10	-3.232	133.744	55
1976	6.25	-4.523	140.105	3
1979	9.12	-1.688	135.966	19
1985	11.17	-1.670	134.937	11
1987	6.17	-5.588	130.843	87
1992	12.20	-6.589	130.403	74
1996	2.17	-0.919	136.973	37
2002	10.10	-3.757	134.297	10

EXPLANATION

Main Shock	★ Mw = 7.6
Depth Classes	● 0 - 69 km
	● 70 - 300 km
Magnitude Classes	○ 4.0 - 5.0
	○ 5.0 - 6.0
	○ 6.0 - 7.0
	○ 7.0 - 8.0
	○ M > 8.0
Plate Boundaries	— Convergent
	— Transform
Volcanoes	▲
Political Boundary	— International
	— Administrative
Roads	— Paved
	— Unpaved

DATA SOURCES

EARTHQUAKES AND SEISMIC HAZARD
USGS, National Earthquake Information Center
NOAA, National Geophysical Data Center
IASPEI, Centennial Catalog (1900 - 1999)
Handbook of Seismology and Earthquake Engineering
Global Seismic Hazard Assessment Program

PLATE TECTONICS
Smithsonian Institution, Global Volcano Program

BASE MAP
NIMA and ESRI, Digital Chart of the World
USGS, EROS Data Center

