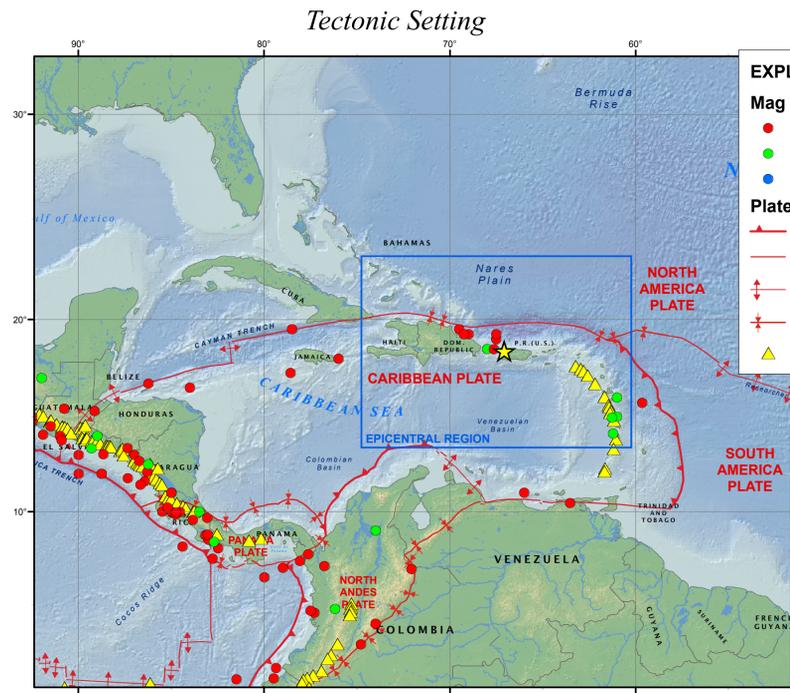
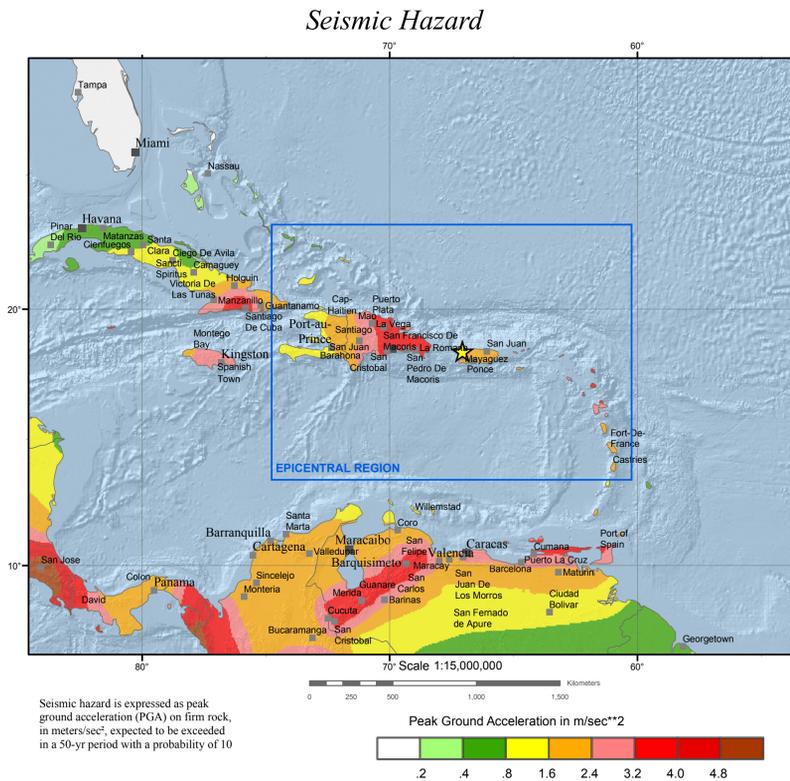


M5.8 Puerto Rico Earthquake of 16 May 2010

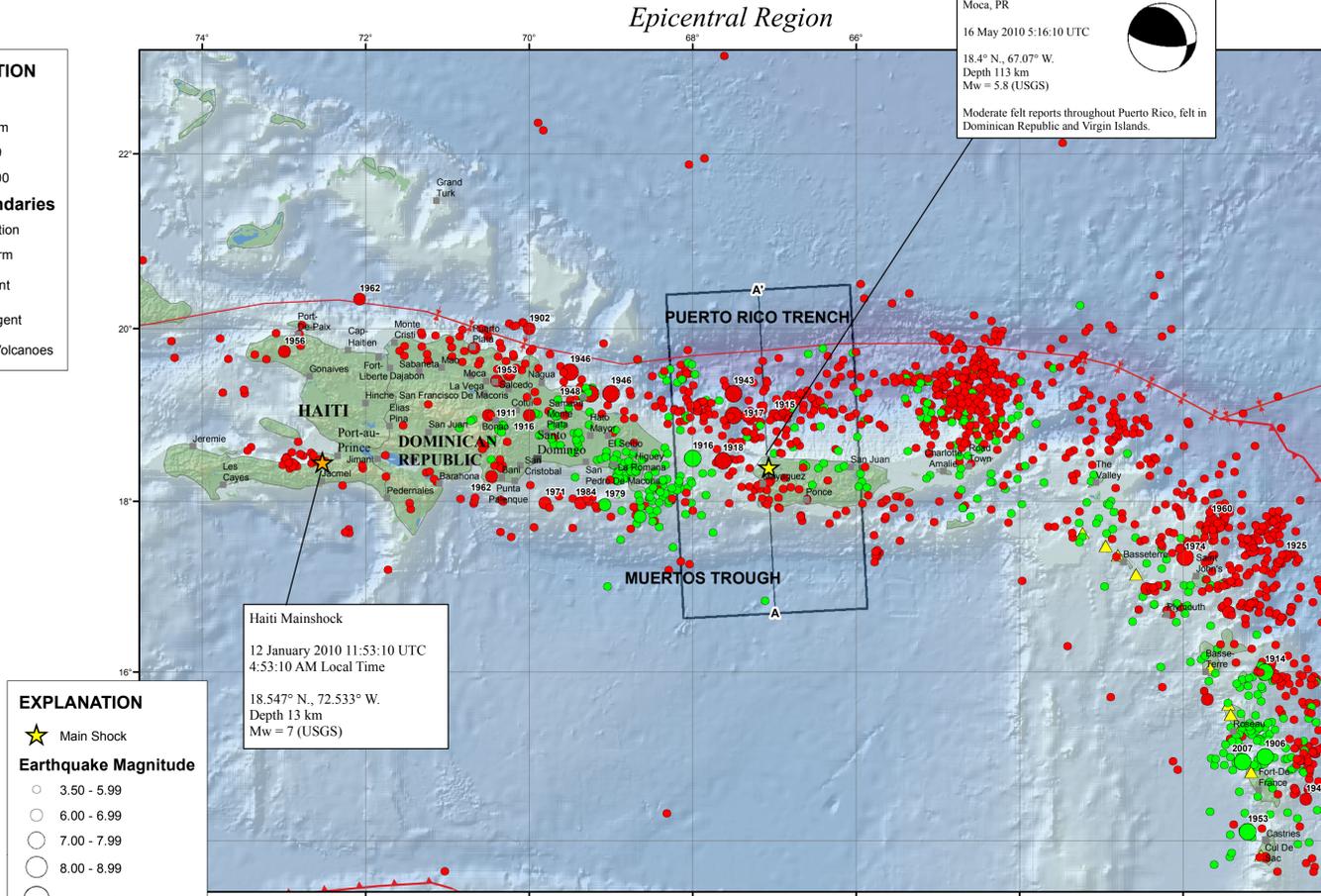


RELATIVE PLATE MOTIONS

In the region of this earthquake, earthquakes define the boundary between the North American and Caribbean Plates, which move past each other at about 20 mm/yr.



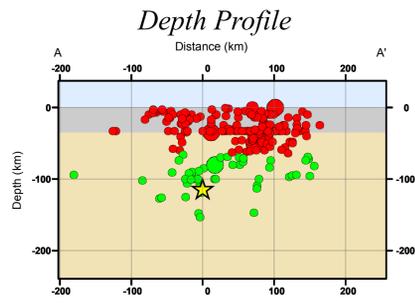
Seismic hazard is expressed as peak ground acceleration (PGA) on firm rock, in meters/sec², expected to be exceeded in a 50-yr period with a probability of 10



TECTONIC SUMMARY

The Puerto Rico earthquake of May 16, 2010, occurred in an inclined seismic zone that dips south from the Puerto Rico Trench and that consists of subducted lithosphere of the North America plate. The broad-scale tectonics of the Puerto Rico region are determined by the motion of the Caribbean plate east-northeast at a velocity of about 20 mm/yr with respect to the North America plate. The North America plate is thrust beneath the Caribbean plate at the Puerto Rico Trench, and is seismically active to depths of about 150 km.

Earthquakes, such as this one, that have focal-depths between 70 and 300 km are commonly termed "intermediate-depth" earthquakes. Intermediate-depth 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 earthquakes may be felt at great distance from their epicenters.



Significant Earthquakes Mag >= 6.5

Year	Mon	Day	Time	Lat	Long	Dep	Mag
1902	02	17	0031	20.000	-70.000	0	6.9
1906	12	03	2259	15.000	-61.000	100	7.2
1911	10	06	1016	19.000	-70.500	0	6.8
1914	10	03	1722	16.000	-61.000	100	7.4
1915	10	11	1933	19.000	-67.000	0	6.8
1916	04	24	0426	18.500	-68.000	80	7.0
1916	11	30	1317	19.000	-70.000	0	6.8
1917	07	27	0101	19.000	-67.500	50	7.0
1918	10	11	1414	18.473	-67.631	35	7.3
1925	07	07	1743	17.362	-60.742	35	6.8
1943	07	29	0302	19.250	-67.500	0	7.6
1946	05	21	0916	14.500	-60.500	50	6.5
1946	08	04	1751	19.250	-69.000	0	7.9
1946	08	08	1328	19.500	-69.500	0	7.5
1948	04	21	2022	19.250	-69.250	40	7.1
1953	03	19	0827	14.111	-61.213	126	7.1
1953	05	31	1958	19.400	-70.400	33	6.9
1956	07	09	0956	19.737	-72.994	43.9	6.9
1960	05	31	1102	17.790	-61.650	35	6.6
1962	01	08	0100	18.291	-70.461	32.6	6.7
1962	04	20	0547	20.339	-72.074	35	6.7
1971	06	11	1256	17.984	-69.808	59	6.5
1974	10	08	0950	17.347	-61.977	23.3	6.9
1979	03	23	1932	17.964	-69.076	81.5	6.7
1984	06	24	1117	17.982	-69.369	44.1	6.7
2007	11	29	1900	14.944	-61.274	156	7.4
2010	01	12	2153	18.457	-72.533	13	7.0

DISCLAIMER

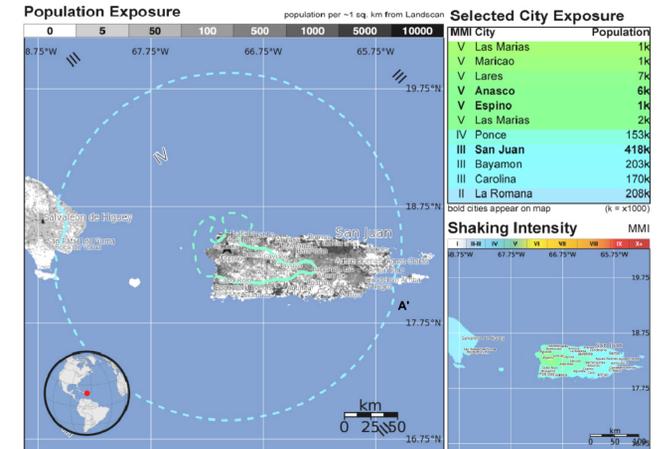
Base map data, such as place names and political boundaries, are the best available but may not be current or may contain inaccuracies and therefore should not be regarded as having official significance.

USGS
M 5.8, PUERTO RICO
Origin Time: Sun 2010-05-16 05:16:10 UTC
Location: 18.40°N 67.07°W Depth: 113 km

USAID
PAGER
Version 3
Created: 2 days, 10 hours after earthquake

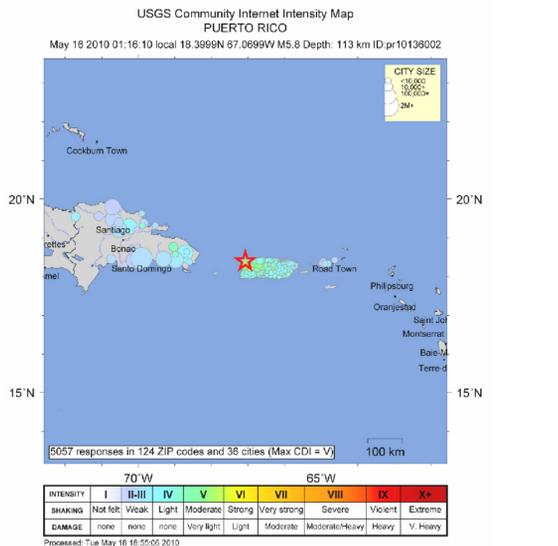
Estimated Population Exposed to Earthquake Shaking

ESTIMATED POPULATION EXPOSURE (k = x1000)	I	II-III	IV	V	VI	VII	VIII	IX	X+
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								
	Vulnerable Structures: none								



This information was automatically generated and has not been reviewed by a seismologist.
<http://earthquake.usgs.gov/pager>

Event ID: us10136002



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)
HDF (unpublished earthquake catalog) (Engdahl, 2003)
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.

PLATE TECTONICS AND FAULT MODEL
PB2002 (Bird, 2003)

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. Geost., 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.

Map prepared by U.S. Geological Survey
National Earthquake Information Center
18 May 2010
Map not approved for release by Director USGS