

Citi advertisement: The new Citi ThankYou Preferred Card. New ways to earn points. Start Earning More.

Published: March 11, 2011

How Shifting Plates Caused the Earthquake and Tsunami in Japan

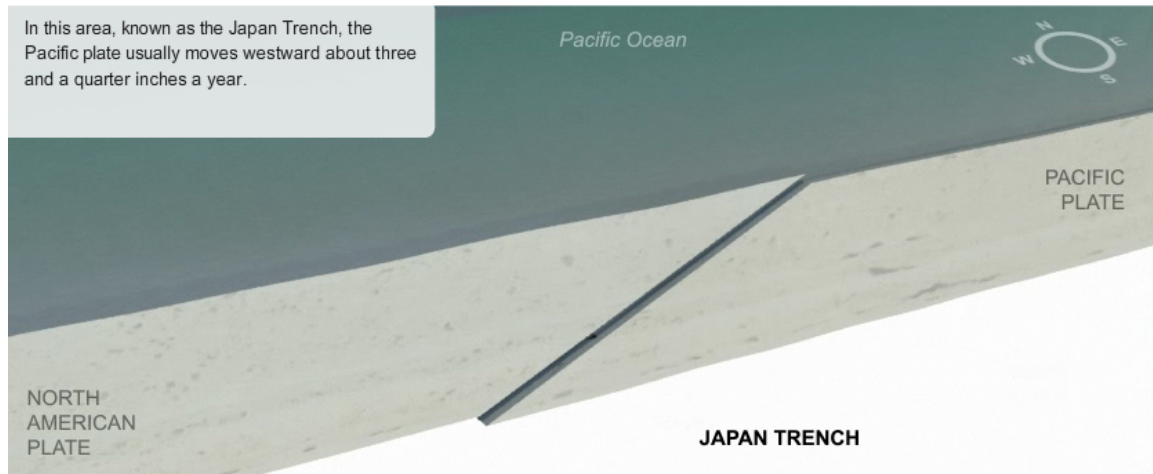
Interactive map and pictures of the damage »

Shifting plates and rising water

The sudden movement of the Pacific tectonic plate under the North American plate caused a massive earthquake and a tsunami.

1 2 3 4 5 6 7 NEXT

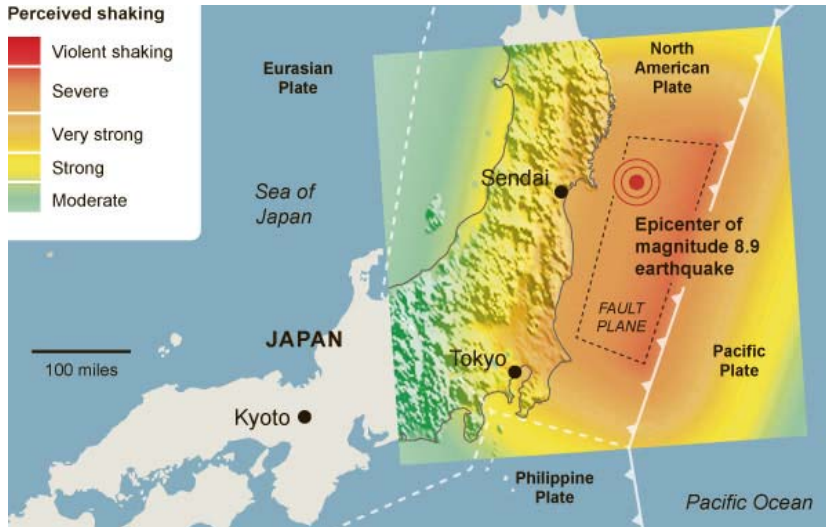
In this area, known as the Japan Trench, the Pacific plate usually moves westward about three and a quarter inches a year.



Source: U.S. Geological Survey

Perceived shaking

- Violent shaking
Severe
Very strong
Strong
Moderate



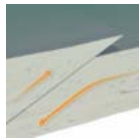
Magnitude of shaking

An 8.9-magnitude earthquake struck the coast of Japan on Friday at a depth of about 17 miles below the earth's surface. Dozens of aftershocks, some of magnitude 6.0 or greater, were felt after the quake.

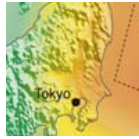
Source: U.S. Geological Survey

Predicted tsunami wave heights

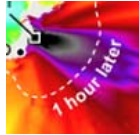
The tsunami set off warnings for much of the Pacific basin including the west coast of the United States



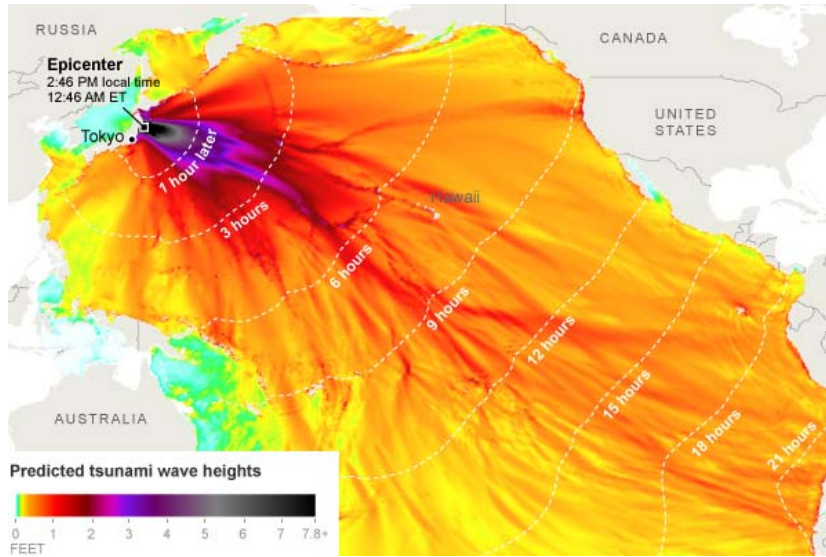
Shifting plates



Shaking magnitude



Tsunami



and South America. Officials say waves have not caused major damage in Hawaii and pose no flooding danger in California.

Source: NOAA Center for Tsunami Research, Pacific Marine Environmental Laboratory

By JOE BURGESS, JONATHAN CORUM, AMANDA COX, MATTHEW ERICSON, XAQUÍN G.V., ALAN McLEAN, TOMOE MURAKAMI-TSE, HAEYOUN PARK, GRAHAM ROBERTS, AMY SCHOENFELD, ARCHIE TSE, JOE WARD and JEREMY WHITE | [Send Feedback](#)

[SIGN IN TO E-MAIL](#)

**Related Multimedia**

[View More Multimedia »](#)

**Related Links**



Interactive Feature

**Satellite Photos of Japan, Before and After the Quake and Tsunami**

Compare satellite images of areas of Japan before and after the disaster.



Interactive Feature

**A Closer Look at the Damage From the Earthquake and Tsunami in Japan**

Zoom in on images and examine scenes of the destruction in Japan.



Video

**Aftermath of the Earthquake in Japan**

Tokyo bureau chief Martin Fackler reports on the huge earthquake and tsunami that hit Japan.

[Powerful Quake and Tsunami Devastate Northern Japan](#)

[Updates on the Earthquake and Tsunami in Japan](#)

[Home](#) | [World](#) | [U.S.](#) | [N.Y./Region](#) | [Business](#) | [Technology](#) | [Science](#) | [Health](#) | [Sports](#) | [Opinion](#) | [Arts](#) | [Style](#) | [Travel](#) | [Jobs](#) | [Real Estate](#) | [Autos](#) | [Back to Top](#)

© 2011 The New York Times Company | [Privacy](#) | [Your Ad Choices](#) | [Terms of Service](#) | [Corrections](#) | [RSS](#) | [First Look](#) | [Help](#) | [Contact Us](#) | [Work for Us](#) | [Advertise](#) | [Site Map](#)