

## Tokyo at risk from massive aftershock, expert says (w/ Video)

March 16 2011

---

(PhysOrg.com) -- Tokyo may be at serious risk from a massive aftershock and associated tsunami as a result of the devastating March 11 earthquake near Sendai, Japan, according to UC Davis seismologist John Rundle.

Friday's magnitude 9.0 temblor has been followed by hundreds of powerful aftershocks that have migrated southwards, noted Rundle, who is professor of geology and physics at UC Davis.

"Initially, the major aftershocks were confined to the region near Sendai, but the steady southward march of the aftershocks is cause for alarm for Tokyo and surrounding regions," Rundle said.

There is historical evidence of major earthquakes off the coast of Japan being followed by another similarly large earthquake nearby within a relatively short period of time, he said.

These include the magnitude 8.4 Ansei-Nankai and Ansei-Tokai earthquakes of 1854, separated in time by only 31 hours; and the 1944-1946 Tononkai and Nankai earthquakes, with magnitudes of 8.0 and 8.1, respectively. Typically, an earthquake of magnitude 9 would be followed, in no particular order, by one [aftershock](#) of magnitude 8, ten aftershocks of about magnitude 7 and many smaller aftershocks.

That 8.0 aftershock has yet to occur. If it happened in Tokyo Bay, it could set off a tsunami that would devastate the densely populated

region, similar to the events of September 1, 1923 during the great Kanto earthquake (magnitude 7.9).

Rundle's research uses computer modeling to understand systems that can go through abrupt and catastrophic changes, such as earthquake faults and financial markets. He has collaborated with researchers at NASA's Jet Propulsion Laboratory and other universities on Quakesim, which studies [earthquake fault](#) systems and has produced earthquake forecasts for California and other parts of the world.

In a blog entry posted July 30 on the website Openhazards.com, Rundle forecast that of four Japanese cities -- Tokyo, Osaka, Niigata and Sendai -- Sendai was the second-most likely to be hit by a major [earthquake](#) within 150 miles over the next year. Tokyo was the most at risk, he calculated. He has updated this forecast as of 3 p.m. on March 13.

Provided by UC Davis

Citation: Tokyo at risk from massive aftershock, expert says (w/ Video) (2011, March 16) retrieved 19 April 2024 from <https://phys.org/news/2011-03-tokyo-massive-aftershock-expert-video.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.