

# Helping to forecast earthquakes in Salt Lake Valley

April 17 2013

---

Salt Lake Valley, home to the Salt Lake City segment of the Wasatch fault zone and the West Valley fault zone, has been the site of repeated surface-faulting earthquakes (of about magnitude 6.5 to 7). New research trenches in the area are helping geologists and seismologists untangle how this complex fault system ruptures and will aid in forecasting future earthquakes in the area.

At the annual meeting of the [Seismological Society of America](#) (SSA), Christopher DuRoss and Michael Hylland of the Utah Geological Survey will present research today that indicates geologically recent large earthquakes on the West Valley fault zone likely occurred with (or were triggered by) fault movement on the Salt Lake City segment. DuRoss and Hylland consider it less likely that West Valley fault movement happens completely independently from movement on the Salt Lake City segment. This likely pairing has implications for how the [seismic hazard](#) in [Salt Lake Valley](#) is modeled.

The trenches have also helped the researchers revise the history of large earthquakes in the area, showing that the [Salt Lake City](#) segment has been more active than previously thought. Since about 14,000 years ago, eight quakes have occurred on the segment. Depending on the time period, these quakes have occurred roughly every 1300 to 1500 years on average. It has been 1400 years since the most recent large earthquake on the segment. The earthquake history of the West Valley fault zone had been largely unknown, but now four earthquakes have been well dated.

This new fault research contributes to a broader goal of evaluating Utah's earthquake hazards and risk. For example, this type of information on prehistoric earthquakes will be used by the Working Group on Utah Earthquake Probabilities, formed under the auspices of the Utah Geological Survey and U.S. Geological Survey, to forecast probabilities for future earthquakes in the Wasatch Front region.

**More information:** Poster title: "Latest Pleistocene and Holocene paleoseismicity of the Salt Lake City segment of the Wasatch fault zone and the West Valley fault zone, Utah – unraveling the rupture behavior of a major graben-forming fault system"

Provided by Seismological Society of America

Citation: Helping to forecast earthquakes in Salt Lake Valley (2013, April 17) retrieved 18 April 2024 from <https://phys.org/news/2013-04-earthquakes-salt-lake-valley.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.