

Scientists study 'slow' earthquakes

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SEATTLE -- U.S. scientists studying a phenomenon dubbed "slow earthquakes" say quakes can abruptly reverse and travel back through previously ruptured areas of a fault.

Researchers at the University of Washington who have been studying the seismic event called episodic tremor and slip, which can last for weeks as it moves slowly along a fault line, say the unexpected "reverse" tremor can move 20 to 40 times faster than the original rupture, a university release reported Sunday.

"Regular tremor and slip goes through an area fairly slowly, breaking it. Then once it's broken and weakened an area of the fault, it can propagate back across that area much faster," said Heidi Houston, a professor of earth and space sciences.

Episodic tremor and slip, also called slow slip, was first documented in the Pacific Northwest a decade ago.

Individual events have been observed in Washington and British Columbia on a regular basis every 12 to 15 months on average, the researchers said.

Slow-slip events tend to start in the southern Puget Sound region and move gradually to the northwest, following the interface between the North American and Juan de Fuca tectonic plates.

The events typically last three to four weeks and release as much energy as a magnitude 6.8 earthquake, though they are not felt and cause no damage since they happen so slowly.

"There's not a good understanding yet of why it's so slow, what keeps it from picking up speed and becoming a full earthquake," Houston said.

One reason, she said, may be because episodic tremor and slip occurs at a depth of 22 to 34 miles, where high temperatures make the tectonic plates more pliable and thus more slippery.