# Portland is Earthquake Country

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Were you shaken up by the 'Spring Break Quake' in 1993? Maybe you were in town on July 15th and July 2nd and felt these earthquakes. If you were in just the right place, you might have felt a very small one last February. As you can tell, feeling an earthquake in Portland isn't exactly common, but it's certainly not rare.

"If you know what you're looking for, there's a lot of evidence around town," says Yumei Wang, the Director of Earthquake Programs for the Oregon Department of Geology and Mineral Industries (DOGANI). "Look at how the West Hills rise so dramatically from the nearly flat area along Highway 30. That's a fault running essentially through downtown Portland."

And that's not the only fault in the area. There's also the East Bank fault (running along the east bank of the Willamette River in north Portland, the Oatfield fault (crossing from Milwaukie to the west slopes of the West Hills), the Lacamas fault (think Lacamas Lake in Vancouver), and the Mt. Angel fault (which triggered the magnitude 5.6 Spring Break Quake).

That doesn't even count the Cascadia subduction zone, a fault that runs off the Oregon coast that could produce a magnitude 8 to 9 earthquake. This fault runs from Northern California to British Columbia. "When we have a subduction quake, it will be much worse than anything we've seen in Oregon," warns Wang. "There could be damage in three states and Canada, so it may take a while for supplies to reach us."

"In addition, we expect a tsunami to hit the coast within a few minutes of the earthquake." A tsunami, or tidal wave, is actually a series of waves over several hours that can devastate coastal communities. "If you go to the beach, you need to know that you should head up hill or inland as soon as you feel an earthquake. Don't wait for a warning siren," she cautions.

Subduction zone earthquakes occur every 200 to 1,000 years. The last one was in January 1700, so it's possible we'll have another one soon. It's also possible that it won't happen for 500 years.

All those potential earthquakes keep Wang busy. She's an ex-Californian with degrees in geology and engineering who's been in several earthquakes and researched many more. Her current project is to let Oregonians know what the risk from future earthquakes might be.

"We've taken information about Oregon's geology and put it together with general information about population and buildings and come up with some estimates of what could happen," explains Wang. "If we have a subduction zone earthquake, our most current estimate is that more than 5,000 people could die, along with billions of dollars of damage across the state."

Most injuries and damage comes from buildings that can't withstand the shaking of a quake. "Some of the most dangerous buildings are old brick buildings without any steel reinforcement," says Wang. "There are 1,500 of these in Portland, and in a major earthquake, many of them would be heavily damaged or completely destroyed." Although old buildings in Portland have already withstood several small to moderate earthquakes, that's not necessarily a comfort. "Each time a building goes through an earthquake, it loses some of it's ability to absorb another shock. For example, the Grays Harbor Courthouse was seriously damaged in the July 2 earthquake, even though it had gone through larger earthquakes before. On the other hand, a typical house made out of wood rarely collapses in a quake, though it can still suffer substantial damage."

Wang and co-worker, Lou Clark, recently published a study detailing

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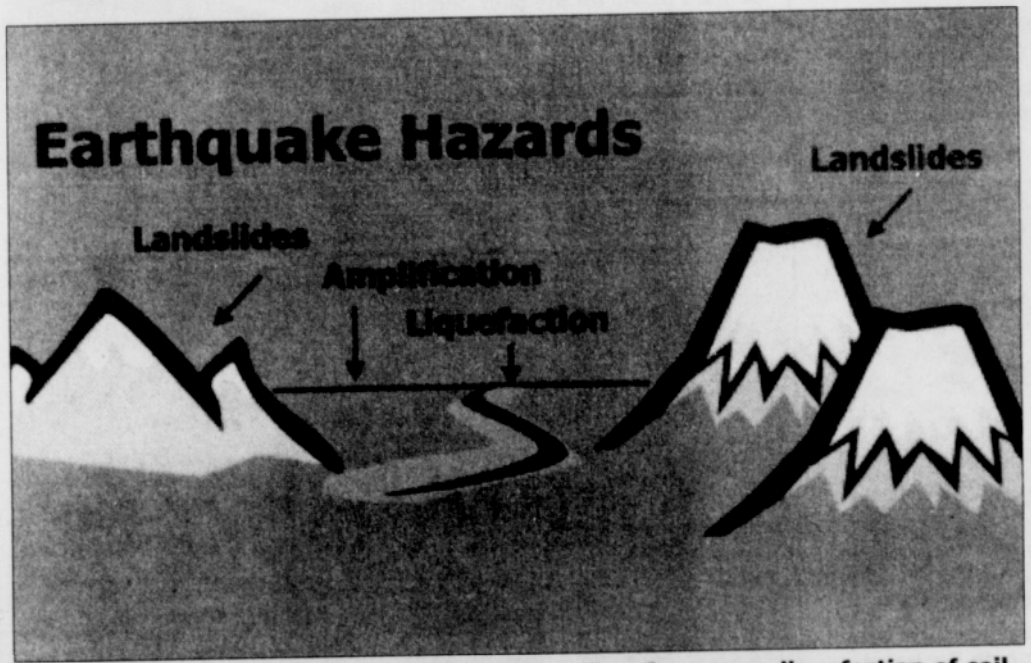


**The Earthquake Hazards: Amplification of earthquake waves, liquefaction of soil, and landslides triggered from shaking relate to the geologic settings of the valley, near the river and in the hills.**

**Top 5 Books**
for this week

**1 Hannibal**
THOMAS HARRIS
*Delacorte*, $27.95

**2 White Oleander**
JANET FITCH
*Little, Brown*, $24

**3 Mother of Pearl**
MELINDA HAYNES
*Hyperion*, $23.95

**4 The Girl Who Loved Tom Gordon**
STEPHEN KING
*Scribner*, $16.95

**5 The Girl's Guide To Hunting and Fishing**
MELISSA BANK
*Viking*, $23.95