



The Official

OREGON SECTION AEG NEWSLETTER

<http://www.aegoregon.org>

September Meeting Details

Tuesday September 25th

Location: Old Market Pub

6959 SW Multnomah

Portland, OR

6:00 pm Social

7:00 pm Dinner

7:30 pm Presentation

Dinner: Pizza & Salad

\$20 Dinner (\$5 Students)

Reservations:

mwegner@cornforthconsultants.com with "AEG Reservation" in the subject line or 971-222-2047 by 4pm Thur. Sept. 20

There is a \$2 surcharge for those who do not reserve by the deadline.

Upcoming Meetings:

- Oct 16th Bill Orr
- Nov 20th Chris Goldfinger
- Dec 18th TBA
- Jan 15th ASCE/AEG Meeting
- Feb 19th Jim O'Connor
- Mar 19th Matthew Morris
- Apr 16th Student Poster Night
- May 21st James McCaplin



The Great Storm of 2007: Landslide densities associated with rainfall, forest stand age, and topography; southwestern Washington

Guest Speaker: Ted Turner, RG, LEG

NOTE: WESTERN STATES IS HOSTING THE BEVERAGES!

An unusual and powerful storm in early December, 2007, caused record flooding and thousands of landslides across southwest Washington and northwest

Oregon, and provided a rare opportunity to examine the effects of both natural factors and forest management practices on landslide density. Landslide inventory data were collected from both aerial photos and systematic field surveys to provide a broad survey database that was used to develop estimates of landslide density and to examine associations between landslide density, precipitation, topography, and forest stand age across a 152,000 ha forested landscape in the Willapa Hills, Washington. We estimated the probability of detecting landslides on aerial photos for six strata defined by forest stand age and a broad range of rainfall intensity, expressed as percent of the 100-year, 24-h, maximum rainfall. Key findings are that landslide detection probability decreased with increasing stand age, but was similar across rainfall intensities. The overall fraction of field-detected landslides that were not detected on 1:12,000-scale aerial photos was 39%. Very few landslides occurred in the 0–100% of 100-year rainfall category, regardless of stand age or slope gradient class. At higher rainfall intensities, significantly higher landslide densities occurred on steep slopes (>70% gradient) compared to lower gradient slopes, as expected. Above ~150% of 100-year rainfall, the density of landslides was ~2–3 times larger in the 0–5 and 6–10 year stand age categories than in the 11–20, 21–30, 31–40, and 41+ categories. The effect of stand age was strongest at the highest rainfall intensities. Our results demonstrate that ground-based landslide inventory data are required in order to correct for detection bias from aerial photos, develop reasonable estimates of landslide density across environmental gradients such as rainfall magnitude and topography, and make unbiased interpretations of relationships between forest management associations and landslide occurrence.



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"A man kayaks on the flooded I-5, north bound, in Chehalis on Tuesday." (December 4, 2007) Associated Press



Bio: Ted Turner, RG, LEG

Ted is a Senior Geologist with Weyerhaeuser's Western Timberlands Environmental Forestry Research division. He's been conducting research and providing technical support to forestry operations in the areas of forest land slope stability and fluvial geomorphology for 17 years. Prior to joining Weyerhaeuser, Ted worked as a hydrologist and river restoration specialist with projects in Montana and Idaho. Ted holds an MS degree in geology from Montana State University and a BA in geology from Humboldt State University.

Message from the Chair

Warm summer greetings from the AEG Oregon Chapter Board! As we welcome the 2012-2013 season, I'd like to extend an extra-special thank you to Mike Marshall (GRI) for his continued dedication to Oregon AEG as Program Chair. Mike is a treasure; his commitment, over many years, has resulted in interesting and informative presentations by a diverse roster of speakers. This year is no exception.

We are off to a great start with a talk by Ted Turner with Weyerhaeuser's Western Timberlands Environmental Forestry Research division. Ted will be speaking about his research on the associations between landslide density, precipitation, topography, and forest stand age. We welcome Ted, and thank him for offering to share this month. As an additional treat, Western States Soil Conservation has offered to host beverages for our September meeting. So please say thanks to Ford Stigall, as well as Ted.

We've planned many exciting meetings this year. Bill Orr (yes, that Bill Orr) will treat us in October to a presentation relating to Oregon geology and paleontology. This season we will also hear from Chris Goldfinger (OSU) and Jim O'Conner (USGS), and we hope to arrange a joint meeting with AWS. We'll be hosting the joint ASCE/AEG meeting in January. We have a presentation by AEG President Matt Morris in March, and are hoping for a great turnout for the Student Poster Night in April. To wrap up the season, Jim McCaplin, AEG Jahns Lecturer for the 2012-2013 season, will present in May. Keep an eye on the Upcoming Meetings panel on the front page of the newsletter. Many thanks in advance to all our presenters.

I want to express thanks to Kevin Schleh (Geocon NW) for excellent leadership during his tenure as Oregon Section Chair, and appreciate his continued input as Past Chair. This year, Darren Beckstrand (Cornforth Consultants) steps into the Chair-Elect position, Linda Mark (Vigil-Agrimis) becomes Treasurer, and Adam Reese (Ash Creek) is our new Secretary. Ann Stansbeary (PSU) has taken on the role of PSU Student Chapter President, and we are appreciative of Ellie Brown's (PSU) efforts to keep students interested in AEG over the last year. Much thanks to Scott Braunsten (PBS) for his excellent work as newsletter editor and to Keith Olson (PSU) for keeping us up-to-date on the Oregon AEG website. We wouldn't be a successful chapter without the dedicated efforts of these volunteers.

By the time of our September 25th meeting, I'll have attended the 2012 AEG Annual Meeting in Salt Lake City, where we will make a short presentation on the mini-proposal we submitted to bring the 2018 International AEG meeting to Portland. I will provide an update on this topic, as well as other annual meeting news, during the September meeting.

Please help to make this a fun and successful year by attending the meetings and staying engaged. See you soon.

With warm regards,
Robin Johnston, RG
Oregon AEG Section Chair



*“Keen observation is at
least as necessary as
penetrating analysis”*

Karl Terzaghi



Mount St. Helens' hike- AWG PNW chapter Saturday, September 15, 2012, 9am

Join us as we spend the day on the southwestern flanks of Mount St. Helens (MSH) for a moderate hike over the varied terrain of the volcano's "backside". The approximate 6-mile loop will travel through a flow of Cave Basalt and an old growth forest providing access to two debris flows that occurred during a heavy winter storm of 2006. Keith Olson, a Portland State graduate student, will give us a brief overview of the area and discuss some of the details of his recent study of the debris flows on MSH. Along the trail, views from the Blue Lake depositional zone and the Cave Basalt flow will offer views of the mountain (weather permitting).

The plan:

Meet in Woodland, WA at Horseshoe Lake Park at 9am to consolidate vehicles as there is limited parking at the trailhead. From there, we will caravan to the Swift Creek Reservoir lookout to briefly view the dam and the morphology that makes up the south side of MSH. Afterwards, we will drive over to the Red Rock Trailhead where the hike begins and ends. Upon returning to the trailhead, we will head back towards Woodland, via Merrill Lake Road, to stop at one or two roadside exposures along the way. Optionally, or depending on time, we can make the approximate 2-mile in and out stroll through the Goat Marsh Research Natural Area to view the dacite dome of Goat Mountain and Goat Marsh Lake.

Please bring a lunch/snacks, water, and good hiking boots

If anyone is interested in carpooling from the Portland area, please contact Lina Ma at lina.ma@dogami.state.or.us or call 971-673-1545.

Some suggested readings:

- Hopson, Clifford A., 2008, Geologic map of Mount St. Helens, Washington prior to the 1980 eruption: U.S. Geological Survey Open-File Report 02-468, 2 sheets, scale 1:31,250. [<http://pubs.usgs.gov/of/2002/of02-468/>].
- Pringle, Patrick T., 2002, Roadside geology of Mount St. Helens National Volcanic Monument and vicinity; rev. ed.: Washington Division of Geology and Earth Resources Information Circular 88, rev. ed., 122 p.

Online resources:

USGS Cascades Volcano Observatory's MSH website: <http://vulcan.wr.usgs.gov/Volcanoes/MSH/>

Larger Map:

https://dl.dropbox.com/u/4280934/AWGFieldTrip_2012.png

Oregon Section loses longtime member and leader

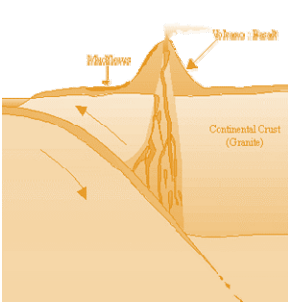
Charles "Ed" Stearns passed away on December 31, 2011, in Redmond, Oregon. Ed had been a member of AEG for many years, and was chair of the Oregon Section in the 1980's. He was an engineering geologist who started working for the Soil Conservation Service in California early in his career. He was then transferred to Portland where he worked at the Western Technical Center for SCS (and later NRCS) for the rest of his career. He retired in the late 1990's and moved to Redmond. He was a great human being, a great leader and a great mentor to all young geologists. He will be missed.

The Oregon Section Newsletter

OREGON SECTION AEG NEWSLETTER is published monthly from September through May. Subscriptions are for members of AEG affiliated with the Oregon Section or other Sections, and other interested people who have requested and paid a local subscription fee of \$10.00. E-mail subscriptions are free. News items are invited and should be sent to: Scott Braunsten, OR Section AEG Newsletter Editor, PBS Engineering and Environmental, 4412 SW Corbett Avenue, Portland, OR 97239, e-mail: scott.braunsten@pbsenv.com, phone (503) 417-7737. Electronic media is preferred. Deadline for submittal is the 20th of the month. Advertising: business card \$100/yr; ¼ page \$200/yr; ½ page \$350/yr. Please notify Scott if you have a change to your email or mailing address.

The Association of Engineering Geologists (AEG) contributes to its members' professional success and the public welfare by providing leadership, advocacy, and applied research in environmental and engineering geology. AEG's values are based on the belief that its members have a responsibility to assume stewardship over their fields of expertise. AEG is the acknowledged international leader in environmental and engineering geology, and is greatly respected for its stewardship of the profession.





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Schematic of a Seepage Pit (Dry Well)

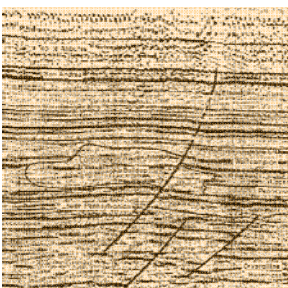
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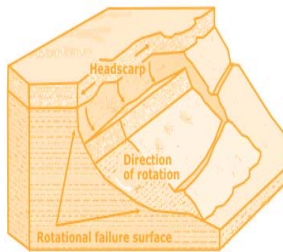
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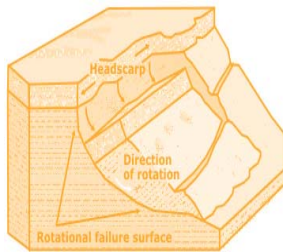
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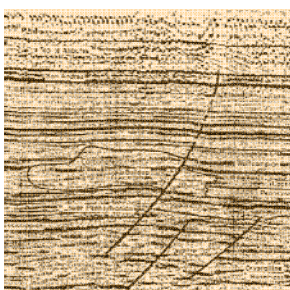
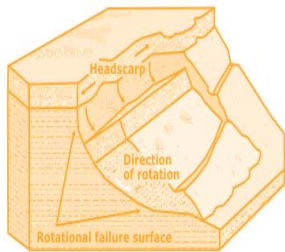
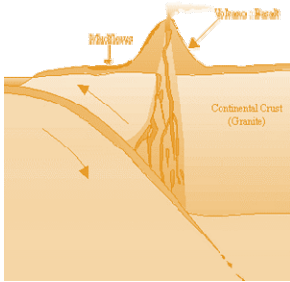
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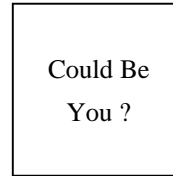
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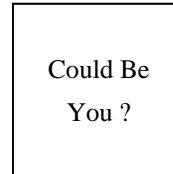
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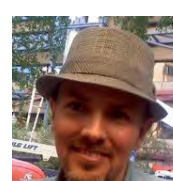
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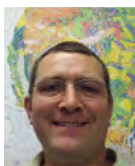
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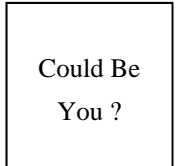
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