

NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology
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March 2012 Newsletter

Volume 26, Number 3



March 13 Program Speaker

Speaker: Steve Reidel, WSU–TriCities

Title: The Late Cenozoic Evolution of the Columbia River System in the Columbia River Flood Basalt Province

Abstract: The Columbia River System is one of great river systems of North America draining much of the Pacific Northwest as well as parts of the western US and British Columbia. The river system has had a long and complex history, slowly evolving over the past 16 million years.

The Columbia River and its tributaries have been shaped by flood-basalt volcanism, Cascade volcanism, regional tectonism and the finally the great Missoula floods of the Pleistocene. The most complex part of river development has been in the northern part, the Columbia Basin, where the Columbia River and its tributaries were controlled first by a subsiding Columbia Basin with subtle anticlinal ridges and synclinal valleys superimposed on a flood-basalt landscape. After negotiating this landscape, the course to the Pacific Ocean led through the Cascade Range via the Columbia Trans-Arc Lowland, an ancient crustal weakness zone that separates Washington and Oregon. The peak of flood-basalt volcanism obliterated the river paths but as flood-basalt volcanism waned, the rivers were able to establish courses within the growing fold belt. As tectonism produced larger and larger folds, the major pathways of the rivers moved toward the center of the Columbia Basin where subsidence was greatest. The finishing touches to the river system, however, were added during the Pleistocene by the Missoula Floods which modified but not greatly changed course of the rivers.

5:30pm: No-host social hour

6:30pm: Buffet dinner

7:30pm: Speaker program

All are welcome to attend –
reservations are required
if coming for dinner.

► [Reservations here](#)



PROGRAM DINNER RESERVATIONS: NWGS members: **\$40**; Non-members: **\$45**; Full-time students : **\$20**. \$45 for LATE REGISTRATION. Make your reservation and payment on-line at www.nwgs.org (or mail your payment to *Northwest Geological Society, 4616 25th Ave NE #397, Seattle, WA. 98105* (must be received by Thursday prior to meeting)). Contact [Dan Smith](mailto:Dan.Smith@nwgs.org) at 206-937-5313 or nwgeo@yahoo.com.

If attending the speaker program only, a \$5 voluntary donation to help defray the meeting room cost is requested.

Location: Pacific Dining Hall at the [Talaris Conference Center](#), 4000 NE 41st St., Seattle, WA. Ph 206-268-7000. **Directions:** See [on-line directions with map](#), or: from I-5 northbound or southbound in Seattle, take Exit 168B (NE 45th St.). Drive east on NE 45th St. past UW down the hill and past University Village. Turn south (right) onto Mary Gates Memorial Drive at the 5-way intersection. MGM Drive will curve east (left) and become NE 41st St. Continue several blocks to the [Talaris Conference Center](#) entrance on the north (left) side. We meet in the Pacific Dining room on the left.

Upcoming Speakers and Field Trips

April 10: Tom Pratt, USGS, Fracture mechanics at a large scale: Central Washington's folds, faults, and OWL (rescheduled from the cancelled January joint AEG meeting).

May 8 (joint AWG meeting): Vicki McConnell, Oregon Dept. Geol. & Min. Industries, Everything you always wanted to know about state geological surveys, but whom to ask?

Spring, 2012 Field Trip: Steve Reidel, WSU-TriCities, Late Cenozoic evolution of the Columbia River system in the Columbia River Basalt Province, date TBA.

Fall, 2012 Field Trip: trip and date TBA.

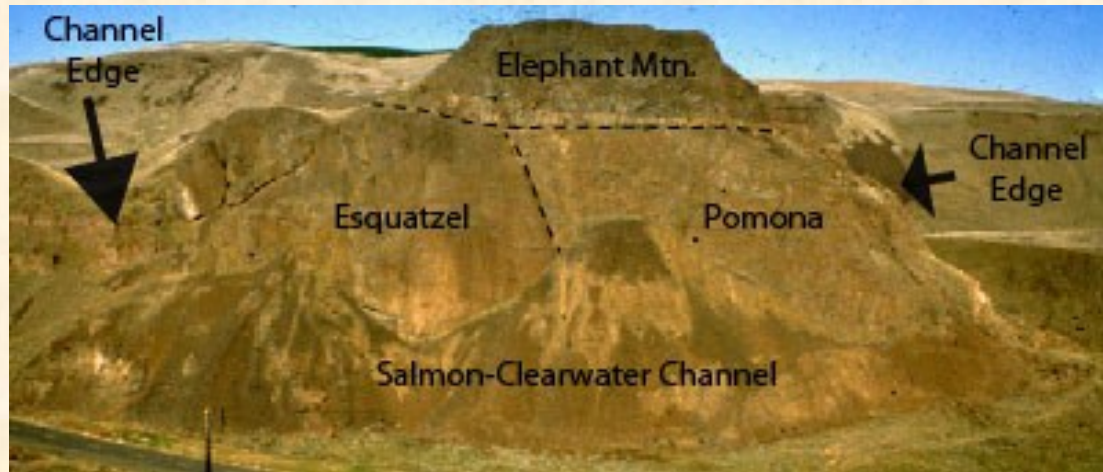
Please see the [NWGS website](http://www.nwgs.org) for detailed announcements.

Contact webmaster [Julie Masura](mailto:Julie.Masura@nwgs.org) if you have any announcements to post on the website.

Announcements

- The 25 year anniversary symposium is now scheduled for **May 4, 2013**. Please mark your calendar!
- A possible *Special Edition* field trip to Iceland this summer is being discussed (late June or July?)
- NWGS Historian [Donn Charnley](#) requests any pre-1980s NWGS information. Contact him at donncharnley@frontier.com or 206.546.3868.
- Next **Board meeting**: March 13, 4:30 P.M., Talaris Conference Center.
YOU would like to be involved!

Photo Spotlight



Ancestral Clearwater-Salmon River channel in Devils Canyon, WA. The ancestral Salmon-Clearwater River occupied this channel from about 13 Ma to about 10.5 Ma. The channel was used by the eruptions of the Esquatzel, Pomona and Elephant Mountain lava flows. After each eruption, the river was able to reoccupy the channel until the Elephant Mountain lava completely filled the channel and forced the river south. Photo and caption submitted by S. Reidel.

About NWGS

NWGS, a regional association of professionals, students & other persons interested in **geology**, provides a forum for the presentation and discussion of a wide range of geologic topics, emphasizing those of the Pacific Northwest of fundamental scientific interest.

YOU would like to be involved!

Program meetings: 2nd Tuesdays, October through May in the Pacific Dining Hall at the [Talaris Conference Center](#) in Seattle (see 1st page). Anyone may attend the speaker program, but a reservation is necessary for those wanting dinner (see 1st page). **Field trips (members only):** one in late spring/early summer and one in late summer/early fall, usually of 1-3 days in length. **Membership** is open to anybody with a professional or amateur interest in geology. **Annual dues:** Professional: \$30; Student: \$5. **To join or pay annual dues:** send a check payable to NWGS to Secretary [Dan Smith](#), 10203 40th Ave SW, Seattle, WA. 98146. Please include your name, address, home phone, email, and employer/affiliation (if any). Professional dues may now also be paid at www.nwgs.org.

YOU would like to be involved!

Recommended Readings

Fecht, K.R., Tallman, A.M., and Reidel, S.P., 1987, Paleodrainage history of the Columbia River system on the Columbia Plateau of Washington state - a summary, *in*, Schuster, J.E., ed., Selected papers on the geology of Washington: Washington Department of Natural Resources, Division of Geology and Earth Resources Bulletin 77, p. 219-248.

Reidel, S.P., Fecht, K.R., Hagood, M.C., and Tolan, T.L., 1989, Geologic development of the central Columbia Plateau: in Reidel, S.P., and Hooper, P.R., eds., Volcanism and Tectonism in the Columbia River Flood-Basalt Province: Geological Society of America Special Paper 239, p. 247-264.

Also: McDougall, Doug, 2011, [Why geology matters](#), University of California Press, Berkeley, 285 p.

Please send your reading recommendations to Newsletter Editor [Tom Bush](#).

To report a change of email or postal address or request to be removed from mailings, notify Secretary [Dan Smith](#) at 206.937.5313. Questions or comments? Contact President [Julie Masura](#).

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