

NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology
Please browse www.nwgs.org for more about us

November, 2024 Newsletter

Volume 38, Number 7

November 12 Program Speaker

5:30pm: No-host social hour; 6:30pm: Dinner
7:30pm: Speaker program ([reservations here](#), see below for details)

Speaker: Brian F. Atwater, U.S. Geological Survey

Title: Volcanic Ash in a Varved Record of Missoula Flood Periodicity

Abstract: Volcanic ash about 16,000 years old potentially links far-flung stratigraphic records of periodic floods from glacial Lake Missoula, Montana. In one of these records, northeast of the Grand Coulee, deposits of 89 Missoula floods alternate with packets of interflood varves of the Sanpoil arm of glacial Lake Columbia. Interflood time reached an early maximum around 50 varve years and diminished to a single varve year. We hope, by means of volcanic ash, to apply this measured periodicity to specific Missoula floods on the Columbia Plateau, where interflood time registered less measurably as loess and animal burrows. The loess of one of these interflood intervals contains two widespread layers of Mount St. Helens airfall ash. The lower airfall layer, Sg, geochemically resembles glass shards high in a late Sanpoil packet. But that packet may entirely postdate Sg airfall time, for three reasons. First, the Sanpoil sample, analyzed by Stephen Kuehn, contains three geochemical populations, only one of which resembles layer Sg. Second, the host packet provides no stratigraphic room for So, the upper ash layer in the Plateau couplet. Third, the analyzed shards came from the silty summer part of a varve (not from a layer 2 cm higher to which a 2021 field guide mistakenly points [[https://doi.org/10.1130/2021.0062\(07\)](https://doi.org/10.1130/2021.0062(07))]). Perhaps the analyzed Sanpoil shards fell near Spokane, reaching the Sanpoil later in seasonal Lake Columbia currents. Sg shards lower in the Sanpoil sequence would then align its interflood varves more exactly with times between specific Missoula **floods** on the Columbia Plateau.

IN-PERSON PROGRAM DINNER RESERVATIONS!

Cost: NWGS member dinner: \$40; Non-member dinner: \$50; Student dinner: \$10; Talk-only: \$10;
Student talk-only: free

To register for attending in-person: please [make your reservation here](#) (nwgs.org/meeting-registration/) by the Thursday prior to the meeting.

Catered menu: Fresh vegetarian spring rolls (gf, df), Mini Pork Belly bao buns (gf, df), Miso glazed salmon, Kalbi Beef, Lemongrass tofu, Vegetable fried rice, biang biang noodles, Asian slaw with almonds, marinated cucumbers, bananas foster bread pudding (gluten-free available) with rum sauce, (Please note any dietary restrictions in the meeting reservation so that we can relay the information to the caterer)

Location: Fautleroy YMCA next to the Fautleroy UCC Church, West Seattle, 9140 California Ave SW, Seattle, WA. 98136. Use the parking lot on the north side of the building. Get [Google Maps driving directions here](#).

Cost: NWGS member dinner: \$40; Non-member dinner: \$50; Student dinner: \$10; Talk-only: \$10;
Student talk-only: Free

Upcoming Speakers and Field Trips

December 10: Jeff Tepper, University of Puget Sound, Initiation of the Cascade Arc

January 14: Paul Burgi, TBA but likely on current landslide research (Searles Lake ground cracks)

February 11: Ken Petrie, Senior Geologist, Weyerhaeuser, Carbon Capture and Sequestration Overview

March 11: TBD

April 8: Baptiste Journaux, Assistant Research Professor, UW, topic TBD

Spring FT: George Bennett, Kurt Siegfried, and David Boyer, Cascade Quarry and Proctor Creek Mines near Gold Bar, WA., late April/early May

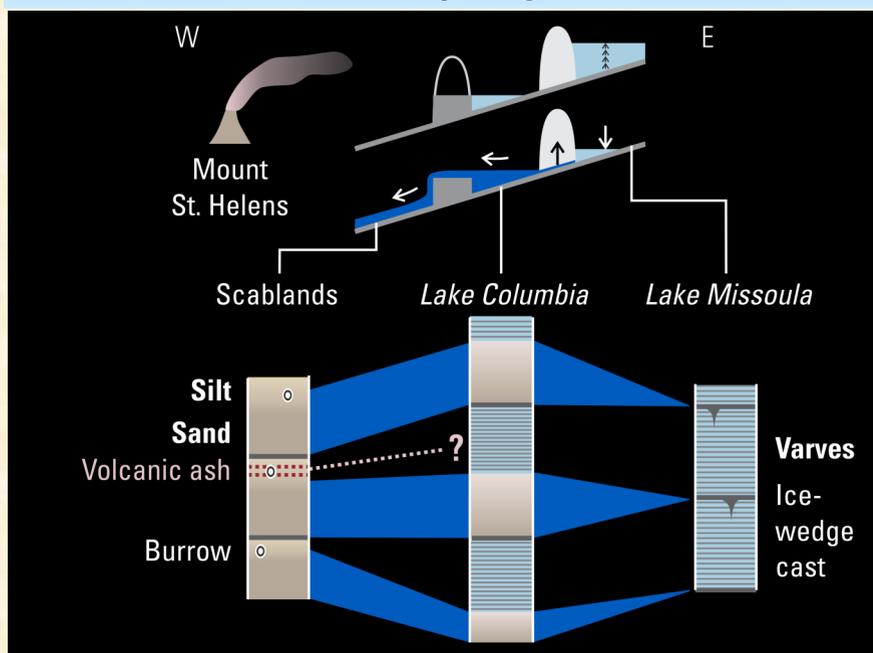
If you would like to volunteer to give a talk or lead a field trip for NWGS, please contact President [Maria Parente](#).

Please see the [NWGS website](#) for detailed announcements.
Contact webmaster [Matthew Porter](#) if you have any announcements to post on the website.

Announcements

- Please notice below that there is still one open Board of Directors position. Please contact President [Maria Parente](#) or any Board member for more information.
- The **spring field trip** will be a visit to the **Cascade Quarry and Proctor Creek Mines** near Gold Bar, led by George Bennett, Kurt Siegfried, and David Boyer. The Cascade Quarry is a hard rock operation and has some excellent exposures along several benches. Proctor Creek Quarry is both a sand and gravel and hard rock operation. There is an excellent outwash exposure in the quarry (that is currently being mined) and there will be drill core and outcrop to look at that is related to the hard rock portion of the mine that is being permitted.
- Next **Board of Directors meeting**: Tuesday, November 19, 6:00 pm via Zoom. Members are welcome to attend. Please email nwgs.secretary.com for the Zoom link.

Photo Spotlight



Graphical abstract.

About NWGS

The [Northwest Geological Society](#) is a non-profit educational organization which provides a forum for information and discussion on Northwest geology and related topics. The Society sponsors talks by leading academic and professional geologists at its monthly meetings, conducts field trips to locales of regional geologic interest, and publishes meeting summaries and field guides based on those activities. Membership is open to anyone interested in regional geoscience issues.

Program meetings are the 2nd Tuesdays, October through May at the [Fauntleroy YMCA in West Seattle, 9140 California Ave SW, WA. 98136](#). Reservations are required to attend in-person (Member dinner: \$40; Non-member dinner: \$50; Student dinner: \$10; Talk-only: \$10; Student talk-only: free).

Field trips (members only): The Society sponsors two overnight field trips each year, one in the fall and one in the spring, to locales of regional geologic interest.

Membership is open to anybody with an interest in geology. **Annual dues**: Professional: \$55; Student: \$10. **To join or pay annual dues**: go to the [NWGS website](#), or visit our website for more details. We look forward to seeing you soon!

Recommended Readings

Brothers, D.S., Sherrod, B.L., Singleton, D.M., Padgett, J.S. Hill, J.C., Ritchie, A.C., Kluesner, J.W., and Dartnell, Peter, 2024, Post-glacial stratigraphy and late Holocene record of great Cascadia earthquakes in Ozette Lake, Washington, USA, *Geosphere* (2024) 20 (5): 1315-1346, DOI: <https://doi.org/10.1130/GES02713.1>.

Mann, D.H., and Gaglioti, M.V., 2024, The Northeast Pacific Ocean and Northwest Coast of North America within the global climate system, 29,000 to 11,7000 years ago, *Earth-Science Reviews*, Vol. 254, July 2024, 104782, DOI: <https://doi.org/10.1016/j.earscirev.2024.104782>.

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

To update your account information, go to [NWGS.org/membership](https://nwgs.org/membership).
Questions or comments? Contact President [Francois Lalague](#).

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