

NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology
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May, 2017 Newsletter

Volume 31, Number 5



May 9 Program Speaker

Speaker: Don Reichmuth, Geomax PC

Title: The Gigantic Arctic Basin Lake and Outburst Flood That Dominated the Last Glacial Period: A New Theory

Abstract: Glacial Lake Reichmuth (GLR) formed 29,000 calendar years ago (cal yrs BP) when the Arctic Ocean Ice Sheet fully grounded along the Continental Shelf from the Lena River in Siberia eastward to the Canadian Arctic Islands. This grounding prevented the northward flowing rivers in Siberia, Alaska and Canada from draining into the Arctic Basin. Local alpine glaciers on the Chukotka and Seward Peninsulas had earlier shut off all flow through the Bering Strait so GLR outflow was forced to use outlets that passed through Canada. The initial outlet was in the vicinity Reindeer Lake in Central Canada at an elevation of about 320 meters. The formation of GLR caused a major climate change and triggered the start of Marine Isotope Stage 2 (MIS 2).

About 25,600 cal yrs BP, the Hudson Bay Ice Sheet enlarged sufficiently to shut off the Reindeer outlet. The outlet then shifted to McDougall Pass in the Canadian Richardson Mountains at 365 meter elevation. This flow rapidly breached the divide between the Yukon and the Old Crow Basins and caused the Porcupine River to begin to flow into the Yukon River system. The climate warming after the Last Glacial Maximum (LGM) 21,800 cal yr BP caused the Bering Strait glacial ice dam to catastrophically fail 14,500 cal yrs BP. This massive outburst flood triggered the Bolling Melt Water Pulse (MWP 1a) that ended Marine Isotope Stage 2 (MIS 2) and caused worldwide sea level to rise about 2.5 meters in about 3 years. This rapid sea level rise destabilized all of the world's tide water glaciers. In the Puget Sound Basin the glacial expansion was stopped and glaciers began to rapidly retreat.

Fresh water outflow from GLR through central Canada from 29,000 to 25,600 cal yrs BP would have provided optimum conditions for human migration from the Yana River vicinity in Siberia to the St. Lawrence River region. Northern Hemispheric solar heating had peaked some 6,000 years earlier and the climate had started to get colder. GLR would have provided water transportation all the way from Siberia to the Atlantic Seaboard. The path was there and the pressure to outrun the cold would have been a powerful driving force pushing migration to the Americas.

PROGRAM DINNER RESERVATIONS: NWGS members: **\$40**; Non-members: **\$45**; Full-time students : **\$20**. Add \$5 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 Secretary [Beth Tanner](mailto:beth.tanner@nwgs.org) with questions about dinner reservations.

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](http://www.talaris.com), 4000 NE 41st St., Seattle, WA., 98105. **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 (**SEE MAP ON P. 3**).

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](#) 

Upcoming Speakers and Field Trips

Spring Field Trip: Eric Cheney, UW ESS, *The Geology of the Sanpoil Syncline and the Okanogan Metamorphic Core Complex*, North-Central Washington, May 5-7, 2017 (Full). Contact [Kathleen Goodman](mailto:kathleen.goodman@nwgs.org) to inquire about openings due to cancellations.

Fall Field Trip: Probably a one-day field trip to a local quarry in September or October. Watch for a separate email over the summer.

If you would like to volunteer to give a talk or lead a field trip for NWGS, please contact President [Scott Calhoun](mailto:scott.calhoun@nwgs.org).

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

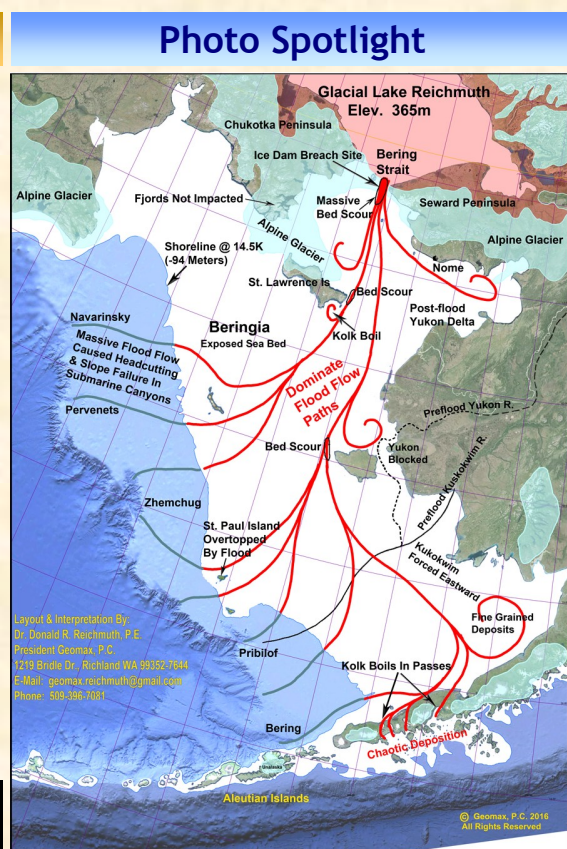
Contact webmaster [Julie Masura](mailto:julie.masura@nwgs.org) if you have any announcements to post on the website.

Announcements

- The **2018 NWGS Symposium** dates February 16 (technical sessions), 17 (public sessions), & 18 (field trip). Save the dates!
- NWGS has renewed its contract with the **Talaris Conference Center** through May, 2018. This is good news, as this venue is working well, and there are very few other acceptable options. Thanks to President Scott Calhoun for finalizing the arrangements.
- The field trip guidebook from the 2016 NWGS field trip to Scotland, *The Grand Geologic Tour of Scotland*, compiled by Kathleen Goodman from contributions of many of the participants, is now available. Please contact Publications Coordinator [Tom Bush](#) if you would like a digital copy sent to you (available only if your annual dues are current).
- If you have an **unusual rock**, please bring it to show! You could also bring anything else of a geologic or scientific nature such as maps or books, especially ones that you have authored.
- Next **Board of Directors meeting**: May 9, 2017, 4:30PM, Talaris Conference Center.

YOU would like to be involved!

Right: Glacial Lake Reichmuth outburst flood flow across Beringia 14,500 calendar years B.P. Figure submitted by D. Reichmuth.



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: \$40; Student: \$5. **To join or pay annual dues:** send a check payable to NWGS to Secretary [Beth Tanner](#), 4616 25th Ave NE #397, Seattle, WA. 98105. 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

Cheney, E.S. (Editor), 2015, Geology of Washington and Beyond: From Laurentia to Cascadia, University of Washington Press, Seattle, 350 p.

Unruh, Jeffrey, and Humphrey, James, 2017, Seismogenic Deformation Between the Sierran Microplate and Oregon Coast Block, California, USA, *Geology*, Vol. 45, No. 5, p, 415-418, doi: 11.1130/G38696.1

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 Membership Chair [George Bennett](#). Questions or comments? Contact President [Scott Calhoun](#).

Photo Spotlight

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HOW TO FIND THE NWGS MEETING SITE IN THE PACIFIC BUILDING AT THE TALARIS CONFERENCE CENTER

