



## NORTHWEST GEOLOGICAL SOCIETY

A regional association of professionals, students & others interested in geology  
Please browse [www.nwgs.org](http://www.nwgs.org) for more about us

### December, 2022 Newsletter

Volume 36, Number 9

#### December 13 Program Speaker

The [Zoom meeting link](#) will be in the meeting reminder email from [NWGS Secretary](#) to all registered members prior to the meeting.

If you are not a member, please email [NWGS Secretary](#) for the link.

Reservations are not needed.

6:30pm: No-host social hour small group break-out sessions; 7:30pm: Speaker program

**Speaker:** Tom Bush, Pierce College Puyallup

**Title:** Stratigraphic and Structural Controls of Landscape Development, San Rafael Swell and Capitol Reef National Park Areas, South-Central Utah

**Abstract:** The San Rafael Swell and Capitol Reef National Park lie within the northwest portion of the Colorado Plateau, a vast roughly circular area centered on the four-corners of Utah, Colorado, New Mexico, and Arizona. This region attracts millions of visitors per year to the numerous public lands who marvel at the scenic landscapes, and for good reason. Rock formations in the plateau range in age from Proterozoic to Paleogene and record a long and complex geologic history. Although igneous and metamorphic rocks are present throughout the region, the landscapes are dominated by horizontal to somewhat deformed drab to colorful sedimentary rocks. The mostly horizontal, colorful strata in many areas are deeply carved, forming spectacular incised meanders, deep canyons, mesas, buttes, pinnacles, stone arches, and natural bridges. The spectacular landscapes have evolved over the last few million years during uplift of the Colorado Plateau and have been greatly influenced by stratigraphic and structural controls. More specifically, the interlayering of hard, resistant strata with soft, nonresistant formations, combined with joint, fault, and folding development from several distinct episodes of deformation, have interacted to create the spectacular geomorphic features of the region.

The San Rafael Swell and Capitol Reef National Park areas of south-central Utah are dominated by regional-scale Laramide monoclonal folds that are cored by the resistant, large-scale, cross-bedded Triassic-Jurassic Navajo Sandstone. Softer, non-resistant strata stratigraphically above but structurally below the Navajo have eroded into strike-parallel valleys. Monocline uplift was accompanied by antecedent stream development across the Navajo, forming numerous slot canyons. Prominent sub-regional scale intersecting joint systems and faults have controlled running water pathways to also form slot canyons, as well as other scenic features such as natural bridges and arches.

**[JOIN THE PROGRAM VIA ZOOM!](#)** Join the program by clicking the link in the separate meeting email announcement. Until we start meeting in person again, there is no cost and a reservation is not needed. You may join for both the social hour (6:30 pm) and the speaker program (7:30 pm), or just the speaker program. During the speaker presentation, the host will mute your microphone, and we ask that you please also mute your camera so as to allow sufficient band width for the speaker program. A Q&A session will follow the presentation. If you have a question or comment during the presentation, click **Chat** at the bottom of your screen to type your question or comment to the general audience. You may also click the **Raise my hand** link to ask the speaker a question and the host will call on you. Click on the Zoom link above to join the meeting at the appropriate time as listed above on the day of the meeting. See the [NWGS website](#) for the full Zoom information.

#### Upcoming Speakers and Field Trips

January 10: TBA

February 14: TBA.

March 14: TBA.

April 11: TBA

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

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

## Announcements

- NWGS is still seeking a talented volunteer to fill the **President Elect** position. The time commitment is not enormous, and this is a rewarding opportunity to contribute to and help shape the direction of our fine organization. Please contact President [Matthew Porter](#) for more information.
- **Next Board of Directors meeting: December 13, 2022, 5:30 P.M. via Zoom.**

*YOU would like to be involved!*

## Photo Spotlight



South-east-directed view of the Waterpocket Fold, Capitol Reef National Park, from Strike Valley Overlook. This Laramide monocline stretches for nearly 100 mi (160 km) throughout south-central Utah and is the primary attraction of the park. The Triassic-Jurassic Navajo Sandstone forms the prominent east-facing dip surface on the right. T. Bush photo.

## 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 2<sup>nd</sup> Tuesdays, October through May. **Until we are able to meet in person again, meetings are held via Zoom (link is included in the email announcement to all members; nonmembers contact the [NWGS Secretary](#)).** Anyone may attend the speaker program at no cost, and a reservation is not needed.

**Field trips (members only):** The Society sponsors two overnight field trips each year, one in the fall and one 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

Billingsley, G. H., Huntoon, P. W., and Breed, W. J., 1987, Geologic Map of Capitol Reef National Park and vicinity, Emery, Garfield, Millard and Wayne Counties, Utah, Utah Geological and Mineral Survey, Salt Lake City.

Davis, G.H., 1999, Structural Geology of the Colorado Plateau Region of Southern Utah With Emphasis on Deformation Bands, GSA Special Paper 342, 157 p.

Finken, D. A. 1977, A History of the San Rafael Swell, Bureau of Land Management, Moab District Office, San Rafael Resource Area, Price, Utah.

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

To update your account information,, go to [NWGS.org/membership](#).  
Questions or comments? Contact President [Matthew Porter](#).

## NWGS Board

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AESI

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