

August 2020



MONTANA GEOLOGICAL SOCIETY NEWSLETTER

Vol 64 No. 10

Inside this Issue:



P2 / EDITOR'S LETTER

Our Newsletter Editor discusses the artistic inspiration provided by Montana geology.



P4 / IN THE NEWS

Catch up on all the headlines and newest geologic discoveries around the globe.



P6 / LUNCHEON

Last chance to register for the Petroleum Industry Appreciation Luncheon!



P7 / RYAN ZINKE

Read more on the biography of the upcoming Luncheon Keynote Speaker.



Contact Us:

mtgeo.org / montanageologicalsociety@gmail.com



Add our email address to your contacts so your Newsletters & Luncheon announcements don't end up in Spam!

PO Box 844
Billings, MT 59103

Letter from the Editor

Dear MGS Membership,

As the summer of 2020 draws to a close, I hope you've had the chance to get out and enjoy the immense beauty of the aptly named Big Sky State.

As you've seen mentioned in nearly every Newsletter, we love to see your photos of Montana geology. In addition to photography, we would love to see what else you might be creating while inspired by Montana's unique geology. Do you draw? Paint? Make LEGO sculptures? Kidding aside, Montana's magnificent landscapes have conjured inspiration for beginner and experienced artists alike for as long as humans have inhabited this beautiful land.

One place to view some of the earliest Montana artwork is the Pictograph Caves. Located on the outskirts of Billings, the Pictograph Caves feature over 100 pictographs created by prehistoric hunters, and the oldest rock art in the cave has been dated as over 2,000 years old. If you are looking for a day trip, the Pictograph Caves make a great choice.



Photographs from: <http://stateparks.mt.gov/pictograph-cave/>

If weather conditions have you stuck inside, it can be extremely rewarding to unplug from the news and spend time engaged in a mindful activity like art. The photo below is of an acrylic painting I made as a gift for a family member of one of her favorite places -- Paradise Valley, where the MGS plans to host a Field Conference in 2022. (Interested in Paradise Valley? Check out page 9!)

So, if you have photos of Montana geology or other Montana-inspired artwork to share, we'd love to see what you've created. Please send photos our way!

I wish you a wonderful remainder of August!

Best Wishes,

Jessica Renstrom
MGS Newsletter Editor



2019-2020 MGS Officers

President	Tom Hewett	406-281-8203
Vice President/Speaker Coordinator	Spenser Kuhn	406-696-0268
Treasurer	Jim Suydam	406-259-4124
Secretary	Sarah Friedman	406-896-5931
Past President	Sarah Friedman	

Who's Who of the MGS

BOARD OF DIRECTORS

Joe Carlisle
Don French
Robert Schalla
Steven W. VanDelinder

AAPG-ROCKY MOUNTAIN SECTION

Delgate: Mark Millard
Alternate: Don French
Foundation: Rob Diedrich 303-830-5875

COMMITTEES

Awards and Continuing Education:
Tom Hewett

Field Trips:
Gary Hughes 861-2072

University Liaison:
Steven W. VanDelinder

Publications:
Duncan McBane 252-3170


Montana Oil & Gas Fields Update:
Jim Halvorson 656-0040

PUBLICATION SALES

Doretta Brush 259-8790

NEWSLETTER EDITOR

Jessica Renstrom 208-2504



*Being a geology
major rocks.*

*Have something geological to sell,
give, or find?
Place a free ad in our MGS Classifieds!*



Contact the Newsletter Editor for more information.

Geology: *In the News*

“Exploding stars may have caused mass extinction on Earth, study shows”

“Killer cosmic rays from nearby supernovae could be the culprit behind at least one mass extinction event, researchers said, and finding certain radioactive isotopes in Earth's rock record could confirm this scenario.”

To read the article, please visit:

<https://www.sciencedaily.com/releases/2020/08/200818142104.htm>

“Lava tubes on Mars and the Moon are so wide they can host planetary bases”

“Subsurface cavities created by lava on Mars and the Moon could provide a shield against cosmic radiation, new research suggests.”

To read the rest of the article, please visit:

<https://www.sciencedaily.com/releases/2020/08/200805110118.htm>

“New acid mine drainage treatment turns waste into valuable critical minerals”

“A new way to treat acid mine drainage (AMD) could help transform the environmental pollution problem into an important domestic source of the critical rare earth elements needed to produce technology ranging from smart phones to fighter jets, according to scientists.”

To read the article, please visit:

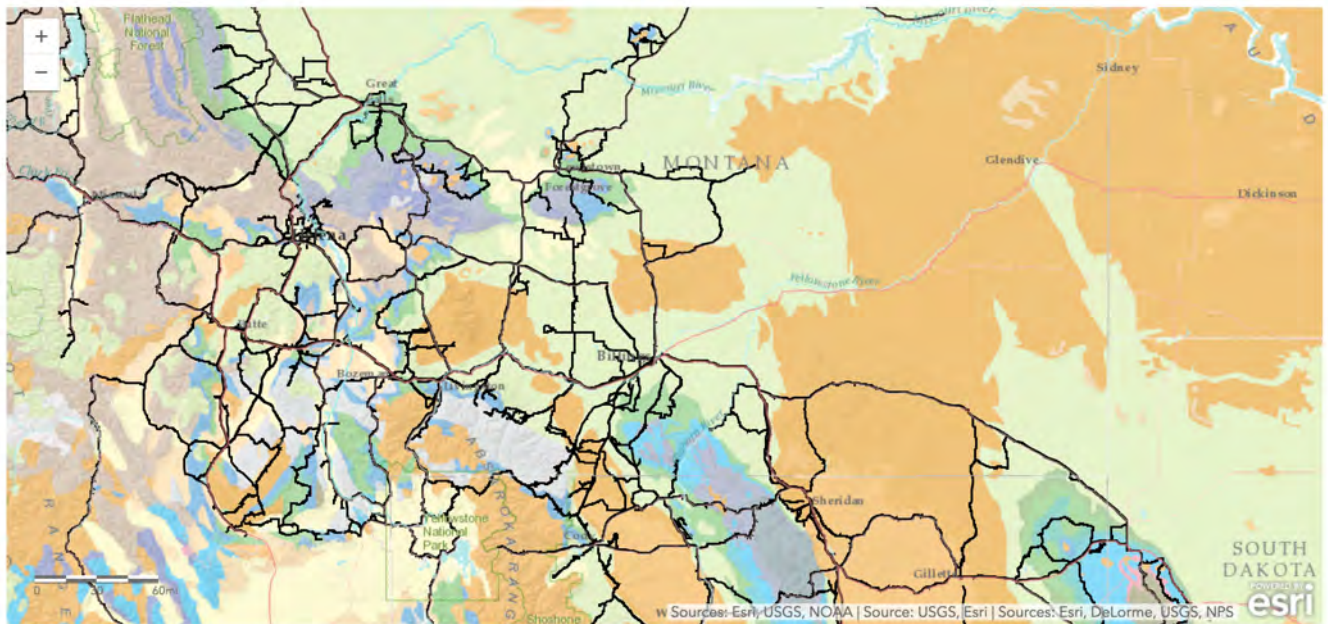
<https://www.sciencedaily.com/releases/2020/08/200805140103.htm>

Going on the road?

Don't forget to consult the MGS Interactive Road Log map!

To find a wide variety of road logs covering the entire state of Montana and areas of Wyoming, Idaho, & Canada, visit:

<http://mtgeo.org/resources/road-logs/>



Girls-n-Science

Unfortunately, due to COVID-19, Girls-n-Science has been canceled for 2020.

Thank you to all the MGS members who have volunteered during past years' events. Please keep an eye on the website for plans for the 2021 season.

<http://www.msubillings.edu/girls/>

Petroleum Industry Appreciation Day Luncheon

WEDNESDAY, SEPTEMBER 2, 2020

Keynote Speaker

MR. RYAN ZINKE

US Navy SEAL Commander, State Senator,
US Congressman, 52nd Secretary of Interior

“America’s Energy Revolution”

Place: Doubletree Hotel, 27 N. 27th St., 3rd Floor
Billings, Montana

Time: Registration opens at 11:30 a.m.
Luncheon begins at 12:00 p.m.

PETROLEUM INDUSTRY APPRECIATION DAY LUNCHEON HONOREES:

- Billings Geophysical Society
- Western Energy Alliance
- Montana Geological Society
- Society of Petroleum Engineers
- IPAA
- MT Association of Professional Landmen
- Montana Petroleum Association

PETROLEUM INDUSTRY APPRECIATION DAY LUNCHEON REGISTRATION:

Company/Affiliation: _____

Address: _____

Number of attendees: _____ @ **\$40.00 EACH** Total \$ _____

Attendees (for name tags): _____

Visa, MC, or AMEX Credit Card No. _____ Exp.Date _____ Security Code _____

Name _____ Billing Zip Code _____
(as it appears on card, please print)

Signature _____

Mail or Email to: Montana Petroleum Association
PO Box 1186
Helena, Montana 59624

Phone: (406) 442-7582
E-mail: mpa@montanapetroleum.org

PETROLEUM INDUSTRY APPRECIATION DAY LUNCHEON

KEYNOTE SPEAKER

September 2, 2020



MR. RYAN ZINKE

**US Navy SEAL Commander,
State Senator, US Congressman,
52nd Secretary of Interior**

“AMERICA’S ENERGY REVOLUTION”

Ryan was born and raised in Montana and attended the University of Oregon where he was awarded All-PAC 10 honors, the Sahlstrom Award and the prestigious Emerald Cup Award for academic, leadership and athletic achievement. He then attended US Navy Officers Candidate School and completed Navy SEAL Training in 1985 and was assigned to SEAL Team ONE. Highlights of Commander Zinke’s twenty-three year career in Special Operations includes two tours of duty at SEAL Team SIX, Acting Commander of Special Forces in Iraq, Task Force Commander in Bosnia and Kosovo, and served as the “Dean” of Special Warfare training. He was awarded the Bronze Star for combat in Iraq and is credited with conducting 360 combat missions and the capture or kill of 72 terrorists. He retired from active duty in 2008 and was elected as a Montana State Senator and later twice elected as Montana’s sole member of the US House of Representatives. He served on the House Armed Services and Natural Resources committees. In 2016, Congressman Zinke was nominated by President Donald J. Trump and later confirmed by the US Senate to serve as the 52nd US Secretary of the Interior. As Secretary, he was a champion of restoring the voice of state and local communities in land and wildlife management decisions, established and protected wildlife corridors, budgeted for the largest investment in our Nation’s history for National Parks, increased public access for recreation and traditional use, and was the principle architect of the American Energy “Dominance” policy. After 31 years of public service, President Trump accepted his resignation in 2019. The Honorable Ryan Zinke is the author of American Commander and serves on numerous boards. He holds an MBA in Finance, an MS in Global Leadership, and a BS in Geology. He is married to the former Lolita Hand of Santa Barbara, has three children and two grandchildren.

Do the price of textbooks have you feeling under pressure?

(See what we did there?)



Use PageLess to find your books, access codes, & class packages. It's free, easy to use, and will help you find all your materials at a "gneiss" price.

And that rocks.

PageLess

TEXTBOOKS SIMPLIFIED.



<https://pageless.us/>



Hydrometrics, Inc.
consulting scientists and engineers

Founded in 1979, Hydrometrics provides an expansive range of science and engineering services for the oil and gas and mining industries, ranging from the Arctic Circle to South America.

- ◆ Oil & Gas Industry Support
- ◆ Refinery & Marketing Terminal Environmental Support
- ◆ Civil, Geotechnical, Chemical, Geological, and Environmental Engineers
- ◆ Hydrogeology, Geochemistry, and Reclamation Specialists
- ◆ Permitting and Compliance
- ◆ EA and EIS Support
- ◆ Remedial Investigations and Construction
- ◆ SPCC and SWPP Preparation
- ◆ Dam Design and Investigation
- ◆ Water Rights
- ◆ Solid and Hazardous Waste Management
- ◆ Power Probe and Auger Drilling

Helena (406) 443-4150 • Billings (406) 656-1172
Kalispell • Whitefish • Manhattan
www.hydrometrics.com

ENVIRONMENTAL CONSULTING SERVICES

Hydrology | Geology | Engineering | GIS

- NEPA: CAT EX/EA/EIS
- GIS
- Expert Testimony
- Engineering Design
- Environmental Permitting
- Environmental Compliance
- Water Management
- Environmental Due Diligence
- Remediation

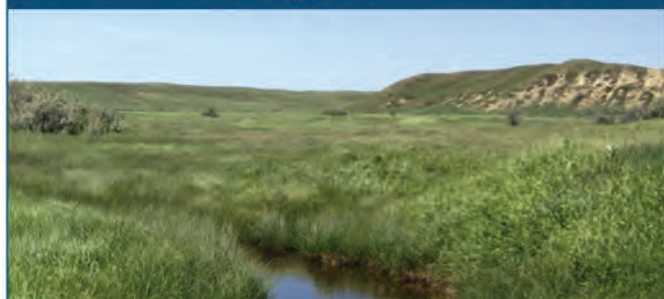
Independent Expertise in
Water Resources and the Environment

BILLINGS : 1500 Poly Drive Suite 103 | Billings, MT 59102 | 406.655.9555
HELENA : 303 Clarke Street | Helena, MT 59601 | 406.443.6169

www.hydrosi.com



HydroSolutions





SES

Geosteering Software

If horizontal wells affect your bottom line, visit us online or call. You'll be glad you did!

SES is for geologists who are dissatisfied with drafting-tool methods of geosteering horizontal wellbores. SES is 3D technical geosteering software that makes wellbore stratigraphic tracking quick-n-easy, accurate, and easily shared. Unlike any other geosteering software, SES provides a complete suite of software features to handle your horizontal drilling needs.

Ph. 720-279-0182

SES Geosteering Software

www.makinhole.com

Interested in placing an ad?

Contact Jessica Renstrom at montanageologicalsociety@gmail.com with your ad, or request pricing to create one for your business or event.

2020 Advertising Rates:
Full Page - \$100/month
Half Page - \$50/month
Quarter Page - \$25/month
Business Card- \$10/month

All ads must be prepaid.
Send payment to:
MGS, PO Box 844
Billings, MT 59103

Paradise Valley

Wanted:

If you know of a good trip or are working on a paper related to the geology of the region near Paradise Valley, please get in touch with the MGS Board.

We would love your input for the creation of a 2022 MGS Field Conference.

MONTANA GEOLOGICAL SOCIETY

PUBLICATION	QUANTITY	PRICE	TOTAL
2006 Montana Oil & Gas Fields CD		\$65.00	
2006 AAPG Datapages - MGS Publications DVD		\$180.00	
2006 AAPG Datapages - MGS Publications DVD (MGS Member price)		\$150.00	
2000 50th Anniversary Symposium		\$20.00	
1999 Thrust Systems of the Helena Salient		\$20.00	
1998 8th Int'l Williston Basin Symposium		\$20.00	
1998 8th Int'l Williston Basin Symposium Core Workshop		\$20.00	
1997 Big Horn Basin Symposium		\$20.00	
1997 MGS-TRGS: The Edge of the Crazies		\$20.00	
1997 AAPG - Rocky Mtn. Section Meeting / Abstract Volume		\$10.00	
1996 AAPG - Rocky Mtn. Section Meeting / Abstract Volume		\$10.00	
1993 Energy and Mineral Resources of Montana		\$20.00	
1991 6th International Williston Basin Symposium		\$20.00	
1991 Geology & Horizontal Drilling of the Bakken		\$20.00	
1991 AAPG - RMS Field Trip: Beartooth Mountains		\$7.50	
1991 AAPG - RMS Field Trip: Eagle Sandstone, Billings		\$7.50	
1991 RMS Field Trip #1 Nye-Bowler Linemont		\$7.50	
1991 Sequence Stratigraphy of Eagle Sandstone		\$7.50	
1990 Bakken Workshop Short Course Study Notes #1		\$10.00	
1989 Geologic Resources of Montana		\$20.00	
1986 Geology of the Beartooth Uplift		\$20.00	
1985 Montana Oil & Gas Fields		\$20.00	
1971 Stratigraphic Names of Montana		\$10.00	
1969 Economic Geology of Montana		\$20.00	
Shipping and Handling charges - \$5.00 per CD/DVD \$8.00 per book			
Total Due			

Billing / Shipping Information

Name _____ Company _____
 Address _____ City, State, Zip _____
 Email Address _____

Please make checks payable to: Montana Geological Society. Visa and MasterCard also accepted.

Visa / MasterCard (circle one) _____ Expiration Date _____
 Name as it appears on the Card _____
 Phone Number (_____) _____

Mail orders: Montana Geological Society, PO Box 844, Billings, MT 59103

Email orders: dbrush@ballardpetroleum.com

Phone orders: Doretta Brush (406) 281-8228

MONTANA GEOLOGICAL SOCIETY

P.O. Box 844

Billings, MT 59103

Membership Renewal

Last Name _____

First Name _____ **Middle Initial** _____

ANNUAL DUES:

_____ **\$20.00 Regular**

_____ **\$10.00 Student**

Please update the information below if needed. Please leave blank if nothing has changed:

Company/Affiliation _____

Mailing Address (work or home)

Street _____

City _____ **State** _____ **Zip** _____

Phone (w) _____ **Phone (h)** _____ **Phone (c)** _____

E-Mail _____

AAPG Member (please circle) YES NO

Education (School, Degree, Year)

Degree #1 _____

Degree #2 _____

Degree #3 _____