



WELCOME NEW MEMBERS

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GEOLOGICAL SOCIETY OF MINNESOTA

NEWS

SUMMER 2010
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<http://www.gsmn.org>

Geology Vacation Ideas

Geocaching is an adventure game for Global Positioning System (GPS) users. It involves the creation and placement by players of caches containing a logbook and often other items and the subsequent searching for and locating of these caches by other players.

Hunting for a geocache can be an individual pursuit or, more commonly, a group or family affair. Some players use the game as a way to travel to unusual places in the country or to see features that are not marked on tourist maps.

Earthcaches are a type of “virtual” geocache—that is, they do not involve the creation of physical containers hidden at sites, but rather, Earthcache visitors learn about Earth through the cache notes when they visit the site. Unlike “traditional” caches, the visitors do not leave or remove items from a cache. Some Earthcaches may be established at places where geocachers can log their visits in a book at a visitors’ center. Earthcaches provide not only location but also a lesson about what the geocacher is seeing.

Before you head out on vacation this year, check out the website www.earthcache.org. All you’ll need is a GPS unit and lots of curiosity to turn your vacation into a geological adventure.

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EDITORS'S NOTES

MEMBERSHIP CHAIR

Darrell Mytty is our new Membership Chair replacing Katy Paul. Katy has been the chairperson since 2006. Thanks for a job well done Katy. If you need to renew your membership or are new to GSM, contact Darrell at (320) 286-5821 or write to the address below.

NEW TREASURER NEEDED

Paul Jansen has resigned as our Treasurer so we need a new person to take over this position. Please contact President Dick Bottenberg if you are interested.

GSM NEWS

Editor: Judy Hamilton
Production Mgr: Katy Paul

Geological Society of Minnesota is a 501(c)3 nonprofit organization. The purpose of this newsletter is to inform members and friends of the activities of the Geological Society of Minnesota. GSM NEWS is published four times a year: **February 15, May 15, August 15, and November 15.** GSM NEWS welcomes unsolicited Geology and Earth Science related articles and photographs. Deadline for article submission is the first of the month, before the date of publication. Send all material for GSM NEWS to the address below.

OFFICERS:

Dick Bottenberg, *President*
Janine Atchison, *Vice President*
Vacant, *Treasurer*
Ly Preece, *Secretary*

Directors in addition to the officers listed above: Allan Bowles; Paul Jansen; Darrell Mytty; Alan Smith; Harvey Thorliefson; and Theresa Tweet.

Send all GSM membership dues, change of address cards, and renewals to:

GSM Membership Chair
P.O. Box 390555
Edina MN 55439-0555

Membership levels are \$10 Full-Time Students;
\$20 Individuals; \$30 Families

SUMMER FIELD TRIPS 2010

So far there are two definite field trips for this summer and one tentative one. There may be more and the notification will be sent by e-mail.

Geology of the Colorado Front Range and Mineral Belt

Sunday, June 13 – Friday, June 18

This trip will start in Golden, Colorado, move to Idaho Springs and end in Colorado Springs. Quite a few hikes are planned, but there are alternate activities for those who do not wish to hike. Among the things we will visit are Dinosaur Ridge, the Red Rocks Amphitheater, Morrison Museum of Natural History, Colorado School of Mines Museum, National Earthquake Information Center and Florissant Fossil Beds National Monument. The cost of the trip will be about \$10 per day for honorariums for the local guides. Participants will need to provide their own transportation to and from the field trip and find their own accommodations. There will be a pre-trip information meeting June 2 at Metropolitan State University. Anyone interested should contact Randy Strobel at 651-731-0458 or GSM_field_trip_2010@hotmail.com

Louisville Swamp Sunday, Aug. 15

We'll be walking the 4.5 mile Mazomani Trail in the Louisville Swamp in Shakopee. The trail head can be reached from the Renaissance Festival parking lot just off Hwy 169. By mid-August, the swamp should be fairly dry. We'll see glacial erratics, river processes, historic homestead sites and, hopefully, lots of wildlife. If you need more information, please contact Randy Strobel.

Thunder Bay September

This is a tentative field trip. More details will be forthcoming.

Submitted by Janet Hopper, Field Trip Chair

VOLCANO MUSINGS

Whether it is tsunamis, earthquakes, floods, fires, volcanoes, or hurricanes, natural phenomena get a lot of media attention, especially when tsunamis wipe out entire cities, or when earthquakes occur under highly populated areas and cause massive property destruction and loss of human life. This year, it seems to be the year of the volcano – the Eyjafjallajökull volcano in Iceland.

Media reports on the Eyjafjallajökull volcano have exposed the horrendous difficulty non-Icelanders have in pronouncing Icelandic words. But it has also introduced us to many new words, some used correctly and some not so much. (The word Eyjafjallajökull means “island mountain glacier”, curiously it does not mean “island mountain glacier volcano”. The Icelandic word for volcano is eldfjall).

In Iceland, you can have a volcano underneath a glacier. So in addition to the eruption with its cloud of ash and steam and accompanying earthquakes, you can also have a flood. This sort of flood is called a jokulhlaup in Iceland. I thought that it must be the same thing as a lahar, but after researching the term, it appears that glacial melt water caused by a hot volcano is the key difference. Lahars happen when the heat from a volcano melts the snow that is on the surface, which then begins a slide, picking up debris, rocks, and anything else in its path, on the way down the mountain. A jokulhlaup is a raging torrent of melted glacial water containing ice blocks, sediment, and volcanic products that pours out from beneath the ice sheet. The melted water can collect in a pocket under the glacier until the accumulation is so great, it bursts through the ice and floods the surrounding countryside, engorging rivers, and dropping its sediment load on farmland. Since Iceland has over 30 volcanoes, and has on average 20-25 eruptions per century, it seems right that the English language should adopt the Icelandic word “jokulhlaup”. After all, Hawaiian has given us “aa” and “pahoehoe” (lava types).

Not only are Icelandic names difficult to pronounce, understanding the description of a volcano can be particularly confusing too. Volcanoes can be described by shape, by eruption type, and by the materials that spewed out of it. In the case of Eyjafjallajökull, it is a stratovolcano, (shape) and the recent activity was steam driven, or a phreatic eruption (type) and the ash clouds contained a high percentage of silica (materials). Eyjafjallajökull’s location beneath a glacier dictates the initial eruption type. The sub-glacial location causes melt water to accumulate, which then boils and turns to steam, which then erupts along with ash, gas, ice blocks, and bombs. Once the ice cover is melted, and the volcano has access to the open air, the eruption type could become phreatomagmatic or phreatoplinian. Back in March, when the first reports of eruptions came in from Iceland, it was a “Stromboli” eruption, mildly explosive lava fountains, with viscous lava flows, on the flanks of the mountain – not under the glacier. From these reports it appears that volcanoes don’t have the same eruption style with every eruption.

Iceland has the dubious honor of not only sitting on top of a hot spot, or mantle plume, but it also straddles the mid-Atlantic rift, which marks the plate boundary between the North American tectonic plate and the Eurasian plate. Also known as a spreading center, the rift is widening at the rate of about 4 centimeters per year. The mantle plume channel reaches the lithosphere beneath another Icelandic glacier, the Vatnajökull, and has contributed to the topography considerably, making this the highest elevation in Iceland. So not only is Iceland getting wider, it is getting thicker, in some places. With all this additional new land, Iceland will be able to support the ever-growing hordes of tourists who want to see active volcanoes up close. Iceland’s tourism industry currently offers snowmobile trips to the front row of the Eyjafjallajökull show as well as helicopter rides over the summit – upwind of the ash plume of course. While residents to the south and east of the volcano live in fear of the next jokulhlaup, and fight to save their livestock from the toxic ash fall, the tourism industry has a new attraction to promote.

No one knows how long this eruption will last. Ironically, if it continues some people will lose everything; others will make a profit. It just depends on which side of the volcano you are on and which way the wind blows.

Submitted by Katy Paul

GSA Annual Meeting – Minneapolis – 2011

The Geological Society of America Annual Meeting that will take place at the Minneapolis Convention Center from October 9 – 12, 2011, will be a major event that will be designed to be a highly constructive step forward in the progress of the broad range of objectives held by the local, regional, national, and international geological research and education community. While GSA headquarters staff in Boulder will tend to most meeting arrangements, the local committee will bring the local and regional perspective to the planning, so that we will assist the HQ team where and when we can, with the aid of our local knowledge, we will ensure that all opportunities are seized to optimize the meeting for the benefit of the local and regional geological community, and we will give the meeting a unique and distinctive flavor. From the local committee perspective, our goal is to maximize attendance, as attendance drives the success of all aspects of the meeting, and we are determined to maximize benefits for the regional geological community – we thus are passionately committed to making this the best meeting possible for the local and regional community.

This continental and global meeting will be hosted in the GSA North Central region for the first time since St. Louis 1989, Indianapolis 1983, and Cincinnati 1992 and 1981. Past meetings include Dallas 1990, San Diego 1991, Cincinnati 1992, Boston 1993, Seattle 1994, New Orleans 1995, Denver 1996, Salt Lake City 1997, Toronto 1998, Denver 1999, Reno 2000, Boston 2001, Denver 2002, Seattle 2003, Denver 2004, Salt Lake City 2005, Philadelphia 2006, Denver 2007, Houston 2008, and Portland 2009. Past Minneapolis meetings were held in 1972, 1956, and 1939. Forthcoming meetings are planned for Denver 2010, Charlotte 2012, Denver 2013, Vancouver 2014, and eastern US in 2015.

Attendance at recent meetings has consistently been just over 6000. The record for a conventional meeting was 7478 for the GSA Centennial in Denver in 1988. The joint meeting with soil scientists and others in Houston in 2008 was attended by 9943. Attendance at GSA North Central 2005 in Minneapolis greatly exceeded expectations, due to excellent committee work on promotion and session recruitment.

The meeting will take place October 9 – 12. The majority of recent meetings have occurred in late October, while mid-November meetings include Charlotte 2012, Boston 2001, and Reno 2000. A meeting even earlier than Minneapolis 2011 was Houston 2008, from October 5 to 9. The early date for Minneapolis 2011 will facilitate field trips prior to the onset of winter

The Minneapolis Convention & Visitors Association played a big role in bringing GSA 2011 to Minneapolis, and they will be very active in helping to arrange the meeting and hotel facilities. They also will play a big role in promotion, given their highly professional resources designed to attract visitors to Minneapolis. We are very happy to be working with Tamara Spude as our contact at the Convention & Visitors Association, who is planning activities such as a booth in Denver at the annual meeting this fall.

The Organizing Committee consists of General Chair Harvey Thorleifson, Vice Chair Carrie Jennings of Minnesota Geological Survey, GSA Senior Director of Meetings Melissa Cumiskey, Minneapolis Convention & Visitors Association representative Tamara Spude, Technical Program Chair Dave Bush of University of West Georgia, Field Trip Chair Jim Miller of UMD, Field Trip Co-Chairs George Hudak of UMD, Patrick McLaughlin of Wisconsin Geological and Natural History Survey, Chad Wittkop of Minnesota State University, Mankato, and Calvin Alexander, University of Minnesota, Twin Cities (UMTC). Sponsorships Chair is Curt Hudak of Foth Infrastructure & Environment, LLC, Special Events Co-Chairs are Amy Myrbo of UMTC, Laura Triplett of Gustavus Adolphus College, and Valerie Stanley of UMTC. Undergraduate Education programs are being led by Cathy Manduca of Carleton College, along with Kent Kirkby of UMTC and others. The Short Course Co-Chairs who are working with GSA HQ are Mindy Erickson of USGS and Dan Hunter of Summit Envirosolutions, Inc., while Community Education Co-Chairs are Karen Campbell of UMTC, as well

as Pat Hamilton and Molly Phipps of Science Museum of Minnesota. K-12 Education Co-Chairs are Kent Gordon, Minnesota Earth Science Teachers' Association, and Lee Schmitt, Hamline University.

In addition, the committee consists of an At-Large Team that includes the GSM President, Dick Bottenberg. The At-Large Team is representative of the full range of educational institutions, organizations, professions, government agencies, and businesses in Minnesota and adjacent states and provinces. The at-large committee members have agreed to advise the subcommittee chairs, and to communicate with their sectors, although they may take on tasks over time. The at-large members thus have a key role in ensuring that the views of the entire regional community will guide the committee, and will play a big role in communication with prospective meeting participants across the region.

Together, the Organizing committee will do everything in their power to ensure that GSA Minneapolis 2011 will be the best meeting possible for the local and regional geological community.

Submitted by: Harvey Thorleifson Ph.D., P.Geo., D.Sc., Director, Minnesota Geological Survey; State Geologist of Minnesota; Professor, Department of Geology and Geophysics; University of Minnesota; 2642 University Ave W, St Paul, MN 55114-1057 USA; Telephone 612-627-4780 ext 224; Fax 612-627-4778; thorleif@umn.edu

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Walleye in Lemon Dill Butter
Pine Portage Shore Lunch

This simple recipe is a nice alternative to fried walleye at shore lunch sites. It tastes almost like lobster! You'll really be surprised! Serves 6

12 - 18 Walleye fillets
1/2 # Salted Butter
3 Fresh Lemons
1 Tablespoon Dill
Old Bay Seasoning

- Fillet and skin walleyes, rinse and pat dry.
- Slice one lemon thinly and set aside.
- Have your camp fire going so your coals and flames are about 8-12 inches below your grate.
- Use heavy duty aluminum foil and triple it up for strength (make this large enough to accommodate all filets in a single layer). Use part of butter to layout pats across the foil, generally one or two pats per fillet. Lay fillets on top of butter pats. Season lightly with Old Bay Seasoning.
- Melt remaining butter in a small pot and squeeze the juice of two lemons into butter, adding 3/4 of the dill to the mixture. Bring to a simmer and let stand for five minutes.
- Pour butter mixture over fillets, place sliced lemon over fillets and sprinkle with remaining dill. Cover with a single sheet of foil sealing tightly and place on grill. After 15 -20 minutes the top should rise up and then poke two small holes to release the steam. Leave on grill five minutes longer.
- Serve with your normal shore lunch goodies, beans and potatoes and bread.

Jim Paja
Guiding out of Pine Portage lodge in northern Ontario

<http://www.walleyecentral.com/recipe.shtml>

This recipe was found by our newsletter editor and it sounded so good, especially since fishing season has just opened in Minnesota. If anyone tries it, please let us know.

**Minnesota State Fair
August 26 – September 6, 2010**

In the next couple of months, the Show and Exhibit Committee will be putting together a list of workers for the upcoming State Fair booth. We will need 72 people, each to work a 4-hour shift at the booth. (You can work more shifts if you have the time and are so inclined.) Each day is divided into three shifts, 9 a.m. to 1 p.m., 1 p.m. to 5 p.m., and 5 p.m. to 9 p.m.. Two people are required (by the State Fair Administration) for each shift. The booth cannot be unattended during the open hours of the Fair.

You don't need to be a geologist to staff the booth. You just need to hand out brochures, smile and maybe talk about the rocks and fossils on the table. People will like to talk to you about their special found treasures also. The children are especially excited about the rocks in the display. Books are on the table and photographs (usually of field trips) are on the backdrop

Even though there are several months before the Fair starts, look at your calendar and decide what days work for you. You can also talk to your buddy(s) and friend(s) to see if they want to work with you.

It's really a fun experience and a good way for folks to find out about us.



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