



Granite State Geologist

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www.gsnhonline.org

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MESSAGE FROM THE PRESIDENT Submitted by Jutta Hager

We have had a good year with excellent speakers and turnout, all the more impressive since each of the meetings took place at a different place. I find it interesting that after our initial move from Concord to Boscawen, we are now back in Concord, at The Red Blazer just down the street from the Cat-n-Fiddle. Chris Laughrey proved to be a good choice as our April speaker; his talk on the Marcellus Shale was both informative and entertaining, a good combination for any presentation after a filling dinner. We estimate approximately 80 attendees, who seemed to acclimate to the new location quite well. Thanks again to Tania Coffin, who helped bring in Chris through her Pennsylvania connections.

Based on the success of our April meeting in terms of food as well as space, we have decided to extend our contract with the Red Blazer for the 2009-2010 meetings. In our ever-successful mineral raffle, John McRobbie won the 1st prize epidote in calcite, George Mavris the 2nd prize hematite from Elba, and Vinnie DelloRusso the 3rd prize Herkimer diamond (last-minute donation by Suzanne Wall).

Thanks to the persistence and resilience of Lee Wilder and Ralph Wickson, we have another Isles of Shoals field trip lined up for this summer. You will find the first announcement elsewhere in the Newsletter, as well as on the website. Hold the date of Saturday, August 15th for a day trip at Star Island, with Wally Bothner providing the geological commentary. Note that the trip will go rain or shine, so please all send out your “positive waves” for storm-free weather. And keep checking the website for updates!

NHGS Expands Ground Water Monitoring Network

Submitted by David Wunsch, State Geologist, and Lee Wilder, Outreach Coordinator

The NHGS is installing monitoring wells to create an ambient bedrock monitoring well network. Ambient, or unstressed wells, reveal natural conditions with minimal influence from pumped wells, or known contamination sites. Characterizing ambient conditions is important for drought management, and determining background levels of natural contaminants. In addition, the ambient bedrock wells can be used to monitor any effects of climate change on statewide water



levels, which may be important in the future. NHGS design includes installing two bedrock wells at a site in order to create a well nest that will allow the state to monitor the shallow and deep bedrock flow systems, which will provide data that will help hydrogeologists address several questions related to ground-water recharge and chemistry. NHGS staff used a geographic Information System (GIS) to combine geologic formations with well statistics derived from the state's Water Well Inventory database to determine the most prolific rock formations that comprise the overall bedrock aquifer, and then match state conservation or park lands with the geology to locate prospective sites for well installation.

The NHGS will install wells in state parks or conservation lands through an MOU with the Department of Resources and Economic Development (DRED) in order maintain long-term access to the wells, and find areas that are minimally-impacted by man's activities to approximate a natural condition.

Installing the wells on state land will also help protect the state's investment in this infrastructure. NHGS also had to consider access in the winter, and proximity to the present driving loop that staff drive to collect water levels from the current network of shallow, surficial wells. Currently, the NHGS staff accrue approximately 1,000 mile per month collecting water level measurements around the state. The addition of digital data loggers will allow data from some wells to be access remotely, saving time and costs. To date, well nests were recently completed in Annett, Eaton, and Upton-Morgan State forests, and Coleman State Park.

In addition to the ambient well network, the state also needs a stressed well network to see the effect of water use and pumping in regions that are widely utilizing ground-water supplies. This will allow water managers to monitor the long-term impacts, if any, on ground water in areas that are "stressed" by society's needs. DES recently hosted a meeting of the SB 155 Ground Water Commission's Data Needs Subcommittee to gather input from ground water scientists from state agencies, consultants, and academia to enhance data collection and monitoring of the state's ground water.

NHGS WEBSITE UPDATED

The NHGS recently updated its website. The new site has information on NHGS programs, maps and data. and links to other geoscience information sites. The website is still being constructed and is in a steady flux of improvement, so please check back periodically for updates, and additional access to geologic information. The site address is: <http://des.nh.gov/organization/commissioner/gsu/index.htm>.

NHGS SPRING GROUNDWATER LEVELS

Ground-water level measurements for March, April and May 2009 were collected by NHGS staff members Genevieve Al-Egaily and/or Kristen Svendsen.

March 23-25, 2009: The statewide average ground-water level showed a 0.89-foot increase from February. Increases were seen in all wells except for Greenfield, Ossipee, and the well at the Concord airport which showed small decreases of 0.06, 0.17 and 0.05 feet respectively. When compared with March 2008, the statewide average ground water level decreased 0.08 feet.

April 22-24th, 2009: The statewide average ground-water level showed a 0.65-foot increase from March. The largest increases when compared to March 2009 were seen in the Albany wells. These are the only wells where a significant snow pack still remains, and recharge from the snow melt may be a contributing factor. When compared with April 2008, the statewide average ground water level decreased 0.50 feet.

May 26-28th, 2009. The statewide average ground-water level showed a 0.85-foot decrease from April. When compared with May 2008, the statewide average ground water level decreased 0.13 feet.

If you would like to view historical groundwater data, please go to <http://nh.water.usgs.gov/WaterData>.

ROCK AND MINERAL TALK BOXES AVAILABLE

Need to give a geology talk? As a GSNH Member you may borrow our Rock and Mineral Talk boxes. Complete with hand samples, text, posters, etc. Most anything you would need to give an interesting presentation. They are stored at the NH Geological Survey in Concord, NH and can be reserved by contacting: geology@des.nh.gov

CALL FOR NOMINATIONS

The next election of the board of directors will be coming up in October 2009. This is a great way to get more involved in GSNH! The BOD meets quarterly at the office of a different board member to discuss society business and send out the newsletters. Some of the BOD members also serve as committee chairpersons. There is a lot of camaraderie at the meetings and we always have a lot of fun! Nominations are now being accepted for all positions. Please note that due to term limits the following positions will not have a member running for re-election: Society VP, Secretary, Treasurer and one Member-at-Large position. We need you to consider joining the board! Those nominated will be contacted for their acceptance of the nomination and biographical information will be requested for publication with the list of nominees. The slate of candidates will be published in the fall newsletter. Please send nominations to either of the Nominating Committee members: Paul Rydel (prydel@sanbornhead.com) or Julie Spencer (julie.spencer@aecom.com). Nominations will be accepted until August 28, 2009.

CORPORATE SPONSORSHIPS FOR GSNH Submitted by Julie Spencer

We are initiating a corporate sponsorship program for GSNH. There are three options available: the Summer Field Trip, the publication of the Membership Directory and our tri-annual Dinner Meetings. The Summer Field Trip will be held on August 15, 2009. Details about the field trip are published in this newsletter and will also be available on the society website. We are seeking a single sponsor for the field trip at the level of \$500. Field trip sponsorship will include:

- ✓ The logo of the corporate sponsor on the field trip handouts and the notice posted on the GSNH website
- ✓ A link to the sponsor's website on the field trip notice page of the GSNH website
- ✓ Introduction during the field trip and an opportunity to speak to the attendees

The deadline for field trip sponsorship is July 15, 2009. This fall the GSNH will publish its biennial Membership Directory. We are currently accepting advertisements which will be printed in the directory at the following sizes and prices: Full page (8 x 5 inches) - \$300, Half page (4 x 5 inches) - \$150 or Quarter page (2 x 5 inches) - \$75. Advertisements will be accepted until August 15, 2009.

The Fall Dinner Meeting will be held on October 15, 2009 and subsequent meetings will be held in January and April 2010. Corporate sponsorships for dinner meetings are available for \$250. Meeting sponsorship will include:

- The logo of the corporate sponsor on the meeting notice
- A link to the sponsor's website on the meeting announcement page of the GSNH website
- Introduction during the meeting, an opportunity to speak to the attendees and to provide literature for the tables

Meeting sponsorship must be made at least 6 weeks prior to the meeting date in order to be included on the meeting notice. The deadline to be a sponsor for the October meeting is September 3, 2009. All requests for sponsorship or advertising must be directed to: Julie Spencer at julie.spencer@aecom.com. Payment for sponsored activities or hard copy of advertisements should be sent to: Geological Society of New Hampshire, PMB 133, 26 South Main Street, Concord, NH 03301.

45th ANNUAL GILSUM ROCK SWAP

The 45th Annual Show will be held June 27-28, 2009, RAIN OR SHINE at the Gilsum Elementary School and Community Center, 640 Route 10 in Gilsum (just 10 minutes from Keene). Show are from 8:00 a.m. - 6:00 p.m. Saturday and from 8:00 a.m. - 4:00 p.m. on Sunday. For directions go to the show website at <http://gilsum.org/rockswap.aspx>. Questions call show contact: Robert Mitchell via E-mail at gilsumrocks@gmail.com or by phone at 603-357-9636. This show attracts more than 70 dealers and swappers with gems, jewelry and minerals available for sale or trade. Pan for minerals, scale the rock climbing wall, enjoy an old fashioned New England ham and bean dinner with home made pies, sit down for a Chicken Barbeque lunch and more! Displays range from newly found specimens in the rough to fossils, prized collector's pieces and even hand crafted jewelry. This year's event will include a special presentation. The presentation will be held Saturday night at 7:00 p.m. at the Elementary.

UPCOMING EVENTS AND DATES TO REMEMBER

June 6, 2009 – Boston Society of Civil Engineers Section, Evening Boston Harbor Boat Cruise, “Boston Harbor, Geology, Engineering and History by Boat”. Contact Doris Soucy at DSoucy@geiconsultants.com.

June 27-28, 2009 - 45th Annual Rock Swap, Gilsum Elementary School and Community Center, 640 Route 10 in Gilsum, NH

July 18-19 North Conway NH, 45th Saco Valley Gem & Mineral Club Annual Show! Note new location & date Community Center downtown 9:00 am– 5:00 pm Saturday, 10:00 am – 4:00 pm Sunday, Silent Auction Saturday, Dealer information: Bob York, 603 356 4424 e-mail: quartzhunteraol.com

August 29-30, Concord, NH - 46th Annual Gem and Mineral Festival presented by the Capital Mineral Club, Sat. 9 – 5, Sun., 9 – 4, Everett Arena, Concord, NH, Adults – \$4.00, 12 and under free

August 15, 2009 - GSNH Summer Field Trip, Isles of Shoals, Saturday.

AGI ANNOUNCES EARTH SCIENCE WEEK THEME FOR 2009

Submitted by Lee Wilder

The American Geological Institute is announcing that "Understanding Climate" is the theme for the 2009 Earth Science Week. Climate is perhaps the most visible earth science topic in the news. Climate affects humans today just as it has for millions of years. It is also pivotal in understanding how the dynamics of our planet function across different scales of time and space. Earth Science Week 2009 will engage students, educators, and the general public in understanding all the factors driving climate and the role climate plays in the history of Earth and humankind. "Students and the general public need to understand Earth's climate system, above and beyond the sound bites of public debate," says Ann E. Benbow, AGI's Director of Education and Outreach. "Earth Science Week 2009 will provide educators, students and interested citizens with the information, resources, and activities they need for scientifically sound climate education."

AGI coordinates Earth Science Week annually in cooperation with its sponsors and the geoscience community as a service to the public. Each year, community groups, educators, and interested citizens organize celebratory events. Earth Science Week offers the public opportunities to discover the earth sciences and engage in responsible stewardship of the Earth. Earth Science Week is supported by the U.S. Geological Survey, the AAPG Foundation, and the broader geoscience community through grassroots activities. To learn more about this week and ways to become involved; including newsletters, local events, and classroom activities, please go to the Earth Science Week website at <http://www.earthsciweek.org>.

WHERE DID ALL THE GLACIAL BOULDERS GO? Submitted by Lee Wilder

I found another one. As I travel about NH, I am often amazed by the number of glacial boulders in NH. Check out the land east of Highland Lake in Stoddard, for example. While helping to log the water observation wells, being drilled in the Upton Morgan State Forest in Concord, I found a large Concord Granite boulder with star drill holes (*see below left*). Next to it, was another piece of the same boulder with a feather wedge (*see below right*) still in the unfinished split. After having found a number of boulders like this in the Concord area, I have come to the conclusion that the reason we have so few remaining glacial boulders here, may be because they were split up into foundation and retaining wall stone by the locals. Next time you are in the cellar of an old NH building or see an old rock retaining wall, look for the star drill marks used to split the flat faces. Not as fancy as real quarried stone, but certainly very useful to frugal early builders.

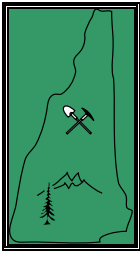


SANKATY HEAD CONTINUES TO ERODE Submitted by Lee Wilder

This southeast shore of Nantucket Island continues to erode, despite landowners' attempts to stabilize the toe of the cliff face. Some owners, along this beachfront road, were able to buy land and have their houses move back, across the road (left in this photo). Just out of sight in the distance, the famous Sankaty Head Lighthouse was also moved back from this eroding cliff face. Like the Old Man's demise, nature continues to slowly pursue its course.



Photo by Lee Wilder, Spring 2009



GSNH Summer 2009 GEOLOGY FIELD TRIP

Isles of Shoals / Star Island Saturday August 15

Let's try this again. We will be going to Star Island on the MV Captain's Lady, where geologist Wally Bothner will lead us through the fascinating geology of Star Island. Meet at Rye Harbor State park on NH Rte. 1A, at Rye Harbor, for a **prompt*** (0900) 9 AM departure on **Saturday August 15, 2009**. Directions at: <http://www.nhstateparks.org/state-parks/alphabetical-order/rye-harbor-state-park/locations-maps-and-directions.aspx>. Look for parking in the lot there. It is \$5. per car, and may be crowded on a summer Saturday morning, so you will want to car pool. You might also park along Rte. 1A...but read signs carefully. Plan to arrive early!

Trip sign-in and complimentary coffee and donuts **begin at 0800***. The round trip boat ride (~ 45 minutes out and 45 minutes back) is \$20. per person. We should be returning to Rye Harbor about (1500) 3 PM. On Star, we will be walking over rough, rocky (slippery?) terrain. Sneakers or sturdy tie shoes are recommended. We will be going rain or shine and it can be cool on an off shore island, so dress for varying weather. Lunch on Star Island will be provided compliments of your GSNH. If you have special dietary needs, **you** should plan for those.



Photo: <http://www.starisland.org/visiting/islandtour/>

You must sign up **in advance** for this trip. Email: Boslwne@tds.net with your name(s), no later than midnight, Wednesday August 12th. (Remember, an Email registration is considered an obligation by you to the GSNH.) Note - our visit to Star Island will be limited to this field trip's activities only. Certificates will be available for 7.0 CEU hours. **Be sure to check www.gsnh.org for any last minute changes, before departing for this trip!**



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