



Granite State Geologist

The Newsletter of the Geological Society of New Hampshire,
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Newsletter Editor: Wayne.Ives@des.nh.gov

Website: <http://www.gsnh.org/>

2012 GSNH Officers:

President – Julie Spencer
AECOM, Westford, MA
julie.spencer@comcast.net

Vice President - Council – Russ Wilder
URS Corporation, Salem, NH
Russ.Wilder@URS.com

Vice President – Society - Doug Allen
Haley & Aldrich, Manchester, NH
dallen@HaleyAldrich.com

Secretary – Muriel Robinette
New England EnviroStrategies, Inc.,
Concord, NH
murielrobinette@NE2Sinc.com

Treasurer – Jim Degnan
USGS, Pembroke, NH
jrdegan@usgs.gov

Past-President – Jutta Hager
Hager GeoScience, Woburn, MA
jhager@hagergeoscience.com

Member-at-Large - Lea Anne Atwell
Sanborn, Head & Associates, Concord, NH
latwell@sanbornhead.com

Member-at-Large - Wayne Ives
NHDES, Concord, NH
Wayne.Ives@des.nh.gov

Membership - Doug Allen
Haley & Aldrich, Inc.
Manchester, NH
dallen@HaleyAldrich.com

Education and Outreach
Tina Cotton
jt_cotton@comcast.net
Lee Wilder
geology@des.nh.gov

Website
Bill Abrahams-Dematte
Bill.Abrahams-Dematte@aecom.com
webmaster@gsnh.org

Newsletter Editor
Wayne Ives
Wayne.Ives@des.nh.gov

In this issue:

- **Message from the President**
- **Call for GSNH officer nominations**
- **Second Connecticut Lake finds**
- **Mammoth discovery**
- **LiDAR imagery available**
- **Greenland ice cap**
- **Fall Dinner Meeting – October 18 at Makris Lobster House**
- **Upcoming Events and Much More!**

MESSAGE FROM THE PRESIDENT Julie Spencer, AECOM, GSNH 2011-2012 President

I hope that all of our members have been out enjoying the weather, maybe planning to take in some geological sights on your vacations this summer? If you do, we would love to include a photo with a caption in a future newsletter. If you would like to submit an article about a great place to visit, that would be even better!

I was sorry to miss the great April dinner meeting. From all reports, it was an interesting and educational evening as the group learned all about conodonts from Dr. Fred Rogers. The society raffled off three minerals to support our educational outreach programs: Tourmaline, Elbaite, and Rutile in Cordierite from a generously donated by Robert Whitmore. Thank you Bob and all the ticket buyers for your continued support of our programs. Unfortunately, I do not have the names of the winners to publish, but let me offer my congratulations anyway!

We are not sponsoring a field trip this summer, giving our volunteers a well-deserved summer off, however, that does not mean that there are not other geological activities happening. Look through this issue for notices of other upcoming programs and field trips and mark your calendars!

Also in this newsletter is an article from the Nominating Committee soliciting nominees for the October election. I encourage everyone to consider serving the society by running for a position on the Board of Directors. We have several board members who have reached their term limits and are unable to run for re-election. In addition, this election is the first since we changed the bylaws and there will now be a third Member-at-Large position, so two Members-at-Large will be elected in October. I especially encourage the younger members of the society to run for a

position on the Board; we had you in mind when the third Member-at-Large position was added. It is a great way to help out the GSNH. Nominations are due by August 20, so do not delay!

Have a safe and enjoyable summer!

!CALL FOR NOMINATIONS! Submitted by Lea Anne Atwell

The next election of the GSNH Board of Directors will be coming up at the October 2012 Dinner Meeting. 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. 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.** We need you to consider joining the board!

With changes to the By-Laws adopted at the October 2011 dinner meeting, each of the GSNH Board Member positions now carries a two-year term. All together, these include:

President – who oversees the overall management and direction of the organization and chairs the Board meetings, etc.;

Vice President (Society Branch) – supports the President and the mission of the organization, in particular aspects more directly related to its academic/non-profit aspects and activities;

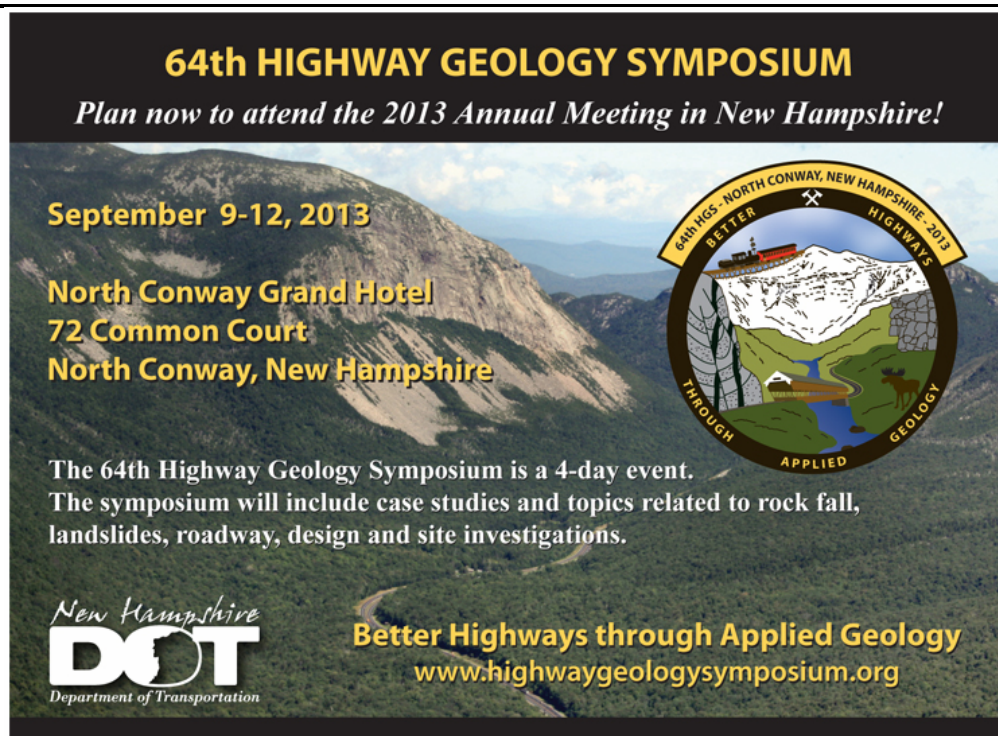
Vice President (Professional Geologist Branch) – as above, with an orientation more toward the consulting/professional community membership of the organization (must be a currently licensed New Hampshire Professional Geologist);

Secretary – keeps minutes of the Board of Directors and associated general record keeping functions;

Treasurer – maintains primary responsibility for the society's financial records and management; and,

Member-at-Large (two positions open this October) – supports the functions of the above other Board Members.

Those nominated will be contacted for their acceptance of the nomination, and biographical information will be requested for publication with the slate of candidates. Please send nominations to the Nominating Committee Chair, Lea Anne Atwell (latwell@sanbornhead.com) by August 20th.



64th HIGHWAY GEOLOGY SYMPOSIUM
Plan now to attend the 2013 Annual Meeting in New Hampshire!

September 9-12, 2013
North Conway Grand Hotel
72 Common Court
North Conway, New Hampshire

The 64th Highway Geology Symposium is a 4-day event. The symposium will include case studies and topics related to rock fall, landslides, roadway, design and site investigations.

Better Highways through Applied Geology
www.highwaygeologysymposium.org

New Hampshire
DOT
Department of Transportation

The poster features a scenic background of a mountain range with a winding road. A circular logo on the right contains the text "64th HGS - NORTH CONWAY, NEW HAMPSHIRE 2013" at the top, "BETTER HIGHWAYS" on the sides, and "THROUGH APPLIED GEOLOGY" at the bottom. The logo also depicts a mountain, a road, and a bridge.

ONCE A GEOLOGIST—ALWAYS A GEOLOGIST

A master's thesis by Heather Houlton http://www.eas.purdue.edu/riggslab/Houlton_Final_Thesis.pdf (December 2010) describes pathways that lead students to geosciences. Her thesis states that outdoor activities (such as camping, caving, hiking etc) when traveling with their families, a desire to be outdoors and not stuck at a desk, the influence of teaching assistants and faculty and, not too surprisingly, having access to a rock collection by either collecting their own or looking at others' were the most important factors influencing their decision to enter the geosciences.

The amount of interest and enjoyment remained comparable between the initial and follow-up studies showing that students' interest and likelihood of pursuing geoscience careers remain high, perhaps because (and not despite) their geoscience classes, because additional surveys showed the students felt more confident as a geoscientist as their class work proceeded.

This story came via American Geosciences Institute which produces Geoscience Currents, which are quick snapshots of data released by AGI on the status of the geoscience workforce. Register to receive free email delivery of Geoscience Currents or browse them at <http://www.agiweb.org/workforce/currents.html>.

CORPORATE SPONSORSHIPS FOR GSNH Submitted by Julie Spencer

Would you like to make your company more visible to fellow GSNH members? Don't forget that we now have a corporate sponsorship program for GSNH. The October 2012 Dinner Meeting is available for sponsorship. The deadline will be 6 weeks prior to the meeting date, so you have plenty of time to consider being a meeting sponsor!

Corporate sponsorships for dinner meetings are available for \$250. Meeting sponsorship includes:

- The logo of the corporate sponsor on the meeting notice
- A write-up about the sponsoring company on the website and in the newsletter
- A link to the sponsor's website on the meeting announcement page of the GSNH website
- Introduction at the Society meeting with an opportunity to speak before the attendees and to provide literature for the tables

Requests for sponsorship should be directed to: Julie Spencer at julie.spencer@comcast.net. More information at <http://www.gsnh.org/sponsors/sponsors.shtml>. Payment for sponsored activities should be sent to: Geological Society of New Hampshire, Unit #7, PMB 133, 26 South Main Street, Concord, NH 03301

NEWS FROM THE NH GEOLOGICAL SURVEY – submitted by Rick Chormann, State Geologist

Surficial geologic mapping under the cooperative STATEMAP program is proceeding this field season in the Ashland and Center Harbor quadrangles (Emery and Garrett Groundwater, Inc.), Warner quadrangle (Carl Koteff), and Carter Dome and Crawford Notch quadrangles (Brian Fowler). Thanks to our volunteers, Brian Fowler and John Cotton, for providing in-kind services that enable NHGS to still qualify for the federal mapping funds in the aftermath of state budget cuts.

Thanks also to Kristin Brandt at Plymouth State University for her volunteer efforts to collect monthly groundwater level measurements at the ambient network well in Campton. Kristin will be moving on but her contributions have been greatly appreciated.

GREENLANDS MELTING ICE SHEET

UVM professor Paul Bierman and his graduate student Alice Nelson are conducting research that aims to answer how long will Greenland's ice sheet last. Follow their work for a week and get a behind-the-scenes, on-the-ground look at climate change research in a blog begun June 4, 2012 by Joshua E. Brown at <http://www.uvm.edu/~uvmpr/?Page=news&storyID=13845>.



More pictures at <http://www.flickr.com/photos/14567399@N08/sets/72157630048756608/>.

THE UNDERWATER TREASURE OF THE SECOND CONNECTICUT LAKE



A 2007 paper describes ferromanganese nodules resting loosely at the sediment–water interface measuring up to 46 cm in diameter discovered by scientists from UMass-Amherst in the Second Connecticut Lake, Pittsburg, New Hampshire. They occur as four distinct morphotypes with stromatolitic growth patterns and can grow ~26 mm/100 years.

The concretions were found in the western-central, near-shore portion of the lake in water depths of 5–12 m and covered at least 9,000 m² of the lake bottom. Similar concretions have been found in NY, MN, Nova Scotia and Ontario.

<http://www.pnas.org/content/104/45/17579.full.pdf+html>

Manganese at concentrations orders of magnitude higher than average freshwater

can be found in the anoxic noncirculating lower layers of thermally stratified lakes.

(Geomicrobiology, 5th ed., 2008, Henry Lutz Ehrlich and Dianne K. Newman)



Dr. Fred Rogers gave an enlightening and fascinating presentation to the Society on what conodonts really are and how paleontologists study them. Here Fred accepts a gift of appreciation from Doug Allen, Society Vice President, after the presentation at the Society dinner meeting April 12, 2012 at the Red Blazer.

! REMINDER !

THERE WILL BE NO GSNH FIELD TRIP THIS SUMMER BECAUSE OF THE EXCELLENT FRIENDS OF THE PLEISTOCENE (PAST) AND NEW ENGLAND INTERCOLLEGIATE GEOLOGY CONFERENCE (UPCOMING IN OCTOBER) TRIPS.

NEW MAILBOX ADDRESS FOR NHGS – COMING SOON
BE SURE TO LOOK FOR THE ANNOUNCEMENT IN THE FALL NEWSLETTER

News from the New Hampshire Department of Environmental Services

FOR IMMEDIATE RELEASE

DATE: May 17, 2012

CONTACT: Rick Chormann, 603 271-1975

des.nh.gov

twitter.com/NHDES

DES PARTNERS WITH USGS TO IMPROVE MAPS OF NH'S RIVER SYSTEMS

Concord, NH – The New Hampshire Geological Survey, a unit of the New Hampshire Department of Environmental Services, recently completed an agreement with the United States Geological Survey that recognizes NHGS as the official steward of the state's Watershed Boundary Dataset. The dataset subdivides the landscape based on how water flows across the land surface, providing useful information for a variety of water resource management purposes. Because water is a shared resource, which knows no political boundaries, this dataset is an essential tool for managing and protecting the state's precious water resources.

The Watershed Boundary Dataset, abbreviated WBD, is a standardized classification for the entire nation, which divides the landscape into a series of similarly sized areas based on land surface form or topography called hydrologic units. The WBD shows the highest areas from which water runs off to rivers and streams and their many branching tributaries, which together comprise the drainage network, or watershed. Smaller units fit together to create progressively larger units until they encompass the drainage network of major rivers, such as the Connecticut River. The boundary between neighboring units is called a watershed "divide," because rain falling on opposite sides of this imaginary line will flow in different directions. More often than not, these boundaries cross political boundaries, highlighting the fact that water is a shared resource. Even though we live on different streets in different towns, we can still have the same "watershed address."

As the steward of the state's dataset, NHGS is responsible for ensuring that the boundaries are as accurate as possible, and that the most up-to-date version of the dataset is readily accessible to the public. The new stewardship agreement builds upon the commitment made by NHGS in 2009 when a similar agreement was completed for the National Hydrography Dataset, representing the drainage network itself. Combined stewardship of these two related datasets assures that they will both remain current and closely integrated with one another. GIS data for the two national datasets is available from <http://www.granit.unh.edu/>, or from the National Map Viewer <http://viewer.nationalmap.gov/viewer/index.html?p=nhd>. The New Hampshire Geological Survey strives to provide the most complete and accurate information possible. If while using the WBD you find any errors, please feel free to report them to Neil Olson, NHGS, at neil.olson@des.nh.gov.

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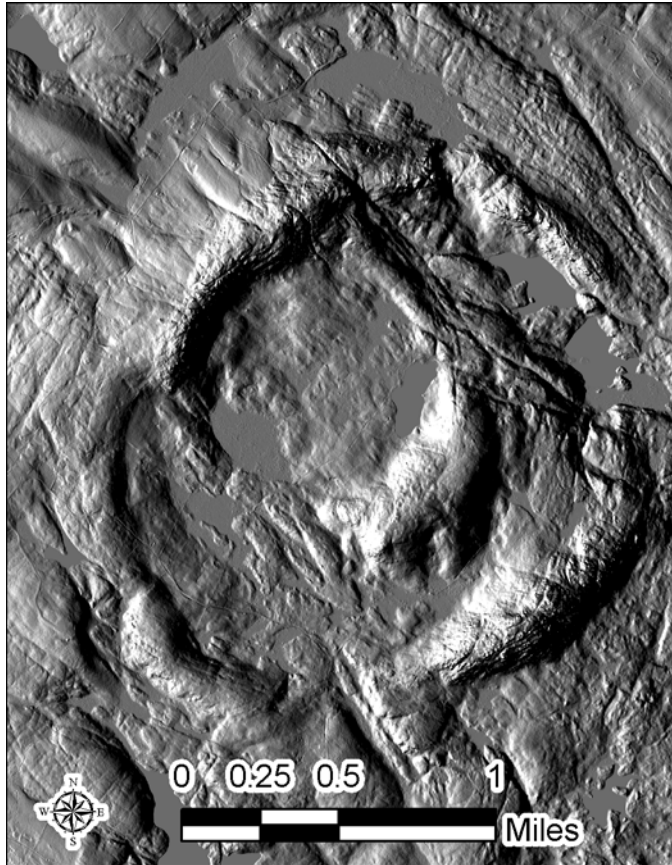
YOUR SOURCE FOR SOCIETY UPDATES

Check the GSNH website for up-to-date information about our meetings and field trips. Announcements regarding changes or cancellations will be posted on the GSNH homepage www.gsnh.org.

! THE NEXT GSNH DINNER MEETING IS OCTOBER 18, 2012 AT MAKRIS LOBSTER HOUSE. SOCIAL HOUR STARTS AT 5:30, DINNER AT 6:30!

NEW DATA PROVIDE AN UNPRECEDENTED VIEW OF NEW HAMPSHIRE'S LANDSCAPE

New high-resolution topographic data covering approximately 900 square miles of New Hampshire's coast show the elevation and shape of the landscape stripped of all trees and buildings. The data were collected using an airborne light detection and ranging (LiDAR) system which scans the landscape with thousands of pulses of light per second emitted by a laser mounted in a small airplane. The coastal NH data represent part of a much larger project area encompassing approximately 9,000 square miles, extending from New York City to Eastport, Maine. Funding was largely provided by the US Geological Survey, but included a contribution from NHDES to expand the NH footprint.



Shaded relief image of Mt. Pawtuckaway, Rockingham County, NH based on the 2-meter resolution digital elevation model created from the recently acquired LiDAR dataset.

Projects that take advantage of this rich data resource are already well underway. The NH Geological Survey (NHGS) is using the data to map the location of valley walls along rivers to improve the identification of areas vulnerable to flooding and erosion hazards. NHGS is also using LiDAR to delineate small headwater stream channels that are so important in controlling runoff during major storms. UNH scientists are using the data to produce updated floodplain maps for coastal communities, and to model potential future inundation areas in the Lamprey River watershed. The detailed elevation data will support a host of other potential uses, including emergency preparedness, transportation planning, watershed protection, aerial photo processing, land cover mapping, shoreline change modeling, air mass modeling, wireless signal transmission, and mapping of relict shoreline features that record changes in sea level as the last ice sheet melted over ten thousand years ago.

The data may be ordered from GRANIT (email granit@unh.edu for details), viewed from the GRANIT interactive data viewer (<http://granitview.unh.edu>), or acquired from the USGS (www.usgs.gov).

Because LiDAR technology provides a cost-effective way to obtain precise and accurate topographic data over large geographic areas, efforts are ongoing to identify resources to support collection of LiDAR data for the remainder of the state. For further information on this important initiative, contact Rick Chormann, NH State Geologist at 271-1975 or frederick.chormann@des.nh.gov.

KNOW ANYTHING?

Share your announcements, technical articles, short stories, geologic photos and other items of interest to geologist in this newsletter by sending to Wayne.Ives@des.nh.gov.

ROCKS AND MINERALS COME TO LIFE

(Reprinted from: A view from the Middle - Parent Newsletter - Rundlett Middle School - April 30 – May 4, 2012)



Bob Whitmore

At one time or another, you have probably held a rock in your hand. Recall the texture. Was it smooth, polished by the force of sand and salt water pounding it onto the beach? Was it rough and cragged, left exposed for centuries to the wind and sun of a canyon wall? On Thursday, April 19, students in Ms. Whitmore's and Mr. Lane's science classes attended a presentation by Bob Whitmore, a New Hampshire native and well-known mineralogist. The presentation provided students with the opportunity to make connections between classroom

instruction and real life application of that knowledge. In addition to sharing some exquisite samples from his own collection of rocks, gems and minerals, Mr. Whitmore challenged students to extend their own learning and thinking. His passion and curiosity about the world in which we live has led him on a life-long journey filled with adventure.



Alaina Chormann examines a sample of fluorite

DATES TO REMEMBER

June 23-24, 2012 - 48TH ANNUAL GILSUM ROCK SWAP AND MINERAL SHOW - at the Gilsum Elementary School grounds off Route 10 from 8:00 AM to 6:00 PM Saturday and 8:00 AM to 4:00 PM Sunday.

Oct. 12-14, 2012 - NEIGC 2012 - NEIGC will be held in south- and central-western New Hampshire and adjacent Vermont, based out of either Hanover or Keene. This meeting is being organized in memory of Jim Thompson and John Lyons. Anyone interested in leading a field trip in this general area should e-mail Tim at tallen@keene.edu. A recent list of tentative trips is at <http://w3.salemstate.edu/~lhanson/NEIGC/>.

October 14–20, 2012 - EARTH SCIENCE WEEK 2012 <http://www.earthsciweek.org/>
Discovering Careers in the Earth Sciences engages young people and the public in learning how geoscientists gather and interpret data about the Earth and other planets

September 2, 2012 - INTERNATIONAL EARTHCACHE EVENT Sunday, September 2, 2012 near Portland, Maine, USA. <http://www.earthcacheevent.org/>.

November 4–7, 2012 – GSA in Charlotte, North Carolina, Geosciences: Investing in the Future. Follow at <http://www.geosociety.org/meetings/2012/>.

March, 2013 - NORTHEASTERN SECTION GSA meeting at Bretton Woods.
<http://www.geosociety.org/Sections/ne/2013mtg/> or contact the General Chair, Brian Fowler at b2fmr@metrocast.net.

May 26 - June 2, 2013 – INTERNATIONAL PEGMATITE CONFERENCE, Attitash-Bear Peak.
Go to http://www.minsocam.org/msa/special/Pig/Peg_2013.pdf.

September 9-12, 2013 - The **2013 HIGHWAY GEOLOGY SYMPOSIUM** to be held in Conway, NH. <http://www.highwaygeologysymposium.org/History.asp>

! THE NEXT GSNH DINNER MEETING IS OCTOBER 18, 2012 AT MAKRIS LOBSTER HOUSE. SOCIAL HOUR STARTS AT 5:30, DINNER AT 6:30!

THE NH GEOLOGICAL SURVEY GROUND WATER LEVEL NETWORK SUMMARY

Submitted by the NHGS

March 2012 NH Groundwater level measurements were collected from March 23 – March 29, 2012. The statewide March 2012 average groundwater level showed an increase of +0.37 feet from February 2012. When compared with March 2011, the statewide average groundwater level for March 2012 decreased -0.34 feet. The March 2012 average groundwater level in the new bedrock wells showed an increase of +1.42 feet when compared with February 2012. When compared with March 2011, the bedrock wells showed an increase of +0.83 feet for March 2012.

April 2012 NH Groundwater level measurements were collected from April 20 – April 30, 2012. The statewide April 2012 average groundwater level showed a decrease of -.058 feet from March 2012. When compared with April 2011, the statewide average groundwater level for April 2012 decreased -1.75 feet. The April 2012 average groundwater level in the new bedrock wells showed a decrease of -1.07 feet when compared with March 2012. When compared with April 2011, the bedrock wells showed a decrease of -1.39 feet for April 2012.

May 2012 NH Groundwater level measurements were collected from May 22 – May 30, 2012. The statewide May 2012 average groundwater level showed an increase of 0.55 feet from April 2012. When compared with May 2011, the statewide average groundwater level for May 2012 decreased -1.14 feet. The May 2012 average groundwater level in the new bedrock wells showed an increase of 0.52 feet when compared with April 2012. When compared with May 2011, the bedrock wells showed a decrease of -0.81 feet for May 2012.

The groundwater level measurements for the deeper of the two Concord bedrock wells (CVWB-1) are now available in real-time on the USGS website at: http://waterdata.usgs.gov/nh/nwis/current/?type=gw&group_key=basin_cd. The data for all of the other wells are available from NHGS and are shared with and posted on the USGS website at: <http://groundwaterwatch.usgs.gov/StateMaps/NH.html>. The data for all of the wells are available from NHGS and are shared with and posted on the USGS website at: <http://groundwaterwatch.usgs.gov/StateMaps/NH.html>.

ROCK OF THE MONTH CLUB

Ever wanted a rock collection, but didn't want to go outside? Or get dirty??? Nah! Me neither. But a membership to the Rock of the Month Club through <http://www.trailmix.net/products/rock-of-the-month/> can get rock samples shipped to your child or grandchild. It may not be the best way to teach kids about geology, but access to a rock collection is a key influence on people taking up a geoscience profession according to Heather Houlton's thesis described in the article above called ONCE A GEOLOGIST—ALWAYS A GEOLOGIST.

HUMANS LIKELY BUTCHERED MAMMOTH 10,000 YEARS AGO

(from http://lightyears.blogs.cnn.com/2012/04/05/woolly-mammoth-likely-killed-by-humans-10000-years-ago-discovered/?hpt=hp_c3)

Ten thousand years ago, a young mammoth probably got into a scuffle with a large predator, and was then apparently butchered by ancient settlers of Siberia. Both lions and humans may have been involved in its death, [according to the BBC](#). Today, the mammoth's remains are some of the best-preserved of their kind, thanks to the low temperatures in the area where it was discovered. The team of scientists that are studying Yuka (the creature's nickname) estimate that the mammoth was between 2 and 3 years old at the moment of its death. The evidence also revealed signs of human interaction with animals in the region. The expedition was financed by [the Discovery Channel](#) and the [BBC](#). “This is the first relatively complete mammoth carcass – that is, a body with soft tissues preserved – to show evidence of human association,” Daniel Fisher, curator and director of the University of Michigan’s Museum of Paleontology, [told Discovery News](#). Fisher explained that the settlers removed “parts include most of the main core mass of Yuka's body, including organs, vertebrae, ribs, associated musculature, and some of the meat from upper parts of the legs,” but the rest remained intact. Kevin Campbell of the University of Manitoba is one of the scientists involved in the investigation, and hopes that this finding could lead to one of the most controversial bioengineering experiments: [the cloning of a mammoth](#). Yuka’s discovery will be broadcasted in the BBC/Discovery Channel TV show “Woolly Mammoth”, produced and directed by Tim Walker. Walker told Discovery News that it could take years or even decades to clone this extinct species.

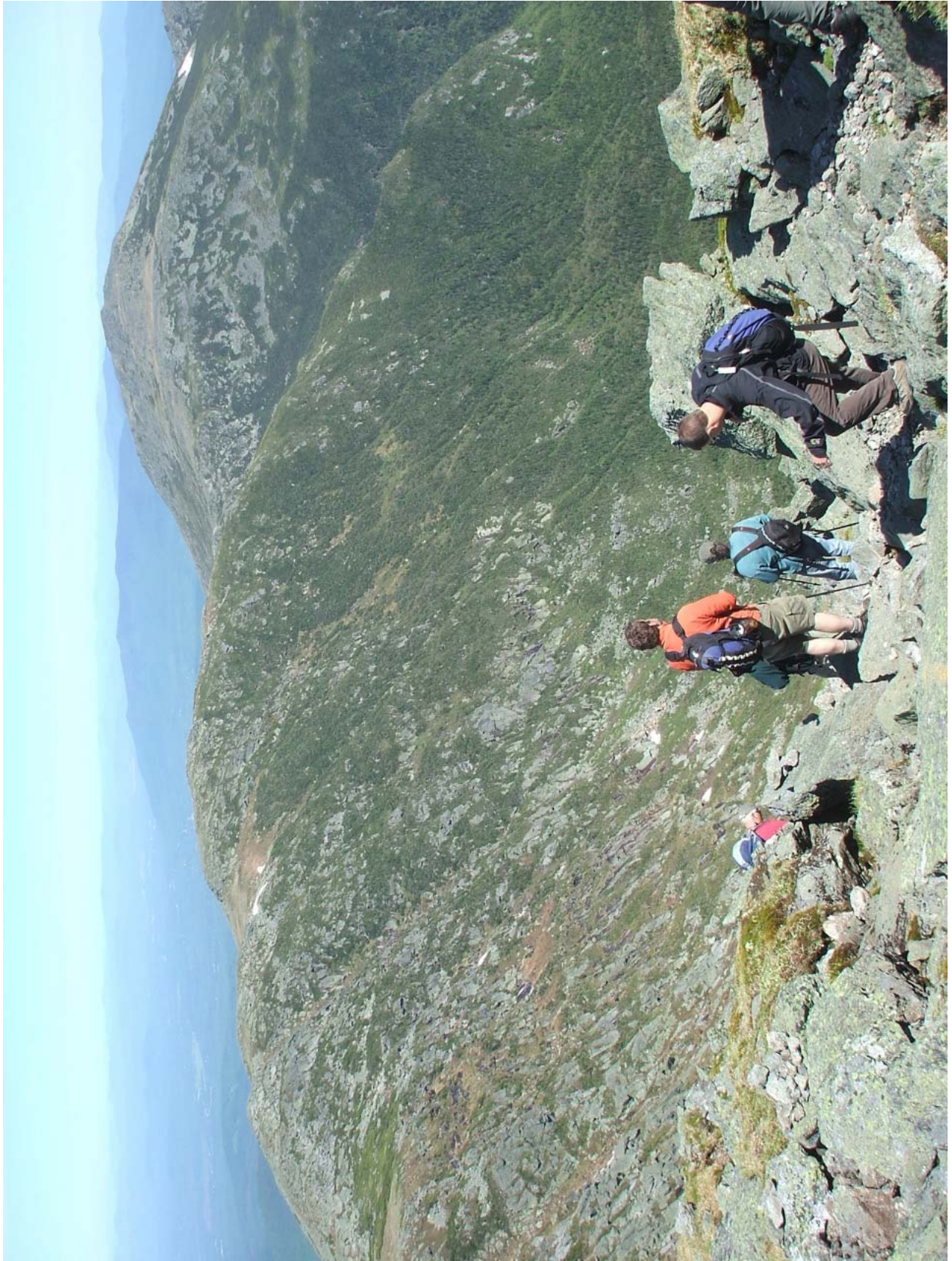




“The meeting was called to order by President Julie Spencer at 7:05pm after a delightful picnic listening to the birds at Toad Hall, in Hopkinton, NH.” (from the minutes of the June 21, 2012 GSNH Board of Directors meeting.) See what was decided in **WHAT THE BOARD IS DOING.**



Brian Fowler giving the Friday field trip introduction near the Mt. Washington summit. Photo from Doug Allen.



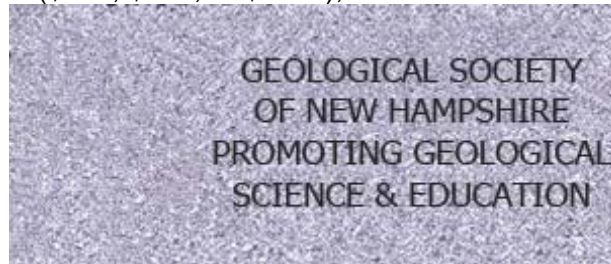
FOTP Field Trip attendees going over the Great Gulf headwall. Photo from Doug Allen.



The classic U-shape valley of the Great Gulf. Glacial action is easy to visualize from this viewpoint. Photo from Doug Allen.

WHAT THE BOARD IS DOING

The Board voted at the June meeting to support the Old Man of the Mountain Legacy Fund by purchasing a 1 foot by 2 foot granite paver. The pavers make up the Profile Plaza on the shore of Profile Lake. The Old Man of the Mountain memorial project is funded entirely through private donations. Continued support from friends of the Old Man will allow the Legacy Fund to move forward with plans for Phase 2. The GSNH paver text is shown below. An outline of the GSNH logo will fill the remaining space. See more about the project at <http://www.oldmanofthemountainlegacyfund.org/get-involved/buy-a-paver.aspx>. If you decide to order your own paver (\$250, \$500, or \$1000), tell them GSNH sent you!



The website will be revised to cull out the dead links to resources. To save a hundred dollars a year, we expect to change the mailbox location—look for a new mailing address for the fall dinner meeting. Membership is around 200 people—are your dues and contact information current? The next dinner meeting is October 18th at Makris' restaurant. The Board is scouting possible ideas for the 2013 summer field trips. Last dinner meeting we began the new dinner rate of \$25, up from \$24, for late reservations and walk-ins. The Society will have a table top display at the GSA meeting next March and discussed what kind of presentation and giveaways we ought to have. The Nominations Committee will be looking for candidates—all but one are up for election and there are two open positions. The deadline for next Newsletter is September 4, 2012. The next BOD meeting will be held September 13, 2012.

X MARKS THE SPOT or MURPHY'S LAW APPLIES EVEN UNDERGROUND (The names have been changed to protect the guilty.) Submitted by U. Bendairtoo

Many years ago I logged a water supply test hole that went down 253 feet in phyllitic schist and stopped there. Stopped because too much water was coming in the well to trip the old drill rig's air hammer bit. The well was a success. Over 250 gpm were measured blowing out of the hole after several hours--water was spilling out everywhere.

A few days later I came back to log the drilling of the production well located five feet away. The drilling company was using a bigger rig to put in a larger diameter hole and get us past the bottom fracture. I didn't figure to log the first couple hundred feet since I'd done that with the first hole. But when I got there the drillers told me they'd hit a new fracture zone at 106 feet and were blowing water and rock out of the test hole so badly they'd sealed it shut to maintain pressure to clear cuttings from the hole. I'd had a small opening in that area when conducting a caliper log in the test well that might have indicated a fracture or a weak spot at that depth so I figured the wells were both tapping a small crossing fracture connecting the two wells. The production well was finished at over 300 feet and I did another caliper log on the new production well and sure enough there was a big opening extending vertically over a number of feet centered around 106 feet of depth as well as the original fracture zone at 253 feet. Well, being a thorough guy, I recalipered the test hole to check that new fracture zone and found a huge opening there too—but now the test well that was only drilled to 253 feet continued down over 300 feet! I concluded the production well had drifted into the test hole and followed down the test borehole down so there was a Y-shaped well there now.

We all went home to set up the pumping test. During pump installation, the drillers reported trouble getting beyond that upper fracture zone, but they'd finally managed to get the pump set at 150 feet. The production goal was only 50 gpm, so we started the test at 125 gpm. Everything went fine for the first hours until the water level reached 106 feet and then the water level dropped precipitously. I throttled it back and saw some recovery, but had to throttle back again and again until I got stabilization above 106 feet while pumping 75 gpm. How could that be?

The test pumping duration barely exceeded the blow test period, yet the well was producing less than third of what we had. Was this another case of bedrock wells failing to meet their blow test yields?

I have another answer. Drilling in schist and hiring drillers getting paid by the foot does not result in straight nor plumb drill holes. I'd already seen the wells were connected from the caliper log. But just because a hole is predrilled, doesn't mean a drill bit will follow it. So you can see what happened. The production well drilled into the test well around 100 feet sure enough—and then kept going making a big X not a Y. The caliper log didn't show it because it hangs on a wire and followed the more vertical leg down below the crossing regardless of which hole it was started in. But the pump was installed on rigid pipe. It started down the production hole and got pushed into the test hole. So while the production well was drilling it was blowing cuttings into the test hole burying its fracture at the bottom. Which was where the pump was now. During the pumping test, water flowed up from the deep fracture in the production well to fall over the cross connection to get to the pump in the partially filled test well.

Failing the pumping test, the well wasn't used.

NATIONAL PARK FOUNDATION AWARDS 2012 IMPACT GRANT TO THE MADISON BOULDER NATIONAL NATURAL LANDMARK

The Madison Boulder Receives Grant From the National Park Foundation To Support Interactive and Engaging Projects That Will Strengthen Americans' Connection With Their National Heritage

Madison, NH (June 15, 2012) – The [National Park Foundation](#), the official charity of America's national parks, is proud to award the Madison Boulder Geological Wayside Park a 2012 [Impact Grant](#) to support the launch of the Park's Facility, Access & Interpretation Improvement Project, a project that will refurbish the Park and make it more attractive as a visitor destination. The grant is part of the National Park Foundation's Impact Grant program which gives parks and other significant areas the critical financial support needed to transform innovative, yet underfunded ideas into successful on-site programs and initiatives.

"This important grant will permit us to complete renovations to the Park that will improve and better interpret the remarkable experience its hundreds of visitors and school groups have each year", said Brian Fowler, Chair of the Town of Madison's Madison Boulder Advisory Commission. "These improvements will enhance the experience of visiting the site and will help visitors better understand how unique the Boulder is as the largest glacial erratic in North America."

The project is funded entirely by private donations plus this Grant and will be completed in cooperation with the Geological Society of NH and the NH Division of Parks & Recreation. "The Madison Boulder is a fascinating and unique feature of the New Hampshire landscape, and receiving this grant will help us make much needed improvements", said Phil Bryce the Division's Director. The improvements include refurbishment of the Park's access road and its walking and handicapped access trails, improvement of the site's security, and installation of geologic and natural history signage and kiosks to help its many visitors enjoy the National Natural Landmark.

"With these strategic grants, we have been able to positively impact hundreds of significant areas across the country," said Neil Mulholland, President and CEO of the National Park Foundation. "This unique program helps the parks and other significant areas enhance the visitor experience, engaging more people, and ultimately building a stronger community of park enthusiasts who share an appreciation and commitment to protecting sites illustrative of America's natural and cultural heritage."

The National Park Foundation, in partnership with ARAMARK through the Yawkey Foundation, The Fernandez Pave the Way Foundation and The HISTORY Channel, awarded Impact Grant grants to 62 national parks and other significant sites across the country totaling more than \$500,000.

A full list of grantees is available on the [National Park Foundation website](#).

Contacts: Brian Fowler, Madison Boulder Advisory Commission, b2fmr@metrocast.net, 367-1041 and Marjorie Hall, National Park Foundation, mhall@nationalparks.org, (202) 354-6480



MEMBERSHIP APPLICATION/RENEWAL

Geological Society of New Hampshire

75 South Main Street, Unit #7, PMB #133, Concord, NH 03301

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Preferred address to receive GSNH communication: ___ Home or ___ Business

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Education: Degrees received or in progress:

Year Degree Major College or University

I volunteer to help with one of the following committees or tasks:

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- ___ Giving a talk at a meeting ___ Events Committee ___ Other:

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- _____ Regular Member (Annual Dues \$20.00)
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Make checks payable to "Geological Society of New Hampshire." Note that GSNH dues are not deductible as a charitable contribution, but may be deductible as a business expense. Please return this completed application form with any necessary corrections and a check for the appropriate dues to the GSNH at the address above.

The Society's Membership year runs from January 1 to December 31.

Signature: _____ Date: _____