



Granite State Geologist

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www.gsnhonline.org

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WELCOME FALL!

- **Message from the President**
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MESSAGE FROM THE PRESIDENT Submitted by Jutta Hager, Hager GeoScience, GSNH 2007-2008 08 President.

The main event during this period was the field trip that didn't happen. Unfortunately, as many of us who planned to go, the GSNH Summer Field Trip to Appledore Island had to be postponed due to high seas from Tropical Storm Bertha. We have received an alternate date for one ship for September 13th, but a second ship not yet been confirmed. We hope to go out on September 13th, but at this writing we are not yet certain. Our theme for the October meeting will be "No Child Left Inside." And we have speakers lined up to address this topic. Also on the agenda are the annual elections, with which we encourage everyone to participate.

RETIREMENT OF JOHN COTTON Submitted by Tina Cotton

He's done it again! John Cotton is well known amongst geologists in New Hampshire. He started his career by being born in Laconia. He progressed from the Laconia public schools to Dartmouth. While there, he worked for Linc Washburn in Greenland one summer, which sparked his interest in glacial geology. He initially enrolled at Yale for graduate work in economic geology under Alan Bateman, but migrated to surficial geology under Richard Foster Flint.

His career with the U.S. Geological Survey started in Bearpaw Mountains of Montana mapping bedrock under Bill Pecora, who later became the Director of the USGS. He became a full-time employee in the Boston office of the Water Resources Division. Among other projects, he oversaw the development of the first wells for the Cape Cod

National Seashore and published a hydrologic atlas of ground water levels for the Boston peninsula. However, his heartstrings remained in New Hampshire. He relocated in Concord and completed a state-wide reconnaissance of stratified drift aquifers in the 1970s. These maps became known as the 'Cotton maps' and were cited as such in state statutes. He also became known as 'Mr. Ground Water' of NH because of his interaction with the public. Upon his urging through the State legislature, this work was further refined in the 1980s and 1990s. He retired from the USGS and joined the Solid Waste Management Bureau of the NHDES where he was involved with landfill closures.

He was instrumental in establishing the GSNH and was its first President. Further recognition of geologists in NH was accomplished through the licensing of professional geologists. John was appointed by the Governor's Executive Council to the original New Hampshire Board of Professional Geologists, where he still serves as Vice-Chairperson. Evidently, he intends to remain active in geology despite his retirement—again!

GEOLOGIC RESOURCE ADVISORY COUNCIL UPDATE



NH State Geologist, Dave Wunsch recently led a discussion with GRAC members at their annual fall meeting. GRAC has representative members from federal, state and local governments; the consulting, planning, and geologic community, academia, and NH environmental and natural resource organizations. GRAC also serves as the State Mapping Advisory Committee, which helps guide the NH Geological Survey with its current and planned mapping projects and programs.

SPONSORSHIP THANKS TO HAGER-RICHTER GEOSCIENCE

The New Hampshire Geological Survey (NHGS) wishes to thank Hager-Richter Geoscience, Inc. for their generous support for the 2008 Mappers Workshop held June 23, 2008 at the Department of Environmental Services in Concord, NH.

NEED CEUs? WHITE MOUNTAIN GEOLOGY WORKSHOP

The workshop will begin Saturday, October 25, with sign-in from 8:30 to 9:00 at the Observatory's [Weather Discovery Center](#), at 2779 Main Street (Route 16 and Route 302) in the village of North Conway, NH (adjacent to Citizens Bank, and across from the Eastern Slope Inn). The workshop instructor is Woody Thompson, of the Maine Geological Survey. He will introduce participants to the bedrock and especially to the glacial geology of the region, and will include presentations from his study of the early geological researchers of the White Mountains and surrounding areas. His special emphasis will be on geological fieldwork, and both field techniques and laboratory follow-up will be considered. The workshop will begin with an informal classroom presentation on Saturday morning. The workshop will then proceed to sites of geological interest in the northern White Mountains region on Saturday afternoon and on Sunday. Locations in Pinkham Notch, Shelburne, Gorham, Randolph, Twin Mountain, and other areas may be visited - ongoing geological explorations may affect just what locales Woody chooses for the field visits. For registration go to <http://www.mountwashington.org/education/workshops/autumn.php>.

LOCAL GEOLOGY FUND AWARDS GRANTS

The Marland Pratt Billings and Katherine Fowler-Billings Fund for Research in New England Geology, better known as the "Mount Washington Observatory's Billings Fund", has awarded two scholarships for summer 2008 fieldwork in the New England region. Tim O'Brien, a master's candidate at the University of KY, received \$1,000 for his project entitled "Testing transpression model for Late Paleozoic orogenesis in the Bronson Hill Terrane-Central Maine Terrane Boundary, North-central MA." Peter Yakolev, an undergraduate at Boston College, also received \$1,000, for his project entitled "Geologic mapping in the Leeds-Coxsackie area, NY."

NEWS FROM THE CAPITAL MINERAL CLUB

On September 27-28, 2008, the Capital Mineral Club will be having its 45th Annual Gem and Mineral Festival in Concord, The event will be held at the Everett Arena on Saturday from 9 to 5 and Sunday from 9 to 4. Cost for adults is \$\$4.00. Children 12 and under are free.

2008 EARTH SCIENCE WEEK – "NO CHILD LEFT INSIDE"

The theme for Earth Science Week is 2008, the purpose of which is to encourage young people to learn about the geosciences by getting away from the television, off the computer, and out of doors.

NHGS SUMMER GROUNDWATER LEVELS

Ground-water level measurements for June, July and August 2008 were collected by NHGS staff members Genevieve Al-Egaily and/or Kristen Svendsen.

June 25th-27th: The statewide average ground-water level showed a 0.65-foot decrease from May. When compared with June 2007, the statewide average ground water level decreased 0.14 feet.

July 28th-30th: The statewide average ground-water level showed a 0.09-foot decrease from June. When compared with July 2007, the statewide average ground water level increased 0.29 feet.

August 25th - 27th: The statewide average ground-water level showed a 0.23-foot increase from July. When compared with August 2007, the statewide average ground water level increased 1.09 feet. Increases were seen in all wells except for Greenfield, which showed a decrease of 0.51 feet.

If you would like to view historical groundwater data, please go to <http://nh.water.usgs.gov/WaterData/2007/dec07gwwmap.htm>.

VERMONT GEOLOGICAL SURVEY SUMMER FIELD TRIP Submitted by Tina Cotton

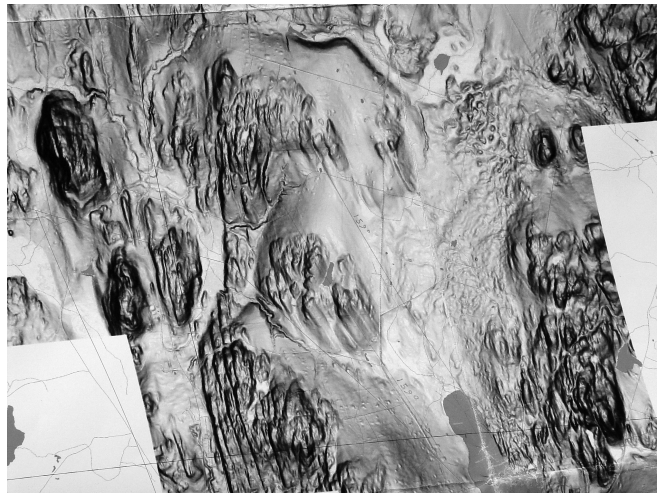
Jon Kim, Dave DeSimone, George Springston, Marjorie Gale, and Larry Becker led the Vermont Geological Society summer field trip east of Burlington, "Integration of Bedrock and Surficial Geology in the Town of Williston, Vermont" held August 9, 2008 on a picture perfect day. The

trip was interesting from several aspects. Jon's April dinner meeting presentation to the GSNH on the "Application of Tectonics to Groundwater Problems in Vermont" was demonstrated at several locations. Evidence of multiple deformations on past GSNH field trips has been illustrated through the orientation of mineral lineations, changes in overall rock formation orientation and stratigraphic position, and brittle deformation expressed in faults, joints, and



fractures; some of these features are subtle and difficult to recognize. In Williston, Jon showed us larger folds that were subsequently folded and then folded again. The Hinesburg thrust fault was also folded, which meant it was logged at varying stratigraphic depths in wells. Fractures paralleled a series of long narrow ravines. Nothing was subtle with these features. Bedrock and surficial geology were mapped concurrently. Each discipline and mapper aided the other. LIDAR slope maps

revealed features that were not readily apparent in aerial or topographic maps. The folds and fractures in the photograph above parallel the valleys and the lineaments shown in the LIDAR image below.



ITRC INTERNET-BASED MARCH 2008 TRAINING CLASSES

The Interstate Technology & Regulatory Council (ITRC) offers a wide variety of training courses on innovative environmental technologies and approaches specific to the areas of site characterization, monitoring and remediation as well as other environmental topics. ITRC's training courses consist of free, web-based internet seminars. The seminars consist of slide presentations with a companion audio portion and can be accessed either by phone line or streaming audio simulcast. To register for an ITRC training class today go to www.itrcweb.org or go directly to <http://clu-in.org/studio/seminar.cfm#upcoming> (you may need to scroll down to find the class of interest).

AREA SCIENCE ACTIVITIES AND EVENTS FOR KIDS

Looking for things to do in the area with kids? You might be interested in checking out these two workshops at *The Little Nature Museum* to be held this fall. For more details on the Little Nature Museum go to www.littlenaturemuseum.org or call 746-6121. Pre-registration is required

for both workshops. Cost is \$5 for museum members and \$7 for nonmembers. All proceeds, after expenses, are donated to The Little Nature Museum Inc.

Saturday, September 13, 2008 (rain or shine) - "Child Survival: Teaching Your Child to Survive Getting Lost in the Woods Workshop". This workshop will teach your children the skills that will reduce their chances of getting lost. Pre-registration is required. Registration is limited to 10 per class. A parent & child must attend together; no charge for accompanying parent. Grades 2 through 4 from 1 to 2:30 PM and Grades 5 through 6, 3 to 5:30 PM, rain or shine. Cost includes a take home survival pack.

Saturday, October 18, 2008 (rain date, Sunday Oct. 19, 2008) - "Map and Compass" Workshop. This workshop will teach your children the skills to keep you from getting lost in the woods including map reading, using a compass, and basic GPS. We need a few adults to help in grades 6 through 8; there would be no charge for those individuals. Registration limited to 12 per class (plus adult helpers). Grades 6 through 8, 9 AM to Noon and Grades 9 through adult from 2 to 5 PM.

UPCOMING EVENTS AND DATES TO REMEMBER

October 10–12, 2008: 100th Meeting of the Northeast Intercollegiate Geologic Conference (NEIGC) to be held in Westfield, Massachusetts. For more information contact thomas.k.weddle@maine.gov or Lindley Hansen at Salem State College or go to [www.http://w3.salemstate.edu/~lhanson/NEIGC/](http://w3.salemstate.edu/~lhanson/NEIGC/).

October 12-18, 2008: Earth Science Week 2008. The theme of this year's earth science week is "No Child Left Inside". The goal of this year's theme is to encourage young people to learn about the geosciences by getting away from the television, off the computer, and out of doors. For more information on Earth Science Week 2008 go to <http://www.earthsciweek.org> for more information.

March 22-24, 2009: GSA Northeast Sectional Meeting, Portland, Maine

GSNH TREASURER'S REPORT – 2007 to 2008

 Submitted by Rich Moore, GSNH Treasurer

The finances of the GSNH for the period July 1, 2007 through June 30, 2008 are summarized in the table below. The GSNH closed its Citizens Bank savings account this year to avoid bank fees and because the Oppenheimer money market fund earns more interest and serves the same purpose. Major expenses are listed in the table below, the largest of which is feeding a bunch of hungry geologists! We also have a large deposit on one of the boats that was scheduled to take us out to Appledore Island this summer. However, the trip was cancelled due to bad sea conditions from Hurricane Bertha and therefore the summer field trip income is not included in this report. The idea of a field trip to Appledore Island/Isles of Shoals was very popular with over 90 people signed up. For those who sent a check you should have receive a communication regarding what should be done with the check. At the time of this reporting, we are still investigating the possibility of a rescheduled field trip in the Fall. Additionally, the GSNH and the Capital Mineral Club jointly purchased, and now own, a mineral display cabinet, which is presently displaying minerals in the DES foyer. Thank you to Greg Kirby, Bob Whitmore and others for contributing minerals for the display. The cabinet cost \$1,202 which, we purchased and the Capital Mineral Club reimbursed us for half. Our raffle fund has accumulated \$257, to \$1,202. Again, thank you to all who have donated minerals, books, jewelry and other prizes. Amazingly, after all the dust settled we are within \$9 of where we were last year!

Treasurer's Report July 1, 2007 through June 30, 2008

| | Current Report | Report date | Change from previous year |
|--------------------------|-----------------|-------------|---------------------------|
| Balance | \$14,606 | | (8.83) |
| Checking Account | \$2,842 | 6/30/2008 | 965.93 |
| Savings Account | | closed | (1,414.04) |
| Oppenheimer Money Market | \$11,667 | 6/30/2008 | 459.28 |
| cash on hand | \$97 | 6/30/2008 | (20.00) |

| Raffle Fund | | Speaker's Fund | | (not a separate bank accounts) |
|--|-----------------|--|---------|--------------------------------|
| income this year | \$257 | Charles Spaulding donated in 2001 | \$1,500 | |
| total | \$1,202 | remaining | \$1,276 | |
| GSNH income this reporting year | \$10,374 | Dues (\$3,980), meeting payments (4,546), raffle (257), interest (459), reimbursements (1,132) | | |
| Expenses this reporting year | \$10,383 | newsletter (\$1,102), meals (\$5,243), 2007 field trip (\$682), 2008 field trip deposit (\$1,000), mineral case (\$1202), website (\$265), grants (\$306) business & industry membership (\$263), misc (\$320) | | |

MINERAL DONATION FROM UNH

As you may know, the Earth Science Department at UNH recently had to temporarily move out of James Hall, so that renovations could take place. In the process of moving, Peter Thompson and Wally Bothner found duplicate and or unneeded mineral specimens. These specimens were donated to the GSNH for use in our Dinner Meeting Mineral Raffles. The NH Geological Survey also received some minerals, archival maps, etc., along with the Clough Collection. Little is known of who "Clough" was, but a number of wooden trays containing NH rocks and minerals have been brought to Concord for review, storage, reference and display. The GSNH and the NHGS wishes to thank the UNH Earth Science's staff for their generous donations and thoughtfulness in seeing that these historical NH geology items are put to good use.

EARTH SCIENCE WEEK OFFERS "JOURNEY 3D" EDUCATOR GUIDE



AGI, organizer of Earth Science Week, has collaborated with the makers of "Journey to the Center of the Earth 3D" (debuted in theaters on July 11), to create an Educator Guide linked to this major movie release. Starring Brendan Fraser, "Journey 3D" plunges its characters - and viewers - into the exciting world beneath the Earth's surface. AGI and Walden Media, which produced this update of the Jules Verne classic, have developed a booklet of related geoscience information and standards-based activities, using the movie as an opportunity to explore "science fiction and science fact." For a printable PDF of the "Journey 3D" Educator Guide, go to <http://www.earthsciweek.org> online. To learn more about the movie, including a games, sweepstakes, and blogs, visit

<http://www.journey3dmovie.com> online.

TROUBLE AT THE MADISON BOULDER Submitted By Dave Wunsch and Lee Wilder, NHGS

Boulder Road, heads west of NH Rte. 113 in Madison, NH. Driving west for a few minutes, there is a sign for the “Madison Boulder State Wayside – A Geological Park.” Turning right towards the site, you will enter by way of a bumpy gravel road, with water-filled potholes that could swallow a compact car, and end up at an unpaved parking area. Getting out of the car, you follow a wide trail westward. At the crest of a slight slope, you will see it...the first sighting usually brings exclamations! What a huge boulder! A sign states “one of the largest glacial erratics in the world” ...a huge, boulder consisting of a rectangular block of Conway Granite, which is now setting in an area underlain by Concord-type granite. But the awe of this famous NH geological feature is now badly marred by numerous “tags.” You call them graffiti...but tags are “words”...meaningful to the creator, but mindless defacing to the rest of us. And the size and intensity of this form of vandalism has been increasing to the point that it now distracts from the magnitude and wonder of the site. What was this tagger thinking?



New Hampshire, the *Granite State*, is renowned for its geologic wonders. It has lost the Old Man, but we still have the Flume, Mount Washington, the Ossipee Mountain ring-dike complex, the Basin, the Madison Boulder, and others. People come from all over the world to view NH's state parks and their famous geological features. But what impression does a tourist gather after visiting the Madison Boulder?

As geologists, we appreciate the opportunity to find truly unique geologic sites, and share them with the general public. Many geologic sites, such as the Madison Boulder, provide outstanding educational visits for school children and the public at large. Unfortunately, in these times of austere budgets, it is unlikely that there will be additional resources for upkeep, maintenance, and repair of our parks. Perhaps it is time for geologists to show by example our dedication to preserving this unique geologic site for the benefit of all. In the spirit of the “Live Free or Die” state, we would like to propose the idea that the GSNH, in cooperation with the NH Geological Survey, exercise some “civic geology” and adopt the Madison Boulder. By adoption, we mean engaging in a formal agreement to look after the Madison Boulder.

Some ideas to implement this responsibility would be to perhaps have an annual picnic/B_B_Q at or near the park, and during the day members could assist with picking up the site, trimming brush, maintaining trails, and perhaps also try to solicit business volunteers who might have the resources to assist with the repair the road, and perhaps loan equipment to “de-tag” the boulder. We have conferred with representatives from the Department of Resources and Economic Development (DRED), and they have embraced the idea, and would be pleased to cooperate with us. The arrangement could be formalized by an MOU between GSNH, NHGS, and DRED. Moreover, having it known that there is a group active in watching over the site may help reduce vandalism. We have also been informed that local community folks are also concerned about the state of the Madison Boulder, and perhaps a partnership with them is possible as well. Local by-in in this effort would be crucial in the success of this effort. Our constructive efforts could help spread word of the GSNH, and demonstrate the volunteer spirit of the geologic community. Interested? Let the GSNH Board of Directors hear your thought and ideas. The Board couldn't do this without a number of you helping. If we hear favorably from enough GSNH members, this item will be formally discussed at the next GSNH Board Meeting. Contact GSNH President Jutta Hager at: Jhager@hager-richter.com regarding this prospective venture. What do you say?

MEMBERSHIP REMINDERS AND THANKS

Important GSNH Membership Information! Do we have your current e-mail address? Often times we need to reach you quickly with an event announcement. But we can only reach you if we have an e-mail address for you that is CURRENT and that you regularly check. Send an e-mail NOW to the GSNH Membership Committee c/o: dallen@haleyaldrich.com... and you will be included in any future NHGS e-mail announcements.

Many thanks to our Webmaster -Rich Merchaber! Rich (rmechaber@piercelaw.edu) maintains the GSNH Website. It is your source of the latest information re the GSNH and upcoming Dinner Meetings, field trips and events. Check it often and stay informed.



Geological Society of New Hampshire

2008 ANNUAL FALL DINNER MEETING

Topic:

“Earth Science Week 2008 – No Child Left Inside”

Perrin Cothran Chick, Education Director of the **Sea Coast Science Center** and **Iain MacLeod**, Executive Director of the **Squam Lakes Science Center** will explain the popular programs their organizations offer and that “get children” outside. A short group discussion will follow each of these presentations, exploring how the NH Earth Science community can help with the Earth Science components in these programs. All of us have an interest in seeing that students understand that the Earth Sciences are a vital component of planet Earth’s physical and biological systems.

Thursday, October 16, 2008

Cat-n-Fiddle Restaurant

Exit 13, I-93, Manchester Street, Concord, NH

6:00 pm Social Hour, 7:00 pm Buffet Dinner, 7:45 pm Speakers
Polls will be Open From 6 to 7:30 PM

GSNH 2008 Annual Fall Dinner Meeting, Thursday, October 16, 2008

Advance Reservations: _____ Member (Dues Paid) @ \$22.00.

- Member at the Door or Non-Member with Reservation (\$24.00).
- Non-Member without Reservation (\$26.00).
- Students \$10.00 with valid student ID card (Reservation Requested).

Note: GSNH will also accept dinner reservations by e-mail, which will then allow you to pay at the door. Please note that e-mail reservations constitute an agreement with the Society for which you will be responsible to pay, whether you are able to attend or not, unless you cancel your reservation by noon the day before the Dinner.

Reservations will be taken until Monday, October 13, 2008! Checks payable to GSNH.

Mail to: Lee Wilder, 477 Putney Hill Road, Hopkinton, NH 03229. Reply via e-mail to:

boslwne@tds.net

Name(s): _____

Address: _____

Phone and/or Email: _____

Half the cost of the dinner may be tax-deductible as a business expense. **The lecture part of the program counts as 2 hours of CEU contact hour credit.**



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