



# Granite State Geologist

The Newsletter of the Geological Society of New Hampshire, Spring-Summer (June) 2011 Issue No. 73

## 2010-2011 GSNH Officers:

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

### Vice President-Council

Bill Abrahams-Dematte  
AECOM, Wakefield, MA  
Bill.Abrahams-Dematte@aecom.com

### Vice President –Society - Doug Allen

Haley & Aldrich, Manchester, NH  
dallen@HaleyAldrich.com

### Secretary – Muriel Robinette

New England EnviroStrategies, Inc.  
murielrobinette@neenvirostrategies.com

### Treasurer – Jim Degnan

USGS, Pembroke, NH  
jrdegnan@usgs.gov

### Past-President – Jutta Hager

Hager GeoScience, Woburn, MA  
jhager@hagergeoscience.com

### Members-at-Large

Lea Anne Atwell  
Sanborn, Head & Associates, Concord, NH  
latwell@sanbornhead.com

Wayne Ives  
NHDES, Concord, NH  
wives@nh.des.gov

### Membership

Doug Allen  
Haley & Aldrich, Inc.  
Manchester, New Hampshire  
dallen@HaleyAldrich.com

### Education and Outreach

Tina Cotton  
jt\_cotton@comcast.net  
Lee Wilder  
geology@des.nh.gov

### Website

Rich Mechaber  
webmaster@gsnionline.org

### Newsletter Editor

Bettina Eames  
Loureiro Engineering Associates  
Merrimack, New Hampshire  
beeames@loureiro.com

## In this issue:

- Message from President
- Spring 2011 NHGS Groundwater Levels
- VGS/GSNH 2011 Joint Summer Field Trip Announcement
- Upcoming Events



*Photo Above: Dr. John Ebel of Boston College, Department of Earth and Environmental Sciences and Director of the Weston Observatory was the featured speaker at the GSNH Spring 2011 Dinner Meeting held Thursday April 7<sup>th</sup>, 2011 At The Red Blazer, in Concord, NH. GSNH President Julie Spencer presents John with the Society's Appreciation Award.*

**MESSAGE FROM THE PRESIDENT** Julie Spencer,  
AECOM, GSNH 2010-2011 President

Sometimes when people talk about the possibility of earthquakes in New England you will hear the comment "They say we're due for a big earthquake." Well, the "they" of that comment came to speak at our April dinner meeting when we were treated to a talk by Dr. John Ebel of Boston College. Dr. Ebel is Director of the Weston Observatory, which operates 16 seismic stations across New England. Even though our earthquake activity is 100 times less active than California, we do have about six small earthquakes each year in New England. In fact, the most seismically active area in New England is within the 30 kilometers extending between Concord and Lake Winnepesaukee.

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**MESSAGE FROM THE PRESIDENT (CONTINUED)** Julie Spencer, AECOM, GSNH 2010-2011 President

We had a great turnout in April with 74 attendees. Tim White won an Almandine Garnet collected from Ruggles Mine in Grafton, NH and Wade Ewing won a Green Fluorite Crystal Cluster from Westmoreland, NH. Thanks to Bob Whitmore for his donation of both minerals for the raffle.

The nominating period is open for our next election. We are always looking for members who are interested in becoming more active in the society. You can self-nominate or nominate another member. Look for the announcement from the Nominating Committee in this newsletter for contact information.

Plans for the joint summer field trip with the Vermont Geological Society (VGS) are coming together. The topic will be the glacial geology in the Upper Connecticut River Valley. A barbeque will be held at the end of the trip giving us more opportunities to get to know our fellow geologists from across our western border. See the notice in this newsletter for more details. We hope to see many of you there!

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**NH MINING PRODUCTS DISPLAY** Submitted by the NH Geological Survey

The Capital Mineral Club and the Geological Society of NH maintain a Display Case in the main lobby of the NH Department of Environmental Services building at 29 Hazen Drive in Concord, NH. The Spring-Summer 2011 display features popular NH Mining Products. Numerous examples of products made from NH rock and Don Dallaire, Gordon Jackson and Bob Whitmore contributed mineral resources for this display.



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**NHGS SPRING GROUNDWATER LEVELS** Submitted by NHGS

NHGS staff member Genevieve Al-Egaily collected ground-water level measurements for March 2011, April 2011 and May 2011.

March 22 – 25, 2011: The statewide average ground water level showed an increase of 1.73-feet from February. Increases were seen in all wells except for the Colebrook and Lisbon well, which showed decreases of 0.80 and 0.39-feet respectively. When compared with March 2010, the statewide average ground water level decreased 1.40-feet. Decreases were seen in all wells except for the Hooksett, Lisbon and New Durham wells, which showed increases of 0.25, 0.65, and 0.09 feet respectively. The average ground water level in the new bedrock wells showed an increase of 1.61-feet when compared with February. Increases were seen in all wells except for the deeper of the two well in Stewartstown, which showed a decrease of 0.88-feet. When compared with March 2010, the bedrock wells with at least one year of data showed a decrease of 0.74-feet. Decreases were seen in all wells except for the deeper of the two well

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## NHGS SPRING GROUNDWATER LEVELS (CONTINUED) Submitted by NHGS

in Stewartstown, which showed an increase of 1.11 feet. The data are available from NHGS, and are shared with the USGS and posted on their website.

April 25 – 28, 2011: The statewide average groundwater level showed an increase of 0.85-feet from March. When compared with April 2010, the statewide average groundwater level decreased 0.14-feet. The average groundwater level in the new bedrock wells showed an increase of 1.15-feet when compared with March. This increase was largely the result of the change in the shallower of the two bedrock wells in Stewartstown, which showed an increase of 8.49-feet. More than a foot of snow still remains on the ground around the Stewartstown wells. When compared with March 2010, the bedrock wells with at least one year of data showed an increase of 0.15-feet. Groundwater level measurements for the deeper of the two Concord bedrock wells are now available in real-time on the USGS website at: [http://waterdata.usgs.gov/nh/nwis/current/?type=gw&group\\_key=basin\\_cd](http://waterdata.usgs.gov/nh/nwis/current/?type=gw&group_key=basin_cd).

May 23 – 26, 2011: The statewide average groundwater level showed a decrease of 0.13-feet from April. When compared with May 2010, the statewide average groundwater level increased 0.73-feet. The average groundwater level in the new bedrock wells showed a decrease of 0.06-feet when compared with April. When compared with May 2010, the bedrock wells with at least one year of data showed an increase of 1.97-feet. The groundwater level measurements for the deeper of the two Concord bedrock wells are now available in real-time on the USGS website at: [http://waterdata.usgs.gov/nh/nwis/current/?type=gw&group\\_key=basin\\_cd](http://waterdata.usgs.gov/nh/nwis/current/?type=gw&group_key=basin_cd).

The data are available from NHGS, and are shared and posted on the USGS website. For historical groundwater data, please go to <http://nh.water.usgs.gov/WaterData>.

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## CALL FOR NOMINATIONS Submitted by Lea Anne Atwell

The next election of the GSNH Board of Directors will be coming up at the October 2011 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 the exception of the one open Member-at-Large position, each of the GSNH Board Member positions carries a one-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;

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

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## CALL FOR NOMINATIONS (CONTINUED) Submitted by Lea Anne Atwell

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

**Member-at-Large (one position 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](mailto:latwell@sanbornhead.com)) by August 19.

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## NHGS RECEIVES NH MINERAL LOAN FROM HARVARD Submitted by NHGS

In March 2011, the New Hampshire Geological Survey picked up some 55 New Hampshire mineral specimens previously selected from the Harvard Mineralogical Museum's (<http://www.fas.harvard.edu/~geomus/>) vast collection. These minerals will be periodically displayed in the GSNH / Capital Mineral Club display case located in the main lobby of the NH Department of Environmental Services building at 29 Hazen Drive, Concord, NH. So the next time you are at the DES Building, check out the lobby Rock and Mineral Display Case. Directions to 29 Hazen Drive are at: <http://des.nh.gov/contactus/directions.htm>

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## GSA'S EARTHCACHE PROGRAM

Source: From: <http://geology.about.com/b/2011/02/24/earthcaches-lessons-in-your-gps-unit.htm?nl=1>



Wouldn't it be nice to take a geologist with you on your outings? The Geological Society of America (GSA) has been helping bring this experience to geocachers with the EarthCache program since 2004. Today, more than 10,000 EarthCaches exist around the world. Here is how they work: like geocaches, you get a precise longitude and latitude and then make your way to that spot using your GPS unit. Once there, you do not find a hidden box like ordinary geocaches. Instead, you look around, read a geological lesson about the place, carry out a few learning-oriented tasks to prove that you were there, and then register your visit when you get

home. Teachers may find this a good way to help educate the public. You could make the world your classroom and its population your class. GSA has a simple set of guidelines at [earthcache.org](http://earthcache.org) to help you submit an EarthCache of your own.

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## NEW USGS PUBLICATION – ARSENIC AND URANIUM

A new Scientific Investigation Report 2011–5013 has been published by the U.S. Department of the Interior, U.S. Geological Survey (USGS) entitled “*Arsenic and Uranium in Water from Private Wells Completed in Bedrock of East-Central Massachusetts – Concentration, Correlations with Bedrock Units, and Estimated Probability Maps*” The report was written by



## NEW USGS PUBLICATION – ARSENIC AND URANIUM (CONTINUED)

John A. Colman, in cooperation with the Massachusetts Department of Environmental Protection and the Massachusetts Department of Public Health.

**NHGS IN NATIONAL GEOGRAPHIC APRIL 2011** Submitted by Lee Wilder, NHGS Outreach Coordinator

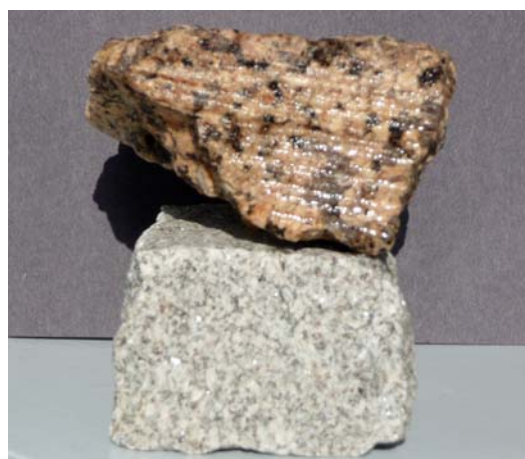
Well, sort of... In the April 2011 Issue of National Geographic ~ page 21 there is a one-page article/photo called "State Rock Stars." Items #17 in the photo are NH Granites! Below is a reprint from the April 2011 National Geographic Magazine page/article.

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*Photo Left: National Geographic Magazine*

[http://blogs.ngm.com/blog\\_central/2011/03/state-rock-stars.html](http://blogs.ngm.com/blog_central/2011/03/state-rock-stars.html)



*Photo Above: The Rocks after the "Photo Shoot"*

The pink Conway Granite was picked up at the Conway Quarry during the Summer 2010 GSNH Geology Field Trip. The gray Concord Granite, Lee Wilder collected previously from the Swenson Quarry on North State Street in Concord. The photo above shows the specimens after their return from National Geographic.

## THE AGING GEOLOGICAL COMMUNITY

Source: *Geoscience Currents* #42. <http://www.agiweb.org/workforce/currents.htm>.

The majority of geoscientists in the workforce are within 15 years of retirement age, and data from federal sources, professional societies, and industry indicate a growing imbalance in the age of geoscientists in the profession. Over the past three years, marked shifts in the age demographics for geoscientists in academia and the federal government have been witnessed. Between 2008 and 2010, there was an overall expansion in the ranks of assistant professors and in professor emeriti, and a concurrent decrease in the number of full professors.

In the federal government, the percentage of geoscientists 50 years old or older has increased since 2007. Furthermore, the majority of geoscience occupations in the federal government show no marked increase in the percentage of early-career geoscientists under the age of 40.

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## RED BLAZER RESTAURANT IN CONCORD, NH CERTIFIES AS ENVIRONMENTAL CHAMPION

Submitted by Doug Allen, Haley and Aldrich

We found this interesting, since this is the restaurant where the GSNH has been holding its quarterly dinner meetings. Sarandis Karathanasis, in addition to being co-owner of The Red Blazer, is also part of the management team for Amenico, a company based out of Pittsfield, that turns waste cooking oil into biomass based renewable diesel fuel. He has been promoting this renewable energy source to restaurants throughout the state. We should give the Red Blazer a round of applause at our next dinner meeting

*Source: Concord, NH - The New Hampshire Department of Environmental Services (NHDES) and the New Hampshire Lodging and Restaurant Association's Sustainability Program (NHSLRP) announce the Red Blazer Restaurant in Concord, NH has been certified as an "Environmental Champion," under a new restaurant certification program.*

*The NHSLRP has created a new green restaurant certification and The Red Blazer is the first restaurant to certify under that program. The Environmental Champion certification process involves filling out a points-based application that awards points for various environmental initiatives and participation in a site visit to verify those initiatives. To earn this award, The Red Blazer has switched the lighting to energy efficient bulbs; reduced lighting costs by taking advantage of natural light; and installed a program that ensures lighting is not left on unnecessarily. The restaurant buys local products whenever possible; has high efficiency equipment in the kitchen; gives its pre-consumer waste food scraps to an employee that raises pigs; and has contracted for a single stream recycling program. There are areas in the restaurant zoned separately to allow for shut down of heat and air conditioning when not in use and the system allows for utilization of fresh air when the outdoor temperature permits. Perhaps the most unique program in the restaurant is the use of waste cooking oil to heat all of the building's hot water. The owners and staff are constantly looking for ways to reduce their environmental impact without compromising service to their customers. They even encourage the restaurant clientele to go to [www.myenergyplan.net](http://www.myenergyplan.net) to find ways to reduce energy in their homes.*

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## **GSNH GRANT RECIPIENTS** Submitted by the GSNH Education Committee

The GSNH Board of Directors recently awarded two Classroom Enhancement Grants. As members know, funds for such awards come from proceeds collected at the Mineral Raffles held during our Dinner Meetings.

Andover Elementary Middle School was awarded a GSNH Classroom Enhancement Grant for purchase of geodes and fossil sets (invertebrate, vertebrate, and exploratory) for the third grade students. These hands-on specimens will help set the framework for the fourth grade and middle school curricula segments on NH's geologic setting and living animals and plants.

Sandra Martin of the Little Nature Museum (<http://www.littlenaturemuseum.org/>) was awarded a similar grant to purchase a Rock and Mineral Display Cabinet for this very busy museum. Many children visit the museum and will get to see a display of common NH rocks and mineral specimens. You may get to meet all these recipients, as they have been invited to our Annual Meeting in October 2011.

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## **UPCOMING EVENTS**

**JUNE 25 - 26, 2011** – 47<sup>th</sup> Annual Gilsum Rock Swap, Gilsum, NH. Details at: <http://gilsum.org/rockswap.aspx>

**JULY 30, 2011** – VGS and GSNH Joint Summer Field Trip (See This Issue's Announcement)

**AUGUST 27 - 28, 2011** – 48<sup>th</sup> Annual Gem, Mineral and Jewelry Festival Capital Mineral Club, Concord, NH. See: <http://www.capitalmineralclub.org>

**SEP 30 – OCT 2, 2011**- New England Intercollegiate Geological Conference Middlebury College, VT

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## **GENERAL INFORMATION**

International Pegmatite Conference is currently planned for late May 2013 in Bartlett NH. Watch the *GRANITE STATE GEOLOGIST* for details as the time gets closer.

Watch for events related to this year's centennial celebration of the Weeks Act in the US Congress. This act established the National Forests in the eastern US, including the White Mountains NF. There are many events held throughout the state in this celebration. Here is where to find out the details: <http://www.weekslegacy.org/>

GSNH member, Ernst Kastning has written an article on Lost River Gorge and Caves that will be in the July 2011 issue of *New Hampshire To Do* magazine. (Ernst also had an article on Rockhounding in the April 2011 issue of *New Hampshire To Do* magazine.)

The cataclysmic End of the World earthquake event did not occur on May 21. It has been postponed to December 21, 2012.

GSA has dates and details of upcoming annual and regional meetings at: <http://www.geosociety.org/meetings/>

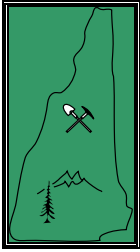
**Do not forget to check the website for up-to-date information about our meetings and field trips. Announcements regarding changes or cancellations will be posted on the GSNH homepage [www.gsnhonline.org](http://www.gsnhonline.org)**

**Thank you to the Swenson Granite Works for donation of the Concord Granite Slab to the UNH Earth Sciences Department.**



*Photo Above: Slab of Concord Granite being unloaded at James Hall, UNH for Earth Sciences Department sign. Left to right: Wally Bothner, Matt Davis, Will Clyde, Shan Zuidema (grad student), Joe Licciardi, Ian Honsberger (grad student), and Abby D'Ambrosia.*





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## Geological Society of New Hampshire

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### 2011 SUMMER FIELD TRIP

#### **Vermont Geological Society and New Hampshire Geological Society Joint Summer Field Trip and Pot Luck Cookout - Saturday July 30, 2011**

Geologist Woody Thompson will guide us through a tour of exposures of glacial, glacial lake and meltwater features in the upper Connecticut River Valley on **Saturday, July 30, 2011**. Trip check-in and carpool coordination will **begin at 0800** at the NHDOT Littleton rest area and welcome center. The rest area is located at exit 44 off I-93 at the intersection with Rt. 18. Car-pooling is encouraged. We will depart to the first stop promptly at 8:30am. We should be arriving at the pot luck cookout site at 4 PM.

We will be walking over rough, (slippery?) terrain. It is recommended that you bring for yourself bug spray, sunblock, water, sneakers or sturdy shoes. If you have special dietary needs, **you** should plan for those. Plan on bringing a lunch on your own, we will have a brief lunch break during the trip. We will be going rain or shine and it can be cool in northern NH, so dress for varying weather.

Please **RSVP** for this trip with your choice and second choice of pot luck contribution from the list below. *Email:* [murielrobinette@neenvirostrategies.com](mailto:murielrobinette@neenvirostrategies.com) with your name(s), no later than midnight, Friday July 22. Certificates will be available for 7.0 CEU hours. **Be sure to check [www.gsnh.org](http://www.gsnh.org) for any last minute changes, before departing for this trip!** The Vermont Geological Survey members will bring many additional dishes. **This trip is FREE for VGS/GSNH members. A \$2 donation by non-members (or anyone!) should/can be given to Jon Kim, VGS and will be used as a "tip" for Woody.**

Please choose an item and second choice to contribute to the pot luck, we will need several of each of these and will notify you within a day of your RSVP if your second choice item will be needed.

Package of 8 hot dogs  
4 Italian sausages  
20 hot dog rolls  
2 lbs potato salad

2lbs macaroni salad  
50 paper plates  
50 plastic cups  
2 soda 2 liter bottles

**Trip Outline, preliminary, reconnaissance to ensure suitable field conditions is underway:**

Assembly point: New Hampshire state rest area and information center on Route 18 west of Littleton (near exit 44 on I-93, on hill overlooking Moore Reservoir on the Connecticut River). From here, we will travel to stops on both the NH and VT sides of the Connecticut Valley

- Moraine(s) formed during an Older Dryas glacial readvance near Littleton, ~ 14,000 years ago.
- Evidence of ice-dammed glacial lakes that existed during deglaciation of the Ammonoosuc and Israel River valleys in the Littleton and Lancaster areas.
- Interbedded till and gravel units associated with the Older Dryas readvance at the Comerford Dam site (NH side).
- Varved clay of glacial Lake Hitchcock, overlying till, on the VT side of Comerford Dam.
- The spillway of glacial Lake Coos, which was upvalley from Lake Hitchcock.
- Evidence for multiple levels of Lake Coos (VT gravel pit exposures).
- Arrival of Paleoindians in the area soon after deglaciation.