



# Granite State Geologist

The Newsletter of the Geological Society of New Hampshire,  
Winter Edition – December 2013 – Issue No. 83

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## In this issue:

- **2014 membership renewal form**
- **Link to Steve Shope interview**
- **Dinner prices going up?**
- **More LIDAR coming?**
- **Dinner meeting January 16 at Red Blazer**
- **Upcoming Events and Much More!**

## MESSAGE FROM THE PRESIDENT

Julie Spencer, AECOM, GSNH 2012-2014 President

As I write this message we've just been treated to our first big storm of the season. Looks like it will be a White Christmas in New England this year! Seeing and hearing about all the delays on the TV and radio is a good reminder to check our website before the January 2014 meeting for any last minute postponements. We have had to move some of our January meetings around on the calendar a bit in the past.

Our annual meeting was held on October 17, 2013 during Earth Science Week. We were treated to a very interesting presentation by Sean Sweeney of Headwaters Hydrology on the Cold River Restoration Project. The flooding in 2005 and the resulting embankment failure caused local impacts three times greater than a 100-year flood. Those of us who attended the 2006 summer field trip to Alstead, NH remember well the awe we felt seeing the space where the 30-foot tall embankment had been washed out. Sean's talk touched on some of the political issues that can crop up when federal dollars are in play and time will tell which restoration efforts last the longest, those by the NRCS or those designed by Headwaters Hydrology.

Governor Hassan gave a very nice proclamation about Earth Science Week to the NH Geological Survey which they shared with us so I could read it to the assembled membership that night. I believe that was our first government proclamation and it was a very nice recognition of the importance of the earth sciences.

Raffle prizes that evening included a smoky quartz crystal from Hale's Location, NH won by Bob Francis, a quartz crystal from Rumney, NH won by Thelma Thompson and a quartz crystal from Diamantina, Brazil, won by Steve Lamb. Thank you to Bob Whitmore for his

donation of all three prizes. Congratulations to all the winners! As a reminder our raffle money is earmarked for our Classroom Enhancement and Professional Development Grants for teachers, so please encourage the earth-science teachers that you know to apply for our grants.

I'd like to welcome Abby Fopiano and Trent Hayden as our new co-webmasters. We really appreciate their service to the society. They will handle all website updates and have some ideas for improvements already. Feedback is always encouraged and appreciated.

If any of you were able to attend the November NHDES Waste Management Seminar you may have seen GSNH member Steve Shope zooming around in his motorized wheelchair. I had the pleasure of talking with him for a few minutes and he expressed a hope that he could attend one of our meetings soon. We'd love to see him back with us and our talk reminded me that even though the Red Blazer meeting room is on the second floor, there is an elevator there, so any of our members who are mobility-challenged can attend our meetings without having to struggle with the staircase.

Speaking of Steve, after our collection at the October meeting I was able to send a GSNH donation of \$200 to the Trail to Recovery Fund. A heartfelt thank you to all who generously donated! Look in this issue for links to videos about Steve from different NH TV programs.

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**ANKERITE**  $CA (FE^{2+},MG,MN^{2+})(CO_3)_2$



Locality: Mine Falls Park, Nashua, NH

Specimen Size: Broken 3.5 cm tan rhombic ankerite crystal cross-section, with limonite rind, embedded in sphalerite. Specimen backside is mostly galena.

Field Collected: Tom Mortimer <http://mindatnh.org/MineFalls%20Gallery.html>

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## MEMBERSHIP RENEWAL

It's that time again already! Yes, time to renew your GSNH membership. Keep current and enjoy the good karma. Please renew your membership for 2014 with the one-page membership form, conveniently available on our website <http://www.gsnh.org/membership/membership.shtml> or the one near the end of this newsletter.

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## THE GSNH DINNER MEETING IS

**JANUARY 16, 2014**

**MAKE YOUR RESERVATION NOW!**

**AT RED BLAZER INN**

**SOCIAL HOUR START AT 5:30, DINNER AT 6:30**

Email reservations to Erin Kirby at [EKirby@Geosyntec.com](mailto:EKirby@Geosyntec.com) or

Mail to: Erin Kirby, GSNH Dinner Meeting, PO Box 3483, Concord, NH 03302-3483.

Checks payable to: GSNH.

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## OPEN-ACCESS JOURNALS/SERIES

GeoRef is a web page that lists a large number of journals and series that are openly available on the web. Only journals and series that appear to provide stable open-access to current issues, have multiple issues available for use, and appear to plan to continue to be available in an open manner are included. Journals that require subscriptions to current issues are not included. This list is updated frequently as availability of openly accessible publications grows.



The Open-Access Journals/Series list is divided into five sections:

[Geological Journals/Series](#)

[Related Disciplines and/or General Science Journals](#)

[Newsletters \(must contain formal articles to appear\)](#)

[Geological Survey Publications / Government Agencies](#)

[Meeting/Conference Abstracts/Proceedings](#)

Note that the GSNH newsletter is not listed here.

This listing requires that a newsletter contain formal

articles in order to be included. Find the list of journals here:

<http://www.agiweb.org/georef/about/openaccess.html>

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## A NATIONAL ROCK?

Gail Collins, columnist for the NY Times started a small avalanche of follow up stories with her article (<http://www.nytimes.com/2013/05/16/opinion/collins-on-the-plus-side.html?ref=opinion>) suggesting Congress spend its time selecting a national rock. She threw marble in as her choice. David Williams, the author of *Stories in Stone*, made plausible arguments for [conglomerate](#), [slate](#), [gneiss](#) and even [rock salt](#) in his blog post "[Official National Rock](#)." His commenters pushed for [basalt](#) (<http://geologywriter.com/blog/stories-in-stone-blog/official-national-rock/>). Andrew Alden, of About.com, and the only one without rocks in his head, made the logical choice—granite.

<http://geology.about.com/b/2013/11/27/a-national-rock.htm?nl=1>.

Twenty-six of the 50 states have designated an official state stone or state rock. (Massachusetts declared one of each, and Vermont named three.) The "source" link on this page [http://geology.about.com/od/regional\\_geology/a/staterocklist.htm](http://geology.about.com/od/regional_geology/a/staterocklist.htm) goes to the best existing material from the respective state government.

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## NH GEOLOGICAL SURVEY MAPPING UPDATES Submitted by Lee Wilder

During the 2013 Summer Field Season, the NH Geological Survey's Mapping Program, mapped the surficial geology of the following quadrangles:

1. Geo-084-024000-SMOF - Tinkham, D.J., Brooks, J.A., and Wingsted, M.B., 2013, Surficial Geologic Map of the Plymouth Quadrangle, Grafton County, New Hampshire: New Hampshire Geological Survey, scale 1:24,000.
2. Geo-121-024000-SMOF - Cotton, J.E. and Cotton, A.M., 2013, Surficial Geologic Map of the Andover quadrangle, Merrimack County, New Hampshire: New Hampshire Geological Survey, scale 1:24,000.
3. Geo-074-024000-SMOF - Hildreth, C.T., 2013, Surficial Geologic Map of the Waterville Valley 7.5 minute Quadrangle, New Hampshire: New Hampshire Geological Survey, scale 1:24,000.
4. Geo-053-024000-SMOF - Fowler, B.K., 2013, Surficial Geologic Map of the Franconia 7.5 Minute Quadrangle: New Hampshire Geological Survey, scale 1:24,000.
5. Geo-062-024000-SMOF - Fowler, B.K., 2013, Surficial Geologic Map of the Lincoln 7.5 Minute Quadrangle: New Hampshire Geological Survey, scale 1:24,000.



Twenty new GSNH "In Appreciation Awards" purchased by the Society and crafted by Lee Wilder.

## GSNH TEACHER GRANTS

The Geological Society of NH has several monetary grants available for classroom teachers. Don't let budget restraints crimp your classroom or professional development activities. Details at: <http://www.gsnhonline.org/outreach/outreach.shtml>

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## WHAT IS YOUR BOARD DOING? By Lea Anne Atwell

The Board gathered for its quarterly meeting at the offices of Sanborn Head & Assoc. in Concord. We were joined by Trent Hayden, one of our new co-webmasters. Trent and Abby Fopiano have graciously volunteered to update and manage our website. Thanks Trent and Abby!

The **GSNH FaceBook** page is up and running. We'll be posting the newsletter, dinner meeting announcements, and other happenings on our page (as well as on our website). You can find us under "**Geological Society of New Hampshire**." Please "like" us! We are also planning a LinkedIn page, which Trent Hayden will be putting together; stay tuned for details in the coming months.

Erin Kirby has been busy coordinating the January dinner meeting. Unfortunately, Red Blazer will be raising their meal prices in 2014 by \$5 per meal. GSNH intentionally keeps our dinner meeting prices low so that more people, particularly students, can attend. Our prices typically result in a small loss of money at each dinner meeting; the \$5 increase at Red Blazer isn't sustainable for the organization to absorb.

The board is looking into several options: 1) selecting a less expensive menu option; 2) increasing the price that we charge for the attending the dinner meetings; or 3) changing the venue. For the upcoming January dinner meeting, we chose a less expensive dinner menu at Red Blazer in order to keep the dinner meeting price the same. We'll continue to discuss ideas and welcome any feedback you may have!

We are starting to think about ideas for the summer field trip. One plan is to link up with the Geological Society of Maine for a field trip in the Mahoosic Range near Bethel. If you have any suggestions, or would like to volunteer to help, please contact a board member.

The next board meeting will be hosted by Russ Wilder at 6 PM, March 13<sup>th</sup> at the offices of URS Corp., 1155 Elm St. in Manchester.

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## GSNH POLICY FOR DINNER MEETINGS From Erin Kirby

We had a great showing for our 17 October 2013 fall meeting at the Makris Lobster & Steakhouse. It is always so much fun to meet and greet everyone as they come in the door! I want to thank everyone for coming and those who were no-shows for graciously reimbursing the Society. As you know reservations for a dinner meeting 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 with me ([ekirby@geosyntec.com](mailto:ekirby@geosyntec.com)) by noon the Tuesday before the Dinner. The Society must pay for your reservations if you cannot attend, so we appreciate your understanding and prompt payment.

We are a non-profit organization staffed by a handful of enthusiastic volunteers. We apply your annual membership dues, your registration fees for meetings and field trips, and raffle monies to fund such worthy causes as the Lincoln R. Page Professional Development Fund<sup>1</sup> and Classroom Enhancement Grants<sup>2</sup>. All members are always welcome attend our Board Meetings and are encouraged to participate in decisions concerning how we allocate the Society's funds.

<sup>1</sup> The Lincoln R. Page Professional Development Fund is named in honor of Lincoln R. Page and reimburses award winners up to \$300 for expenses related to their continuing education in the earth science.

<sup>2</sup> Classroom Enhancement Grants for which teachers across the state of New Hampshire are invited to submit proposals for a grant of funds (up to \$300) to support the purchase of earth-science related teaching materials (equipment or supplies) for use in the classroom.

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## MEMBERSHIP RENEWAL

It's that time again already! Yes, time to renew your GSNH membership. Keep current and enjoy the good karma. \$20 or \$10 for a student membership. Please renew your membership for 2014 with the one-page membership form, conveniently available on our website <http://www.gsnh.org/membership/membership.shtml> or the one near the end of this newsletter.

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**EARTHQUAKE FELT THROUGH CENTRAL N.H.** By JEREMY BLACKMAN,  
Concord Monitor staff <http://www.concordmonitor.com/home/8873211-95/earthquake-felt-through-central-nh> - Friday, October 11, 2013

People from dozens of towns in central New Hampshire reported feeling what they described as an earthquake shortly after 9 p.m. The U.S. Geological Survey, which has limited operations during the partial federal government shutdown, did not provide immediate confirmation of the quake, but the New England Seismic Network, which operates out of Boston College, reported a magnitude 2.5 to 2.6 tremor, with its epicenter 5 kilometers northwest of Contoocook.

The Concord police said they fielded nearly half a dozen calls from residents in the area reporting structural shaking – though no immediate damage or injuries. Others posted on social media that they too had felt a noticeable rattling.

A 4.0-magnitude earthquake struck New England one year ago, centered in Maine and reverberating as far as Vermont and Connecticut. A 3.1-magnitude quake shook the area around the same time in 2010.



WMUR-TV (<http://bit.ly/GIFZIM>) reports that residents in more than a dozen communities from Franklin to Laconia reported feeling the ground shake or hearing a loud rumbling noise at 9:07 p.m.

Source: <http://aki.bc.edu/index.htm>

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## RECENT TV NEWS STORIES ABOUT STEVE SHOPE

Heather Hamel of WMUR reported on Steve's conditions in a October 10, 2013 report "Community rallies around Newfields man paralyzed in accident" Read more and see Steve's interview at: <http://www.wmur.com/news/nh-news/community-rallies-around-newfields-man-paralyzed-in-accident/-/9857858/22376368/-/kctfuc/-/index.html#ixzz2mcJLmsg5>.

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## **GRANTS: MONEY, MONEY, MONEY...** from Tina Cotton

Many BIG thanks to Muriel Robinette for an outstanding job of selling raffle tickets at our dinner meetings and to all who have succumbed to her pleas! The money raised in this manner is used to promote our educational outreach to students and teachers.

The **Lincoln R, Page Professional Development Fund** reimburses teachers as much as \$300 for expenses related to their continuing education in the earth sciences. Most recently, this fund helped offset registration fees for teachers attending the workshops at the Northeast Section GSA meeting last March.

The **Classroom Enhancement Grant** reimburses as much as \$300 to teachers for the purchase of earth-science-related teaching materials (equipment or supplies) for use in the classroom. Typically, grant funds have purchased rock, mineral, and fossil sets.

As members of GSNH, you are in a unique position to publicize these grants to your local school system. School budgets have been squeezed these past few years. Teachers and schools across the state can apply for these grants to help in a small way to augment limited school funds.

Details for applying are available at <http://www.gsnhonline.org/outreach/outreach.shtml>.

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## **NEED A STATE GEOLOGIC MAP?**

Are you planning a trip and would you like to preview the geology? A gallery of the 50 state bedrock maps starts here - <http://geology.about.com/od/maps/ig/stategeomaps/>. This site claims to contain the first and the only complete set of state geologic maps on the Web. <http://geology.about.com/od/stategeologicmaps/>. See also links to all sorts of content about New Hampshire geology: its rocks, landforms and history at [http://geology.about.com/od/geology\\_nh/](http://geology.about.com/od/geology_nh/).

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## **INNOVATIVE PROGRAMMING TO BE INTRODUCED AT NEGSA, 2015** submitted by Brian Fowler

The 2015 Meeting of the Northeastern Section of the Geological Society of America will return to the Bretton Woods Omni-Mount Washington Resort after its success there this past March. Since 53% of the 2013 attendees were students, most looking for job and career-building contacts, the Organizing Committee has decided a substantial part of the 2015 program will emphasize applied and engineering geology, using in a more relaxed “forum” format that permits students and consulting, governmental, planning, and industrial practitioners to more easily present case histories and innovative techniques and to then “talk shop” more comfortably. The Committee would like to speak with applied geoscience professionals about ways to become involved with this unique opportunity. You can have an active hand in encouraging students to pursue careers in applied geoscience - an effort urgently needed to combat the trend of geology students pursuing non-geological employment. If you'd like to be “in on the ground floor” of this unique programming, please email Brian Fowler, at [b2fmr@metrocast.net](mailto:b2fmr@metrocast.net).

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## **CHINA LANDS ON THE MOON**

A Chinese spacecraft made a soft landing on the surface of the moon on Saturday, December 14, 2013 and deployed a rover Sunday. This is the first mission of its kind since an unmanned Russian mission touched down in 1976. China joined the United States and the former Soviet Union as the only countries to make a soft landing and safely drop an exploratory vehicle on the moon. The rover is equipped with the kind of technology that has never been on the surface of the moon. It may tell us about the ancient scientific records trapped between lava flows. <http://www.npr.org/blogs/thetwo-way/2013/12/14/250992496/state-tv-chinese-rover-makes-soft-landing-on-the-moon>  
<http://www.npr.org/blogs/thetwo-way/2013/12/15/251277579/chinas-moon-rover-separates-from-lander>

## HITCHCOCK MAP RESTORATION

The Hitchcock Map in James Hall has been used to teach UNH students about geology of the region since 1893. In 2009, during the renovation of the building, Wally Bothner oversaw the project of repairing and restoring the map. Scott Ripley from UNH Video Productions documented the map's journey during this year long process. The link to the video of the map restoration story is <http://vimeo.com/8972779>.



As part of the James Hall renovation, Professor Emeritus of geology Wally Bothner restored a unique 1878 wooden New Hampshire geological relief map by Charles Hitchcock. Credit: Perry Smith, UNH Photographic Services

Thanks to Wally, the top of Mount Washington has been replaced and the Northeast's highest peak now reaches its true height of 6,288 feet. Mount Washington got its facelift, along with the rest of New Hampshire, Vermont and Western Main, when Bothner undertook a painstaking restoration of a 12-by-16 foot wooden relief map created by state geologist Charles Hitchcock in the late 1800s. [http://www.unh.edu/news/cj\\_nr/2010/aug/bp09map.cfm](http://www.unh.edu/news/cj_nr/2010/aug/bp09map.cfm)

The Hitchcock map, which was the first of three relief maps of New Hampshire, is at a horizontal scale of one inch to one mile, with its vertical scale exaggerated 500 percent. Constructed of laminated half-inch thick boards cut and glued on top of each other, it weighs nearly 1.5 tons and was moved in three pieces. In addition to 40 color-coded rock types, the map showcases bodies of water and mines that were active when the map was created. Geographic features like the boundaries and names of nearly 570 towns and major roadways reflect 1870s New England; the state's largest lake is spelled "Winnipiseogee." [http://unh.edu/news/cj\\_nr/2010/aug/bp09map\\_01.jpg](http://unh.edu/news/cj_nr/2010/aug/bp09map_01.jpg)

During the work on his monumental three volume "Geology of New Hampshire" (1874, 1877, 1878), it's first State Geologist (1868-1878) Dartmouth Professor Charles H. Hitchcock prepared



four inch to the mile wood laminate relief maps with vertical exaggerations of ~2.5 and ~5 times.  
[https://gsa.confex.com/gsa/2009NE/finalprogram/abstract\\_155229.htm](https://gsa.confex.com/gsa/2009NE/finalprogram/abstract_155229.htm)

See more video describing this restoration at [www.youtube.com/watch?v=3lWeiiTcPkQ](http://www.youtube.com/watch?v=3lWeiiTcPkQ) and <http://docs.unh.edu/hitchcock/pages/titlepage.htm>.



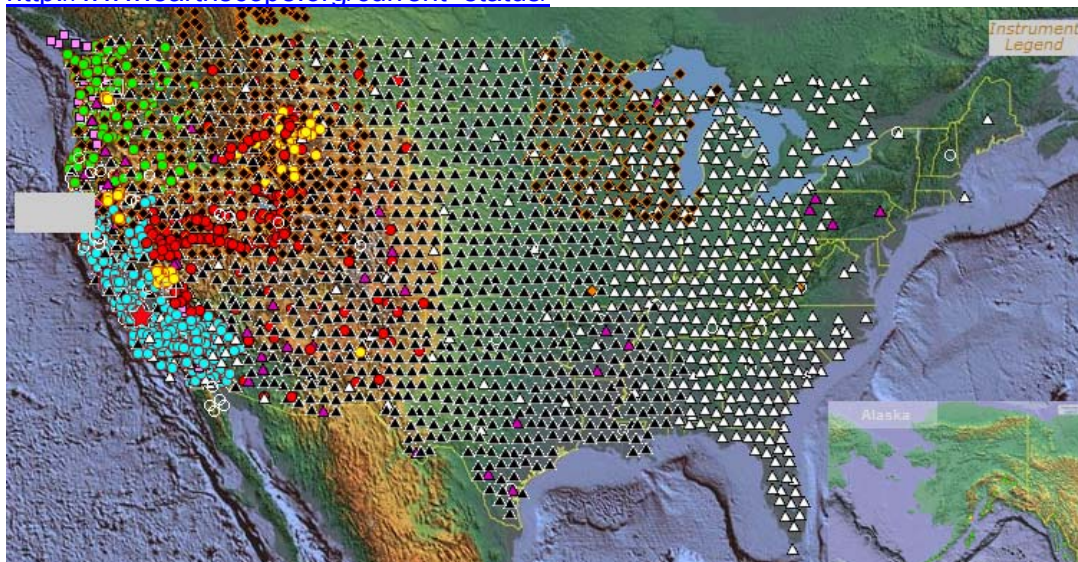


New Hampshire's White Mountains, returned to their rightful height, are a highlight of the newly restored historical relief map of Northern New England at the University of New Hampshire's James Hall. Credit: Lisa Nugent, UNH Photographic Services.

### **EARTHSCOPE**

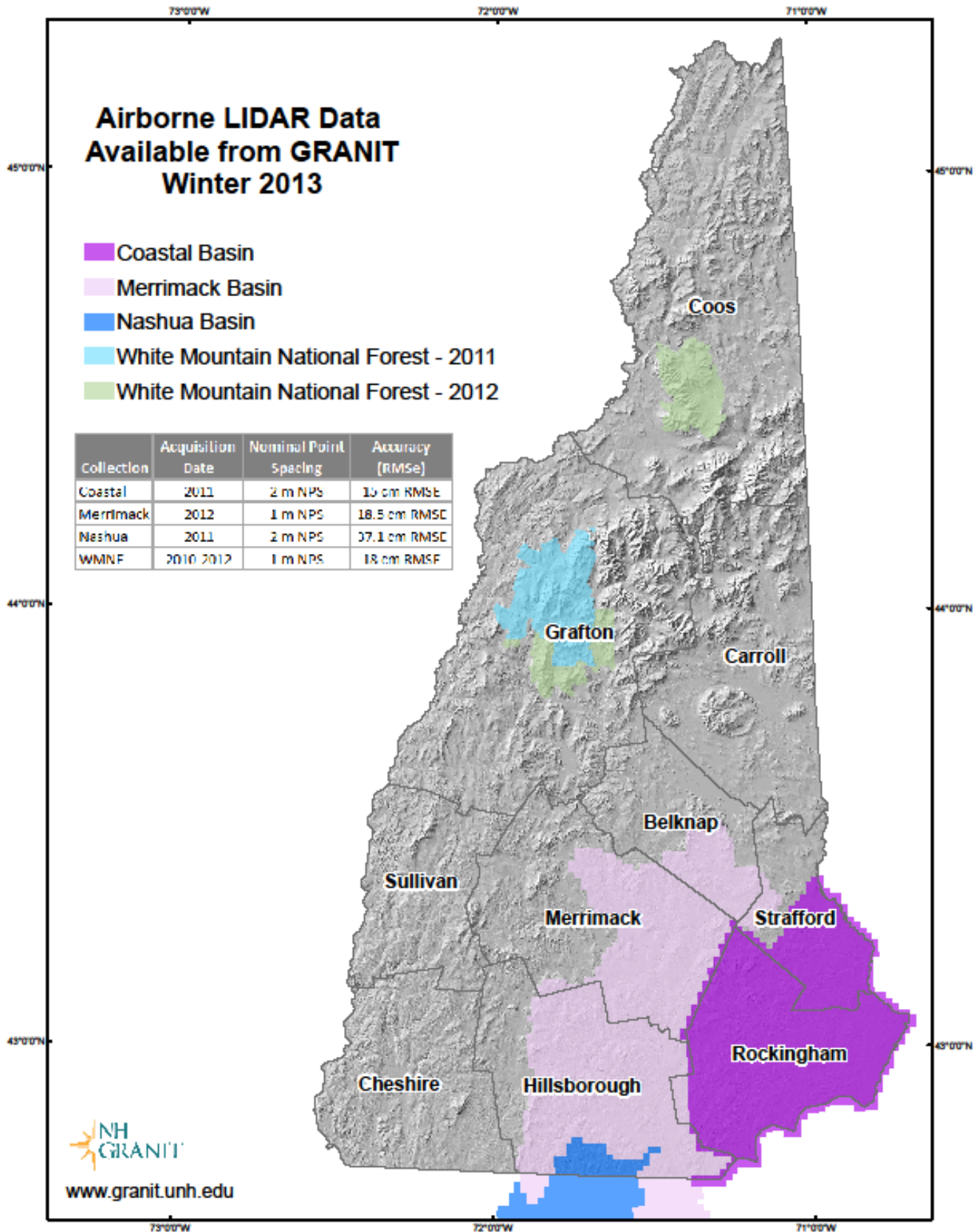
EarthScope is a program of the National Science Foundation (NSF) that deploys thousands of seismic, GPS, and other geophysical instruments to study the structure and evolution of the North American continent and the processes that cause earthquakes and volcanic eruptions. It involves collaboration between scientists, educators, policy makers, and the public to learn about and utilize exciting scientific discoveries as they are being made.

[http://www.earthscope.org/current\\_status/](http://www.earthscope.org/current_status/)



**CAN NH PROVIDE FUNDING FOR MORE LIDAR COVERAGE?**

Efforts are ongoing to obtain funding to complete statewide LIDAR coverage, but nothing is concrete yet. The current LIDAR coverage is shown below.



## DATES TO REMEMBER

**March 16-20, 2014** - Symposium on the Application of Geophysics to Engineering and Environmental Problems, Boston MA - <https://www.eegs.org/Annual-Meeting-SAGEEP/SAGEEP-2014>.

**March 23-25, 2014** - NE-GSA at Lancaster, PA <http://www.geosociety.org/sections/ne/2014mtg/>

**March 2015** - NE-GSA at Bretton Woods, NH – See Brian Fowler’s article on the new programming emphasis in this issue.

# BOSTON



Massachusetts USA  
Boston Marriott Copley Place

# SAGEEP 2014

# March 16-20, 2014

Abstracts Deadline:  
Dec. 16!

Make Hotel  
Reservations Now -  
Online or Call!

Conference  
Registration Open  
Soon!

Keynote Speaker  
Alfred William Eustes  
Distinguished  
Lecturer 2014-18,  
Colorado School of  
Mines

## Preliminary Program Highlights



### Short Courses

- Multichannel Analysis of Surface Waves (MASW) Fundamentals and More
- Overview of Utility Locating Technologies
- Google Earth Applications in Education and Research
- Environmental Applications of the Induced Polarization Method



### Technical Field Trip

Boston: A Geological and Engineering Tour of the “City upon a Hill”. A half-day field trip led by David Woodhouse, consulting geologist, offering a geohistorical perspective of the City of Boston focusing on its geology and the role geology played in the city’s settlement, its growth and the design of its buildings.



### Special Sessions

Geophysical Data Management (GIS)  
Advances and Challenges in Archeological Geophysics  
Geophysical Imaging of Standing Trees  
Geophysical Data Management (GIS)  
Live UXO Data Analysis  
Munitions Detection Systems and Software  
Electrical Geophysical Monitoring  
Seismic Refraction: Full Waveform Inversion/Imaging

Jutta Hager  
VP - SAGEEP  
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Mario Carnevale  
Technical Chair  
[mcarnevale@hagergeoscience.com](mailto:mcarnevale@hagergeoscience.com)

[www.EEGS.org/Annual-Meeting-SAGEEP-2014](http://www.EEGS.org/Annual-Meeting-SAGEEP-2014)

## **DATES TO REMEMBER (continued)**

**May 21-23, 2014** - Joint Annual Meeting of the Geological Association of Canada, the Mineralogical Association of Canada, the Atlantic Geoscience Society and the University of New Brunswick, , May 21-23 2014, on the Fredericton campus of the University of New Brunswick.  
<http://www.unb.ca/conferences/gacmac2014/>

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### **2014 ACEC-NH Speaker Series January 15, 2014**

NH Department of Environmental Services Commissioner Burack & U.S. EPA Region 1: James T. Owens, III, U.S. EPA Region 1 Director (Invited)

**DES staff members** will be in attendance: Vicki Quiram, Assistant Commissioner; Harry Stewart, Water Division Director; Mike Wimsatt, Waste Management Director; and Craig Wright, Air Division Director.

\$35.00 registration includes full breakfast (\$50.00 Non Member Rate)

Grappone Conference Center, 70 Constitution Ave., Concord, NH, 03301

**Pre-registration is required.** RSVP by January 10, 2014.

**For more information:** Contact: ACEC-NH Executive Director, Alex Koutroubas  
(603) 225-7397 or [alex@dennehybouley.com](mailto:alex@dennehybouley.com)

Effective **January 1, 2014** ACEC-NH's address will change to:

**ACEC-NH c/o Dennehy & Bouley**

**17 Depot Street, Unit 3**

**Concord, NH 03301**

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### **GSNH LEGISLATIVE TRACKING – 2014** submitted by Russ Wilder

It is still early to figure out which Legislative Service Requests (LSRs) will actually survive to become bills to be considered for legislation. LSRs become bills when referred to a Policy Committee, usually in late December or January. The texts will be made available then. The following LSRs appear to have been withdrawn: 2014-H-2072-R by Spang; 2014-H-2117-R by Levasseur; 2014-H-2243-R by Horrigan.

2014-H-2072-R Sponsors: (Prime) [Judith Spang](#) - establishing a commission to study the establishment of a land use and environmental court or board in New Hampshire. (*Withdrawn*)

2014-H-2079-R Sponsors: (Prime) [Marcia Hammon](#) - requiring the department of environmental services to examine the potential harm to the public and the environment of New Hampshire from the transportation of bituminous tar sands through Coos county by the Portland-Montreal pipeline.

2014-H-2117-R Sponsors: (Prime) [Nickolas Levasseur](#) - relative to municipal standards under environmental policies. (*Withdrawn*)

2014-H-2281-R Sponsors: (Prime) [Daniel Itse](#) - establishing a committee to study and propose a recodification of certain environment-related committees.

Sponsors: (Prime) [Maureen Mann](#), [John Reagan](#) - relative to large groundwater withdrawal permits.

2014-H-2309-R Sponsors: (Prime) [Karen Umberger](#) - relative to municipal monitoring of large groundwater withdrawals.

2014-H-2079-R Sponsors: (Prime) [Marcia Hammon](#), [Laurence Rappaport](#), [Marjorie Shepardson](#), [Linda Lauer](#) - requiring the department of environmental services to examine the potential harm to the public and the environment of New Hampshire from the transportation of bituminous tar sands through Coos county by the Portland-Montreal pipeline.

2014-H-2243-R Sponsors: (Prime) [Timothy Horrigan](#) - relative to waste from hydraulic fracking. (*Withdrawn*)

2014-H-2199-R Sponsors: (Prime) [Leigh Webb](#) - relative to the oil discharge and gasoline ether cleanup fund.

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## THE NH GEOLOGICAL SURVEY GROUND WATER LEVEL NETWORK SUMMARY

Submitted by the NHGS

**September 2013** NH Groundwater level measurements were collected by the NH Geological Survey from September 20 – September 27, 2013. The statewide September 2013 average groundwater level for **wells in the overburden** (soil on top of the bedrock) showed a decrease of -0.23 feet from August 2013. When compared with September 2012, the statewide average groundwater level for September 2013, in these wells, increased +0.13 feet. The September 2013 average groundwater level in the new **bedrock wells** showed a decrease of -3.03 feet when compared with August 2013. When compared with September 2012, the bedrock wells showed an increase of +1.63 feet for September 2013.

**October 2013** NH Groundwater level measurements were collected by the NH Geological Survey from October 25 – October 30, 2013. The statewide October 2013 average groundwater level for **wells in the overburden** (soil on top of the bedrock) showed a decrease of -0.21 feet from September 2013. When compared with October 2012, the statewide average groundwater level for October 2013, in these wells, decreased -0.43 feet. The October 2013 average groundwater level in the new **bedrock wells** showed a decrease of -0.09 feet when compared with September 2013. When compared with October 2012, the bedrock wells showed an increase of +0.41 feet for October 2013.

**November 2013** NH Groundwater level measurements were collected by the NH Geological Survey from November 25 – November 29, 2013. The statewide November 2013 average groundwater level for **wells in the overburden** (soil on top of the bedrock) showed a decrease of -0.05 feet from October 2013. When compared with November 2012, the statewide average groundwater level for November 2013, in these wells, decreased -0.41 feet. The November 2013 average groundwater level in the new **bedrock wells** showed a decrease of -0.14 feet when compared with October 2013. When compared with November 2012, the bedrock wells showed a decrease of -0.52 feet for November 2013.

The groundwater level measurements for the deeper of the two Concord bedrock wells (CVWB-1) are **not** presently available in real-time. Past data are on the USGS website at: [http://waterdata.usgs.gov/nh/nwis/uv/?site\\_no=431034071340501&PARAMeter\\_cd=72019](http://waterdata.usgs.gov/nh/nwis/uv/?site_no=431034071340501&PARAMeter_cd=72019).

The data for all of the wells in the NH Groundwater Level Network are shared with and posted on the USGS website at: <http://groundwaterwatch.usgs.gov/StateMaps/NH.html>.

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## EARTH SCIENCE WEEK 2013 - A WORLDWIDE SUCCESS

While figures are still being tallied, an estimated more than 50 million people gained a new awareness of the geosciences through the 16th annual Earth Science Week (<http://www.earthsciweek.org>) last month. The event celebrated the theme “Mapping Our World” by illuminating the many exciting ways geoscientists use maps to study the planet.

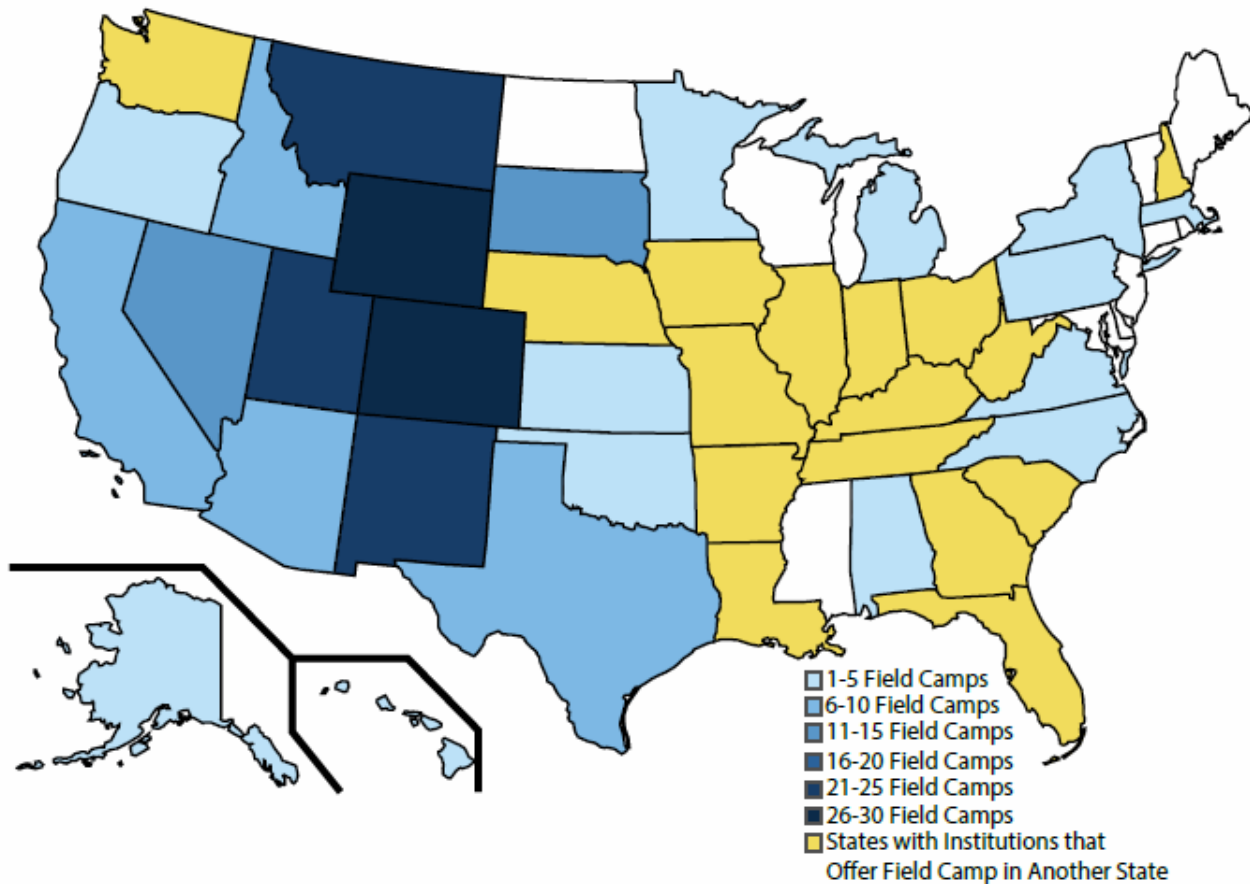
Events ranged from students conducting classroom science projects to activities at science centers and museums. National Fossil Day, October 16, reached millions with paleontology activities and resources. Women in the Geosciences Day, October 17, enabled professional geoscientists to share the excitement of their careers with young women. And the second annual Geologic Map Day engaged students in learning about the vital uses of geologic maps (<http://www.earthsciweek.org/geologicmap/index.html>)

## GEOLOGY FIELD CAMP ATTENDANCE UP

submitted by Lee Wilder

Dr. Penelope Morton, University of Minnesota Duluth, has provided updated information about student attendance at field camps each year, as well as the locations of the field camps and institutions that host them. Student attendance at field camps has steadily risen since 2006 reaching 2,973 students in 2013, a 92% increase.

For more information about student attendance and to see the states most often visited during field camps, please see Currents #82 at <http://www.agiweb.org/workforce/currents>



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## GEOLOGY NORTH OF THE BORDER

GEOLOGICAL ASSOCIATION OF CANADA (<http://www.gac.ca/wp/>) has a fun site to explore including a minerals and rock series page ([http://www.gac.ca/wp/?page\\_id=6011](http://www.gac.ca/wp/?page_id=6011)) and copies of their current and past newsletters with pictures of some pretty interesting characters—your fellow geologists. Not to mention, their reference page. CanGeoRef is a subset of GeoRef ([www.agiweb.org/georef](http://www.agiweb.org/georef)), the earth science literature database built and maintained by the American Geological Institute (AGI) which contains 3.2 million references. CanGeoRef will eventually include all Canadian Geoscience Literature published since the early 1800's. And if you still need credit hours, there's a page of upcoming events including the Joint Annual Meeting, May 21-23 2014, on the Fredericton campus of the University of New Brunswick

## FALL GOLD PANNING

Mike Heidorn and Wayne Ives took a jaunt up to the White Mountains and spent the day panning last fall. Mike got some pictures worth more than gold. At least more than we found!



above – A gold flake in Mike Heidorn's pan. Photos by Mike Heidorn

left - Wayne Ives panning on a stream in the White Mountains this September.

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## STANDARD ATOMIC WEIGHTS OF 19 ELEMENTS TO CHANGE

The International Union of Pure and Applied Chemistry (IUPAC) has voted to change the standard atomic weight of 19 elements as listed on the Periodic Table of the Elements. The move has come following the annual meeting of a special Union commission held this past August. The changes are being made due to the availability of more precise measurements and have come about as a result of recommendations by the U.S. Geological Survey, commission members and other research organizations.

Weights on the Periodic Table are given as standard atomic weight, which is the average mass of a given element in mass units. One mass unit is equal to 1/12 the mass of a single carbon-12 atom.

Determining precise atomic weights has become more important as new more precise tools are used to investigate the natural world around us. More precise atomic weights help make archeological estimates more precise for example. Scientists have been publishing tables with atomic weights as far back as 1899 when the International Atomic Weights Committee was convened. The IUPAC has been the body responsible for overseeing international standards for [atomic weights](#) since 1919.

In this latest go round, some elements are shown as heavier, some lighter. The full list of changes will be published in a new table titled "Table of Standard Atomic Weights 2013" in the journal Pure and Applied Chemistry, sometime next year.

<http://phys.org/news/2013-09-iupac-votes-standard-atomic-weights.html>



## LEGISLATION AFFECTING GEOLOGISTS IN MAINE submitted by Russ Wilder

According to Keith Taylor, President of the Maine Geological Society, the report mentioned below, is moving ahead to the legislature's finance committee for consideration early next year.

### From Maine Geological Society Newsletter

#### **More Government Reform ?**

#### **A PROPOSAL TO DISCONTINUE LICENSING OF GEOLOGISTS IN MAINE**

#### **Check out the recent Report of the Director of the Office of Policy and Management Findings and Recommendations Part F of the Biennial Budget**

(<http://www.maine.gov/economist/Part%20F/Final%20Report%20with%20Cover.pdf>) released on September 30, 2013. The Office of Policy and Management (OPM) was established by the Maine Legislature in 2012 to help improve the efficiency and effectiveness of Maine's government. In this report OPM has identified \$11,255,673 in potential administrative savings for FY14 and \$24,276,592 in potential savings for FY15, achievable administratively and through legislative action. OPM identified four licensing programs currently operating within the Department's Office of Professional and Occupational Regulation for discontinuation. One of those programs is the **Board of Certification of Geologists and Soil Scientists**. There is no reference in the report to cost savings achieved by eliminating this Board (in fact, it appears that income from our license fees significantly exceeds any costs to the state).

In any event, according to the OPM report:

*"The Board of Certification of Geologists and Soil Scientists was established in 1973. There are currently 332 individual licensees—257 geologists and 75 soil scientists. On average, one new applicant is licensed annually. The State Geologist and State Soil Scientist, both employees of the Department of Agriculture, Conservation and Forestry, are ex officio members of the board....."*

*The program's complaint history is minimal. Between 2000 and 2013, three complaints have come before the board. Two complaints were dismissed and the third complaint filed in January 2008 that resulted in a board decision and order after hearing is on appeal to the Law Court. The board met twice to discuss the 2008 complaint filed by the Department of Environmental Protection against a licensee. The Board did not meet in 2009. The Board met once in 2010 to conduct an adjudicatory hearing on the 2008 complaint. The board did not meet in 2011. The Board met twice in 2012, once to discuss the Superior Court remand on the 2008 case and once to review the decision and order on the remand.*

*OPM and the Department can discern no need to continue regulating this profession. The Department receives no inquiries from the public about licensees or the program itself. Although the administrative complaint process is available to the public, consumers have had no need to use the complaint process. OPM and the Department recommend discontinuation of the licensing program for geologists and soil scientists without jeopardy to public safety"*

Tina Cotton's update: Maine licenses expire December 31, which means renewals must be done this month irrespective of pending legislation to eliminate licensing. Maine licenses must be renewed each year for a fee of \$170.

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## LATE BREAKING SUMMER FIELD TRIP NEWS – Wayne Ives

As we once linked up with Vermont for a field trip, we may be linking up with Maine for an overnight field trip to the Bethel-Sunday River area July 19-20, 2014 for glacial and bedrock stops run by Woody Thompson and Dyk Eusden. Gordon Bromley at U. Maine Orono may be involved in describing his work dating glacial moraines in the Berlin-Androscoggin area. A pegmatite mine is likely to be on the itinerary. There is a brand new mineral museum in Bethel that is supposed to be awesome and will likely be part of the trip, too. More news likely by the dinner meeting. Let the Board know if this date and plan is interesting to you.



**Sean Sweeney, P.E., CWS of Headwaters Hydrology, PLLC is presented with the Society's Appreciation Award at the 10/15/17 Earth Science Week 2013 for his presentation "The 2005 Alstead Flood--Eight Years Later."**



### **NEW ISLAND OFF THE COAST OF JAPAN**

November 21, 2013 - A volcanic eruption has raised a new island. Advisories from the coast guard and the Japan Meteorological Agency said the islet is about 660 feet in diameter. It is just off the coast of Nishinoshima, a small, uninhabited island in the Ogasawara chain, which is also known as the Bonin Islands.

The Japanese archipelago has thousands of islands. In some cases, they help anchor claims to wide expanses of ocean overlying potentially lucrative energy and mineral resources.

Japan has plans to build port facilities and transplant fast-growing coral fragments onto Okinotorishima, two rocky outcroppings even further south of Tokyo, to boost its claim in a territorial dispute with China.

<http://worldnews.nbcnews.com/news/2013/11/21/21559251-volcanic-eruption-raises-new-island-in-pacific-ring-of-fire>

Kyodo News via AP - Smoke billows from the new island off the coast of Nishinoshima.



# Geological Society of New Hampshire



## GSNH 2013 Fall Dinner Meeting

### **Arsenic and Manganese – Anthropogenic Source or Background Condition?**

**Speaker: Paul Rydel**  
**Hydrogeologist, NH Department of Environmental Services**

**Thursday, January 16, 2014**  
**Red Blazer Restaurant**  
**72 Manchester Street, Concord, NH**

5:30 pm Social Hour; 6:30 pm Buffet Dinner; 7:15 pm Speaker

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**New time - RSVP by 4 pm Friday, January 10, 2013 to get the reservation price**

Advance Reservations: \_\_\_\_\_ Member (Dues Paid)      \$22.00  
  \_\_\_\_\_ Non-member                      \$25.00

\_\_\_\_\_ **Please indicate the number of vegetarian meals – leave blank for none.**

- Member at the Door (\$25.00)
- Non-Member at the Door (\$28.00)
- Students \$10.00 with valid student ID card (Reservation Requested)

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 Tuesday before the Dinner.** Reply via e-mail to: [EKirby@Geosyntec.com](mailto:EKirby@Geosyntec.com). Mail to: **Erin Kirby, GSNH Dinner Meeting, PO Box 3483, Concord, NH 03302-3483. Checks payable to: GSNH.**

Name(s) \_\_\_\_\_

Address: \_\_\_\_\_

Your phone or e-mail: \_\_\_\_\_

Half the cost of the dinner may be tax-deductible as a business expense. **The lecture part of the program counts as 1.5 hours of CEU contact hour credit.**



MEMBERSHIP APPLICATION/RENEWAL

Geological Society of New Hampshire

PO Box 3483, Concord, NH 03302-3483

- New member
Renewing member
Check here if you have no updates to your information.
Check here if you do NOT want your information published in the directory.

Name & Home Address:

Business Name & Address:

Blank lines for Name & Home Address

Blank lines for Business Name & Address

Home Telephone

Office Telephone

Home Fax:

Office Fax:

E-mail:

E-mail:

Preferred address to receive GSNH communication: Home or Business
Quarterly newsletters are distributed electronically. Check here if you prefer a paper copy:
New Hampshire PG # (if applicable):

Education: Degrees received or in progress:

Table with columns: Year, Degree, Major, College or University

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

- Membership Committee, Regulations Committee, Communications Committee, Legislative Committee, Education Committee, Giving a talk at a meeting, Events Committee, Other

Membership Category:

- Regular Member (Annual Dues \$20.00)
Student Member (Annual Dues \$10.00)...Please complete Education section above.

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.

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

Signature: Date: