



Granite State Geologist

The Newsletter of the Geological Society of New Hampshire,

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In this issue:

- New geologic time scale is out; new Permian timescale, too
- Swear words
- Summer field trip pictures
- Update on Steve Shope
- Earlier cut-off date for dinner reservations this month
- Upcoming Events and Much More!

MESSAGE FROM THE PRESIDENT

Julie Spencer, AECOM, GSNH 2012-2014 President

I hope that all our members have had a good summer. We had a capacity crowd for our summer field trip in June to review the bedrock and surficial geology of the lakes region in New Hampshire. Dan Tinkham and John Brooks did a fantastic job as our leaders that day. Thanks too, to Russ Wilder for coordinating the event. There are a lot of details to work out for an event like the field trip and we are grateful for all the volunteers who helped make the day such a success. Here's a plug for early registration next year: for logistical purposes we needed to limit the number of attendees, but even after registration was closed there were people inquiring about the trip who had to be turned away. Don't let this happen to you next year!

Our annual meeting will be held on October 17, 2013 during Earth Science Week. The theme of Earth Science Week this year is "Mapping Our World" promoting awareness of the many exciting uses of maps and mapping technologies in the geosciences. The Earth Science Week website lays out their goals for the week to engage "...young people and the public in learning how geoscientists, geographers, and other mapping professionals use maps to represent land formations, natural resource deposits, bodies of water, fault lines, volcanic activity, weather patterns, travel routes, parks, businesses, population distribution, our shared geologic heritage, and more. Maps help show how the Earth systems – geosphere, hydrosphere, atmosphere, and biosphere – interact." There are many resources on the website (www.earthsciweek.org) for teachers and students, so please encourage your kids and their teachers to check it out.

Our paving stone at the Old Man of the Mountain Profile Plaza in Franconia Notch is in place. If you're headed up to the White Mountains to enjoy some outdoor activities this fall stop by and take a look at what's in place at the plaza and visit the new Old Man of the Mountain Museum near the base of Cannon Mountain.

Just a reminder that our elections are now held bi-annually in even-numbered years so there will not be an election this fall. Sean Sweeney of Headwaters

Hydrology will present our October talk on the Cold River Restoration Project. Our field trip to Alstead, NH in 2006 was one of our most popular field trips ever, so join us to learn more about the restoration efforts. I look forward to seeing you at the October meeting!

THE GSNH DINNER MEETING IS

MAKE YOUR RESERVATION NOW!

OCTOBER 17, 2013

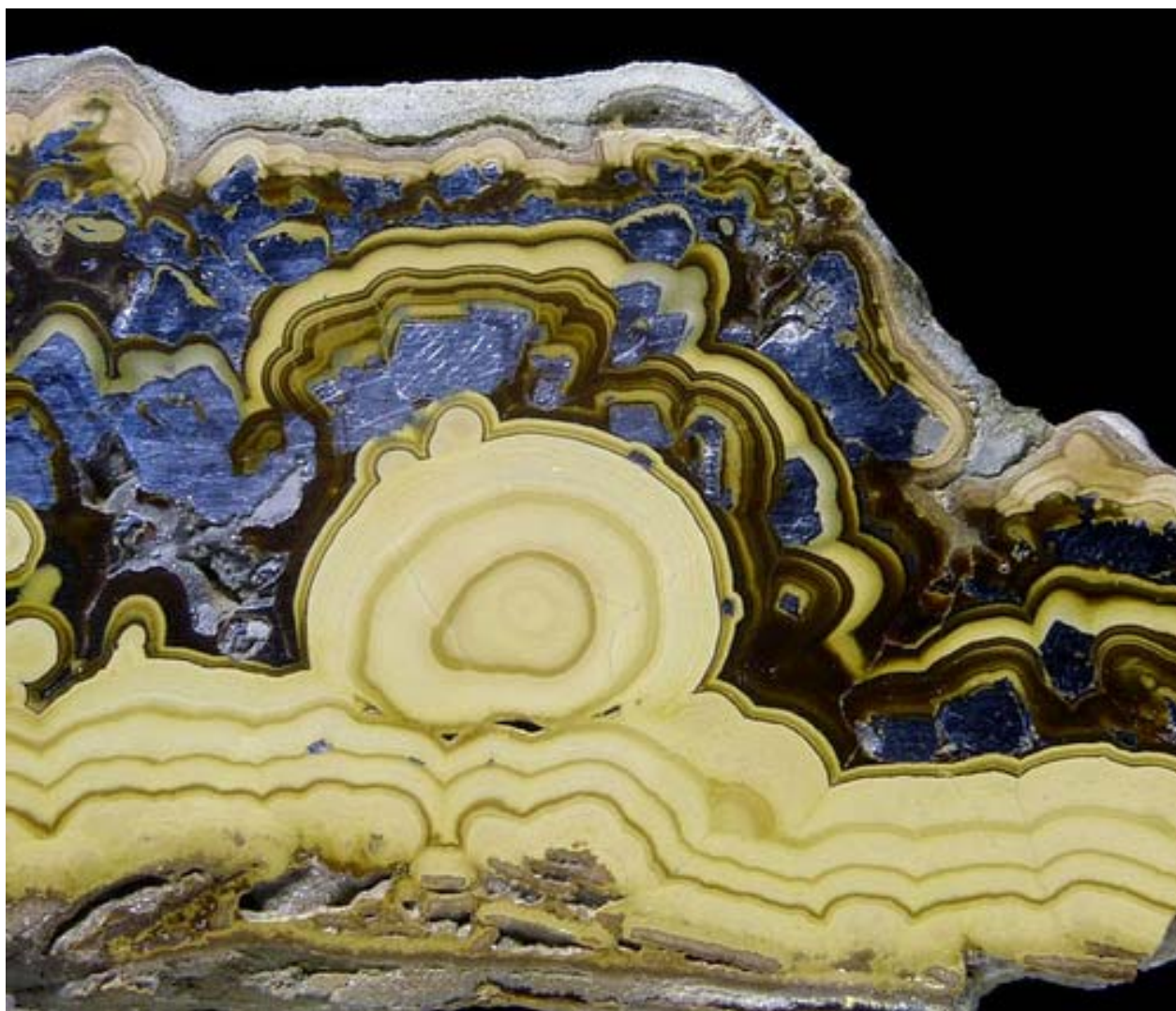
AT MAKRIS LOBSTER HOUSE

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

Email reservations to Erin Kirby at EKirby@Geosyntec.com or

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

Checks payable to: GSNH.



Polished slab of a Schalenblende - consisting of alternating bands of brown-yellow sphalerite, galena and marcasite

<http://themineralogist.tumblr.com/post/50670960546/polished-slab-of-a-schalenblende-consisting-of>

GSA GEOLOGIC TIME SCALE (V. 4.0) J.D. Walker, J.W. Geissman, S.A. Bowring, and L.E. Babcock, Compilers - <http://www.geosociety.org/science/timescale/>

2013 marks the 30th anniversary of the first Geological Society of America Geologic Time Scale (Palmer, 1983), the 100th anniversary of the first geologic time scale based on radioisotopic dates (Holmes, 1913), and the 125th anniversary of the Geological Society of America. Here we briefly review the development of the GSA Geologic Time Scale. A more complete treatment can be found in Walker et al. (2013).

The effort to prepare the first Society time scale was concurrent with the preparation of the 27 volumes of *The Geology of North America* to celebrate the Decade of North American Geology (DNAG). In 1982, an ad hoc Time Scale Advisory Committee was formed by the DNAG steering committee to encourage “uniformity among DNAG authors in the citation of numerical ages for chronostratigraphic units of the geologic time scale” (Palmer, 1983). The Time Scale Advisory Committee consisted of Z.E. Peterman (chairman), J.E. Harrison, R.L. Armstrong, and W.A. Berggren. Allison (Pete) Palmer, as Centennial Science Program Coordinator for GSA, was given the charge of compiling the Advisory Committee’s efforts. The goal of the then unique layout of the GSA/DNAG Geologic Time Scale, with each Phanerozoic Era given identical column length, along with the Precambrian, was to provide a compact, succinctly organized yet suitably detailed (e.g., including uncertainties in ages of chronostratigraphic boundaries) compilation of our current knowledge of geologic time.

Work on this GSA time scale started in 2012 in conjunction with preparation by the compilers of an article on the Geologic Time Scale for the *GSA Bulletin* (Walker et al., 2013). This effort is a revision of the 2009 GSA Geologic Time Scale (Walker and Geissman, 2009). Revisions focused on three aspects. The first was to update names and boundaries to capture changes presented in Gradstein et al. (2012) and Cohen et al. (2012) to reflect recent efforts of the many working groups of the International Commission on Stratigraphy (ICS). Second, we updated the boundary ages using these same sources. Lastly, the magnetic polarity time scale was modified. Significant changes from the previous GSA Geologic Time Scale principally reflect adjustments to the Cenozoic, including: (1) dropping the use of Tertiary, which previously was considered a period that was the same as the combined Paleogene and Neogene; and (2) dropping the informal early, middle, and late divisions for the Paleocene, Eocene, Oligocene, and Miocene.

The compilers plan to keep the GSA Geologic Time Scale as up to date as possible. For that reason, we are moving away from the previous practice of putting a calendar date on the time scale (i.e., 2009 Geological Time Scale) but rather we have adopted a “versioning” approach. The current GSA Geologic Time Scale is version 4.0 as it is the fourth one produced in this series. It is our opinion that the geological community no longer views the time scale as static, but one that should evolve as new research is done. Establishing new stratigraphic datums, determining new dates for boundaries, and advances in other aspects of geologic age determinations occur often and should be reflected in a more dynamic approach to time scale presentation with yearly updates. The time scale will be given a version number and posting date, and be available at no cost online. Previous versions will also remain available at www.geosociety.org.

GSA encourages the use of the time scale, boundary ages, and its terminology in all publications; strict enforcement, however, is not planned. Constructive comments are encouraged and should be addressed to editing@geosociety.org. Print your copy or buy the 18” by 27” sheet for \$9.95 at <http://www.geosociety.org/science/timescale/>.



John Brooks and Dan Tinkham describe the geology at Stop 1: Winnepesaukee Tonalite and Meredith Porphyritic Granite. Photo by Julie Spencer.



Brecciated Endicott Diorite at Stop 5. Photo by Julie Spencer.



Dan and John lean in for a closer view of the “rotten rock” (deeply weathered syenite) at Stop 3. Photo by Julie Spencer.



Dan's Delta Dilemma – Photo by Garrett Graaskamp



Glacial lake delta at Stop 7. Coarser topset beds overlie the more steeply dipping and finer foreset beds. Photo by Julie Spencer.



Photo by Lee Wilder, August 2013. Don't miss the chance to purchase a paver at the Old Man Profile Plaza. Do this online at: <http://www.oldmanofthemountainlegacyfund.org/get-involved/buy-a-paver.aspx>. More on Profile Lake and the Plaza in the recent AAA magazine, which can be seen at oldmanofthemountainlegacyfund.org/uploads/OldMan_AAAMagazine_Fall2013.pdf

U.S. FEMALE GEOSCIENCE DEGREE RATES IN ATMOSPHERIC SCIENCE, GEOGRAPHY, GEOSCIENCE AND OCEAN SCIENCE, 2000-2012

Decreases in female enrollments and awarded degrees in the geosciences were reported recently. This led to an investigation of the rates of awarded degrees to females in different geoscience fields--atmospheric science, geography, geoscience/geology, and ocean science. Thanks to data collected by the Association of American Geographers and the Consortium for Ocean Leadership, this Currents compares the rates of conferred degrees to females in these four different fields from 2000-2012. For more information, see Currents #71.

<http://www.agiweb.org/workforce/currents.html>

WHAT IS YOUR BOARD DOING? By Lea Anne Atwell

Doug Allen hosted the quarterly Board meeting on September 5th at the offices of Haley & Aldrich in Bedford.

Bill Abrahams-Dematte provided the quarterly Treasurer's report. We discussed the idea of selling GSNH t-shirts to raise money for our Speaker's Fund. We are looking into the costs to see if this is a feasible option – stay tuned for more details.

The Board voted to sponsor a golf tee at the Newfields Fire Rescue Association's 15th Annual Gold Tournament on September 14th. Proceeds from the event will benefit GSNH member Steve Shope, who was injured in a mountain bike accident in April. We will also be collecting donations at the October dinner meeting.

The Membership Committee reported that there are 207 active GSNH members, and that the GSNH Facebook page is up and running.

We also discussed the details of the upcoming October dinner meeting and potential speakers for the January meeting. As always, if you know if someone who would be interested in giving a talk – let one of the board members know.

The next GSNH Board meeting will be at 6pm December 5th at the offices of Sanborn Head in Concord.

GSNH POLICY FOR DINNER MEETING NO-SHOWS

Please note that 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 Erin Kirby (ekirby@geosyntec.com) by noon the Tuesday before the Dinner. Thank you in advance for your cooperation.

MEMBERSHIP RENEWAL

If you don't remember whether you have paid your dues, then you probably haven't. Please renew your membership for 2013 with the [one-page membership form, conveniently available on our website](#) or near the end of this newsletter.

<http://www.gsnh.org/membership/membership.shtml>

WANTED – WEBMASTER

GSNH is currently seeking someone to volunteer to take on the position of updating and managing the GSNH website. Some experience with design and computer savvy desired, but the position certainly offers room to grow. Website is currently managed through the GSNH ISP's online tool, which makes changing and editing text and features relatively easy, so getting started is not difficult. Eventually we hope to update and revamp the site, which can be done by either the webmaster or managed by the webmaster with the right subcontractor. Please respond to Julie Spencer (GSNH President) and Bill Abrahams-Dematte (Webmaster) with any questions or interest in taking on this position.

DELAYED - DOUG HOWLAND TALK ON HIS WORK WITH THE MARS SPACE PROGRAM

We still hope to have this talk, but it may be a while.

2013 NEIGC - KATAHDIN REGION - NORTH CENTRAL MAINE October 11-13, 2013

This region is one of the most scenic and secluded in New England. Exposed within and around [Baxter State Park](#) is a vast array of low-grade metasedimentary and volcanic rocks ranging in age from Precambrian to Middle Devonian. These rocks may be key to interpreting those in the high grade belts along strike to the southwest. Pillow lavas, mélange, pyroclastic flows with columnar jointing, turbidities, basin-deepening stratigraphic sequences, shear zones, plutons with hornfels rims are just a few features this conference hopes to cover. In addition the area offers an opportunity to view unique glacial and Holocene features.

Big Moose Inn On Millinocket Lake, Maine

[Field Trip Agenda](#) and Registration ([Doc](#))

<http://w3.salemstate.edu/~lhanson/NEIGC/Conference.html>

GET YOUR GUIDEBOOKS HERE!

Thanks to the efforts of UNH librarian Thelma Thompson, digital copies of geology guidebooks are available from the [University of New Hampshire Digital Collection](#) at <http://www.library.unh.edu/digital/category/science-technology>.

The screenshot shows the University of New Hampshire Library website. At the top, there is a navigation bar with links for Home, About Us, Find, Services, Locations, Research Support, and News & Events. Below this is a search bar with the text "Search all digital collections" and a "Search" button. The main content area is titled "Digital Collections" and displays search results for "Guidebook for field trips in southern and west-central Maine, October 13, 14 and 15, 1989: New England Intercollegiate Geological Conference 81st annual meeting". The results are sorted by date, latest first, and show two items. The first item is a guidebook from 1989, and the second is a guidebook from 1988. On the left side of the page, there are filters for Category (All categories, Science & Technology, Biology (2), Geology (59), Physics (3)), Type (Text (64)), and Date (1839 (1), 1860 (1), 1874 (1), 1876 (1), 1877 (1), 1878 (1), 1895 (1), 1920 (1), 1923 (1), 1924 (1), 1925 (2), 1926 (1), 1927 (1), 1928 (1), 1931 (1)).

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Category

All categories

Science & Technology

Biology (2)

Geology (59)

Physics (3)

Type

Text (64)

Date

1839 (1)

1860 (1)

1874 (1)

1876 (1)

1877 (1)

1878 (1)

1895 (1)

1920 (1)

1923 (1)

1924 (1)

1925 (2)

1926 (1)

1927 (1)

1928 (1)

1931 (1)

Results 1-15 of 64 Sorted by date, latest first

 [Guidebook for field trips in southern and west-central Maine, October 13, 14 and 15, 1989: New England Intercollegiate Geological Conference 81st annual meeting](#)
New England Intercollegiate Geological Conference (NEIGC)
1989

 [Guidebook for field trips in southwestern New Hampshire, southeastern Vermont, and north-central Massachusetts: New England Intercollegiate Geological Conference, 80th annual meeting, October 14, 15 and 16, 1988, Keene, New Hampshire](#)
New England Intercollegiate Geological Conference (NEIGC)
1988

DATES TO REMEMBER

October 11-13, 2013 – NEIGC FIELD TRIP – MAINE

<http://w3.salemstate.edu/~lhanson/NEIGC/Conference.html>

October 17, 2013 – GSNH FALL MEETING 5:30pm at Makris Lobster House, 354 Sheep Davis Rd, Concord. Register now with Erin Kirby at EKirby@Geosyntec.com.

October 19, 2013 (rain date Oct. 20) - WHITE MOUNTAINS GEOLOGY WORKSHOP

See article in this newsletter.

October 13-19, 2013 EARTH SCIENCE WEEK 2013 - Earth Science Week 2013.

ESW will promote awareness of the many exciting uses of maps and mapping technologies in the geosciences. "Mapping Our World," the theme of ESW 2013, engages young people and the public in learning how geoscientists, geographers, and other mapping professionals use maps to represent land formations, natural resource deposits, bodies of water, fault lines, volcanic activity, weather patterns, travel routes, parks, businesses, population distribution, our shared geologic heritage, and more. Maps help show how the Earth systems – geosphere, hydrosphere, atmosphere, and biosphere – interact. <http://www.earthsciweek.org/>

SWEAR WORDS EVERY GEOLOGIST SHOULD KNOW

Okay, that was a typographic error—it should have said *-sphere* words every geologist should know. Geologists use a lot of "-sphere" words in their work—well, mainly in the papers they write, and in textbooks. So to help you keep things straight, at <http://geology.about.com/od/glossaryofgeology/qt/Geological-Sphere-words.htm?nl=1> there's a guide to the various -sphere words, starting from the largest and ending with the deepest and ranging from the **heliosphere**, to the **geoblogosphere** and **geotweetosphere**.. For example, there is **perisphere**, a concept proposed in 1995 to mean the part of the uppermost asthenosphere that produces a major set of magmas that is enriched in trace elements. It's a key part of an Earth model that [does not include mantle plumes](#) (also known as hotspots.) The definition says that the term perisphere may gain or lose prominence as science moves on, but for now it's little known and not widely cited. Note that the definition contains a link about mantle plumes that leads to a discussion of a new theory explaining hotspots not as plumes from the deep, but as stirrings in the upper mantle—its top 400 kilometers—caused from above by the movements of the crustal plates and surface-based cooling. This discussion in turn has a link to a paper on the questioning the traditional plume theory as it relates to Yellowstone. So just when you thought you knew how Yellowstone and Iceland formed, along comes a different interpretation. It's enough to make a geologist swear.

THE NH GEOLOGICAL SURVEY GROUND WATER LEVEL NETWORK SUMMARY

Submitted by the NHGS

June 2013 NH Groundwater level measurements were collected by the NH Geological Survey from June 24 – June 28, 2013. The statewide June 2013 average groundwater level for **wells in the overburden** (soil on top of the bedrock) showed a decrease of -0.11 feet from May 2013. When compared with June 2012, the statewide average groundwater level for June 2013, in these wells, decreased -0.20 feet. The June 2013 average groundwater level in the new **bedrock wells** showed a decrease of -0.35 feet when compared with May 2013. When compared with June 2012, the bedrock wells showed an increase of +1.09 feet for June 2013.

July 2013 NH Groundwater level measurements were collected by the NH Geological Survey from July 25 – July 31, 2013. The statewide July 2013 average groundwater level for **wells in the overburden** (soil on top of the bedrock) showed an increase of +0.37 feet from June 2013. When compared with July 2012, the statewide average groundwater level for June 2013, in these wells, increased +1.06 feet. The July 2013 average groundwater level in the new **bedrock wells** showed a decrease of -1.00 feet when compared with June 2013. When compared with July 2012, the bedrock wells showed an increase of +2.19 feet for July 2013.

August 2013 NH Groundwater level measurements were collected by the NH Geological Survey from August 26 – September 10, 2013. The statewide August 2013 average groundwater level for **wells in the overburden** (soil on top of the bedrock) showed a decrease of -0.95 feet from July 2013. When compared with August 2012, the statewide average groundwater level for August 2013, in these wells, increased +0.19 feet. The August 2013 average groundwater level in the new **bedrock wells** showed an increase of 1.52 feet when compared with July 2013. When compared with August 2012, the bedrock wells showed an increase of +4.16 feet for August 2013.

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/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>.

THE GREAT NORTHEAST SHAKEOUT <http://www.shakeout.org/northeast/index.html>

Northeasters must get better prepared before the next big earthquake, and practice how to protect ourselves when it happens. The purpose of the ShakeOut is to help people and organizations do both. Mark your calendars! Millions of people worldwide will [Drop, Cover, and Hold On](#) at 10:17 a.m. on October 17th (You can hold your drill at any time within 2 weeks of October 17th.) You are invited to [join](#) them by participating in the 2013 *Great NorthEast ShakeOut!* Last year more than 19.4 million people were registered in Great ShakeOut earthquake drills [worldwide](#). Participating is a great way for [your family or organization](#) to be prepared to survive and recover quickly from big earthquakes.

There are many ways for individuals, businesses, schools, faith-based organizations, community groups, scouts, and others to participate in the ShakeOut, to get prepared for earthquakes, and to share what you're doing with others so they can do the same. Select from the following list to download flyers with customized ideas for what you or your organization can do:

2013 is the first year that Northeast states will be organized as an Official ShakeOut Region. [Maine](#), [Massachusetts](#), and [Pennsylvania](#) are organizing statewide recruitment efforts of schools, organizations, and individuals. [FEMA](#) and the [Northeast States Emergency Consortium](#) are coordinating recruitment across the entire region.

Register here - <http://www.shakeout.org/northeast/register/>. Why? Read the history of earthquakes in the northeastern United States at <http://nsec.org/hazards/earthquakes.cfm.html#history>.

THE SUPERCONTINENT OF PANGAEA WITH MODERN DAY BORDERS



http://www.slightlywarped.com/crapfactory/curiosities/2013/august/maps_that_will_change.htm#.UjIquDDlgEA.facebook

LINK MOON LAUNCH STORY

<http://www.space.com/22667-nasa-moon-spacecraft-launching-friday.html>

UPDATE ON MEMBER STEVE SHOPE Submitted by Julie Spencer

Our friend and GSNH member Steve Shope continues to work hard on his recovery from a severe spinal cord injury incurred in April. After nine weeks at Spaulding Rehabilitation Hospital, Steve returned home in July. Life as a quadriplegic is very expensive and much of what is needed is not covered by insurance. So the Trail to Recovery Fund was established to help Steve and his family with these expenses. The Trail to Recovery Fund has been very busy working with local organizations on fundraising activities. In August the Exeter Lions Club selected the Trail to Recovery as the beneficiary of their annual 5K Walkathon, a testament to Steve's active participation in their past fundraising events. In September Steve's fellow fire fighters with the Newfields Fire Rescue Association will donate the proceeds from their annual golf tournament to the Trail to Recovery Fund. The GSNH Board of Directors voted to sponsor a tee at the golf tournament in recognition of Steve's years as a dedicated GSNH volunteer. In October there will be a mountain bike event and for those who are not active in outdoor events, plans are underway for an auction in November. You can learn more about Steve and the Trail to Recovery Fund on their website <http://www.trailtorecovery.com>

WHITE MOUNTAINS GEOLOGY WORKSHOP

Date: October 19, 2013 (rain date Oct. 20)

Learn all about the geology of the White Mountains at this popular autumn geology workshop led by geologist Woody Thompson of the Maine Geological Survey. The workshop explores the glacial geology of the northern White Mountain region and the history of geological exploration and understanding of the area.

The workshop will begin with an informal classroom presentation and then proceed to sites of geological interest in the northern White Mountains region. Exact locations will be based on Thompson's ongoing geological explorations, but may include sites in Pinkham Notch, Shelburne, Gorham, Randolph, Twin Mountain, or other areas.

Thompson will introduce participants to the bedrock and glacial geology of the region, and share findings from his studies about the early geological researchers of the area. He'll help participants discern hidden clues about the glaciers that once covered the area, and explain the process of deglaciation that occurred several thousand years ago. Both field techniques and laboratory follow-up will be considered, with a special emphasis on geological fieldwork.

Thompson has extensive practical and research familiarity with the region, and is a co-author of the newly published book "[The Geology of New Hampshire's White Mountains](#)." He has led this well-received workshop for several years, and makes the content appropriate for all experience levels. Past participants have ranged from complete novices to teachers and geological professionals alike.

Schedule - The workshop will meet at 8:30 am and conclude at 4:30 pm. It will begin at the Mount Washington Observatory [Weather Discovery Center](#) in North Conway, NH.

Cost - The fee for supporting members of the nonprofit Mount Washington Observatory is \$95 and \$115 for non-members. It includes instruction and all associated materials.

Reservations - To make a reservation please contact Mount Washington Observatory Director of Education Michelle Cruz at (800) 706-0432, x225 or mcruz@mountwashington.org. Space is limited, so advance reservations are strongly encouraged. Refunds will be made available through October 12, 2013.

Physical Requirements - No lengthy, strenuous hiking is involved, but participants should be in good physical condition.

Gear Requirements - Participants should dress for hiking, and come equipped with warm clothing, rain gear, and sturdy footwear. Participants should also pack a trail lunch and water.

Transportation - Participants will provide their own transportation to and from field locations. Car pooling amongst participants will be encouraged.

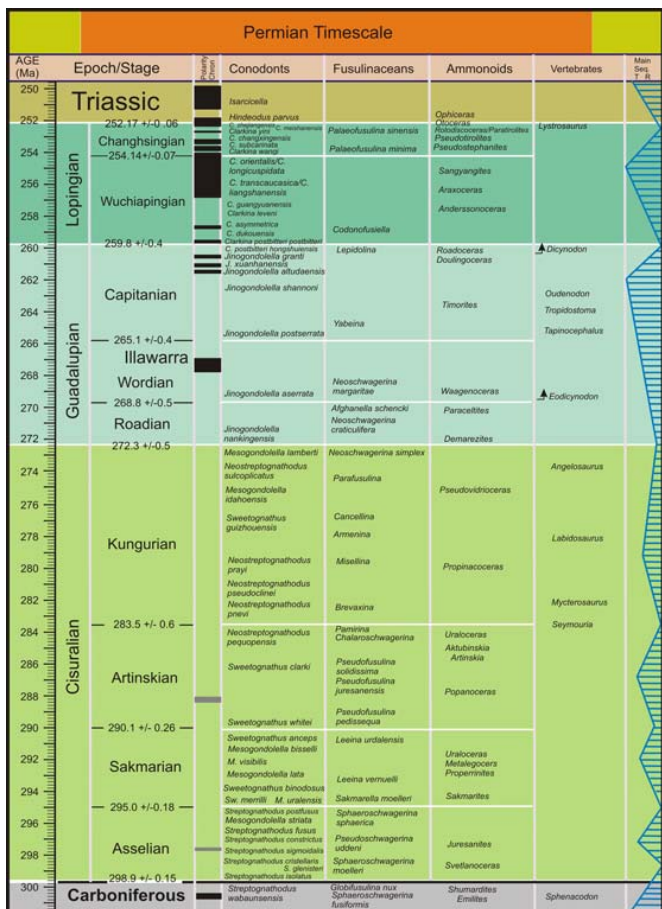
QUICK HIGHLIGHTS FROM INTERNATIONAL COMMISSION ON STRATIGRAPHY WEBSITE - NEW PERMIAN TIME SCALE - FROM <http://www.stratigraphy.org/>

Permian Subcommittee produces new timescale for Permian System based on the most recently obtained numerical ages.

The International Commission on Stratigraphy is the largest and oldest constituent scientific body in the International Union of Geological Sciences (IUGS). Its primary objective is to precisely define global units (systems, series, and stages) of the International Chronostratigraphic Chart that, in turn, are the basis for the units (periods, epochs, and age) of the International Geologic Time Scale; thus setting global standards for the fundamental scale for expressing the history of the Earth.

See the paper entitled “THE INTERNATIONAL PERMIAN TIMESCALE: MARCH 2013 UPDATE” by SHU-ZHONG SHEN, JOERG W. SCHNEIDER, LUCIA ANGIOLINI AND CHARLES M. HENDERSON.

(From the abstract) In this paper, we provide a brief overview on recent progress of Permian timescale development based on new biostratigraphic, geochemical and geochronologic data. The Permian Period was from 298.9 Ma to 252.17 Ma based on the latest U-Pb ages in the southern Urals and South China. <http://permian.stratigraphy.org/files/20130721210111619.pdf>



Click [HERE](#) to download a better version (higher resolution).

The new timescale can also be found at the Permian Subcommittee website at the following address: <http://permian.stratigraphy.org/per/per.asp>.



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: