

# **Granite State Geologist**

The Newsletter of the Geological Society of New Hampshire, Fall-Winter (September) 2011 Issue No. 74

## 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

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

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- In this issue:
- Message from President
- Summer 2011 NHGS Groundwater Levels
- Summer Field Trip Photos
- Annual Fall Dinner Meeting and Elections
- Upcoming Events and Much More!

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

I hope that all our members have had a great summer. The GSNH co-hosted a terrific field trip with the Vermont Geological Society on July 30. We had a great turnout of about 60 people for the trip to the Upper Connecticut River Valley and group barbeque at Weeks State Park. Woody Thompson, assisted by George Springston, led us to some very interesting locations as we learned about the lateglacial history of the area. I think that everyone's favorite stop was the Lake Hitchcock Varve Section! The pot luck barbeque was a great and delicious way to end the day. We all enjoyed touring the lodge, which was formerly the summer retreat of the Weeks family. This year marks the centennial of the Weeks Act, which established the eastern national forest lands system. This legislation resulted in the creation of the White Mountain National Forest and other national forests in the eastern United States

The arrival of fall signals back-to-school and back to our schedule of dinner meetings. I hope that you can join us on October 13 for our annual meeting and election. We have chosen an alternate venue to try, so check the meeting notice at the end of this newsletter for all the details. October 9-15 is Earth Science Week 2011. This year's theme is "Our Ever-Changing Earth." In celebration of Earth Science Week, our speaker for the October meeting is Kristen Camp, a graduate student from the University of New Orleans. Kristen is doing pegmatite research in New Hampshire for her thesis. GSNH supported her with some grant money for her research and we are very happy that she can share some of her results with us.

Remember that only members who are up-to-date on their dues can vote in the election, so please make sure that your membership is current. If you are not sure of your

membership status, ask at the check-in desk at the October meeting or contact Doug Allen, the Membership Chair (see contact information on the left side of the newsletter cover). Renewals will be accepted on the night of the meeting. It has been my pleasure to serve you as president for the past year. If re-elected I look forward to another successful year of the society.

## CHILDREN'S BOOK REVIEW – "ROCKHEAD"

Doug Allen recently received a copy of the new children's book, "RockHead" written by Brian Kure and illustrated by Alayna Paquette. Brian is the husband of GSNH member and geology educator Deb Kure, a GSNH member since 2008. It is exciting to see a new children's book available that foster a curiosity for geology and accurately depicts the soil and rock beneath our feet. My six-year-old reviewer gives this book two thumbs up. Follow along with Ricky Klump as he is jarred into geologic super powers and ends up saving his town! Available on Amazon.com. Link for a thumbnail of the book cover:<u>http://www.amazon.com/Rockhead-Brian-Kure/dp/1441412670/ref=sr\_1\_1?ie=UTF8&gid=1315934736&sr=8-1</u>

## LITTLE NATURE MUSEUM RECEIVES GSNH GRANT Submitted by Sandra Martin

The Geological Society of NH has awarded The Little Nature Museum the full purchase price, including shipping, of the new table top mineral case described at: <u>www.littlenaturemuseum.org/</u>. The case currently houses a collection of NH Minerals. The Museum Board of Directors and I are extremely grateful to the GSNH for their generosity and support of geologic education.



## **GSNH MEMBER DOUG ALLEN RIDES AGAIN**

Team Courage "The Coneheads" rode together for the Pan-Massachusetts Challenge, a two-day, 192 mile bike-a-thon from Sturbridge, Massachusetts to Provincetown at the tip of Cape Cod to raise funds for the Dana-Farber Cancer Institute in Boston. Team Courage consists of members from Burns & McDonnell, Haley & Aldrich, Terracon, and the Hartford MDC. This year Team Courage raised over \$81,000 for Dana-Farber, well beyond their minimum goal. Collectively, the 5,000 cyclists this year hope to raise \$34 million, all of which will go towards cancer research and patient treatment at



Dana-Farber. GSNH member Doug Allen is pictured in the back row, second from the right.

## ANNUAL 2010-2011 TREASURER'S REPORT Submitted by James Degnan, Treasurer

The finances of the GSNH for the period June 30, 2010 through June 30, 2011 are summarized in the table below. Some of our small loss this year was due to grants and donations. We'll see that loss made up next year though since the 2011 summer field trip only cost the GSNH volunteer time and donated paper and ink. Thanks to the grills and grilling expertise from Jon Kim (VGS), Muriel and Mike Robinette, Greg Smith, Matt Stein, Larry Becker (VGS), John Carmola (VGS) and all of the attendees that contributed to the joint VGS-NHGS pot luck barbeque following the 2011 field trip led by Woody Thompson. My one burner back packing stove barely cooked a package of hot dogs. Cost saving measures this year included serving the newsletter on-line through our website instead of mailing which will save the society well over \$1,000 a year. Our raffle fund has accumulated \$277, this fund allowed us to give out two classroom enhancement grants this year. Thank you to all who have donated minerals and other prizes. Thanks to the corporate sponsorship from New England Envirostrategies we were able to continue to offer speakers lodging and transportation reimbursements.

		<u> </u>				
					Change from	
		Current Report	Report Date		previous year	
Balance		\$14,954.97			\$ (525.89)	
		<b>A</b> 0.000.40			\$	
Checking Account		\$3,020.19	6/30/2011		(526.59)	
Oppenheimer MM		\$11,837.78	6/30/2011		\$ 0.70	
cash on hand		\$97.00		6/30/2011 \$		
Expanses this year	\$8,757.69		Income	this	\$8,231.80	
Expenses this year		Spockor's Fund (n	year	rata bank		
Raffle Fund (not a separate bank account)Speaker's Fund (not a separate bank account)\$1,381.46\$643.36				accounty		
Income Summary	, ,		<del>40 10.00</del>			
Interest: Oppenheimer				\$0.70		
Meeting fees				\$5,314.00		
Meeting sponsor, New England Envirostrategies				\$250.00		
Dues				\$2,390.00		
Raffle				\$2,390.00		
Total				\$8,231.80		
					φ0,231.00	
Expense Summary					<b>*</b> ••••	
Excessive item fee				\$6.00		
Non Profit Renewal				\$27.00		
Checks				\$37.18		
Grants and donations				\$821.14		
Website				\$289.40		
Meeting and field trip meals				\$6,729.93		
News letter (2 of 4 printed and mailed)				\$330.00		
PA System				\$250.95		
Mail box				\$168.00		
Speaker lodging reimbursement				\$98.09		
Expenses total					\$8,757.69	

#### Geological Society of New Hampshire Treasurer's Report June 30th, 2010 through June 30, 2011

# NEW USGS-NHGS PUBLICATION - SURFICIAL GEOLOGY OF MT. WASHINGTON & THE PRESIDENTIAL RANGE

The map is the first of its kind for NH's Presidential Range and is a compilation of 45 years of field work by its author, both independently over the years but most recently in cooperation with the USGS and the N.H.Geological Survey under their Cooperative STATEMAP Program Grant Award No. G09AC00202 for the surficial geology of the Mt. Washington and adjacent portions of the Carter Dome 7.5-Minute Topographic Quadrangles (USGS Map # 596878260 / NHGS Map # GEO-047-024000-SMOF).

The descriptively annotated map is suitable for use by anyone, but will be especially informative to those with basic familiarity with the subject of geology. The map depicts and interprets the geologic deposits and features that overly the bedrock beneath the northern portion of the Presidential Range by means of various colors and symbols, and its informative annotations and photographs provide basic descriptions of the intriguing geologic and climatic history of the area since the departure of the last ice sheet about 16,000 years ago.

Among its more interesting information is an explanation of why the highest portions of Mt. Washington and the Northern Peaks look like "rockpiles" and newly identified evidence that a significant circue glacier existed in the Great Gulf after the last continental ice sheet left the region. Also described is a newly-identified postglacial lake in The Glen and unusual evidence of massive debris avalanching in postglacial times in both Castle and King Ravines.

The map, which is printed on a tear and water resistant synthetic base and packaged in a ziplock pouch, will soon be available at both the Observatory's Weather Discovery Center and Summit Museum Shops. At present, it is also available from the publisher, Durand Press, Inc., Lyme, NH.See: <u>www.durandpress.com</u>

### NHGS SUMMER GROUNDWATER LEVELS Submitted by NHGS

<u>June 21 – 30, 2011</u>: The statewide average groundwater level showed a decrease of 1.59 feet from May 2011. When compared with June 2010, the statewide average groundwater level increased 0.45 feet. The average groundwater level in the new bedrock wells showed a decrease of 1.80 feet when compared with May 2011. When compared with June 2010, the bedrock wells with at least one year of data showed an increase of 1.51 feet.

<u>July 26 – August 5, 2011</u>: The statewide July 2011 average groundwater level showed a decrease of .70 feet from June 2011. When compared with July 2010, the statewide average groundwater level increased 0.36 feet. The July 2011 average groundwater level in the new bedrock wells showed a decrease of 1.69 feet when compared with June 2011. When compared with July 2010, the bedrock wells with at least one year of data showed an increase of 2.13 feet.

<u>August 23 - August 30, 2011</u>. The statewide August 2011 average groundwater level showed a decrease of 1.04 feet from July 2011. When compared with August 2010, the statewide average groundwater level increased 0.01 feet. The August 2011 average groundwater level in the new bedrock wells showed a decrease of 1.86 feet when compared with July 2011. When compared with August 2010, the bedrock wells with at least one year of data showed an increase of 1.39 feet.

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

### UPCOMING ANNUAL NEIGC TRIP Submitted by Dave West

The Geology Department at Middlebury College invites you to participate in the 103<sup>rd</sup> annual meeting of the New England Intercollegiate Geological Conference to be held in west-central Vermont and adjacent regions on Friday, September 30 through Sunday, October 2. The meeting will involve 14 different field trips spread out over the 3-day meeting with each trip being led by geologists currently working in the area (over 40 different leaders involved). The meeting will also include a welcoming reception on Friday night and a banquet on Saturday night - both held on the Middlebury College campus. Details of the individual field trips and found registration forms can be on the NEIGC website (http://www.salemstate.edu/~lhanson/NEIGC/). For additional information on the meeting please contact Dave West in the Geology Department at Middlebury College (802-443-3476; dwest@middlebury.edu).We hope to see as many of you as possible on these NEIGC field trips.

#### **NEW UNH EARTH SCIENCES SIGN** Submitted by Wally Bothner, Professor Emeritus of Geology

A new granite EARTH SCIENCES sign welcomes all to the second floor home of the Department in James Hall. A stone mason at Swenson Granite Works in Concord, NH, shaped the top of the Concord Granite slab, beautifully to reflect much of



NH's irregular topography. Seacoast Memorials in Portsmouth did an outstanding job of lettering the sign, onsite, and the UNH Small Projects carpenters found an old oaken beam to fashion the supports in the same furniture style as the old oak benches on either side. Wally Bothner had two brass plates inscribed. One plaque identifies the slab as "CONCORD GRANITE, Devonian". The other says "Swenson Granite Works, Concord, NH." The EARTH SCIENCES sign makes it very clear where you are in new James! Geology classes will be urged to use their hand lenses to get real mineralogical and textural details of the State's namesake. Please stop by and have a look when your travels take you east from Concord.

### WHERE DID ALL THE BOULDERS GO? Submitted by Lee Wilder



As I have traveled around NH, I have been struck by the number or lack in number of glacial boulders at various places. There are a number of reasons for this, based on the behavior of the Pleistocene Ice. However, much of a NH town can have numerous glacial boulders in remote sections, and none near built up areas. The smaller stones were lugged to the edges of fields for stone walls. But the large boulders? Early construction used stone for buildings, cellar walls, door steps and retaining walls. Careful inspection of these building stones will reveal primitive drill holes. Holes drill by hand, to split off useable blocks of stone for building. However, there

are no local quarries. In addition, the boulders are of a great variety of equal grained granitic rocks. It occurred to me, that perhaps early settlers had "harvested" the local glacial boulders. Far easier then opening a bedrock quarry, splitting the local boulders into building blocks also

cleared the land for villages and fields. This interpretation has been reinforced several times. However, the most recent evidence was seen on the descent of Mt. Major at the end of the September 10, 2011 BRCC and GSNH Geology Field Trip. There on the north side of the Boulder Loop Trail, are several large granitic boulders complete with drill holes. Several split off blocks, sit nearby in the woods. What do you think?

## **UPCOMING EVENTS**

**September 30 - October 2, 2011 -** New England Intercollegiate Geological Conference Middlebury College, VT, <u>http://w3.salemstate.edu/~lhanson/NEIGC/</u>

**October 9-12, 2011 -** Geological Society of America Annual Meeting, Minneapolis, MN. Go to <u>http://www.geosociety.org/meetings/2011.</u> Many great Quaternary and Geomorphology sessions are planned!

October 9 – 15, 2011 – Earth Science Week. "Our Ever Changing Earth"

**October 13, 2011** – GSNH Annual Fall Dinner and Elections, Makris Lobster and Steak House, Concord, NH

October 14-16, 2011 - New York State Geological Association. Syracuse, NY

**May 26-June2, 2013 –** International Pegmatite Conference, Attitash-Bear Peak. Go to <a href="http://www.minsocam.org/msa/special/Pig/Peg\_2013.pdf">http://www.minsocam.org/msa/special/Pig/Peg\_2013.pdf</a>

SUMMER FIELD TRIP PHOTOS JULY 30, 2011 – GEOLOGY OF THE UPPER CONNECTICUT RIVER VALLEY, VT-NH AND BARBECUE AT WEEKS STATE PARK, NEW HAMPSHIRE













#### **GENERAL INFORMATION**

**FOP** - The next meeting (the 75th Annual!) of the Northeastern Friends of the Pleistocene (FOP) will be held on Mt. Washington and the Presidential Range on June 1-3, 2012 to review, among many other things, the newly-identified evidence of post-Late Wisconsinan cirque activity in the Great Gulf and indications the Late Wisconsinan Ice Sheet was not as thick in the region as its predecessors. The program is being formulated; an official announcement will be published around January 1st. Those interested should watch the FOP website at http://www.geology.um.maine.edu/friends.

**GLACIOGRAMS AVAILABLE** - If you know of someone - a colleague or a student - who should be on the *Glaciogram* e-mail list but is not, please recommend that they sign up via the webpage: <u>http://www2.newpaltz.edu/glaciogram/Subscribe.html</u>.

**WEBSITE HELP WANTED** - the GSNH Board of Directors is seeking assistance with maintaining the GSNH web site. Duties include maintaining current information on the GSNH.org web site, posting society-related announcements to the web site, and providing input on how the web site can be improved. If you have experience managing websites and would like to volunteer some of your time, please contact Doug Allen at <u>DAllen@HaleyAldrich.com</u>. For more information on specific duties and the current status of the GSNH web page, please contact Rich Mechaber at <u>Richard.Mechaber@law.unh.edu</u>.

**NEWSLETTER EDITOR HELP WANTED** – the GSNH Board of Directors is seeking assistance with maintaining the GSNH electronic newsletter. Duties include managing member contributed articles and announcements via email and compiling into a MicroSoft Word based template. Must have Adobe Acrobat and other computer software able to resize photos and convert final documents to a PDF format for final uploading to GSNH website. If you have experience managing websites and would like to volunteer some of your time, please contact juliespencer@aecom.com. For more information on specific duties of the newsletter editor, please contact Bettina Eames at beeames@loureiro.com.

**REMINDERS** - 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





# **Geological Society of New Hampshire**

## GSNH 2011 Annual Fall Dinner Meeting Voting for 2011-2012 GSNH Board (Polls Open 6:00 to 7:30 p.m.)

Topic:

## "Mineralogy and Geochemistry of Anorogenic Granitic Pegmatites Associated with the White Mountain Intrusive Suite, New Hampshire"

## Speaker:

Kristen Fletcher Camp, M.S. Student University of New Orleans Earth and Environmental Sciences

# Thursday October 13, 2011

## Makris Lobster and Steak House

354 Sheep Davis Road Concord, NH 03301

6:00 pm Social Hour, 7:00 pm Buffet Dinner, 7:45 pm Speaker

# GSNH 2011 Annual Fall Dinner Meeting, Thursday, October 13, 2011 (RSVP By Monday, October 10, 2011)

Advance Reservations: \_\_\_\_\_Member (Dues Paid) @ \$22.00.

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

GSNH will also accept dinner reservations by e-mail, which will then allow you to pay at the door. Please note that email reservations constitute an agreement with the Society for which you will be responsible to pay, whether you are able to attend or not, unless you cancel your reservation by noon the day before the Dinner. Reply via e-mail to: <u>Wayne.lves@des.nh.gov</u>. Mail to: Wayne lves, GSNH 2011 Annual Fall Dinner Meeting, Unit #7, PMB #133, 75 South Main St., Concord, NH 03301

Name(s) \_

Address: \_

Your phone or e-mail:

Checks payable to: GSNH.

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. Please indicate whether you would like a vegetarian meal on your RSVP.

## Proposed changes to GSNH Constitution & Bylaws

The Board of Directors puts forth the following proposed changes to the GSNH Constitution & Bylaws.

Board position on the proposed changes:

- Preparations for the annual election take much of the board's time. We feel that time would be better spent on society business and propose changing the elections to every other year, starting in 2012.
- When the second Vice President position was added to the board it created an even number of board members. Elimination of the Past President position was rejected as that position provides continuity from one board to the next. Elimination of one of the Members-at-Large was rejected as we recognize the need for new board members and the unique role that the Member-at-Large position plays in encouraging members to serve on the board.
- To help guard against the possibility of an entire board change, we propose differing term limits between the Members-at-Large and the other positions.

## CONSTITUTION:

## ARTICLE V: MEETINGS.

GSNH shall hold one Annual Membership Meeting., Every even numbered year having the sole

purpose of electing a Board of Directors,. and for such Other business as may properly come

before the meeting may be raised during any Annual Meeting. The Annual Meeting shall be held

at such time and place as the Board of Directors may from time to time prescribe. Other

membership meetings and Board meetings may also be held as deemed desirable by the Board

of Directors.

## ARTICLE VI: OFFICERS & BOARD OF DIRECTORS.

The officers of GSNH shall be an elected President, Vice President (Society Branch), Vice President (Professional Geologist Branch), Secretary, and Treasurer. The Board of Directors shall consist of the five (5) officers, the immediate Past-President, and the two (2) three (3) elected Members at Large.

#### BYLAWS: ARTICLE IV: OFFICERS.

A. The officers of GSNH shall be a President, Vice President (Society Branch), Vice President (Professional Geologist Branch), Secretary, and Treasurer. These officers, together with the Past-President and two (2) three (3) elected Members at Large shall constitute the Board of

Directors. The Professional Geologist Vice President and at least one of the Members at Large, must be currently licensed New Hampshire Professional Geologists. In the event there is no Past-President, then an individual will be elected for a term of one (1) year to complete that term, by a majority of members present and voting at the Annual Meeting.

B. The officers shall be elected for a term of one year two (2) years each. They may not serve more than three (3) consecutive terms in the same office. The Members-at-Large of the Board of Directors shall be elected for a term of two years each, with their terms staggered and overlapping such that only one Member-at-Large will be elected each year not serve for more than two (2) terms in that office.

#### ARTICLE V: ELECTIONS.

A. A committee on nominations, consisting of three at least two (2) members shall be appointed annually by the Board of Directors no later than the GSNH Board meeting prior to the Annual Meeting. Members of the nomination committee shall serve until the next GSNH Board Meeting following the Annual Meeting.

B. The nomination committee shall solicit nominations for the five (5) elected officers and the two (2) three (3) members at large, except the Past President, with the deadline for nominations being four (4) weeks before the Annual Meeting. The nomination committee shall publish a list of nominees at least three (3) weeks prior to the Annual Meeting.

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## From your GSNH Nominating Committee ......

The following slate of candidates for the GSNH Board of Directors is offered for your consideration (as per the GSNH Constitution and By-laws). Current GSNH members may vote for said slate at the GSNH Fall 2011 Annual Dinner Meeting, on Thursday October 13, 2011, at Makris Lobster and Steak House in Concord.

## <u>President</u>

<u>Julie Spencer</u> – Julie is a Senior Program Manager with AECOM Environment in Chelmsford, MA. She lives in Nashua, NH and is a long-time member of the GSNH. She has volunteered on the Nominating Committee through several elections, has served as the Communication Committee Chairperson, was the Website Coordinator from 2003 through 2007, served as President for the 2006-2007 term, then as Past President from 2007 through 2010. Julie is currently serving as President of GSNH and was elected in October 2010.

## Society VP

<u>Doug Allen</u> - Doug is a Senior Hydrogeologist and Project Manager with Haley & Aldrich, Inc. in Manchester, specializing in environmental site investigations and remediation, application of GIS to environmental projects, engineering geology, and hydrogeological studies. He is a licensed PG in New Hampshire. Doug has played an active role in GSNH since joining in 2002, volunteering on the membership committee (maintaining the membership database, preparing member directories, and communicating event information to members) since 2004 and previously served on the Board of Directors as Secretary. Doug and his family live in Warner where he serves on the Town's Conservation Commission. Doug appreciates the professional fellowship that GSNH brings to the geological community of New Hampshire and looks forward to ongoing active participation.

## Council VP

<u>Bill Abrahams-Dematte</u> - Bill is a Project Hydrogeologist/Scientist for AECOM Environment in Wakefield, MA., where he has worked for the last 10 years. Prior to AECOM, Bill has worked for Continental Placer, Inc. in Laconia, NH, as a private consultant in Williston, VT, and for the Vermont Association of Conservation Districts, Montpelier, VT. Bill specializes in environmental site investigations, site characterization and remediation, hydrogeological studies, data management, and occasionally geotechnical work. He also employs GIS and ACAD to his environmental projects. Bill has been a member of the GSNH for the last 9 years and Council VP for the last 1-1/2 years; a member of the GSA, NGWA, and AIPG societies; and a licensed PG (NH #575). Bill lives in Wilton, NH and appreciates the GSNH for providing a means to being more connected with the New Hampshire geological community and excuses to go out and hike around on a bunch of rocks.

<u>Russell J. Wilder</u> - Russ is currently Vice president of Environmental Services at URS' Salem Office. He graduated from UNH in geology in 1970 and received his masters degree in soil and water science in 1971. He has over 30 years of senior management experience, including positions as manager of very large multi-disciplinary task order contracts for federal environmental services and Fortune 500 Companies. He has extensive experience working with New England regulators including the USEPA, USACE, USF&WS, NMFS, MADEP, CTDEP, VTAEC and NHDES. While at the USEPA Region 1, Russ received an award for his work with the USACE on the 404 Dredge and Fill Program. Also while at the USEPA, he was responsible for the issuance of NPDES permits to industries and municipalities in Massachusetts, New Hampshire, Vermont, and Connecticut. Russ has served on the Windham, NH Conservation Commission and Planning Board for 24 years and is currently a member of the Alton, NH Conservation Commission. He currently serves on the legislative committee for GSNH. Russ is a Licensed Site Professional (LSP) in Massachusetts and a Professional Geologist in Virginia and New Hampshire. He has three grown children, Daniel, Stephanie and Lindsey. He resides with his wife, Penn, in Alton Bay, NH.

## <u>Treasurer</u>

<u>Jim Degnan</u> – Jim is a hydrogeologist for the USGS in Pembroke, NH, this position has provided the opportunity for him to be involved in a wide variety of ground water and water quality studies in the US and abroad. Jim has had the privilege of serving as treasurer for the GSNH since 2010. Jim is a licensed professional geologist in NH, has a BS in Geology from UNH (1997), and has worked for the USGS since 1994.

### <u>Secretary</u>

<u>Muriel Robinette</u> – Muriel is a native New Hampshire'ite' who returned to the Granite State from a 9 year hiatus on the west coast for graduate school and work. She is a graduate of Laconia High School, University of New Hampshire, and Washington State University with degrees in Geology and Engineering and spent 4 years as an Assistant Professor of Geological Engineering at the University of Idaho. Besides academia, she worked for 4 years at DES (then the WSPCC) and spent 20 years with national consulting firms before finally settling down in NE to start New England EnviroStrategies in 2007.

### Member-at-Large

<u>Wayne Ives</u> - Wayne was a geology major at Albion College in Michigan and graduated with a bachelor of arts degree. He worked in groundwater exploration consulting for ten years conducting geophysics, drilling and testing wells, and managing projects in New England, New York, California, Georgia, Virginia and Sudan. He left consulting to work for the Department of Environmental Services starting in the Superfund Program, where he quickly began managing Superfund Sites while serving as the Program's hydrogeologist. After seven years in Superfund, Wayne transferred to the Water Division to become the Instream Flow Specialist where he has been working for eleven years developing and testing criteria for meeting water quality standards for stream flow and managing water withdrawal issues.

<u>Thomas Fargo</u> - Tom supervises the Mobile Sources Section of the NHDES Air Resources Division. He moved to Dover, New Hampshire in 1988 to pursue a Ph.D. in geology at UNH. Tom received his Bachelors and Masters Degrees in Geology from the State Universities' of New York at Fredonia and Buffalo, respectively. He spent over ten years working in environmental consulting, primarily in New England, before engaging in citizen volunteer pursuits such as serving in the NH House of Representatives in 2007-08. Tom is long-time member of the GSNH and has served on the Legislative Committee since 2009.

...and of course, write-in candidates are always welcome.