

# THE GREEN MOUNTAIN GEOLOGIST



QUARTERLY NEWSLETTER OF THE VERMONT GEOLOGICAL SOCIETY

VGS Website: <http://www.uvm.org/vtgeologicalsociety/>

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## PRESIDENT'S LETTER

### *A View of the River*

Yesterday, I was invited on a Civil Air Patrol flight to view some of the flood damage in the Winooski, and White River watersheds. Today, I've just returned from site visits to Barnard, Plymouth, and Clarendon to consult with local officials who are trying to deal with landslides triggered by the recent flooding. The damage to roads, bridges, businesses, and homes that I saw was extensive and severe. Many of you have seen the changes wrought by the waters firsthand and some of you have been directly affected. Some damage was due to inundation by flood waters, but much was due to severe bank erosion and landsliding. Much was centered on the mainstems, but there was also massive damage along tributaries and most especially near the mouths of tributaries.

Besides the damage caused by the river, I also saw that tens of thousands of cubic yards of gravel are being mined out of our rivers right at this moment. This is occurring because enforcement of stream alteration regulations has been temporarily scaled back due to the flood emergency. The work is being done by municipalities and private contractors with seemingly little understanding of the consequences for the stability of the river system. Hopefully, the State will resume enforcing the regulations and citizens and watershed groups will demand that their local officials stop these short-sighted operations. For information about the effect of gravel mining on the stability of river channels, visit the website of the Vermont River Management Program at [http://www.vtwaterquality.org/rivers/htm/rv\\_educationalresources.htm](http://www.vtwaterquality.org/rivers/htm/rv_educationalresources.htm).

I can't help but be reminded of Luna Leopold's elegant primer on streams, *A View of the River* (Harvard University Press, 1994). This gem summarizes the physics, hydrology, and geomorphology of river systems in a masterly fashion. Leopold somehow manages to write about river science in technical language that is nonetheless accessible and interesting. Although the book reports on many high-tech scientific experiments and mathematical analyses, I think it is most valuable because it shows us the power of simple observational techniques, such as painting cobbles on a gravel bar and seeing how far the next flood moves them. *A View of the River* is a fine introduction to the interplay of geology, climate, landscape, water, and sediment.

Before this storm (and the more local flash flooding in late May that affected the upper Winooski where I live) I thought I had a pretty good sense of how river systems operated. Over the previous 20 years I had seen some significant flood damage from various storms. However, the floods of this year have broadened and deepened my view of how rivers shape and are shaped by the landscape they flow through. We ignore the risks from extreme flooding at our peril and will need to do much better in planning for the next big flood.

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One way to help learn from the recent flood is to assist in the volunteer flood geomorphic assessment project that I mentioned in a recent email sent to VGS members. If you'd like to help, contact me at [gsprings@norwich.edu](mailto:gsprings@norwich.edu). Kristen Underwood, John Van Hoesen, and I are working out the details of the assessment methods and hope to get detailed assessment work underway at several sites in early October.

Respectfully submitted,  
George Springston, President  
September 22, 2011

### **TREASURER'S REPORT**

The Society is in good financial health, with a current balance of \$5557.68. Since the last Treasurer's Report in April 2011, we have received income of \$40 from dues, and have spent \$1,300.39. These expenses included:

- a Research Award of \$696.20 to Ian Honsberger
- 1<sup>st</sup> (\$100), 2<sup>nd</sup> (\$75) and 3<sup>rd</sup> (\$50) prizes at the Annual Student Research Meeting
- Executive Committee meeting expenses (\$64.92)
- GMG publication expenses (\$19.04)
- Annual Student Meeting expenses (\$295.23).

Respectfully submitted,  
David S. Westerman, Treasurer

### **ADVANCEMENT OF SCIENCE COMMITTEE REPORT**

The Advancement of Science Committee awarded a Research Grant of \$696.20 to Ian Honsberger, a M.S. Candidate at the University of New Hampshire. The research is titled: "Metamorphic History of an Ultramafic-Mafic-Pelitic Rock Package in Stockbridge, Vermont".

The Committee is soliciting research grant **applications** with a deadline of **October 1<sup>st</sup>**. Because the State complex is shut down following flooding, applicants should send their completed applications directly to:

Jon Kim  
68 Best Street  
Morrisville, VT 05661

### **Joint Field Trip of the Vermont and New Hampshire Geological Societies**

On July 30<sup>th</sup>, ~65 members of the Vermont and New Hampshire geological societies attended a field trip entitled "Glacial Geology of the Upper Connecticut River Valley, Littleton-Lancaster, NH, and Barnet-Guildhall, VT" led by Woody Thompson of the Maine Geological Survey (co-authors were Jack Ridge of Tufts University and George Springston of Norwich University). The

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trip was followed by a barbeque in Weeks State Park in Lancaster, N.H. This is the first joint field trip run by the two societies in, at least, the past 15 years. If you would like a pdf copy of the guidebook article, contact Jon Kim. This trip consisted of 6 stops, which were:

- 1) Sleeping Astronomer Moraine of the Bethlehem Moraine Complex (Bethlehem, NH).  
Highlight: 30-meter high moraine with granitoid boulders.



Looking up at  
the Sleeping  
Astronomer  
Moraine.

- 2) Mill Brook Section near the Comerford Dam (Monroe, NH).  
Highlight: Multiple tills in the Mill Brook section.



Mill Brook section from  
power station near the  
Comerford Dam.

## 3) Lake Hitchcock Varve Section (Barnet, VT).

Highlight: Varves overlying till.



Larry Becker (left) and Paul Madden (center) at the upper part of the varve section.

## 4) Gillman Spillway of Lake Coos (Gillman, VT).

Highlight: Long and linear channel that drained glacial Lake Coos.

## 5) Guildhall Sand and Gravel Pit (Guildhall, VT).

Highlight: Delta foreset beds of sand and gravel deposited into Lake Coos; collapsed ice contact deposits.



Foresets (right) and ice contact deposits (left) at Guildhall gravel pit.

- 6) Weeks State Park (Lancaster, NH).  
Highlight: Overview of glacial Lake Israel Valley and barbeque.



Barbeque in full swing.

Trip leader Woody Thompson.



Respectfully Submitted,  
Jon Kim

## VERMONT STATE GEOLOGIST'S REPORT

### **Floods Reach Vermont Geological Survey Building**

Like many in Vermont, the VGS building (the Logue Cottage in the Waterbury State Office Complex) received flood waters. Up to a foot of water reached the first floor with the basement completely inundated. Our map plotter, a number of files, and some groundwater quality monitoring equipment were lost but luckily the core geologic archives and maps were out of the office to be scanned. In fact, the scanning project is complete and we already have PDF files on a hard drive with plans to make reports and maps available on the web. The core of a state survey is its geologic reports and maps and thankfully we now have a solid amount of information in digital form.

We are in the process of moving to temporary quarters in Winooski where the Vermont Student Assistance Corporation is located. We will be going into the building with other Divisions of the Department of Environmental Conservation. There are still internet and phone issues to be worked out including moving our materials from the second floor of Logue.

**General Fund Fully Restored**

The last GMG was published before the legislature completed its work but I now can officially report that the legislature passed the budget with the following language:

“A proposal to transfer the Division of Geology (Vermont Geological Survey) to the University of Vermont did not ultimately occur as planned in SFY ‘11 so the SFY ‘12 budget reflects an increase in costs to return the Division of Geology fully to the DEC budget.”

Many thanks to all those that met on a snowy night in early January, 2011 to plan a defense of the Vermont Survey’s budget because of the crucial role we play in Vermont. The members of the ad hoc committee never had to mobilize to make the case as the transition team for the new administration picked up the message to restore our budget. Many thanks go to Kristen Underwood. She met with the outgoing administration that communicated the geological community’s and the Society’s interest to the transition team. Though one challenge has been successfully met we now face the flood response, but at least finances are stable in this on-going Vermont fiscal year.

Submitted by,  
Laurence R. Becker, State Geologist

**ANNOUNCEMENTS****FALL FIELD TRIP**

This Fall the Society will not hold a field trip but members are encouraged to attend the New England Intercollegiate Geological Conference (NEIGC), being hosted by Middlebury College. An announcement was sent out to Society members by email earlier in the month. Three days of field trips are planned for September 29<sup>th</sup> through October 3<sup>rd</sup>. Please contact Dave West ([dwest@middlebury.edu](mailto:dwest@middlebury.edu)) to ask about last minute spots that may be open.

If you have an idea for a future trip, please feel free to contact any member of the Executive Committee to promote your idea.

**VERMONT GEOLOGICAL SOCIETY CALENDAR**

Sept 29 – Oct 2: New England Intercollegiate Geological Conference, Middlebury, VT

Oct 1: Student Research Grant Program applications due, to Jon Kim. Please see the website for format information.

Oct 9 - 13: Geological Society of America Annual Meeting, Minneapolis

Oct 9 – 15: Earth Science Week. This year’s theme is “Our Ever Changing Earth” and engages young people and the public in learning about the natural processes that shape our planet over time. For information on planning events, help for teachers and students, materials, and more go to:  
<http://www.earthsciweek.org/index.html>

The **Vermont Geological Society** is a non-profit educational corporation.  
The **Executive Committee** of the Society is comprised of the Officers, the Board of Directors,  
and the Chairs of the Permanent Committees.

#### Officers

President	George Springston	(802) 485-2734	gsprings@norwich.edu
Vice President	Keith Klepeis	(802) 656-0247	kklepeis@uvm.edu
Secretary	David West	(802) 443-3476	dwest@middlebury.edu
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#### Board of Directors

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Les Kanat	(802) 635-1327	les.kanat@jsc.edu
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#### Chairs of the Permanent Committees

Advancement of Science	Jon Kim
Geological Education	Christine Massey
Membership	David Westerman
Public Issues	Laurence Becker
Publishing	Richard Dunn



**Vermont Geological Society**  
**Department of Geology and Environmental Science**  
**Norwich University**  
**Northfield, VT 05663**

***ADDRESS CHANGE?***

*Please send it to the Treasurer at the above address*

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