



QUARTERLY NEWSLETTER OF THE VERMONT GEOLOGICAL SOCIETY

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

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PRESIDENT’S LETTER

This summer, my wife and I took the Lake Champlain ferry from Burlington to Port Kent, N.Y. to visit Ausable Chasm- a visit I had always planned to make during my 20 years in Vermont. The walking tour takes you along the chasm rim as well as down within and “the curse of the geologic mind” took over immediately, which seeks to explain everything in three-dimensions, rather than just admiring the beauty.

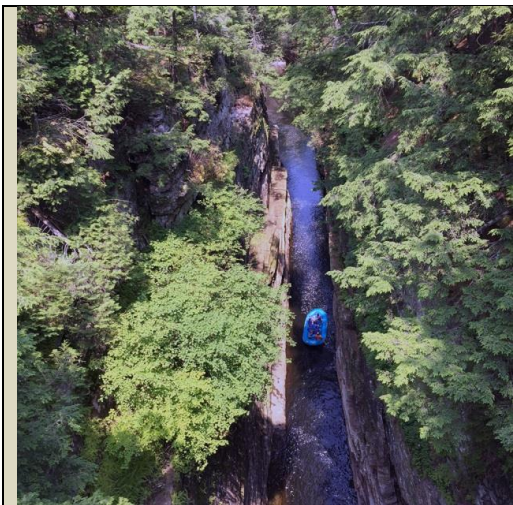


Ausable Falls from the rim trail.

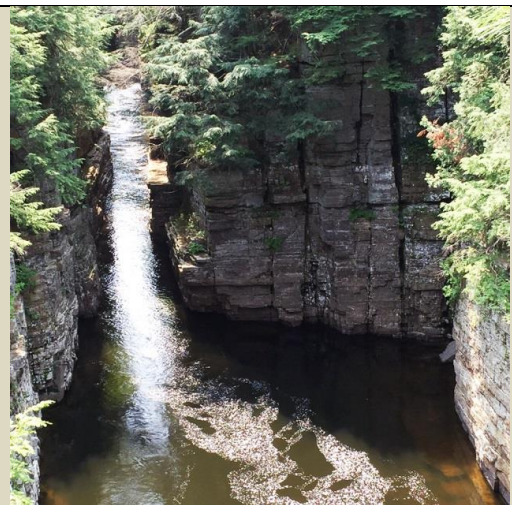


Right angle bend in the Ausable River as seen from the bridge.

The chasm itself is cut into the Late Cambrian Potsdam Formation, which is a light gray well-bedded quartzite. The downcutting (hundreds of feet) that produced the chasm, like that of



Raft following the dominant fracture set.



Wide river channel formed at the intersection of orthogonal fracture sets.

Niagara Falls, is actually post-Pleistocene. Within the chasm, the Ausable River channel follows a spectacular rectangular course that is controlled by two right-angle fracture sets. I left wondering if we have analogous fractures in Vermont.

The Vermont Geological Society fall field trip is entitled “Soil Genesis in Addison County - the soil profile in context” and will be led by Larry Becker and Caroline Alves on Saturday October 17th. Details will follow in a dedicated e-mail.

Respectfully submitted,
Jon Kim, President

TREASURER’S REPORT

Finances: The finances of the Society remain strong, still buoyed up by our major gift bequeathed to us from “Sandy” Partridge. Overall, however, our annual expenses remain approximately equal to our annual income.

Expenses:

Doll Awards (\$100, \$75, \$50)	\$225.00
Research Award	\$700.00

Jenny Bowers, UVM Graduate Student: *Impacts of Competitive Sorption Processes on Pb Bioavailability in Urban Soils*

Balance: Our balance as of July 1, 2015 is \$10,7786. An additional \$85 was received as dues, and \$100 as gifts to the research fund, bring our annual totals to \$1,733 and \$1,212, respectively.

New Member:

None

Respectfully submitted,
David S. Westerman, Treasurer

ADVANCEMENT OF SCIENCE COMMITTEE REPORT

Applications to the Vermont Geological Society Research Grant Program for the fall award period are due on October 1st. Applications should be sent to Jon Kim, Vermont Geological Survey, 1 National Life Drive, Main 2, Montpelier, Vermont 05620 and **post-marked no later than October 1st**.

Respectfully submitted,
Jon Kim, Chair

STATE GEOLOGIST'S REPORT

AASG Annual Meeting

The Association of American State Geologists meeting was held in Flagstaff, AZ in June and was an opportunity to meet colleagues from across the country. There were sessions on groundwater, hydraulic fracturing, and survey sustainability, plus a trip to the Grand Canyon. Laurence Becker, retired State Geologist, was inducted as an Honorary Member of AASG.

Staffing and Budget

Amid budget cuts and a staff reduction, Jon Kim and I are working to define where our work has the largest impact and to maintain or expand the valuable partnerships we have with the geologic community and the Society membership. We have some stellar student interns and dedicated partners at Norwich University, University of Vermont, Middlebury College, SUNY Plattsburgh, Green Mountain College, and the Vermont State Colleges. The Survey is focused on groundwater quality and supply, reducing public exposure to physical hazards and meeting our statutory obligations to provide sound and timely advice, educate the public and inform decision making.

Groundwater

Jon Kim, in partnership with the Agency of Agriculture, is investigating an issue of nitrates in the Sutton public and private water supplies. Jon, Keith Klepeis, Ed Romanowitz, and Pete Ryan (aka the groundwater consortium) are involved in regional studies and prepared field trips for the New York State Geological Association and the National Groundwater Association fractured bedrock conference. The field trip guidebook article for fractured bedrock studies in the Champlain Valley is posted on our web site.

This September we received a USGS grant to review water use data collected by the State of Vermont, and to write a plan to upgrade the data to USGS tier one and improve the data distribution system.

Hazards

Geologic hazards continue to be a focus of the Survey. George Springston (Norwich University partner) is conducting a landslide hazard mapping project for the Town of Highgate following the State Hazard Mitigation Plan protocols.

We are working with the Northeast States Emergency Consortium (NESEC) to complete a ROVER (rapid observation of vulnerability) assessment for some critical facilities in Vermont and combine the information with surficial materials to produce seismic hazard information for planning.

Mapping

Mapping projects funded through STATEMAP during 2015-2016 are surficial geologic mapping by George Springston in the Cabot Quadrangle and by John Van Hoesen in the Town of

Monkton. Groundwater resource maps will also be produced for these areas. Monkton provided in-kind match through the water well location project, contacting landowners and working on GIS data.

One More Note

I've recently given presentations at the Plymouth Historical Society, Craftsbury Church, National Guard, Northern Rivers Land Trust, and the Country Club of Vermont and more are on the schedule. The interest in geology shown by so many Vermonters is amazing and fun. In some cases, the audience even came prepared with geology songs ("Gonna take a sedimental journey, gonna turn the rock to sand..."). Can't beat that!

Respectfully submitted,
Marjorie Gale, Vermont State Geologist

ANNOUNCEMENTS

Save the date – October 17th is the Fall Field Trip. "Soil Genesis in Addison County - the soil profile in context" will be led by Larry Becker and Caroline Alves. Details TBA – watch for an e-mail closer to the date.

Thanks to Peter Gale for volunteering as the next Editor of the Green Mountain Geologist and Chair of the Publications Committee.

New open-file reports posted on the Vermont Geological Survey web site are:

Kim, J. and Springston, G., 2015, Report on Aquifer and Aquifer Recharge Mapping in the Town of Bristol, Vermont: Vermont Geological Survey Open File Report VG2015-1, scale 1:24,000.

Kim, J., Gale, M., Springston, G., Koteas, C., Defelice, C., and Saitta, N., 2015, Bedrock Geologic Map of the Southern Two-Thirds of the Woodbury Quadrangle, Vermont, Washington County, Vermont: Vermont Geological Survey Open File Report VG2015-2, scale 1:24,000.

Springston, George, Thomas, E., and Kim, J., 2015, Surficial Geologic Map of the Southern Two-Thirds of the Woodbury Quadrangle, Vermont, Washington County, Vermont: Vermont Geological Survey Open File Report VG2015-3, scale 1:24,000. Digital data (geodatabase) also posted.

CALENDAR

University of Vermont, Geology Seminar Series

Date: Sept 14, 2015

Time: 4:15 pm

Location: Delehanty Hall, Room 219

Contact: Julia Perdrial, 802-656-0665 or Julia.Perdrial@uvm.edu

Information: Christopher Sinton, Department of Environmental Studies and Science, Ithaca College, NY: "Seamounts and Drowned Islands of the Galapagos Region"

66th Highway Geology Symposium

Date: September 14-17, 2015

Location: Sturbridge Host Hotel and Conference Center, Sturbridge, MA

Host: Massachusetts Dept of Transportation and the UMASS Amherst.

Information: There will be a half day TRB session titled "Geotechnical Risk Assessment and Performance Management" on Monday afternoon, September 14th. Technical sessions of the Symposium will start on Tuesday morning, September 15th.

More information is at: <http://www.highwaygeologysymposium.org/>

University of Vermont, Geology Seminar Series

Date: Sept 21, 2015

Time: 4:15 pm

Location: Delehanty Hall, Room 219

Contact: Julia Perdrial, 802-656-0665 or Julia.Perdrial@uvm.edu

Information: Aaron Thompson, Department of Crop and Soil Science, University of Georgia, GA: "Coupled iron-carbon dynamics across the Luquillo and Calhoun Critical Zone Observatories"

Middlebury College, Geology Lecture Series

Date: Sept 25, 2015

Time: 12:30 pm

Location: Bicentennial Hall

Information: Katharine North, Chevron Corporation: "Contaminant hydrogeology from California to Kazakhstan"

2015 NGWA Conference on Groundwater in Fractured Rock

Date: September 28-29, 2015

Location: Hilton Hotel, 60 Battery St., Burlington, Vermont

Host: National Ground Water Association

Information: Visit the web site: <http://info.ngwa.org/servicecenter/Meetings/Index.cfm>

2015 Vermont Geological Society Fall Field Trip

Date: October 17, 2015

Location: Addison County, Vermont

Information: "Soil Genesis in Addison County - the soil profile in context" will be led by Larry Becker and Caroline Alves. Details TBA – watch for an e-mail closer to the date.

University of Vermont, Geology Seminar Series

Date: October 26, 2015

Time: 4:15 pm

Location: Delehanty Hall, Room 219

Contact: Julia Perdrial, 802-656-0665 or Julia.Perdrial@uvm.edu

Information: Rachel Gabor, Department of Geology and Geophysics, University of Utah, UT:
"From soil to surface water: using organic matter fluorescence and other tracers to identify catchment controls on stream water chemistry"

2015 Geological Society of America Annual Meeting & Exposition

Date: November 1-4, 2015

Location: Baltimore, Maryland

University of Vermont, Geology Seminar Series

Date: November 9, 2015

Time: 4:15 pm

Location: Delehanty Hall, Room 219

Contact: Julia Perdrial, 802-656-0665 or Julia.Perdrial@uvm.edu

Information: Jon Kim, Vermont Geological Survey, VT: "Recovery of a Fractured Bedrock Aquifer from Nitrate Contamination in the Central Vermont Appalachians"

University of Vermont, Geology Seminar Series

Date: November 16, 2015

Time: 4:15 pm

Location: Delehanty Hall, Room 219

Contact: Julia Perdrial, 802-656-0665 or Julia.Perdrial@uvm.edu

Information: Seth Kruckenberg, Department of Earth and Environmental Science, Boston College, MA: "Mantle heterogeneity, deformation, and controls on olivine crystallographic texture: a record from xenoliths in West Marie Byrd Land, Antarctica"

University of Vermont, Geology Seminar Series

Date: November 30, 2015

Time: 4:15 pm

Location: Delehanty Hall, Room 219

Contact: Julia Perdrial, 802-656-0665 or Julia.Perdrial@uvm.edu

Information: Michael Schindler, Department of Earth Science, Laurentian University, ON CA:
"Confined pore spaces in mineral surface coatings: environmental processes recorded at the nanoscale"

2016 Geological Society of America Annual Meeting & Exposition

Date: September 25-28, 2016

Location: Denver, Colorado

Host: Geological Society of America

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

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Membership	David Westerman	westy@norwich.edu
Public Issues	Marjorie Gale	Marjorie.gale@vermont.gov
Publications	Marjorie Gale	marjorie.gale@vermont.gov

**Vermont Geological Society
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158 Harmon Drive
Northfield, Vermont 05663**

ADDRESS CHANGE?

Please send it to the Treasurer at the above address