



QUARTERLY NEWSLETTER OF THE VERMONT GEOLOGICAL SOCIETY

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

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PRESIDENT'S LETTER

When I moved to Vermont in 1996, my first mapping project was in the Eden, Lowell, and Albany area and took me a field season and a half to complete. During this project, I regularly consulted with Rolfe Stanley of UVM on this map because he (and his students) had worked along-strike to the north and west. The eastern part of this field area had me doing traverse after traverse over the Lowell Mountains and back. The last time I walked over the Lowell range was in the spring of 1997.

On August 27 of this year, I returned to the top of the Lowell Mountains on a tour of the Kingdom Community Wind Farm operated by Green Mountain Power with State Geologist Larry Becker and Marjorie Gale of the Vermont Geological Survey. Wow, how things had changed! I encourage you to take a tour of a wind farm sometime.

Respectfully submitted,
Jon Kim, President

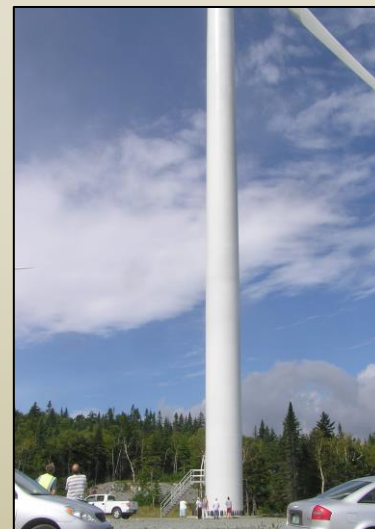
FALL FIELD TRIP ANNOUNCEMENT

Date: Saturday October 18, 2014

Title: Unusual sedimentary sequences from a dynamic ice sheet, Great Brook and Honey Brook, north-central Vermont"

Meeting Place and Time: 9:30 AM at the Town of Plainfield Park and Ride. The site is on the north side of Main Street Extension, about 0.25 miles east of U.S. Rt. 2. As it is an official Park and Ride site, there is a sign out on Rt. 2. The Vermont Agency of Transportation website has specific information on this park and ride location (PLAINFIELD, TH3) at <http://parkandrides.vermont.gov/>.

Description: George Springston and Rick Dunn (Norwich University) will lead a trip examining fairly unusual sedimentary sequences related to the ice sheet margin and proglacial lake depocenter. With only 3-4 stops the trip is intended to give participants a lot of time to explore the sections and develop their own hypotheses regarding sedimentary processes and the glacial stratigraphy. The trip should be especially interesting for students as they can hone their interpretive skills!



Lowell Wind Farm

The first 2-3 stops do not involve hiking, the final stop has a ~500 m walk up a valley. Viewing the complete stratigraphy at each site requires some steep slope scaling but they can all be examined from below. If it has rained participants may want to wear footwear for shallow stream wading. The trip should end by mid-afternoon, near Barre. There will be no store stop for lunch; participants please bring your lunch.

VGS SUMMER FIELD TRIP



Introduction to the field trip.



Jon shows how the Dunham Dolostone is folded over the Cheshire Quartzite.

VGS Summer Field Trip

On August 9, 2014, Jon Kim (Vermont Geological Survey), George Springston (Norwich University), and Everett Marshall (Vermont Dept. of Fish and Wildlife) led a field trip entitled “Rocks, Dirt, and Plants: A Natural History Tour of the Bristol Waterworks”.

The purpose of this trip was to integrate bedrock and surficial geology with plant ecology for the 40+ participants. The trip involved seven stops spread over 2 miles of trails and roads. The calcium-poor Cheshire Quartzite and the calcium-rich Dunham Dolostone, which are the bedrock formations in this area, support markedly different plant communities. In addition, there are surficial deposits preserved from three major glacial lake levels.

See photos at left and below.

*Reminder - Fall Field Trip is
October 18th, 9:30 am, Plainfield
Park and Ride, Rt. 2.*



“The Anticline” in the Cheshire Quartzite.



George uses a LIDAR slope map to explain the multiple glacial lake levels in the area.



Everett explains plant communities that grow in the soils overlying the Dunham Dolostone.

ADVANCEMENT OF SCIENCE COMMITTEE REPORT

There were two proposals submitted to the Vermont Geological Society Research Grant Program by the October 1st deadline. These proposals will be evaluated in the near future.

- 1) Nick Bachman, Middlebury College undergraduate student: Uranium-bearing phosphorite breccia in the Clarendon Springs Formation dolostone and the implication for aquifer chemistry; Milton and Colchester, Vermont
Amount Requested: \$900

- 2) Cynthia Connard, Middlebury College undergraduate student: U-Pb dating of detrital zircons in the Cram Hill Formation, Vermont: Implications for Paleozoic paleogeography and orogenesis
Amount Requested: \$900

Respectfully submitted,
Jon Kim, Chair

STATE GEOLOGIST'S REPORT

Please look to the next State Geologist's report for a full thank you to all who made the Vermont Geological Survey what it is today. The full time, the partners, and the many have all contributed so much over the last 20 years, leaving a deep geologic legacy for Vermont. It certainly has been an exciting and rewarding time for me. Hopefully by the next GMG, the next State Geologist will be known and introductions to the community can be made (the position announcement is open until Oct 16).

Science and Congressional Briefing, Washington DC, September 12, 2014

The American Chemical Society (ACS) and the Society for Risk Analysis sponsored a "Water-Based Hazards: Risk Mitigation" briefing on Capitol Hill in the Rayburn House Office Building. The Vermont State Geologist presented "Landslide Hazard Mitigation" and the landslide mapping protocol developed in Vermont as an integral part of Vermont's landslide mitigation strategy. Adam Parris, an interdisciplinary expert on Social and Environmental Change at the National Oceanic and Atmospheric Administration, presented on "The Role of Science in Resilience: Lessons from Hurricane Sandy". Mr. Parris has a Vermont connection. He holds a Master's Degree in Geology having studied with Professor Paul Bierman. The two other talks were: "Lessons from the Elk River, West Virginia Chemical Spill" by a John Hopkins University Professor in Environmental Health Sciences and a presentation on "Disaster Mitigation Funding: Pre-Event vs Recovery"

Nov 12 Earthquake Meeting

As there exists low to moderate seismicity in northern Vermont, seismic hazard mapping projects for the Burlington, Colchester, and the Williston areas are complete (Lens, Dewoolkar, Springston and Becker, 2013). In addition to Burlington, Colchester and the Town of Williston, parts of Milton, Winooski, Essex Town and Village, South Burlington and Shelburne fall within the study areas. The Vermont Geological Survey will co-sponsor with the VT Division of Emergency Management and Homeland Security a briefing to Vermont Essential and Critical Facilities Managers on the seismic hazard maps accompanied by a FEMA Presentation titled "Earthquake Hazard Mitigation for Nonstructural Elements." The FEMA and the Northeastern States Emergency Consortium logos will be on the flyer as well. The event is planned for Nov 12, 2014 at the Double Tree in Burlington.

National Geologic and Geophysical Data Preservation Program

The State Geologist joined a USGS review panel in Denver, Colorado, June 16-19, 2014. Thirty states applied for funds to preserve geologic and geophysical data. There are four categories for consideration: inventorying what a state has, metadata creation, paper conversion/digital data preservation, and rescuing samples that are in need of better protection. The Vermont Geological Survey is working under its first grant to inventory our paper and digital data.

Regional Planning Commissions and Landslide Mapping Protocol

A Department of Environmental Conservation strategic plan strategy is to work with regional planners and local government to implement the “Protocol for the Identification of Areas Sensitive to Landslide Hazards in Vermont”. On July 15, the State Geologist and George Springston of Norwich University met with the Central Vermont Regional Planning Commission (CVRPC) in Montpelier and a Local Emergency Planning Committee in Guilford administered by the Windham Regional Commission (WRC). We gave examples of the kind of landslides we see in Vermont and discussed the use of the protocol. Both the CVRPC and WPC are interested in going further and we talked about forming a consortium of RPC’s to work with the Vermont Geological Survey.

Respectfully submitted,
Laurence Becker, Vermont State Geologist

AD HOC INTERNSHIPS COMMITTEE

The Vermont Geological Society is trying to help connect students with internship opportunities. To this end, we need to assess how much demand there is for internships, and what limitations there might be for students accessing internship opportunities. We developed a questionnaire for students, a questionnaire for VGS members, and are working on connecting with businesses and organizations in Vermont who may hire interns.

We also contacted Geology and Environmental Science departments in hopes of establishing a contact person who could distribute information about a survey monkey student questionnaire and enlist students to participate. The contact person will also receive a listing of internship opportunities and be the key person to connect their interested and qualified college/university students with the opportunities. The VGS plan is to make the initial discovery and pass information on to departments.

Thus far the University of Vermont, Castleton State College, Johnson State College, and Middlebury College all plan to participate. We are waiting to hear from other colleges.

Please look for a Survey Monkey in your membership e-mail soon.

Respectfully Submitted,
Marjorie Gale, Helen Mango, Michelle Nucci and Miles Waite

ANNOUNCEMENTS AND MEMBER NEWS

Fall GMG bragging rights for 'Where's It, What's It?' go to all those who correctly identified the picture: Ron Krauth, Chuck Ratte, Greg McHone, Thomas Villars and Kent Koptiuch!



"I can't resist taking a guess at the photo in the recent Green Mountain Geologist. This looks like the southern end of Lake Willoughby, up in the Northeast Kingdom in Westmore."

"Where's it, What's it? is pretty easy. Mount Pisgah cliffs along the east shore of Lake Willoughby in town of Westmore. Have ridden my bike along the shoreline on Route 5A many times, and always hoping that some huge boulder doesn't pick that exact moment to come tumbling down the cliffs. From the photo, looks like I had more of a margin in the talus slope area than I realized."

For more pictures of Lake Willoughby, Mt. Pisgah, rockfalls and landslides, follow this link:
<http://www.anr.state.vt.us/dec/geo/hazmap.htm>

TREASURER'S REPORT

Finances: The Society remains in excellent financial health. As of September 30, 2014 we had \$11,602 in the bank.

New Members: Please join me in welcoming a new member: Sara Lott with Impala Networks.

Respectfully submitted,
David S. Westerman, Treasurer

WHERE'S IT, WHAT'S IT? (Contributed by guest photographer Thomas Villars)



Send an e-mail to Marjorie.gale@state.vt.us with the Vermont town name and a brief description of what's in the picture. What do you win? Bragging rights. Look for your answers in the Winter Issue of the GMG. Also, feel free to contribute some photographs of your own to use in the next puzzler.

CALENDAR

Oct 10-12: New England Intercollegiate Geologic Conference (NEIGC), hosted this year by Wellesley College, Wellesley, MA; <http://w3.salemstate.edu/~lhanson/NEIGC/Conference.html>

Oct 12-18: Earth Science Week, Earth's Connected Systems

Oct. 13, 4:15 pm, Room 219, Delehanty Hall, UVM, 180 Colchester Ave., Burlington. UVM Geology Seminar: Laurel Goodwin, U of Wisconsin-Madison: Quantifying the mechanical behavior of shear zones.

Oct 17: Earth Science Week, Geologic Map Day; <http://www.earthsciweek.org/geologicmap/>

Oct 19-22: Geological Society of America Annual Meeting, Vancouver, BC;
<http://community.geosociety.org/gsa2014/home/>

Oct. 27, 4:15 pm, Room 219, Delehanty Hall, UVM, 180 Colchester Ave., Burlington. UVM Geology Seminar: Frank Magilligan, Dartmouth College: Lessons learned from Hurricane Irene: Going from field impacts to fluvial theory and river management.

Oct. 31, 12:30 pm, Room 417, Bicentennial Hall, Middlebury College, Middlebury: Amy Leventer, Hamilton College: Interdisciplinary exploration of the East Antarctic margin. The public is warmly welcomed.

Nov. 3, 4:15 pm, Room 219, Delehanty Hall, UVM, 180 Colchester Ave., Burlington. UVM Geology Seminar: Marjorie Gale, Vermont Geological Survey: The 2011 Bedrock Geologic Map of Vermont: Highlights, transitions and notes about the journey.

Nov. 10, 4:15 pm, Room 219, Delehanty Hall, UVM, 180 Colchester Ave., Burlington. UVM Geology Seminar: David Singer, Kent State University: Speciation and distribution of trace metals associated with iron sulfides in the Marcellus Shale.

Nov. 14, 12:30 pm, Room 417, Bicentennial Hall, Middlebury College, Middlebury: Julia Perdrial, University of Vermont: How does critical zone carbon respond to global change: examples from the northeastern and southwestern US. The public is warmly welcomed.

Nov. 17, 4:15 pm, Room 219, Delehanty Hall, UVM, 180 Colchester Ave., Burlington. UVM Geology Seminar: Ken Ridgeway, Purdur University: TBD Cenozoic flat-slab subduction processes and the tectonic development of southern Alaska.

Dec. 5, 12:30 pm, Room 417, Bicentennial Hall, Middlebury College, Middlebury: Ray Mitchell, Principal Carbonate Sedimentologist, ConocoPhillips (retired): Microporous ooids in a Middle East sour gas reservoir. The public is warmly welcomed.

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.

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ADDRESS CHANGE?

Please send it to the Treasurer at the above address