THE MAINE GEOLOGIST

NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MAINE

February, 2007
Volume 33
Number 1

THE PRESIDENT'S MESSAGE

Dear Members,

With the election of officers at the fall meeting, I am honored to serve the Geological Society of Maine as President for the next two years. I wish to thank Tom Weddle for his service to the Society as President, and look forward to working with him and the continuing Directors, Liz Champeon and Lisa Churchill-Dixon; incoming officers - Julia Daly (Vice-president) and Martha Mixon (Secretary); and continuing officers - Rob Peale (Treasurer) and Charlotte Lehmann (Interim Newsletter Editor). I also wish to thank outgoing Director Dave Gibson, for his previous years of service as Vice-president and President as well as Director. In addition, I look forward to working with all of the GSM membership in continuing to improve on communication between the various segments of the geological community in Maine.

In one of the better attended fall meetings, approximately 60 members and friends where present for presentations. I wish to thank Liz Champeon, Steve Dickson, Dorothy Richter, AmyJean McKeown, and Joe Kelley individually and their companies, agencies and organizations for allowing them the time to put together and make their presentations. This was an excellent example of having members from consulting, academic and regulatory agencies present information on geological processes, hazards and future applications of geological information. Special thanks to Cindy Robbins and Tom Brennan of Poland Springs for hosting the meeting and providing an excellent social hour and meal.

As noted in the October 2006 newsletter and elsewhere below, the spring meeting will be hosted by University of Maine at Farmington. The meeting will continue to be more academically focused with student poster sessions and presentations in the afternoon and an evening keynote speaker.

Thinking ahead to the summer field trip, Mary Groves, the owner of the Poland Mining Camps in Poland, Maine has graciously agreed to allow GSM to tour the pegmatite quarries on the western side of Mount Apatite in Auburn. The pegmatite quarries include the Pulsifer, Keith, Wade and Hole-in-the Ground quarries. Since these quarries were first opened in the late 1800s, they have produced world-class gem tourmaline, beryl, and apatite, and a variety of other rare pegmatite minerals. The Keith quarry has been actively mined during the last several years. Mineral collecting in these quarries is exclusively through Mary Groves. Thanks to Gary Bucklin for making the arrangements with Mary to allow us this opportunity. This portion of the summer field trip has been scheduled for Saturday, July 28, 2007. Further information regarding the field trip will be provided in the next newsletter. This will include procedures on making reservations to attend as the size of the group will be limited. Ideas for speakers or additional field trips in the area are welcomed, to make this a two day event.

Poland Springs is becoming a tradition for the fall meeting, having graciously agreed to host the meeting again in 2007. Based on the excellent attendance at the last meeting, Poland Springs has reserved the large meeting room in the hotel for October 19, 2007. (It's a Friday, mark your calendars!) A tentative general topic is: "Geological Practices Associated with Implementation of Alternative Energy Sources". This is the initial request for speakers to make presentations on any of the variety of geological services that may be provided in the evaluation or implementation of geothermal, wind, landfill gas, tidal, alternative fuel or other projects. Please contact me at with your ideas. This may become a full day symposium if there is sufficient interest.

Finally, I repeat the comments of those who have preceded me and urge the membership to participate by contributing to the newsletter and web with articles of interest, upcoming events, announcements, photographs and member news. Remember that your dues support this newsletter, the website, student awards, keynote speakers, and meeting and field trip expenses. I look forward to seeing you at the spring meeting at the University of Maine at Farmington.

Cliff Lippitt, President (2006-2008)
<clippitt@swcole.com>

NEWS FROM THE COLLEGES AND UNIVERSITIES

In Memoriam, D. W. Caldwell

Dee Caldwell, Geology Professor Emeritus at Boston University passed way on the morning of December 12, 2006. Dee grew up in Mt. Vernon, Maine, and as a boy scout, after earning his geology merit badge, decided that he would become a geologist. Upon completing undergraduate studies at Bowdoin College, he eventually received an MA from Brown University and later his PhD from Harvard University. He taught at Wellesley College prior to his term at Boston University, retiring from BU in 2001.

Many people knew Dee as the NEIGC Secretary, a post he held for 26 years, from 1969 to 1995, and as leader of many conference field trips. He has over one-hundred publications on file in the Bibliography of Maine Geology, and of these he is the co-author of forty-nine 15-minute surficial geology quadrangles. Dee also led many trips for the Geological Society of Maine, the most memorable being the wade down the Trout Brook Valley in northern Baxter State Park; he usually began it with a fully-clothed immersion at the pool at the first stop, hat and all. The Society has lost a good friend, and the geologic community has lost a great contributor to Maine geology.

Dee's wife, Marvin Caldwell, an extended family, and many, many friends, colleagues and former students attended a service for him held in Groton, Massachusetts, December 15, 2006. A summer service in Millinocket, Maine, is to be announced.

Submitted by Tom Weddle

GSM SECRETARY'S REPORT

Fall Meeting, October 27, 2006
Poland Spring Golf Course Clubhouse
41 Ricker Road, (off Route 26), Poland, Maine

The meeting consisted of a mini-symposium titled, "Practical Applications of Geology", a brief awards ceremony, a brief business meeting with election of officers, a social hour, dinner, and a keynote speaker. Prior to the program Vice President Cliff Lippitt warmly thanked Poland Spring for once again hosting the fall meeting, complete with complimentary dinner and open bar. Special thanks were given to Mark Dubois, Tom Brennan (both GSM members and geologists employed by Poland Spring), and Cindy of the Poland Spring staff. Members of the Structural Engineers Association of Maine were welcomed to the meeting.

Mini-Symposium: The program began at 2 pm and included the following talks:

Liz Champeon (S. W. Cole Engineering, Inc.) gave a travelog titled, "Alaska's Inland Passage: From Glacier Bay to the Misty Fjords". Stunning slides were shown of nunataks, U-shaped and hanging valleys, fjords, bright blue sea ice, an unweathered vertical scarp behind Main Street in Juneau (Main Street appears to be built on talus piles), a tree-free "splash mark" around the shores of a fjord - a sign of a past tsunami-type event.

Steve Dickson (Maine Geological Survey) gave a talk titled, "From Holocene to Anthropocene on the Coast of Maine: Geological Consequences and Hazards". The term "anthropocene" was introduced by Crutzen (*Nature*, v. 415, p. 23) to recognize human activities as major geologic forces shaping the earth and atmosphere, competing with volcanic eruptions and glacial advances that defined earlier geologic epochs. Steve reviewed some of these human activities and their consequences in his talk.

Dorothy Richter (Hager Richter Geoscience) spoke on "Surface and Borehole Shear Wave Velocity". New model building codes require determination of seismic site classes, which are based on subsurface properties that can be determined by measuring shear wave velocities. The traditional method of measuring shear wave velocities has been crosshole seismic. Dorothy described a new technique known as multichannel analysis of surface waves (MASW). It uses surface seismic refraction/reflection and does not require boreholes.

AmyJean McKeown (EPA Office of Solid Waste and Emergency Response (OSWER, Region 2)) gave a talk on her experiences in Louisiana as an EPA emergency responder following Hurricane Katrina. The EPA's efforts to retrieve wayward hazardous and other wastes following Katrina were described. Katrina damage and response was documented in her slides.

Awards: State Geologist *Bob Marvinney* presented an award to *Walter Anderson* on behalf of the

Geological Society of Maine. The award was to honor Walter for his service to GSM and the geology community in Maine.

Business Meeting and Election of Officers: A brief business meeting was held. The nominating committee, represented by *Marita Bryant*, nominated a slate of officers consisting of *Cliff Lippitt* for president; *Julia Daly* for vice president; and *Martha Mixon* for secretary (to fill out the unfinished term of Sean Dougherty). The motion was seconded and the slate was elected unanimously.

Treasurers Report: Treasurer *Rob Peale* presented the Treasurers Report. After some discussion a motion was made by *Bob Gerber* to move the small amount of money in the Education Fund into the same account with the Anderson Fund so it can earn a higher rate of interest. The motion was seconded by *Bob Marvinney*, and passed with a show of hands.

Announcements:

- The Spring Meeting will be held at University of Maine at Farmington
- *Woody Thompson* distributed free copies of a draft map depicting Maine's Ice Age Trail from Acadia National Park to the New Brunswick border. There is an accompanying website: http://iceagetrail.umaine.edu/
- *Walter Anderson* gave an update on the International Appalachian Trail committee (InternationalAT.org) which is working to extend the AT from Mount Katahdin to Newfoundland.

Keynote Speaker: A keynote address was given by *Joe Kelly*. It was titled, "The Birth, Death and Re-Birth of the Mississippi River Delta: How Can People Live Here?" Joe has served for several years on a National Academy of Sciences team studying the Louisiana coast. Joe talked about constructive and destructive geologic processes active in the Mississippi River Delta, the history of the Delta, and the impact of Hurricane Katrina on the Delta and the human population that inhabits it. Joe's assessment was that it is not possible to restore the entire delta that has been lost to natural and humanmade forces. Some areas will have to be abandoned. Efforts and funds should be focused on selected areas where success is most likely. A long-term plan that takes into account the geologic and climatic forces is needed.

Geological Society of Maine 2007 Spring Meeting Agenda

UMF is hosting the Spring GSM meeting:

April 13, 2007

Ricker Hall, UMaine Farmington

Tentative schedule:

Posters at 2:00 PM

Talks 3:30

Business meeting 5:00 - 5:30

Social (half-) hour 5:30 – 6:00

Dinner 6:00

Speaker (TBA) at 7:00 PM

Abstracts due FRIDAY, APRIL 6, 2007

Submit to Julia Daly (dalyj@maine.edu)

Must follow GSA format, 300-word maximum.

GSM WEBSITE: www.gsmmaine.org

The GSM website contains copies of present and archived Newsletters, a calendar of events, and other items of interest to the Society, including the updated Bylaws. There are many important links to geology items in Maine and elsewhere. There is a page on Maine geology and the Photo of the Month. Let us know what you think.

Webmaster, Mike Lerley

<mike@rentageekme.com>

GEOLOGICAL SOCIETY OF AMERICA
Northeastern Section Meeting
March 11-14, 2007
Durham, New Hampshire

Symposium Honoring Father Jim Skehan, S.J.
Walter A. Anderson <**waageo@verizon.net**> and
Chris Hepburn <**hepburn@bc.edu**>

TITLE: Rev. James W. Skehan, S.J.: Geologist, Teacher, Mentor, Priest: A Jesuit Journey.

Father Jim, as he is known to one and all around the world, has had a long, distinguished and varied career extending for over half a century. This symposium is to recognize and commemorate his many contributions, particularly those to the geology of the northern Appalachians. He was one of the first to recognize the importance of plate tectonics in understanding this mountain belt and its differentiation into terranes, including the extent of the Avalon terrane into SE New England. We hope his colleagues, former students and many friends will join in celebrating Father Jim's career by contributing modern work or summaries from areas of Father Jim's interests tinged, perhaps with personal recollections of this unique individual.

The announcement is posted on
www.geosociety.org and
www.unh.edu/esci/negsa2007.html

Hard copy was in the September issue of GEOLOGY TODAY.

THE STATE GEOLOGIST'S MESSAGE

Investigations of Bar Harbor earthquakes
Robert Marvinney
State Geologist

Everyone is now familiar with the series of earthquakes that have shaken Bar Harbor since late September. More than two dozen earthquakes have been recorded by the New England Seismic Network since September 22, with three events of magnitude 3.1 or greater. Seismographs temporarily deployed in a tight net around the Mount Desert Island have recorded even more events. The most common question to my office from the media, local residents, and emergency responders regarding this series is, "What does this mean?" The honest answer at this time is, "We don't know," but we are trying to learn more about these earthquakes.

The largest earthquake in this series was the magnitude 4.2 event on October 2, which was felt over a broad area of central coastal Maine. Occurring shortly after the magnitude 3.4 event in September, this earthquake generated considerable interest in the seismological community. Dr. Won-Young Kim, Director of the Lamont Cooperative Seismographic Network (Lamont-Doherty Earth Observatory, Columbia University), arranged to have a total of six portable seismographs deployed on Mount Desert Island and neighboring areas, in a careful distribution intended to provide very precise epicentral locations for these earthquakes. Several of these units were made available on short notice through the Advanced National Seismic System at USGS.

Since their deployment, the units have recorded dozens of small aftershocks. Dr. Kim reports that the earthquakes originate at a very shallow location in the crust – approximately 1.5 km. Furthermore, the preliminary data indicate a roughly N-S line of rupture beneath Frenchman Bay and possibly a reverse E over W motion along the plane of failure. As more data are retrieved from the portable instruments in the months to come, seismologists will be able to further refine the locations and motions of these earthquakes.

I think this is an excellent opportunity for research that can build on the data already being collected. According to studies by the USGS, although the seismic hazard in the northeast is much less than in the western U.S., when combined with relatively old and densely built infrastructure, this defines a fairly high seismic risk. One area that has not been adequately researched is the attenuation of seismic energy in the relatively dense crust of the northeast. Most studies of ground shaking relative to earthquake magnitude have been done in more seismically active areas where the crust dampens

seismic energy relatively rapidly. Refining the attenuation factor in the northeast is essential to refining seismic risk.

Little research has focused on the causal factors of earthquakes in the northeast. Looking back through the instrumentally-recorded earthquake record for Maine, there are no sequences of earthquakes similar to the Bar Harbor sequence in number, magnitude, and close spatial distribution. This series is truly unique! Analysis of the excellent dataset from the portable seismographs will provide an important window into crustal processes that can be applied to the entire northeastern U.S. In the months to come, I and MGS staff will work with seismologists of the Lamont and Weston Observatories, as well as researchers at UMaine to develop research proposals to further investigate the causes and consequences of these events.

Robert G. Marvinney, Maine State Geologist:
<Robert.G.Marvinney@state.me.us>

GSM MEMBER NEWS

Liz Champeon is planning to retire from full-time work at the end of 2006, but will stay on as Senior Consultant on a project basis at S. W. Cole. Steve Cole will be doing the same.

After 23 years in the environmental field, **Chris Olson** took the opportunity to start up a training facility in Fairfield for the Maine Department of Transportation. The site has 41 acres for hands-on training, as well as huge garages for indoor training with trucks, scaffolding, etc. Chris says it is a challenge putting it all together, but that she is enjoying the creative experience. She also was married last summer, and is helping her mother deal with the after effects of Hurricane Katrina.

Todd Coffin is still enjoying a successful running career. He won the 2006 Sugarloaf Uphill Climb in October. More than 100 runners competed on a 2.5 mile course that rose over 2,500 vertical feet, finishing at the summit of the mountain.

Alison Jones sends greetings from Tucson, AZ, where she moved last March. She reports that there is a booming market for hydrogeologists there. Alison is one of four managers for the City of Tucson Department of Environmental Protection. She manages the hydrogeology staff that are investigating and cleaning up city-owned properties, including landfills and brownfields. She notes that the city is located in an alluvial basin in the Basin and Range province and that groundwater models actually work there! She misses her band, the Edith Jones Project, but is getting into the music scene in Tucson. She would love to hear from her Maine friends and can be reached by email at: <alison@edithjonesproject.com>.

Please send member news to:

Carolyn Lepage, Member News Correspondent (1996-present) <clepagegeo@aol.com>

PO Box 1195, Auburn, ME 04211-1195
Fax: (207)-777-1370; Phone: (207)-777-1049

GSM TREASURER'S REPORT

Membership	
Students	48
Associates	25
Regular	221
Institutional	5
Total	299
Total Paid Up	138
	(46.15%)

Balance On Hand August 31, 2006

Anderson Fund Savings	$459.38
Anderson Fund CD	$5,310.40
Education Fund Savings	$806.65
General Fund Money Market	$2,958.49
General Fund Savings	$26.03
General Fund CD	$5,082.34
General Fund Checking	$0.00
Total	$14,643.29

Income

Dues	$1,187.00
Interest	$178.70
Anderson Fund Donation	$16.00
Other Donations	$15.50
Publications Sales	$67.50
Subtotal	$1,464.70

Expenses

Newsletters	$0.00
Honoraria	$300.00
Anderson Awards	$0.00
Other Awards	$38.80
Meeting Expenses	$38.52
Donations	$0.00
Postage	$5.50
Web site	$0.00
Refunds	$0.00
Miscellaneous	$9.32
Subtotal	$392.14

Balance On Hand December 31, 2006

Anderson Fund Savings	$476.94
Anderson Fund CD	$5,387.36
Education Fund Savings	$822.38
General Fund Money Market	3,846.25
General Fund Savings	26.11
General Fund CD	5,156.81
General Fund Checking	0.00
Total	15,715.85

Respectfully submitted,
Rob N. Peale, Treasurer (2004 -present)
<Rob.N.Peale@maine.gov>

THE EDITOR'S MESSAGE

I am pleased to be able to fill in for Dan Belknap while he is on sabbatical during the current academic year. Please send any items from individuals, schools or organizations for inclusion in the Newsletter to my e-mail address. **Remember that the date on your mailing address refers to when your current dues run out**. Please help the Society by paying up to date or beyond, and most especially, making good on any arrears.

Thanks.

Charlotte Lehmann, Interim Newsletter Editor
(2006 - present) <clehmann@bates.edu>

(207) 786-6485, FAX: 207-786-8334

MEMBERSHIP DUES STATEMENT

The GEOLOGICAL SOCIETY OF MAINE, INC. (often referred to as **GSM**) is a non-profit corporation established as an educational Society to advance the professional improvement of its members; to inform its members and others of current and planned geological programs in Maine; to encourage continuing social contact and dialog among geologists working in Maine; and to further public awareness and understanding of the geology of the State of Maine; and of the modem geological processes which affect the Maine landscape and the human environment.

The Society holds three meetings each year, in the late fall (Annual Meeting), early spring, and mid-summer (usually field trips). A newsletter, ***The Maine Geologist***, is published for all members three times a year. The Society year runs from August 1 to July 31. Annual dues and gift or fund contributions to the Society are tax deductible. There are three classes of memberships:

$12.00	REGULAR MEMBER	Graduate geologists, or equivalent, with one year of practice in geology, or with an advanced degree.	***PLEASE NOTE NEW***
$12.00	INSTITUTIONAL MEMBER	Libraries, societies, agencies, businesses with interests in or practicing geology and related disciplines.	***FEE SCHEDULE AS OF***
$10.00	ASSOCIATE MEMBER	Any person or organization desirous of association with the Society.	***August 1, 2003***
$ 5.00	STUDENT MEMBER	Persons currently enrolled as college or university students.	

THE GEOLOGICAL SOCIETY OF MAINE ANNUAL RENEWAL / APPLICATION FOR MEMBERSHIP

Regular Member	$12.00	$__________	Name ________________________________	**Make checks payable to:**
Institutional Members	$12.00	$__________		Geological Society of Maine
Associate Member	$10.00	$__________	Address ________________________________	Rob Peale, Treasurer
Student Member	$ 5.00	$__________		Maine Dept. Environmental
Contributions to GSM		$__________	________________________________	Protection,
(Please write gift or fund on check.)			________________________________	State House Station 17
TOTAL ENCLOSED		$__________	________________________________	Augusta, ME 04333-0017
		Email Address	________________________________	

(GSM funds include the Walter Anderson Fund___, the Education Fund___, and discretionary gifts ___ as noted by contributor)

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2006/2007 SOCIETY YEAR BEGINS AUGUST 1 - PLEASE SEND DUES TO TREASURER.
The DATE on your mailing address refers to PAID UP DUES DATE

THE GEOLOGICAL SOCIETY OF MAINE
c/o Charlotte Lehmann, Interim Newsletter Editor
Department of Geology
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THE MAINE GEOLOGIST is the Newsletter of the Geological Society of Maine, published three times a year, in mid-winter, summer, and early fall, for members and associates.

Return Service Requested

Correspondence about **membership** in the Society, **publications** and **dues** should be mailed to:
Rob Peale, Department of Environmental Protection,
State House Station 17, Augusta, ME 04333-0017 <rob.n.peale@maine.gov>

Items for inclusion in the **Newsletter** may be directed to:
Charlotte Lehmann, Geology Dept., Bates College,
Lewiston, ME 04240 <clehmann@bates.edu>