



THE MAINE GEOLOGIST

THE NEWSLETTER OF THE GEOLOGICAL SOCIETY OF MAINE

FEBRUARY
1986
VOL.12 NO.2



Society News:



President's Message

Locked in the throws of winter as we are, Geology is progressing on several fronts. GSM will be a co-exhibitor at Northeast GSA with the Geological Society of Vermont. Dave Westerman, former GSM president called a couple of weeks ago and proposed the idea. The opportunity will hopefully lead to bulletin sales and new members. We plan to have display copies of the new state maps as well. However, these will have to be purchased through the Survey in Augusta via order forms. The new state maps are now available and are very impressive. The colors are bolder than I had anticipated. Everyone who worked on them are to be congratulated.

The possibility of the 1988 Northeast GSA in Portland is a step closer. I have been invited to give a formal presentation of plans at the board meeting at Kiamesa Lake. Ken Weaver, Secretary NE GSA, will probably visit Portland prior to the March meeting. The one hang up that needs to be overcome is the size of the meeting facility. The Holiday Inn is a wee bit too small, making it necessary to have two hotels involved. With the shades of Providence still fresh in everyone's minds this could be our undoing. There are other hotels within a three to five minute walk (honest time) of the Holiday, however. If the '88 meeting is in Portland, it will involve two facilities.

Spring and winter meetings of the Society. Don Newburg, Bates College, has sent out a special announcement calling for student papers to be delivered at the spring meeting. The meeting will be on Friday, March 28, 1986 in the Skelton Lounge, Chase Hall, Bates College. We will start at 1:00 PM. ENCOURAGE YOUR STUDENTS TO ATTEND! The level of papers given in the past has been very professional. Those of us involved with the teaching profession should attempt to maintain this level of professionalism amongst our students.

The winter meeting is still up in the air. If it happens it will occur in February at Colby College. The topic will be on high level nuclear waste disposal. At this writing I have not heard back from the person who would be our evening speaker. There will be a separate mailing announcing the time, topics and place.

Speaking of high level nuclear waste, when was the last time that half of the front page of your local newspaper contained topics pertaining to geology? For example the Saco-Biddeford Journal Tribune devoted nearly two thirds of the front page and one half of the back page of the first section devoted to the geological aspects of high level nuclear waste disposal. Low and behold next to Walt Anderson's photo with the bedrock geologic map was a very intelligible article that actually used words like "Sebago Batholith", "Bottle

Lake Pluton", "fracture patterns", "Glaciation", and "sea level and shore line changes" among others. In my personal opinion the profession of Geology in Maine has much to gain from this issue. I see this as: 1) an opportunity to relate the workings of our science to an ill-informed and often disinterested public; 2) an opportunity for geology to contribute to the development of public policy, both for the short and long term; and 3) an opportunity to investigate these proposed sites in a detail that would ordinarily not come to pass. Maybe I have been in the dark the past several years, but I have had the impression that there is much to be learned about the Sebago Batholith. In conclusion, I would encourage us all to be more involved in these public policy issues. We should contribute, where we can, and in meaningful and rational ways to demonstrate that geology is a responsible profession, capable of dealing with sensitive social and at times emotional issues. I mean, Holy Hornblende Batman, are my toes going to glow in the dark if I drink the water from the Portland Water District if the dump is put in southern Maine?

Stephen Pollock



Secretary's Report

The Fall Meeting of GSM was held October 15, 1985 at the University of Southern Maine. Many of our most prestigious consultants spoke on being a consultant in Maine. Unable to be present until the end of these talks, your secretary can only report that those he spoke to at happy hour were very impressed with all the consultants.

Following happy hour and a gourmet meal at the University's dining hall, Steve Pollock brought the business meeting to order. Bob Gerber reported some good news: the treasury is up to \$200 since summer, and now has \$1800 in it. Bob also had some bad news: the organization is now under investigation for not filing our taxes in 1983 and 1984. It seems that we forgot to submit the necessary paperwork to obtain permanent non-profit tax exempt status, and we are now a non-tax exempt private corporation. At least IRS is willing to admit that we are, indeed, not a profit-making organization.

Bob has turned our tax problems over to Barry, Dunn and McNeil, an accounting firm. Apparently, we can be considered tax exempt if we do not influence political decisions. I guess we should keep quiet on issues such as whether the fault under the proposed Big A dam site is active, or if the government should store radioactive waste under Sebago Lake.

Christine Olson asked if we can move our bulk mailing address to Augusta, instead of Brunswick, and was told this could only be done if we are non-profit and tax exempt.

The discussion shifted to our next meeting. A suggestion² was made that it be in Orono in January, and cover Appalachian geology and the ground water program (or lack of one) at UMO. This suggestion was at first met with an uncomfortable silence, followed by increasingly derogatory comments about the poor attendance record of our Orono members and the climate in "northern Maine" in January (2/3 of the state may be north of Orono, but we're geologists, not geographers). A compromise of Waterville was proposed and generally agreed on, as was a suggestion to have a meeting in Farmington one of these days. The topic for the winter meeting was left open, but has since been filled with radioactive waste.

A suggestion to have the Spring meeting/presentation of student papers at Bates met with no objections, which showed that the effects of happy hour were wearing off. Accordingly, the business meeting was closed.

For our evening entertainment, Irwin Novak filled us in on landslides in the Portland-Gorham area in the past few hundred years, with an emphasis on the 1983 Gorham slide.

Submitted by John S. Williams



Maine Survey Notes:



The MGS Hydrogeology Division has begun a pilot study on the classification of Maine's ground water utilizing the Environmental Protection Agency-National Water Well Association's DRASTIC method. The project was initiated at the request of the Maine State Planning Office and the Land and Water Resources Council's Ground Water Subcommittee. The Division compiled the results of the first year of a pesticides and ground water study and began entering well data volunteered by water well drillers.

Woody Thompson conducted sand and gravel aquifer mapping in the Windsor-Vassalboro area. He also completed field work on the delta study for the Nuclear Regulatory Commission (NRC) project. Carolyn Lepage and Jeannine Amos (UMO) began field work on the landslide study, investigating several sites in southern coastal Maine. Irwin Novak (USM) compiled the results of his landslide occurrence survey. In November, the MGS drilled several holes in the Gorham landslide to determine stratigraphy and depth to bedrock and to collect samples for engineering tests to be conducted by Jeannine Amos.

After the new state bedrock and surficial geologic maps were sent to the printers the Cartography and Publications Division started updating old surficial geologic maps by adding a topographic base and working on the backlog of unpublished surficial maps. Significant Aquifer maps for the Portland to Augusta area were released. MGS staff continued preparing several manuscripts including the final report on the NRC crustal warping study. In addition, Joe Kelley began working up maps of bottom sediments on the inner continental shelf.

In January, Melanie Lanctot left the MGS for a position with the Department of Human Services (DHS). Melanie had worked for the Survey for 14 years; she will continue her work on radon at DHS.

NEGSA Precious Metals Symposium

Walter Anderson (Maine Geological Survey) and Fred Beck (F. M. Beck, Inc.) will convene a symposium entitled "Precious Metals in Polymetallic Sulfides in Eastern North America" at the Annual Meeting of the Northeastern Section of the Geological Society of America (NEGSA). The symposium, which begins at 8:35 on March 14, will feature papers on precious metals deposits from Newfoundland to Georgia. Speakers include representatives from the mineral exploration industry, academia, and federal and provincial geologic agencies.

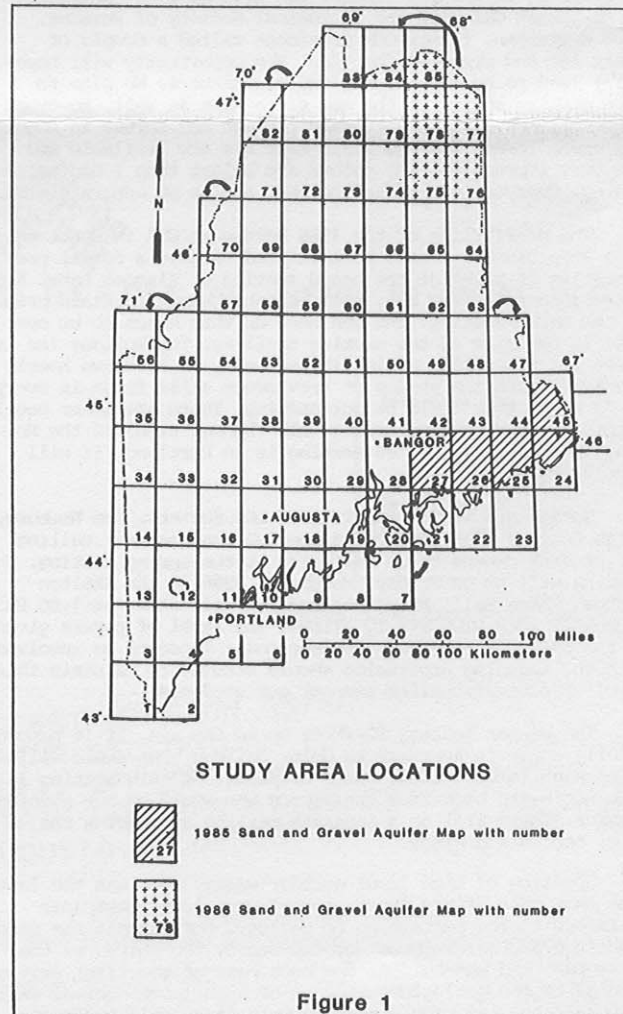


USGS Notes:



HYDROGEOLOGY OF SIGNIFICANT SAND AND GRAVEL AQUIFERS IN MAINE.

The U.S. Geological Survey, the Maine Geological Survey, and the Maine Department of Environmental Protection are currently involved in the fifth year of a proposed 7-year cooperative hydrogeologic study of significant sand and gravel aquifers. Major objectives of the study include



identification of the significant aquifers and accurate mapping of their boundaries; collection and interpretation of data on yield, stratigraphy, depth to water table, and the depth to bedrock; characterization of regional ground-water chemistry; and assessment of potential ground-water contamination sites.

The study area for 1985 (figure 1) covered 2300 square miles, which includes approximately 180 square miles of significant aquifers. Field work was started in the spring and completed by October.

The study area for 1986 (figure 1) covers 2285 square miles, which includes approximately 150 square miles of aquifers.

The project results for each study area will be presented in an interpretive report with 1:50,000-scale maps. The 1985 results, consist of one report and five maps, will be available from MGS in January 1987. The 1986 results will consist of a report and six maps and should be available from the MGS by January 1988. The text for each study area will include a summary of the project objectives, methods of investigation, results, and conclusions. The following specific data and related interpretive discussions will also be included in the text: well inventory information, well logs, cross-sections, seismic profiles, results from chemical analyses, and summaries of site investigations. The maps will show locations of municipal wells, domestic wells, test wells, cross-sections, potential ground-water contamination sites, data on depth to water table, and depth to bedrock. Aquifer boundaries and estimated yields will also be shown.

Questions concerning these studies can be directed either to Jim Adamik, U. S. Geological Survey, 26 Ganneston Drive, Augusta, ME 04330 (# 622-8208), to Andy Tolman, Maine Geological Survey, State House Station #22, Augusta, Maine 04333, (#289-2801) or to John Williams, Maine Department of Environmental Protection, State House Station #17, Augusta, Maine 04330, (#289-3901).



Saco River Valley Aquifer Study

The extensive, unconfined sand and gravel aquifer located along the Saco River from Lower Bartlett, New Hampshire to Fryeburg, Maine is an important water supply for this region. A quantitative investigation of this resource was initiated in 1984 by the U. S. Geological Survey, the New Hampshire Water Supply and Pollution Control Commission and the Water Resources Board, and the Town of Conway, New Hampshire. The location of the study area is shown in figure 1.

The objectives of this study are to determine the quantity and quality of water available from the aquifer, the effects of increased pumping on water levels in the aquifer, and the effects of various land-use practices on ground-water quality.

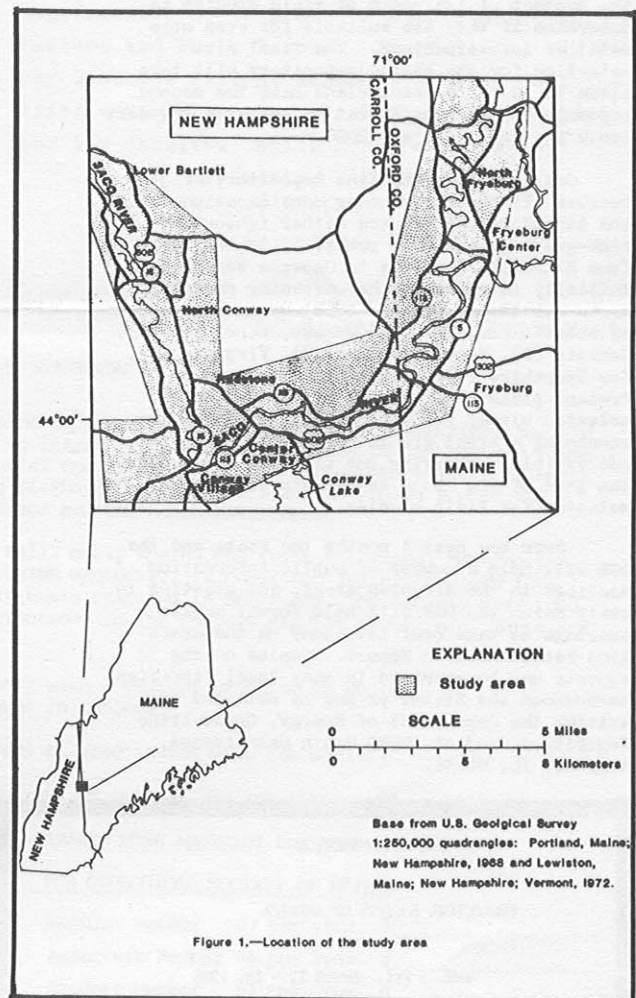
The field work for this study has now been completed. Data were collected on surficial geology, depth to bedrock and bedrock surface topography, ground-water and surface-water quality, water-table fluctuations, stratigraphy, permeability (in-situ slug tests), aquifer/stream interactions (seepage runs), and stream discharges. Techniques used include seismic refraction (17 miles of profiling), continuous marine seismic reflection (12 miles of profiling along the Saco River), and electromagnetics

(non-contact resistivity and terrain conductivity). Four temporary stream gaging stations and 5 continuous ground-water level recorders were installed. A total of 82 observation wells were installed.

In response to numerous requests for the data, an open-file basic data report will be released in March. This report will contain only water-quality information. It will later be incorporated into a more inclusive basic-data report which will contain the following information: water levels, altitudes of the wells, well logs (stratigraphy), water-quality data, and grain-size data.

An interpretive report will then be compiled which will contain discussions of the following: surficial geology, hydrology (saturated thickness, hydraulic properties, availability of water, water-table configuration, water-table fluctuations, recharge and discharge), ground-water quality, and analysis and applications of the digital model.

The project staff includes Dorothy Tepper, Carole Johnson, and Dan Morrissey. If anyone would like further information, please contact Dorothy Tepper at 622-8208.





In Other News:



VERMONT GEOLOGICAL SOCIETY PUBLICATIONS

The following publications are available from the Vermont Geological Society. To order or request information, send to:

David Westerman, Treasurer
Vermont Geological Society
Box 304
Montpelier, Vermont 05602

Department of Energy Announces Two Areas in Maine Possible N-Waste Repository Sites

Hysteria Sweeps State Legislature

January 22, Augusta. On January 16th the U.S. Department of Energy announced that two areas in Maine, one in the Sebago Batholith in western Maine, and one in the Bottle Lake complex in eastern Maine, were selected as possible "potentially acceptable sites" for the nation's second high-level nuclear waste repository. The State now has 90 days to respond to the DOE's draft Area Recommendation Report. If unsuccessful in changing the initial recommendations of the DOE, the two areas in question would be the subject of 3-5 years of field studies to determine if they are suitable for even more detailed investigations. The final site selection for the second repository will take place in 1998. Present plans have the second repository beginning operation early in the next century - approximately 2006.

Called the Crystalline Repository Project because all the rocks under consideration for the second repository are either igneous or high-grade metamorphic rocks, 17 States ranging from Minnesota to Maine to Georgia were initially involved in the screening process. Areas for the next phase of study have been selected in Minnesota (8 areas), Wisconsin (2), Georgia (2), North Carolina (2), Virginia (3), New Hampshire (1), as well as 2 in Maine. Present plans have only 12 of the 20 areas selected slated for field investigations; the remaining 8 areas are in case States are successful in removing one of their areas from the list of 12. Both of Maine's areas were selected for field studies.

Over the next 3 months the State and the DOE will hold a number of public information meetings in the affected areas, and starting in early March the DOE will hold formal public hearings to take oral testimony on the draft Area Recommendation Report. Copies of the reports may be examined in many local libraries throughout the State, or may be obtained by writing the Department of Energy, Crystalline Repository Project, 9800 South Cass Avenue, Argonne, IL, 60439.

VERMONT GEOLOGY VOLUME 1, OCTOBER 1980, "The Geology of the Lake Champlain Basin and Vicinity" Proceedings of a symposium held February 1980 at Norwich University, Northfield, Vermont. 37 pages - \$5 postpaid

VERMONT GEOLOGY VOLUME 2, APRIL 1982. Papers from the winter meeting held February 1981 at University of Vermont, Burlington, Vt. 24 pages - \$6 postpaid

VERMONT GEOLOGY VOLUME 3, JUNE 1984, "Fossils from the Metamorphic Rocks of the Silurian-Devonian Magog Belt in Northern Vermont", by Charles G. Doll. 16 pgs. 20 pls. \$9 ppd.

VERMONT GEOLOGY VOLUME 4 GUIDEBOOK 1, OCTOBER 1985. This is the first of a Vermont Geology series containing VGS sponsored field trip guides. VGS members \$9 and non-members \$10 ppd.



"Planet Earth" Segment Filmed in Maine

The upcoming public television series "Planet Earth" will include a segment filmed in Maine. In April 1985, Dr. Cornelia Cameron, USGS Peat Commodity Specialist and principal investigator for the MGS's Maine Peat Resource Evaluation Program, was filmed on one of the peat deposits in the Bangor area. Dr. Cameron, ably assisted by MGS Geology Technician Craig Neil, was describing the formation of peat for the episode entitled "Gifts from the Earth" which will air on February 19. The MGS provided logistical support for the film crew from Station WQED/Pittsburgh (the station that also films National Geographic specials).

The series, which premieres Wednesday, January 22, promises to be very informative.

January	22	The Living Machine
January	29	The Blue Planet
February	5	The Climate Puzzle
February	12	Tales from Other Worlds
February	19	Gifts from the Earth
February	26	The Solar Sea
March	5	Fate of the Earth

NORTHEASTERN SECTION

GEOLOGICAL SOCIETY OF AMERICA

Wed. - Fri. March 12 - 14, 1986

Concord Resort Hotel
Kiamesha Lake, New York

For hotel and meeting registration forms contact:

Carolyn Lepage, Maine Geological Survey, Sta. 22
Augusta, Maine 04333 (207) 289-2801

SEPM EASTERN SECTION FIELD TRIP

May 16, 17, 18, 1986

COASTAL PROCESSES AND QUATERNARY STRATIGRAPHY

IN NORTHERN AND CENTRAL COASTAL MAINE

Joseph T. Kelley
 Daniel F. Belknap
 Woodrow B. Thompson
 Alice R. Kelley

Questions or requests for registration forms should be sent to Alice R. Kelley, 110 Boardman Hall, University of Maine, Orono, Maine 04469

Other upcoming projects of the SEPM which may be of interest to some of our readers:

- March 6-7, 1986 SEPM Short Course "Modern and Ancient Deep Sea Fan Sedimentation," Calgary, Alberta.
- April 7-9, 1986 SEPM Short Course "Platform Margin and Deep Water Carbonates," Calgary, Alberta.
- May 8-9, 1986 SEPM Short Course "Relationship of Organic Matter and Mineral Diagenesis," Houston, Texas.
- May 11-14, 1986 SEPM Field Seminar "The Description and Depositional Analysis of Marine Carbonates - A Field Techniques Workshop," Little Rock, Arkansas.
- May 30, 1986 SEPM Short Course "Glacial Sedimentary Environments," Champaign, Illinois.

For information contact Joni C. Merkel, Society of Economic Paleontologists and Mineralogists, P. O. Box 4756, Tulsa, Oklahoma 74159-0756

49th Annual

FRIENDS OF THE PLEISTOCENE MEETING

Dates: May 23 - 25, 1986
 Place: Fort Kent, Maine
 University accommodations
 Subject: Late-glacial ice activity of northern-most New England and adjacent Canada
 We hope you can join us so that the blackflies will be well fed. Additional information can be obtained from: Steve Kite
 Dept. of Geol. & Geogr.
 Univ. of West Virginia
 Morgantown, WV 26506
 tel. (304) 293-5603

Texas A&M University's Geology Department would like to announce the availability of their Geology Graduate Student Resume Book for 1985-1986. This booklet is a compilation of the one-page resumes of 58 graduate students, at both Masters and Ph.D. levels. In addition, the Geology Graduate Student Resume Book also contains brief descriptions of the TAMU Geology Department and its faculty. Write for free copy to:
 Vincent S. Cronin, TAMU Geol. Dept.
 Texas A&M University
 College Station, Texas 77843

MEMBERSHIP DUES STATEMENT

THE GEOLOGICAL SOCIETY OF MAINE, INC. is a non-profit Maine 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 dialogue among geologists working in Maine; and to further public awareness and understanding of the geology of the State of Maine, and of the modern geological processes which affect the Maine landscape and the human environment.

The Society holds three meetings each year, in the late fall, early spring and (with the Annual Meeting and sometimes field trips) in mid-summer. A newsletter, **THE MAINE GEOLOGIST**, is published for all members four times a year (more or less), approximately on a quarterly basis starting in September. The Society year runs from August 1st to July 31st. Annual dues and gift contributions to the Society are tax deductible. There are three classes of annual memberships:

- \$7 REGULAR MEMBER - Graduate geologists, or equivalent, with 1 year of practice in geology, or with an advanced academic degree in geology
- \$6 ASSOCIATE MEMBER - Any person or organization desirous of association with the Society
- \$4 STUDENT MEMBER - Persons currently enrolled as students in college who are interested in geology
- \$2 APPLICATION FEE - A one-time fee to all new members, payable when applying for membership

ANNUAL RENEWAL or APPLICATION FOR MEMBERSHIP - THE GEOLOGICAL SOCIETY OF MAINE

NAME _____ (Please print or type)	Regular Member \$7 per year \$ _____
ADDRESS _____ (permanent Mailing Address)	Associate Member \$6 per year \$ _____
	Student Member \$4 per year \$ _____
	Application Fee \$2 One-time \$ _____

TOTAL ENCLOSED : \$ _____

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 P. O. Box 270
 South Freeport, Maine 04078

THE GEOLOGICAL SOCIETY OF MAINE, INC.

--- NOW AVAILABLE ---

1:500,000 Bedrock and Surficial Geologic Maps of Maine

Bedrock Geologic Map of Maine, 1985, edited by P.H. Osberg,
A.M. Hussey, II, and G.M. Boone, full color, 42" x 58".
Price: \$5.00 + 25¢ sales tax

Surficial Geologic Map of Maine, 1985, edited by W.B. Thompson
and H.W. Borns, Jr., full color, 42" x 53".
Price: \$4.50 + 23¢ sales tax

Please specify rolled or folded copies.
SALES TAX DOES NOT APPLY TO OUT-OF-STATE ORDERS.

Send check or money order made payable to
Treasurer, State of Maine, to:

Maine Geological Survey
State House Station 22
Augusta, ME 04333



85-86 SOCIETY YEAR STARTED - AUGUST 1st - PLEASE SEND IN YOUR DUES

THE GEOLOGICAL SOCIETY OF MAINE

% Arthur M. Hussey, Dept. of Geology,
Bowdoin College, Brunswick, Maine 04011

THE MAINE GEOLOGIST is published four times a year, more-or-less, in early Fall, late Fall, late Winter, and maybe June or July, for members of the Geological Society of Maine, a non-profit educational Maine corporation interested in all aspects of the geology of the State of Maine.

Correspondence about membership in the Society should be mailed to Robert G. Gerber, P. O. Box 270, South Freeport, 04078. Items for inclusion in the newsletter may be directed to Chris Olson, RFD 3, Box 3070, Winthrop 04364.

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