

Nova Scotia

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Department of Natural Resources, Mineral Resources Branch

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NOVA SCOTIA
Natural Resources

Joggins Fossil Cliffs Named a UNESCO World Heritage Site

Tick-tock, tick-tock. It is Monday, the 7th of July, and the World Heritage Committee has been meeting now for seven days straight, deciding on the state of sites in danger, hearing reports of the state of conservation of others. Now, seven days in, the 21 countries that constitute the committee have begun to hear sites nominated after years of work, hoping to be added – inscribed – on the list of World Heritage Sites. Some countries already know that things look grim, as the reports from the bodies that have assessed them (International Union for Conservation of Nature (IUCN) for natural sites like Joggins, or International Council on Monuments and Sites (ICOMOS) for cultural sites like Lunenburg or the Taj Mahal) are laid out concisely in document 8.B *Nominations to the World Heritage List*.

Just how much this means to many countries was very apparent at the meeting: it is perhaps the ultimate honour in a world that is so fractious and at odds culturally and politically. Almost every nation in the world – big or small – is here. For me, I feel that we are reaching the crest of a very steep hill – one that has taken the better



Photograph of a small section of the Joggins Fossil Cliffs at low tide (photo by Wally Hayes, Nova Scotia Department of Tourism, Culture and Heritage). The cliffs were designated a World Heritage Site by the United Nations Educational, Scientific and Cultural Organization (UNESCO) on July 7, 2008.



On January 23, 2007, a dossier supporting the application of the Joggins Fossil Cliffs to become a UNESCO World Heritage Site was sent in three oak boxes to the World Heritage Centre in Paris. Photo shows (L to R) the Hon. Murray Scott, MLA for Cumberland South; Ms. Rhonda Kelly, Executive Director of the Cumberland Regional Economic Development Association; Ms. Jenna Boon, Director of the Joggins Fossil Institute; Dr. John Calder, DNR Geologist and Scientific Liaison for the project; Premier Rodney MacDonald; and Mr. Keith Hunter, Warden for Cumberland County.

part of my career to climb - and I don't know what lies on the other side. Perhaps surprisingly, I am not very nervous after all this time. Here with me pacing the halls of the Centre de Congrès in Québec City are Rhonda Kelly, who through CREDA facilitated the nomination for the past 10 years, and Jenna Boon, who with a sure hand tackled management issues in the nomination and oversaw construction of the new Joggins Fossil Centre (see *Minerals Update*, v. 25, no. 2). I feel a curious mix of assuredness and resignation, and although I would have liked to tweak the nomination here and there, feel that we've done our job, and now must wait for the decision. Tick-tock.

Through the week, I've made a point of meeting delegates from around the world, and I take comfort in my reception both as a Canadian and 'observer' from the nominated site of Joggins. I found kindred spirits in fellow scientists who, like expectant parents in a maternity hospital, are here to witness the birth of a natural World Heritage Site in their own countries. One is from Iceland,

which has nominated the volcanic island of Surtsey, born of fire on the mid-Atlantic Ridge, and the other from Switzerland, behind the nomination of the tectonic spectacle of Sardona, including the Glarus thrust, in the Swiss Alps. This is unusual, for there are many more cultural sites than natural on the World Heritage list, and decidedly few that are primarily geological in nature.

And finally it's time. Tim Badman of the IUCN, who conducted the onsite evaluation of Joggins last October, gives a précis of his report on Joggins: it is strong – even glowing. I wasn't prepared for what followed, but there was an overwhelming sense of warmth and goodwill from the executive seated at the long podium in front of us. The acting Chair, from Israel, asked the committee if he was correct in reading their reactions, and if no one was opposed he should recommend that Joggins be inscribed by acclamation – the only such occasion that many could remember. No contesting votes, no dis-

cussion, save Australia's comment that this nomination had reset the bar for future nominations. It was over. And just beginning. Smiles and hand shakes from the Chinese ambassador, from the US delegation, from Australia, all seated around Canada. All I wanted to do now was to be in Joggins, where I could celebrate with the people to whom this means so much.

Almost 30 years ago, when I was in my early twenties, I had the dubious distinction of being asked by Deputy Minister John Smith to present the results of drilling to the coal miners gathered at the Miners' Hall in River Hebert. As I began to speak a hush fell over the men, and I remember to this day their grim faces as I began to tell them that the livelihood of their fathers and grandfathers was over. I made a vow to myself to do whatever I could to help the community. What price can you place on community pride and a sense of hope? Whatever that price is, it was all worth it.

John Calder

Nova Scotia Gem and Mineral Show 2008

The beautiful town of Parrsboro on the Fundy coast has been host to an annual summer gathering of rock and mineral enthusiasts for 43 years. Originally called the Rockhound Roundup, the event is now known as the Nova Scotia Gem and Mineral Show and it takes place from August 15 to 17 at the Parrsboro Lions Arena on King Street.

Have you been to the Canadian Museum of Natural History in Ottawa lately? This year, the Gem Show's Organizing Committee is proud to feature display cases of minerals from the Canadian Museum of Natural History, Canadian minerals from the collection of Helen and Rod Tyson, and photos and specimens from the Colonial Copper Mine of Cape d'Or, Cumberland County. Dealers from Nova Scotia, New Brunswick, Prince Edward Island, Quebec, Ontario and Maine will bring their rocks, minerals, jewelry and beads to sell at the show in Parrsboro.

Admission to this family-friendly event is just \$3 per person 12 and over. Show and sale hours are 10:00 am to 7:00 pm, Friday and Saturday, and 10:00 am to 5:00 pm on Sunday. The Grand Opening of the show is at 1:00 pm Friday, August 15, at the arena. Booths will be judged for best Lapidary, Fossil or Mineral, and Best Overall Display, with prizes presented at the grand opening.

Some of the regular features at the arena will include demonstrations of gold panning, wire wrapping, glass-blowing beads, cutting turquoise and agate, making silver pendants and flint wrapping. Other workshops will include making wire and gemstone trees, evaluating your mystery gem, the healing properties of stones and painting dinosaurs.

The show will extend beyond the arena to include daily beach tours to see the outstanding geological sites of interest in the region. Plans are nearly complete for a field trip to Joggins (see article on p. 1) on Friday, Aug. 15. On Saturday, join Dr. Howard Donohoe for a 12:45 pm departure to the day-use beach access at Five Island Provincial Park.



Ken Adams and Graham Williams (centre) lead a beach walk to observe the Triassic-Jurassic boundary at The Old Wife, Five Islands Provincial Park.



PEI vendor and silversmith Tony Campbell at last year's Gem and Mineral Show.

Howard will interpret the 200 million year geological history of the park from before the age of dinosaurs to the last period of glaciation. For more up-to-date information on the Nova Scotia Gem and Mineral Show please visit the web site <http://museum.gov.ns.ca/fgm/mineralgem/show.html>.

Friends of Eldon George will want to join us at the Fundy Geological Museum from 7:00 to 9:00 pm on Friday, August 15th, for a celebration

of his artwork. His art includes lapidary work, local clay figures and paintings. Eldon was one of the founders of the original Rockhound Roundup. Eldon's exhibit will be at the museum for the month of August. Please RSVP fundyed@gov.ns.ca or leave a message for Carol or Pat at 1-902-254-3814 if you would like to attend the reception.

*Carol Corbett, Education Co-ordinator,
Fundy Geological Museum*

New Map of Groundwater Regions Available

The Nova Scotia Department of Natural Resources (DNR) recently released a revised 1:500 000 scale map of the Groundwater Regions of Nova Scotia, by Gavin Kennedy and John Drage. The map was previously published by the Nova Scotia Department of Environment (NSE) and Environment Canada in 1985. The map is available for download at the following URL: <http://www.gov.ns.ca/natr/meb/download/dp428.htm>.

Six major Groundwater Regions are shown on the map:

1. Quaternary
2. Sedimentary
3. Carbonate
4. Volcanic

5. Plutonic and
6. Metamorphic.

Primary watershed boundaries and active observation wells maintained by NSE are also shown on the map.

The Groundwater Regions map is also available as a DNR internet map service and online map application at the following URL: <http://gis4.natr.gov.ns.ca/website/nsgroundwater>. The online map application provides users with the functionality of overlaying a number of different layers with the Groundwater Regions data, such as general topography, shaded relief, bedrock geology and grid mapping (Fig. 1). In

addition, the online map application provides associated database information, including watershed names, hyperlinks to observation well data, and statistics for apparent well transmissivity, specific capacity and potential long-term sustainable yield. These statistics were compiled from the Nova Scotia Pumping Test Database for each of the six identified groundwater regions.

The online map application provides a framework for future updates of the internet map service with additional layers, such as well log and pumping test data.

Gavin Kennedy

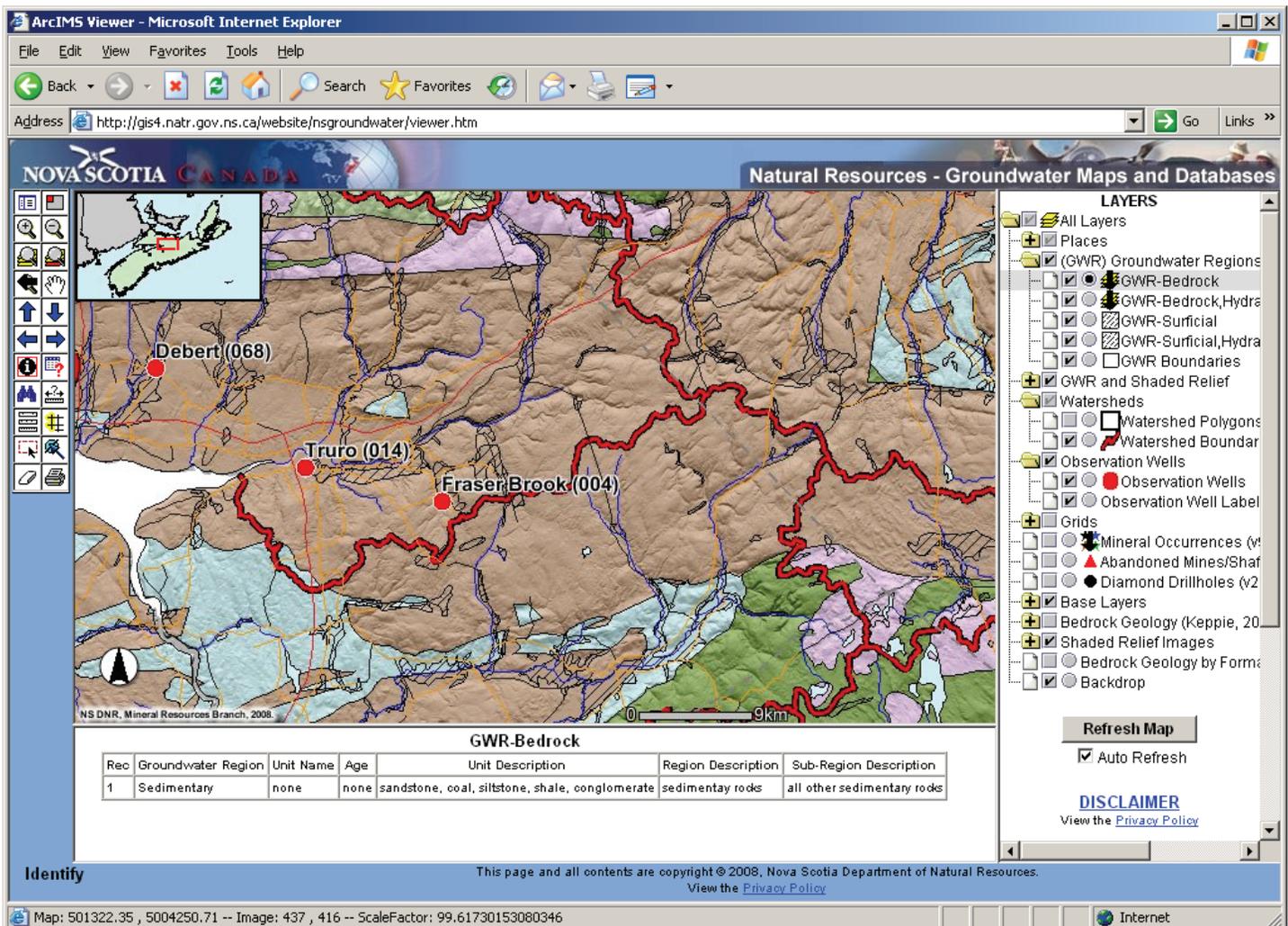


Figure 1. Sample screen of groundwater map and databases available from the Mineral Resources Branch online map application.

From The Mineral Inventory Files

Meadowville Deserves Another Chance

Not often can I present a situation where there is already a clearly defined, drillable target awaiting investigation but such is the case at the Meadowville Zn-Pb prospect, found about 15 km west of the town of Pictou (Fig. 1). Given the booming metal markets and resultant hyperactive exploration that have existed over the last few years it's surprising that the Meadowville deposit is not receiving more attention. In fact, at the time of writing, the property remains unstaked.

Several base metal exploration projects along the north flank of the Cobequid Highlands in western Pictou County during the 1960s and 70s revealed a lot of geochemical 'noise' throughout that region. In the early 1980s, geochemical surveys by Bluestack Resources and BP-Selco revealed several east-trending Zn and Pb anomalies in detailed soil and basal till surveys over an area southwest of the small community of Meadowville (Fig. 1). The anomalies were found to be coincident with the base of the Carboniferous sandstone- and shale-dominated Boss Point Formation along its unconformable contact with the underlying conglomeratic Claremont Formation. Additional prospecting quickly revealed the widespread presence of sphalerite- and galena-bearing boulders of a typical sandstone-hosted, disseminated mineral occurrence. Analogies would be the Scandinavian Laisvall base metal deposits and, more locally, Nova Scotia's Yava Pb deposit in southeast Cape Breton and the lesser known Leitches Creek Pb-Zn prospect near Sydney.

Rio Algom Exploration drilled two holes at Meadowville in 1992, targeting the base of the Boss Point Formation. Hole DDH M-1 encountered 10 m with concentrations from 0.5-1.0% Zn and 0.1-1% Pb. Mispac Resources Incorporated acquired the property in 1997 and drilled two holes to test the base of the Boss Point Formation and possible down-dip extension of the mineralized zone encountered in DDH M-1. These holes (M-97-1 and M-97-2; Fig. 1) were

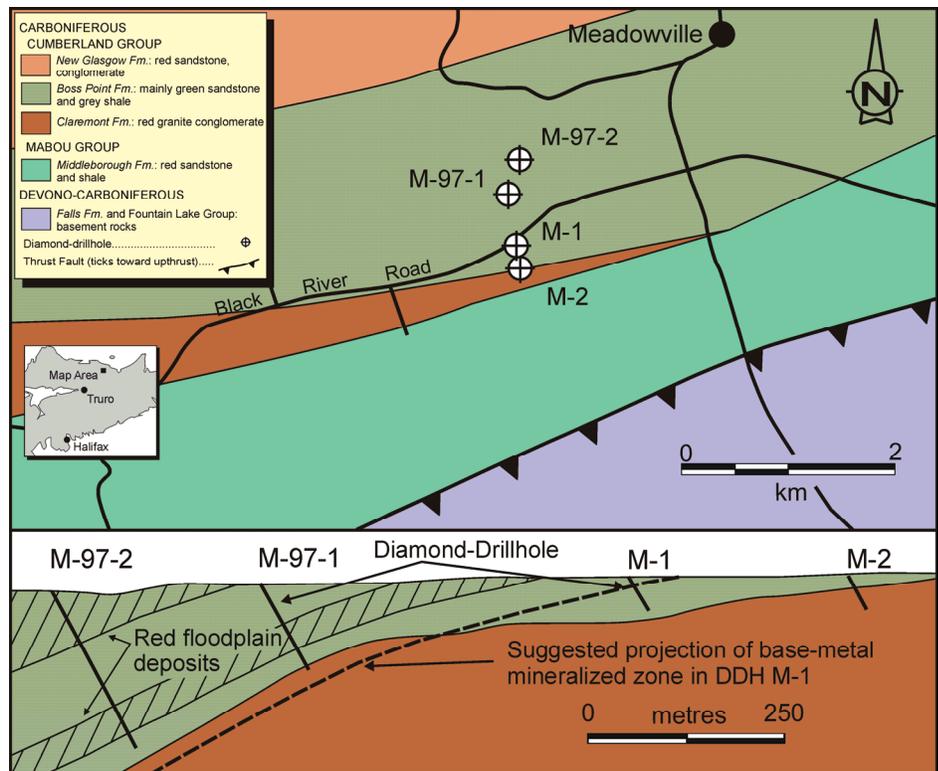


Figure 1. Geological map and cross-section of the Meadowville area, Pictou County, showing the Zn geochemical anomalies of Bluestack Resources and diamond-drill holes of Rio Algom Exploration and Mispac Resources Inc. The cross-section along the diamond-drill hole profile is based on the Mispac Resources exploration but the dashed line represents what may be the actual location of the mineralized zone encountered in hole DDH M-1.

thought to have penetrated to the underlying Claremont Formation but yielded only weakly elevated Zn-Pb levels so the property was dropped. This may have ended the story except that F. W. Chandler of the Geological Survey of Canada entered the picture in 2000, carrying out an examination of the drillholes and formulating his own re-interpretation of the results (<http://dsp-psd.pwgsc.gc.ca/Collection-R/GSC-CGC/M44-2000/M44-2000-D10E.pdf>). Chandler feels confident that the Mispac drilling actually did not penetrate to the base of the Boss Point Formation and its potentially mineralized zone. Instead, he provides a compelling case that the conglomerates intersected at the bottom

of DDH M-97-1, which were thought by Mispac to represent the underlying conglomeratic Claremont Formation, are actually just one of the channel lag conglomerates that are typically known within the Boss Point Formation sequence. The cross-section provided in Figure 1 shows the interpretation as presented from the Mispac assessment, but has been modified (dashed line) to indicate the greater depth at which the base of the Boss Point Formation and potential mineralized zone actually exist. The Chandler interpretation appears sound and this model needs further testing. Clearly, the Meadowville property warrants another round of exploration.

G.A. O'Reilly

Progress Report on Strategy for Natural Resources

Early in 2008, the Nova Scotia Department of Natural Resources (DNR) asked Voluntary Planning to gather input from the citizens of Nova Scotia on the topics of forests, minerals, parks and biodiversity as the first phase of a three-phase process to develop a comprehensive natural resources strategy. Voluntary Planning accepted this request and formed a Natural Resources Citizen Engagement Committee to conduct community meetings across the province, and to provide other opportunities for Nova Scotians to be involved.

In May and June, Voluntary Planning conducted 27 public meetings in fire halls, community centres and other meeting places across the province. The response to this first step in the process has been strong, with more than 2000 participants attending the public meetings. In addition, about 150 individuals and groups have submitted written comments to the Voluntary Planning committee.

According to the Voluntary Planning website (http://vp.gov.ns.ca/files/u4/conversation_starter.pdf) the Natural Resources Citizen Engagement Committee will now analyze all the information received during the first phase of the process. Voluntary Planning will present its findings to a panel of experts to be established by DNR, and will release a report to the public. In addition, Voluntary Planning will forward any pertinent information to other government departments.

Phase II of the process to develop a new natural resources strategy will be led by the expert panel, which will conduct a more detailed analysis of the findings of Phase I. Phase III will involve DNR staff using the values, findings, reports and recommendations from Phase I and II to write the final strategy.

Mike MacDonald

April-June 2008 Open Assessment Reports

Report Number	NTS	Licensee
AR ME 2006-046	11F/04C	Harpell, J
AR ME 2006-047	11E/02A	Acadian Gold Corporation
AR ME 2006-048	11D/15C 11E/02B	Moose River Resources Incorporated
AR ME 2006-049	11K/08B	Coastal Construction and Excavating Limited
AR ME 2006-051	11E/02D	Acadian Gold Corporation
AR ME 2006-052	21H/08D	Hudgins, A D
AR ME 2006-053	21A/07C	Hiltz, K R
AR ME 2006-054	21A/16B	Richman, J
AR ME 2006-056	11D/16D	Meguma Resource Enterprises Incorporated
AR ME 2006-057	11D/15C 11E/02B	Moose River Resources Incorporated
AR ME 2006-058	11E/02B	Acadian Gold Corporation
AR ME 2006-059	11E/02B	Acadian Gold Corporation
AR ME 2006-060	11E/02B	Acadian Gold Corporation
AR ME 2006-061	11E/05D	Allen, L J
AR ME 2006-062	11D/15C	Hilchey, A F
AR ME 2006-063	11E/03A	Hilchey, A F
AR ME 2006-064	11F/06A	Schenkels, H F
AR ME 2006-065	11D/11C	Acadian Gold Corporation
AR ME 2006-066	20O/16A	Wightman, J F
AR ME 2006-067	11E/03C, D	Landis Mining Corporation
AR ME 2006-068	11E/03C, D	Landis Mining Corporation
AR ME 2006-069	11F/05A, B	Acadian Gold Corporation
AR ME 2006-070	21A/09B	Richman, J
AR ME 2006-071	11E/02A	Acadian Gold Corporation
AR ME 2006-072	11E/01D 11F/04C	Goldenville Mining Corporation; Acadian Gold Corporation
AR ME 2006-073	11D/15A	Acadian Gold Corporation
AR ME 2006-074	21A/07C	Hiltz, K R
AR ME 2006-075	11E/07A, B	Acadian Gold Corporation
AR ME 2006-076	11K/06A	Nicholson, C
AR ME 2006-077	11K/06A	Nicholson, C
AR ME 2006-078	11E/03B	Scozinc Limited
AR ME 2006-080	11E/02B, C	D D V Gold Limited
AR ME 2006-084	11E/01C, D	D D V Gold Limited
AR ME 2006-085	11E/01C, D	D D V Gold Limited
AR ME 2006-087	11E/01D	D D V Gold Limited
AR ME 2006-088	11E/01C	D D V Gold Limited
AR ME 2006-089	11E/01D	D D V Gold Limited
AR ME 2006-090	11E/01D	D D V Gold Limited
AR ME 2006-093	11D/16C	Grant, S
AR ME 2006-100	11E/02B 11E/03A	D D V Gold Limited
AR ME 2006-101	20P/13C	Hudgins, A D
AR ME 2006-113	11E/03B	Anthony, R C
AR ME 2006-134	11E/02A	Shadbolt, D
AR ME 2006-135	21H/01D	Blackfly Exploration and Mining
AR ME 2006-143	11F/06B	Benrock Limited
AR ME 2007-075	21A/02D	Elk Exploration Limited
AR ME 2007-076	21A/02D	Elk Exploration Limited
AR ME 2007-077	21A/02D	Elk Exploration Limited
AR ME 2007-080	11E/03A	Blackfly Exploration and Mining

Susan Saunders and Norman Lyttle

Geologist Paul Smith Retires from DNR, but Not from Working

Paul Smith has recently retired from the Geological Services Division of the Department of Natural Resources after 33 years as a geologist for the Province of Nova Scotia. Paul joined the full-time staff of the Department of Mines (as it was known then) in 1975, although he had worked previously for the department as a summer student. Paul received a B.Sc. degree and an M.Sc. in structural geology from Acadia University. Even as a student Paul had been a mentor to many of the younger geology students, including myself. The mentor role is one that he continued to play throughout his career with the department. Paul's tasks evolved through the years: geochemistry with the late Jim Bingley, geological mapping in Cape Breton Island with Allan Macdonald, geological mapping in Guysborough County, and his life-long interest in the geology of the Silurian rocks of the Annapolis Valley near his home.

Despite this varied background, geological study of the gold-bearing rocks of the Meguma Group on mainland Nova Scotia became Paul's predominant interest for more than 20 years of his career. Unravelling the complex structure and geological history of the dozens of Meguma gold occurrences was achieved by detailed study of the deposits, which gave Paul a unique insight into the gold mineralization processes in the Meguma Group. Over the years Paul introduced many staff geologists to the wonders of gold in Nova Scotia, including Brian O'Brien, George O'Reilly, Dan Kontak, Mike Corey, Ron Mills, Rick Horne, myself, and hundreds of prospectors and industry geologists. As Nova Scotia's expert on gold, Paul's office often had a line up of prospectors and industry geologists waiting to see him. His expertise has been a priceless resource for the rest of the geological staff at DNR as well.

In the 1990s Paul began to promote the potential for large tonnage, disseminated gold deposits in Nova Scotia. The idea that low-grade, high-volume depos-



Paul Smith in front of the sailing vessel Amistad, Halifax Harbour.

its could be economically viable was in part responsible for the current boom in gold exploration in the province. He also benefited from the experience of visiting similar gold deposits in Australia and New Zealand, culminating in several collaborative publications with researchers from those countries. Paul still found time to become President of the Mining Society of Nova Scotia and he was instrumental in the formation of the Mining Association of Nova Scotia in 2007.

For the last two years Paul has worked as Liaison Geologist for the department and in this capacity he has been actively promoting mineral development opportunities in Nova Scotia. His leadership in organizing the 2007 Mineral Resources Branch conference produced the extremely popular Investors Forum, which brought about a new level of mineral industry participa-

tion in the event.

At the end of July Paul officially retired from DNR, but he will continue his campaign to promote mineral exploration opportunities in Nova Scotia. Paul has accepted a position as Vice President (Public Relations) with a local mining and exploration company and he intends to start addressing his new challenges immediately. We will miss Paul's early morning reports on the road conditions from White Rock to Halifax, his advanced sense of fashion (white sneakers worn with business suits at conferences), but most of all we will miss the enthusiasm that he brought to work every day and his deep knowledge of Nova Scotia mineral deposits.

Good luck Paul on your post-DNR geological career, and stop by and see us now and again.

Bob Ryan

Mining Matters 2008 to be Held on Sunday and Monday, Nov. 9 and 10

The mining sector in Nova Scotia contributes \$489 million to the provincial GDP and employs 6,340 persons, both directly and indirectly in spin-off jobs. Mineral sector jobs are mostly located in rural parts of the province. The salaries paid to these employees are the highest of any sector in the economy, being 40% higher than the average wage for all sectors. These factors, coupled with the long tradition of mining in Nova Scotia led the Department of Economic Development to classify this sector as a Foundation Industry along with forestry, agriculture and fishing.

There are many exciting developments in the mineral sector and the department's 32nd annual Fall conference will be a great place to learn more about what is going on in mining. Plans are being developed now for the 2008 conference, November 9th and 10th at the Westin Nova Scotian Hotel in downtown Halifax. The organizing committee plans to build on the very successful 2007 conference, which boasted a record delegate attendance and a first-ever Industry Investment Forum.

Mining Matters 2008 will feature technical sessions, displays that highlight the contribution of the mining sector to the provincial economy, and commercial exhibits by exploration, investment and supply & service companies. On Nov. 9, displays will open in a large space comprising Commonwealth Ballrooms A and B. This will integrate all the posters, booths and multi-media displays in one room. Technical presentations will also begin on Sunday in the Atlantic Ballroom, which should provide a much improved space to hear and interact with speakers. Monday, Nov. 10, will be devoted to corporate presentations by mining and mineral investment personnel.

Stay tuned for more updates in the next issue of the *Nova Scotia Minerals Update* and on the DNR website (<http://www.gov.ns.ca/natr/meb/>).

Mike MacDonald



Pouring a gold bar at the Dufferin Mine in 2004. Current developments at the Touquoy Gold Project should lead to substantial gold production in the future.

Special Notes

Report of Activities 2007

The *Mineral Resources Branch Report of Activities 2007* (Report ME 2008-1) is now available from the DNR Library, 3rd Floor, 1701 Hollis Street, Halifax. The report comprises 140 pages (45 in full colour) and costs \$20.

E-mail Notification

If you would like to be added to our mailing list to receive an e-mail notice when new maps and publications are released, or when a new issue of the *Nova Scotia Minerals Update* is released, please send your e-mail address to minerals@gov.ns.ca.

Dates to Remember

August 15-17, 2008

Nova Scotia Gem and Mineral Show, Lion's Recreation Centre, Parrsboro, Nova Scotia. For more information please see the article on page 3 or visit the web site:

<http://museum.gov.ns.ca/fgm/mineralgem/show.html>

October 30-November 1, 2008

Mineral Resources Review 2008, Delta Hotel and Convention Centre, St. John's, Newfoundland. For more information please contact Norman Mercer (709-729-6193 or e-mail normmerc@nl.ca).

November 2-5, 2008

Exploration and Mining New Brunswick 2008, Delta Hotel, Fredericton, New Brunswick. For more information please contact Carol McNeill-Dobbelsteyn (506-453-6624 or e-mail carol.mcneill-dobbelsteyn@gnb.ca).

November 9 and 10, 2008

Mining Matters 2008, the Westin Nova Scotian Hotel, Halifax, Nova Scotia. For more information please see the article on this page or visit the web site: <http://www.gov.ns.ca/natr/meb/>.