# Current Activities in Geological Mapping and Geochemistry

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Geoscientists in the Geological Mapping and Geochemistry Section were active in several projects in 2005. Specific activities include the following.

Terry Goodwin conducted a limited field program with DNR geologist Paul Smith, as part of his on-going participation in the Metals in the Environment (MITE) program, a multi-disciplinary project initiated by the Geological Survey of Canada (GSC) to examine metals and metalloids in the environments associated with past-producing gold districts throughout Nova Scotia (cf. Parsons *et al.*, p. 19).

Rick Horne completed bedrock geological mapping of Meguma Group rocks in map area 11D/13 (Mount Uniacke), along with DNR geologist Bob Ryan. Mapping was directed at acquiring data for gaps in coverage and to resolve questions of stratigraphy and structure. Rick focused on the location of fold hinges, distribution of stratigraphic units and characteristics of fold profiles to assist in preparation of a cross section. During the 2005 field season, Rick initiated a bedrock geological traverse across the Meguma Terrane north of Sheet Harbor to assist in the compilation of geology of the Eastern Shore region.

Rob Naylor and Dawson Brisco worked closely with the GIS Group and NRCan geologist Peter Giles to complete the bedrock geology maps for areas 11E/06 (Truro area) and 11E/07 (Hopewell area). This work represented the Nova Scotia component of the 2003-2005 Targeted Geoscience Initiative (Phase 2), a project designed to assist and promote mineral and energy exploration. Geological mapping was completed during the 2004 field season and the ensuing work includes the incorporation of digitally compiled historic geological information, mineral deposit research, geophysical modelling and regional geochemistry. Bedrock geological maps will be released in the fall of 2005.

Ralph Stea was approached by the Confederacy of MainLand Mi'kmaq to be a scientific advisor for the Debert project, a regional and detailed geological and archaeological mapping project designed to study the Debert Paleo-Indian site and surrounding lowland areas near Truro. Ralph's main contribution to the project is the three-dimensional surficial mapping of the study area. The project also included setting up a GIS system, including the compilation of numerous data layers including: coastal zone maps with hydrography, aggregate surficial geology maps, pertinent historical aerial photography, bedrock geological maps, biophysical information, soil series maps, and Crown land information.

Chris White continued 1:10 000 scale bedrock mapping in the South Shore region, resulting in the completion of 21A/02 (Liverpool) and 21A/03 (Lake Rossignal) sheets. Additional work included investigation of Zn and Cu mineralization from glacial outwash in Wedgeport gravel pits aimed at establishing the source area. Chris also worked with two B.Sc. Honours students, including Virginia Brake from Dalhousie University who is studying the geophysical characteristics of granitoid plutons in Southwestern Nova Scotia. The other student is Ryan Toole from Acadia who is looking at whole-rock chemistry from three stratigraphic sections through the Meguma Group in southern Nova Scotia to characterize the source area as Africa or some other peri-Gondwana terrane.