

## **Earth sciences GIS at the university level; opportunities for teaching, research and development**

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Computers are playing an increasingly important role in earth science studies and mineral exploration. PC-based software, dedicated to accomplish specific geological or geo-physical tasks has been around for several decades. Lately, however, interests have started to include GIS software because of its locational accuracy, ability to accommodate large multi-source datasets and its integrational, analytical and modelling capabilities. These are software characteristics of particular interest to mineral explorationists because the present techniques of hard-copy data integration are very time-consuming.

The GIS Laboratory of the Department of Geology, University of New Brunswick, has been active in developing geology related software applications using CARIS (Computer Aided Resources Information System).

Past and present projects include:

(1) Geological mapping software-applications for UNIX and

MS Windows platforms as well as a pen-operated computer;

- (2) Environmental-protection software applications centred on watershed and groundwater studies and waste-storage site selection; and
- (3) Introducing computer-based geological mapping at the undergraduate student level and as professional retraining by means of conventional classroom as well as Distance Education teaching techniques.

As the earth sciences gradually expand into the GIS environment the demand on the universities to become more extensively involved in teaching GIS related subjects will be increasing. Considering the rate at which computerization of the workplace is expanding in general, one can anticipate that within a decade geology graduates will be expected to be able to work in fully integrated electronic environments.