

Digital Information Services

B. E. Fisher, J. C. Poole and J. S. Saunders

The Digital Information Services group is responsible for developing and maintaining the Mineral Resources Branch (MRB) Geographic Information System and associated databases, the NovaScan bibliographic geoscience database, for supplying digital data and services to clients and staff, and for developing and maintaining the MRB Internet web site. Permanent Digital Information Services staff consist of geologists / GIS specialists Brian Fisher and Jeff Poole, and web technicians Susan Saunders and Barbara MacDonald. Jeff McKinnon, a geologist / GIS specialist, was hired as a GIS assistant to work on projects for the federal-provincial Targeted Geoscience Initiative (TGI). Julie Beaumont, a GIS specialist, was hired in April and worked until December on TGI projects. Paul Barker, Collene Tuttle and Alia Bigio, geology students, were hired to work as GIS assistants during the summer of 2003.

Digital Geoscience Data Products

A collection of digital geology maps, databases and images of Nova Scotia (in DXF, ARC export, ArcView® shapefiles, TIFF, and JPEG formats in a UTM projection using the NAD27 datum, and in PDF format) has been developed, and is available for viewing or free download from the MRB web site (<http://www.gov.ns.ca/natr/meb/pubs/pub3.htm>). The complete list of digital data products available can be seen in Appendix 3. A licence agreement is issued with all digital data sets. This agreement allows unrestricted use of the data with the understanding that DNR remains the owner of the data and is not transferring copyright to the user. Since March 1999, when data were first made available for download from the MRB web site, there have been nearly 67,000 downloads.

Public Access GIS

A Public Access GIS has been developed for the use of clients in the DNR Halifax Library. This is a

user-friendly query and display system that uses a customized version of ArcView® to access a variety of geographically referenced, digital geoscience data on Nova Scotia. It can display and query data sets, overlay various themes of geoscience, topographic and land-use information, and plot the resulting maps in colour.

GIS Development

Digital Information Services staff have been working cooperatively with MRB staff on several projects, including the Western Nova Scotia Aggregate Project. Paul Barker was hired for the summer to digitize and create databases for a number of bedrock and surficial maps required for that compilation.

The GIS version of the Registry of Mineral and Petroleum Titles database was updated several times. Five new versions (7, 8, 9, 10 and 11) of the Mineral Rights Disposition Map for the Province of Nova Scotia (Open File Map ME 2000-6) were released. The initial release of the Mineral Rights Database as a digital product took place in October 2003, with version 2 being released in November 2003.

Work has continued on converting 48 recently published bedrock geology maps and approximately 30 of the Faribault geological series maps from Fieldlog® / AutoCAD® format into ArcInfo® and incorporated as part of the branch GIS. These maps will be completed and released as digital products in 2004.

Internet Map Projects

Jeff Poole has created several prototype Internet Map Server (IMS) applications, currently running in-house, that will allow our clients to view, query, plot and download digital maps and databases over the Internet. Two applications have been created and are planned for release in early 2004. The first

is a compilation of geological maps and databases, including the Mineral Rights database, and the second is the Mineral Resource Land Use Atlas.

Targeted Geoscience Initiative Project in South-central Cape Breton Island

In the summer of 2000 the Geological Survey of Canada (Atlantic) and the Mineral Resources Branch were awarded funding under the Natural Resources Canada Targeted Geoscience Initiative (TGI) for a geological mapping project to aid mineral development in south-central Cape Breton Island. As part of this project, we are responsible for producing a digital compilation of geological data for this area. Jeff McKinnon and Julie Beaumont were assigned in April to work exclusively on this project to build databases, digitize maps and develop the digital products that will be produced as a result of this project. We have identified approximately 90 layers that may potentially be included as part of the final products. To date, approximately 20 maps have been digitized, several maps have been scanned, 6 geophysical images created, 38 geophysical maps created, and a number of other layers and databases have been developed for inclusion in the compilation. A web site for the project will be released early in 2004.

Targeted Geoscience Initiative Project in Central Nova Scotia

In the fall of 2003 the Geological Survey of Canada (Atlantic) and the Mineral Resources Branch were awarded funding under the Natural Resources Canada Targeted Geoscience Initiative (TGI) for a Carboniferous hydrocarbon and mineral potential project in central Nova Scotia. As part of this project we are responsible for producing a digital compilation of geological data for this area.

Canadian Geoscience Knowledge Network

The Canadian Geoscience Knowledge Network

(CGKN) is a collaborative effort between the 12 provincial and territorial geoscience agencies and the Geological Survey of Canada, which operates six offices across Canada. The plan is for the CGKN to be a single window to access geoscience holdings of all the surveys using the Internet. In 2003 the branch continued to develop metadata describing digital data products and publications, and worked to bring the metadata server on-line. It is expected that metadata will be searchable over the Internet by CeoNET and the CGKN metadata search engine in March 2004.

Digital Products and Open File Maps Released in 2003

The following new digital products, open file maps, and updated versions of digital products were released in 2003. These can all be downloaded for free from the URL listed with the product.

Digital Products

DP 001b. Mineral Occurrence Database, version 6, December 2002. This database can be used with DP 001a, the Mineral Occurrence Query Program. (<http://www.gov.ns.ca/natr/meb/download/dp001b.htm>)

DP 002. Mineral Occurrence Database, version 6, December 2002. E00, DXF/DBF and SHP formats, <http://www.gov.ns.ca/natr/meb/download/dp002.htm>

O00-06. Mineral Rights Disposition Map for the Province of Nova Scotia, version 7 (June 27, 2002), version 8 (June 18, 2003), version 9 (August 20, 2003), version 10 (October 6, 2003) and version 11 (November 7, 2003), compiled by B. E. Fisher and A. S. Wenning, scale 1:500 000. Open File Map ME 2000-6. (<http://www.gov.ns.ca/natr/meb/download/O0o06.htm>)

DP ME 51, Version 1, 2003, Nova Scotia Mineral Rights Database. Available in E00, SHP and DXF/DBF formats. Download free from the MRB website at <http://www.gov.ns.ca/natr/meb/download/dp051.htm>

DP ME 53, Version 1, 2003, Digital Version of Nova Scotia Department of Natural Resources Map ME 2000-8, Geothermal Resource Areas in the Province of Nova Scotia, scale 1:500 000, 2000. Available in E00, SHP, DXF/DBF and PDF formats. Download free from the MRB website at <http://www.gov.ns.ca/natr/meb/download/dp053.htm>

DP ME 59, Version 1, 2003, Digital Version of Nova Scotia Department of Natural Resources Open File Map ME 2003-1, Surficial Geology Map of the Whycocomagh Area (N.T.S. 11F/14), Inverness County, Nova Scotia, by R. R. Stea and M. Feetham, 2003, scale 1:50 000, Open File Map ME 2003-1. Available in E00, SHP, DXF/DBF and PDF formats (DP ME 59 was previously released in June 2003 in PDF format only). Download free from the MRB website at <http://www.gov.ns.ca/natr/meb/download/dp059.htm>

DP ME 62, Version 1, 2003, Airborne Magnetic Total Field, Calculated First Vertical Derivative and Calculated Second Vertical Derivative Images for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003. Available in TIFF and JPEG formats and also as PDFs of OFM ME 2003-2 to 16 and OFM ME 2003-33 to 35 (see next page). Download free from the MRB website at <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

DP ME 63, Version 1, 2003, Bouguer Gravity and Residual Bouguer Gravity Images for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003. Available in TIFF and JPEG formats and also as PDFs of OFM ME 2003-17 to 26 and OFM ME 2003-36 and 37 (see next page). Download free from the MRB website at <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

DP ME 64, Version 1, 2003, Airborne VLF-EM Total Field and Quadrature Images for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003. Available in TIFF and JPEG formats and also as PDFs of OFM ME 2003-27 to 32 and OFM ME 2003-38 and 39 (see next page). Download free from the MRB website at <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

Open File Maps

OFM ME 2000-6. Mineral Rights Disposition Map for the Province of Nova Scotia, version 7, (June 27, 2003), version 8 (June 18, 2003), version 9 (August 20, 2003), version 10 (October 6, 2003) and version 11 (November 7, 2003), compiled by B. E. Fisher and A. S. Wenning, scale 1:500 000.

OFM ME 2003-1 Surficial Geology Map of the Whycocomagh Area (NTS 11F/14), Inverness County, Nova Scotia, by R. R. Stea and M. Feetham, 2003, scale 1:50 000

OFM ME 2003-2 Airborne Magnetic Total Field Map for Part of NTS 11F/10, St. Peter's Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-3 Airborne Magnetic Calculated First Vertical Derivative Map for Part of NTS 11F/10, St. Peter's Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-4 Airborne Magnetic Total Field Map for Part of NTS 11F/11, Port Hawkesbury Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-5 Airborne Magnetic Calculated First Vertical Derivative Map for Part of NTS 11F/11, Port Hawkesbury Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-6 Airborne Magnetic Total Field Map for Part of NTS 11F/14, Whycocomagh Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-7 Airborne Magnetic Calculated First Vertical Derivative Map for Part of NTS 11F/14, Whycomomagh Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.**

Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-8 Airborne Magnetic Calculated Second Vertical Derivative Map for Part of NTS 11F/14, Whycomomagh Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.**

Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-9 Airborne Magnetic Total Field Map for Part of NTS 11F/15, Grand Narrows Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-10 Airborne Magnetic Calculated First Vertical Derivative Map for Part of NTS 11F/15, Grand Narrows Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-11 Airborne Magnetic Total Field Map for NTS 11K/02, Baddeck Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-12 Airborne Magnetic Calculated First Vertical Derivative Map for NTS 11K/02, Baddeck Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-13 Airborne Magnetic Calculated Second Vertical Derivative Map for NTS 11K/02, Baddeck Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-14 Airborne Magnetic Total Field Map for Part of NTS 11K/03, Lake Ainslie Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-15 Airborne Magnetic Calculated First Vertical Derivative Map for Part of NTS 11K/03, Lake Ainslie Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-16 Airborne Magnetic Calculated Second Vertical Derivative Map for Part of NTS 11K/03, Lake Ainslie Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-17 Bouguer Gravity Map for the Western Part of NTS 11F/10, St. Peter's Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-18 Residual Bouguer Gravity Map for the Western Part of NTS 11F/10, St. Peter's Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-19 Bouguer Gravity Map for Part of NTS 11F/11, Port Hawkesbury Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-20 Residual Bouguer Gravity Map for Part of NTS 11F/11, Port Hawkesbury Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-21 Bouguer Gravity Map for NTS 11F/14, Whycomomagh Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-22 Residual Bouguer Gravity Map for NTS 11F/14, Whycomomagh Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-23 Bouguer Gravity Map for the Western Part of NTS 11F/15, Grand Narrows Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-24 Residual Bouguer Gravity Map for the Western Part of NTS 11F/15, Grand Narrows Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-25 Bouguer Gravity Map for the Western Part of NTS 11K/02, Baddeck Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-26 Residual Bouguer Gravity Map for the Western Part of NTS 11K/02, Baddeck Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-27 Airborne VLF-EM Total Field Map for Part of NTS 11F/14, Whycomomagh Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

OFM ME 2003-28 Airborne VLF-EM Quadrature Map for Part of NTS 11F/14,

Whycomomagh Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

OFM ME 2003-29 Airborne VLF-EM Total Field Map for Part of NTS 11K/02, Baddeck Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

OFM ME 2003-30 Airborne VLF-EM Quadrature Map for Part of NTS 11K/02, Baddeck Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

OFM ME 2003-31 Airborne VLF-EM Total Field Map for Part of NTS 11K/03, Lake Ainslie Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

OFM ME 2003-32 Airborne VLF-EM Quadrature Map for Part of NTS 11K/03, Lake Ainslie Area, Nova Scotia, by M. S. King, 2003, scale 1:50 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

OFM ME 2003-33 Airborne Magnetic Total Field Map for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003, scale 1:100 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-34 Airborne Magnetic Calculated First Vertical Derivative Map for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003, scale 1:100 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-35 Airborne Magnetic Calculated Second Vertical Derivative Map for

Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003, scale 1:100 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp062.htm>

OFM ME 2003-36 Bouguer Gravity Map for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003, scale 1:100 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-37 Residual Bouguer Gravity Map for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003, scale 1:100 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp063.htm>

OFM ME 2003-38 Airborne VLF-EM Total Field Map for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003, scale 1:100 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

OFM ME 2003-39 Airborne VLF-EM Quadrature Map for Part of the TGI Project Area, South-central Cape Breton Island, Nova Scotia, by M. S. King, 2003, scale 1:100 000. **Price \$5.00.** Also available as a free PDF download from <http://www.gov.ns.ca/natr/meb/download/dp064.htm>

NovaScan

NovaScan is the bibliographic geoscience database on Nova Scotia and its offshore regions. As of December 31, 2003, the database contained 14,402 MRB records, consisting of 6,896 mineral exploration assessment and property reports, 3,702 publications, 2,774 open files, 808 theses, 195 contribution series, 12 digital publications, and 15 outside publications.

NovaScan was revised with 246 new records in 2003. The new records included 110 assessment and property reports, 63 publications, 48 open files, 6 contribution series and 19 theses.

In 2003, 112 assessment and property reports were publicly released from confidential status. Each month, a list of open assessment and property reports was generated from NovaScan and distributed to the DNR Library, the Core Library in Stellarton, and to the three Regional Geologists in Coxheath, Bible Hill and Bridgewater. Quarterly lists of open assessment and property reports were produced and published in the Nova Scotia Minerals Update newsletter.

In order to provide better service to our staff and clients by allowing Internet access (including search features) to NovaScan database, two independent projects were continued in 2003. The first project involved downloading the database into the MRB GIS and creating geographic boundaries for all NovaScan records. When complete, the NovaScan database will be searchable through MRB's Public Access GIS, and also searchable on the Internet. Completion of this project should take place in 2004.

The second project involved downloading and converting the NovaScan records into standard library MARC format, so that they could be loaded into the Provincial Library's Internet-accessible Ncompass catalogue database. This catalogue can be accessed at the following address: <http://ncompass.library.ns.ca>. After selecting your language of choice (English/French), select Nova Scotia Department of Natural Resources from the available catalogue listings, and you will then be able to search all the DNR Library records, including the NovaScan records. As of December 31, 2002, all non-confidential NovaScan records were entered into the Ncompass database. Newly released assessment reports, property reports, open files and publications are added to the Ncompass catalogue on a monthly basis.