

MINERAL OCCURRENCE DATA SYSTEM

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ABSTRACT

The Mineral Occurrence Data System (MODS) is the principal repository for geological information on the Province's mineral resources and comprises summaries of data on about 6200 mineral occurrences. It offers fast and easy access to the data and can be searched from the Geological Survey's website (<http://www.gov.nl.ca/mines&en/geosurvey>).

INTRODUCTION

The Mineral Occurrence Data System (MODS) is the principal repository for geological information on the Province's mineral resources and is a two-part InfoBase consisting of a mineral occurrence database and a collection of mineral occurrence maps (O'Driscoll *et al.*, 1991). The MODS comprises summaries of data on known mineral occurrences, and is designed to offer fast and easy access to information. It contains over 6200 mineral occurrence descriptions, covering all of the Province. The main delivery point for the MODS data is the Geological Survey of Newfoundland and Labrador (GSNL) website (<http://www.gov.nl.ca/mines&en/geosurvey>).

MINERAL OCCURRENCE DATABASE

MODS (ORACLE™)

The MODS data is housed within the Oracle™ database management system; however, data entry is achieved using an application of MS-Access™ database software (Stapleton and Smith, 2004). MS-Access™ connects to the Oracle™ database using object database connectivity (ODBC) technology. In addition to increasing the security of the MODS data, Oracle™ will become the common database platform for all geological survey databases, which will enable more efficient sharing of information between them. For example, the MODS will be able to link directly to Geofiles, the geological survey's bibliographic database. The MODS internet application is dynamically linked to the Oracle™ database, giving clients same-day access to updated information.

MODS FOR GIS

Geoscience Resources Atlas Online

Detailed MODS data can be queried and viewed in a map environment in conjunction with other geoscientific data sets on-line using the, *Geoscience Resources Atlas*, from the Geological Survey's website.

MapInfo™ and ArcView™

Selected fields from the mineral occurrence database are also available on CD ROM as part of the Geoscience Atlas of Newfoundland (Davenport *et al.*, 1999a) and the Geoscience Atlas of Labrador (Davenport *et al.*, 1999b). Both operate as 'turnkey' systems on personal computers in MapInfo™ and ArcView™ formats. These publications enable clients to better visualize geo-referenced data in broader geoscientific contexts; updated MODS GIS datasets are available on request from the Geological Survey of Newfoundland and Labrador.

MINERAL OCCURRENCE MAPS

Mineral occurrence maps on geological bases have been published at 1:250 000 scale and selected areas have been published at 1:50 000 and 1:100 000 scales. An industrial minerals map for insular Newfoundland, at 1:1 000 000 scale on a coloured geological base, is also available. These maps provide the location, the minerals present and the status of each occurrence. Mineral occurrence locations are also plotted on 1:50 000-scale topographic maps and are available for viewing at the Geological Survey's offices in St. John's.

The MODS project has also published six, on-demand, thematic mineral occurrence maps on geological bases. These are, Epigenetic Gold and Related Mineralization, Newfoundland; Copper and Associated Mineralization, Newfoundland; Zinc–Lead and Related Mineralization, Newfoundland; Mississippi Valley-Type Lead–Zinc Mineralization, Newfoundland; Volcanogenic Massive Sulphide Deposits, Dunnage Zone, Newfoundland; and Metallic Mineral Occurrences of the Avalon Zone, Newfoundland.

All maps are available from the Geological Survey's Geoscience Publications and Information Section, upon request.

PROGRESS UPDATE

During the past year, attention focused on completing the systematic update for NTS areas 1K, 1N and 2F and on systematically compiling and updating mineral occurrence data for NTS areas 2C and 2E (Figure 1). Time was also spent documenting recent mineral discoveries within other selected areas of the Province (Figures 1 and 2).

MODS USERS

The MODS is used by mineral exploration company personnel and consultants, independent prospectors, personnel and students of academic organizations and the general public. It is also used daily by government geologists in land use planning. Advice is given to various government departments through the Interdepartmental Land Use Committee (ILUC) referral process on establishing wilderness areas, hydro developments, provincial and national parks, cottage developments, water reservoirs, etc., so that where possible, these developments proceed in areas of low mineral potential.

It is made available to various federal government agencies such as the Mines and Metals Sector of Natural Resources Canada, the Geological Survey of Canada (GSC), and will be this Province's contribution to the Mineral Deposits Data Model Sub-group of the Canadian Geoscience Knowledge Network (CGKN).

CGKN MINERAL DEPOSIT DATA MODEL

The CGKN is an initiative of the National Geological Surveys Committee (NGSC) to provide an internet portal to Canadian geoscience information. The MODS project personnel are participating in CGKN through the Mineral Deposit Data Model Sub-group. The following paragraphs describe the project's mandate, membership, and planning

and implementation strategy and are taken from the CGKN Mineral Deposits Working Group website (http://www.cgkn.net/2002/working/mineral_e.html).

Mandate

The mandate of the CGKN, Mineral Deposit Data Model Sub-group, is to provide, through the internet, a digital representation of the nation's mineral occurrences that will assist in supporting such activities as land-use planning, resource assessment, exploration, environmental monitoring, communication, scientific modelling/visualization and education. This will be done from distributed databases maintained by individual agencies. These agencies will work toward a common data model, including geoscience language, particularly for geological parameters that would be most beneficially viewed across the boundaries of individual provinces or territories. The data model will be developed in cooperation with other CGKN working groups, and will follow the open standards that are adopted by CGKN.

The mineral deposit data for each province or territory will reside at the custodial agency where it can be kept current. Applications that assist in viewing and extracting information about mineral deposits via the internet on a national scale will be adopted from either the North American Data Model (NADM) or CGKN software development projects.

Membership

All territorial, provincial and federal agencies that are actively involved in the collection, compilation and dissemination of mineral-deposit related information will be represented on the sub-group, to guide the development of the data model and its science language. The sub-group will be led by two co-leaders, one representing federal agencies and the other, the provincial and territorial agencies. The co-leaders will be appointed by GSC management and the Committee of Provincial Geologists, respectively.

PLANNING AND IMPLEMENTATION

The sub-group will establish a long-term (3 to 5 year) plan to guide the development and maintenance of the national view of the mineral deposit databases. Within this framework, annual plans will be drawn up to establish the role of each agency in accomplishing particular tasks, taking into account the agencies' capabilities in terms of personnel and financial resources for that year. From these annual plans, projects will be designed to attract matching funding from national programs.

The group has almost completed the harmonization of commodity terms for metallic commodities, and deposit sta-

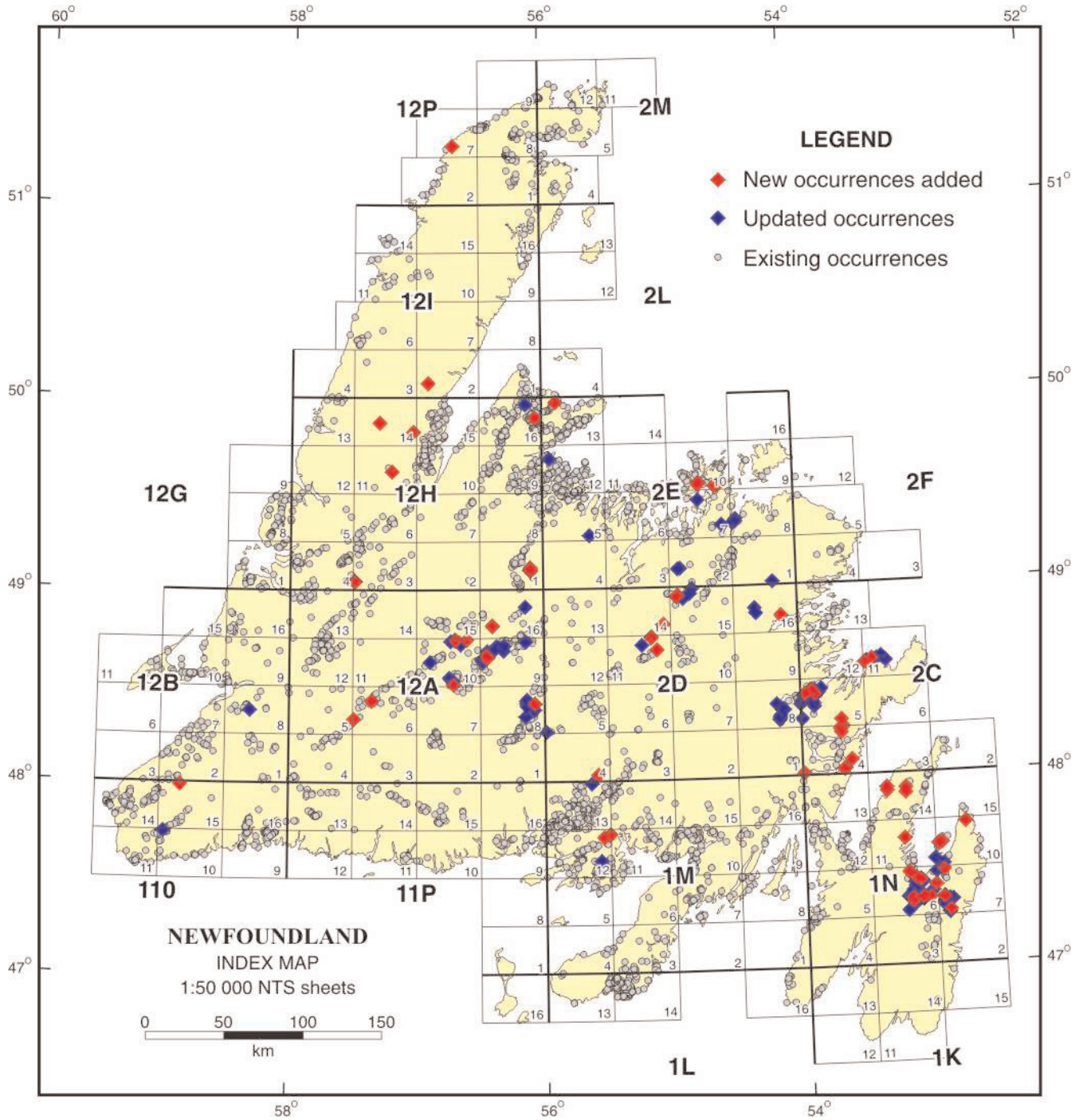


Figure 1. Index map for Mineral Occurrence Data System project, insular Newfoundland.

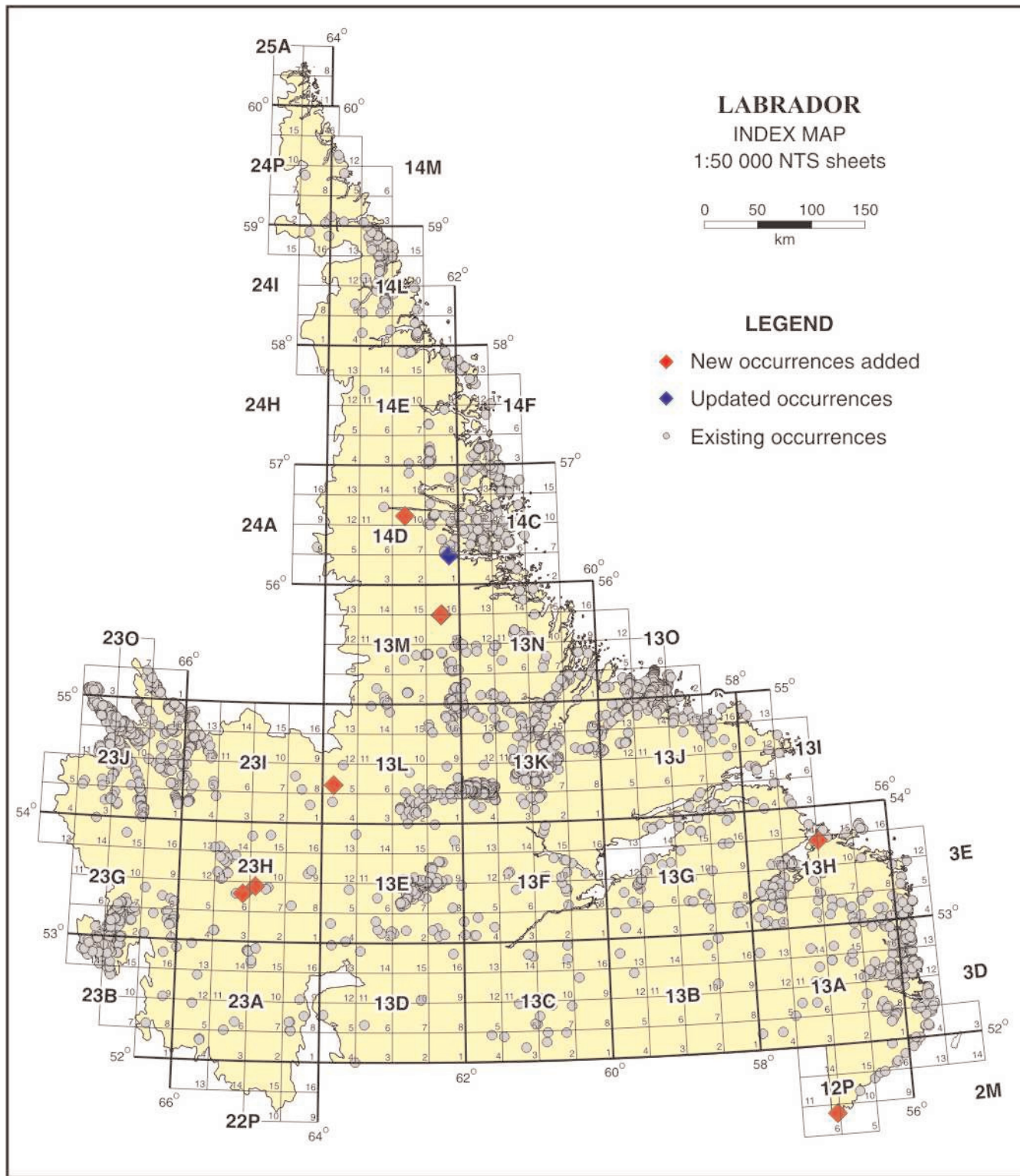


Figure 2. Index map for Mineral Occurrence Data System project, Labrador.

tus in 2005. Work in 2006 focused on harmonizing and prioritizing terminology to make targeted-database attributes appear consistent across Canada. Although much work was done to further the harmonization of metallic commodities, more work will be needed in 2007 to finalize the extractable metals table. The group also worked to harmonize terms for non-metallic commodities, but decided to delay the process until the effect of the metallic commodity simplification is demonstrated. Re-map tables for each province and territory were circulated with the working group's year-end report.

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