

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 more than 6300 mineral occurrences. It offers fast and easy access to the data and is searchable from the Geological Survey's website (<http://www.nr.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 (Stapleton *et al.*, 2000). The MODS comprises summaries of data on known mineral occurrences, and is designed to offer fast and easy access to information. It contains more than 6300 mineral occurrence descriptions, covering all of Newfoundland and Labrador. The main delivery point for the MODS data is the Geological Survey of Newfoundland and Labrador website (<http://www.gov.nl.ca/mines&en/geosurvey>). Clients are able to search the database using either the "Mineral Deposit (MODS) Index Search Form" or "Geoscience Resource Atlas".

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 *et al.*, 2005). MS-Access™ connects to the Oracle™ database using object database connectivity technology. In addition to increasing the security of the MODS data, Oracle™ will be the common database platform for all of the Geological Survey's databases, which will enable more efficient sharing of information between them. For example, the MODS will 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.

DELIVERY MECHANISMS

GeoScience OnLine

Most users of MODS access it *via* the internet from the Geological Survey's website.

Detailed MODS data can be queried and viewed in a map environment in conjunction with other geoscientific datasets online, using the Geoscience Resources Atlas map viewer.

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 'turn key' systems on personal computers in MapInfo™ and ArcView™ formats. These publications enable clients to better visualize georeferenced data in broader geoscientific contexts. Updated MODS GIS datasets are available for download from the Geoscience Resource Atlas.

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, minerals present and 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, NL.

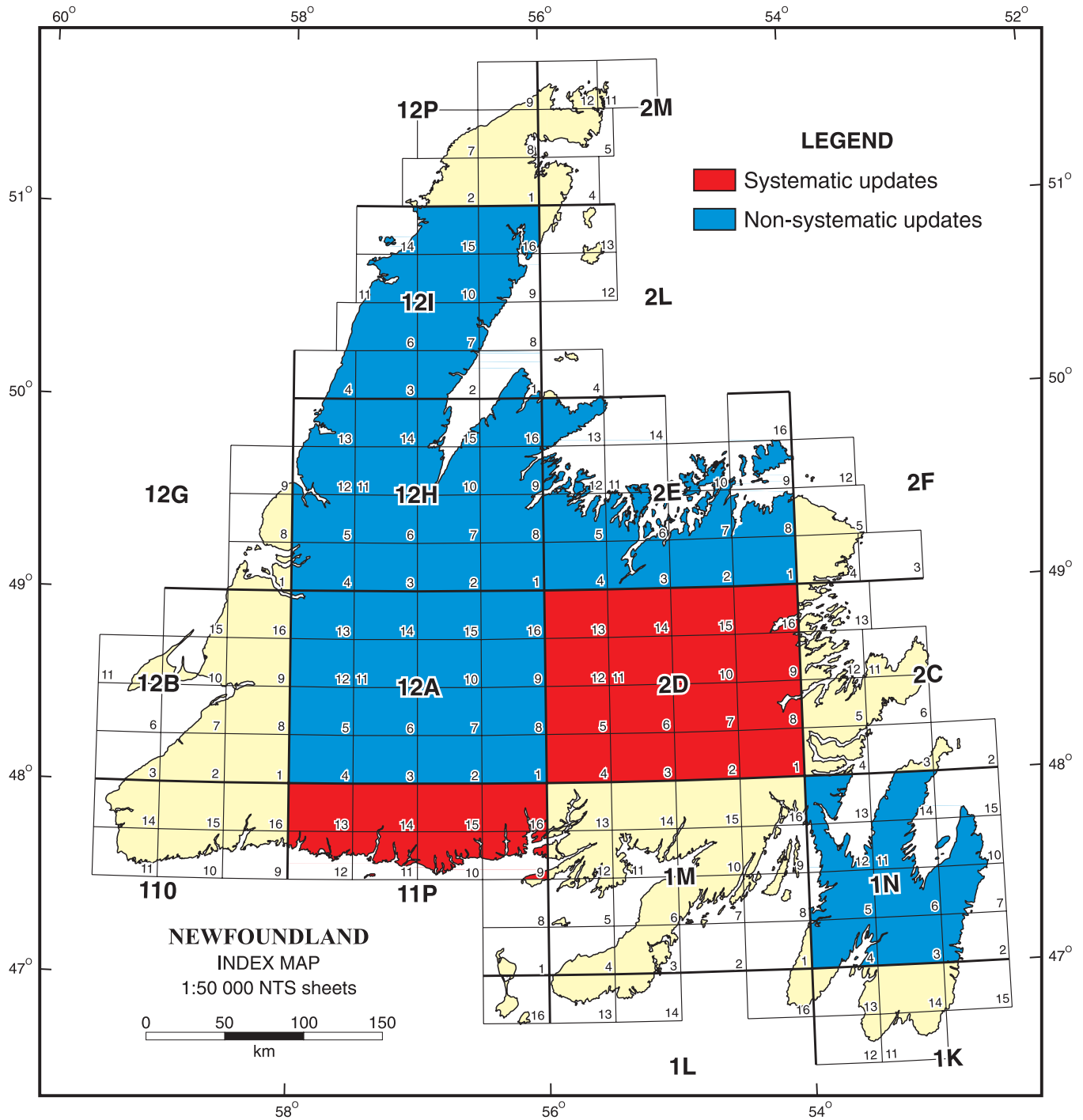


Figure 1. Systematic versus non-systematic updates for insular Newfoundland.

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.

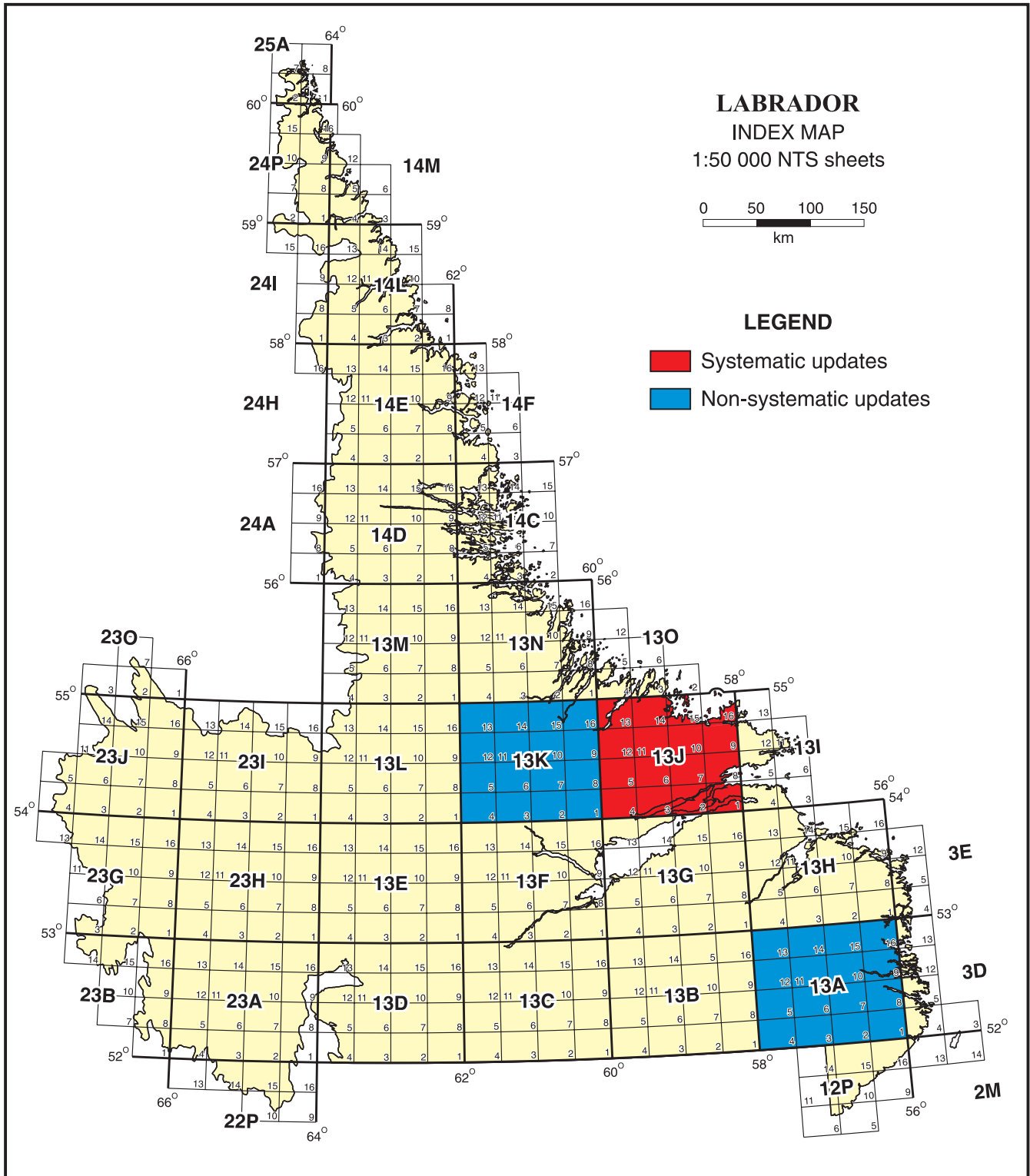


Figure 2. Systematic versus non-systematic updates for Labrador.

LINKS TO COMMODITY SERIES REPORTS PROJECT

Since the late 1990s, the Geological Survey has pro-

duced several "Commodity Series Reports", which are short summaries of particular commodities with emphasis on their geological settings and exploration potential. The primary information base for developing such reports is the MODS,

and work continued in 2009 on three such reports. These reports concern molybdenum, tungsten and tin (a combined treatment), rare-metals (*i.e.*, zirconium, yttrium, beryllium and rare-earth elements), and iron ore. The MODS project also contributed to an updated commodity series report on uranium in Newfoundland and Labrador.

PROGRESS UPDATE

Record levels of mineral exploration in recent years continues to generate a tremendous amount of new information and keeping MODS up to date represents a challenge at present. Systematic updates by NTS sheet continued with most work focused on NTS 2D (east-central Newfoundland), 11P (southwest Newfoundland) and 13J (Central Mineral Belt, Labrador). We also implemented updates on a Province-wide basis by accessing press releases and mineral-industry assessment reports as they come into the public domain. Areas updated in this manner include 1N, 2E, 12A, 12H, and 12I (Newfoundland) and 13A and 13K (Labrador) (Figures 1 and 2).

The MODS personnel, working with the Geoscience Publications and Information Section, contributed to a poster titled 'Mines of Newfoundland' that includes locations and historical photographs. The poster is currently in the draft phase of production and will be published in conjunction with the Geological Survey's outreach program.

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 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.

The MODS data are made available to various federal government agencies such as the Minerals and Metals Sector and the Geological Survey of Canada of Natural Resources Canada, and the Mineral Deposits Subgroup of the Canadian Geoscience Knowledge Network (Stapleton and Smith, 2004).

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