

## MINERAL OCCURRENCE DATA SYSTEM

by

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### INTRODUCTION

The Mineral Occurrence Data System project was initiated in 1978 (McArthur, 1978; Missan *et al.*, 1979). It is designed to offer an efficient information service on all mineral occurrences in the province to geoscientists in exploration, government and academic research. It is a two-part project comprising a manual Mineral Inventory File and a computerized Mineral Index.

### MANUAL MINERAL INVENTORY FILE

The manual Mineral Inventory File is part of the National Mineral Inventory and was originally proposed to continue and update the card system of Hsu (1974) and the mineral occurrence maps and tables of Douglas (1976a and b).

In 1978 a pilot project was carried out in the Stephenville (12B) map area. By April, 1979, the system was fully operational with two Mineral Inventory Geologists (one responsible for insular Newfoundland and one for Labrador) and one Project Geologist. The number of Mineral Inventory Geologists increased to a maximum of four during 1981.

Prior to 1978, information on the geology, history of exploration, nature of mineralization and other important data on mineral properties could only be obtained by long research through numerous files and publications. With the Mineral Occurrence Data System in place, this preliminary research can now be done quickly and efficiently. So far approximately 70% of the Province's mineral occurrences have been documented. It is hoped to have cards

for all occurrences completed and mineral occurrence maps published within the next fiscal year.

A Mineral Inventory "card" or file consists of up to four pages (or more, depending on the amount of data available) which summarize all the available information on a known mineral occurrence. A card may be used for any type of occurrence from an indication to a producing mine. In preparing a card, the geologist researches all reports and publications which contain information on a particular occurrence. The location is then plotted on a 1:50,000 or 1:250,000 scale topographic map and the information is condensed under the headings: description, history of exploration and development, production and/or reserves, status, type of deposit, mineralogical composition, nature of mineralization and genesis, host rocks, structure, metal/mineral content, geophysical expression, geochemical expression, physiographic setting, remarks and references. These cards are then placed on file and are available for anyone to use if data is not confidential. Confidential cards are filed separately.

To date, information on approximately 2,500 mineral occurrences has been compiled. When cards are completed for an NTS area, the occurrences are plotted on maps with updated geological bases and published. Mineral occurrence maps (1:250,000) have been published for NTS areas 12B (Stephenville), 2E (Botwood) and 14C (Nain). It is our objective to publish maps for all areas of the Province at appropriate scales. For the most part, they will be published at 1:250,000, but in areas which require more detail, the scale will be larger. It is planned to have

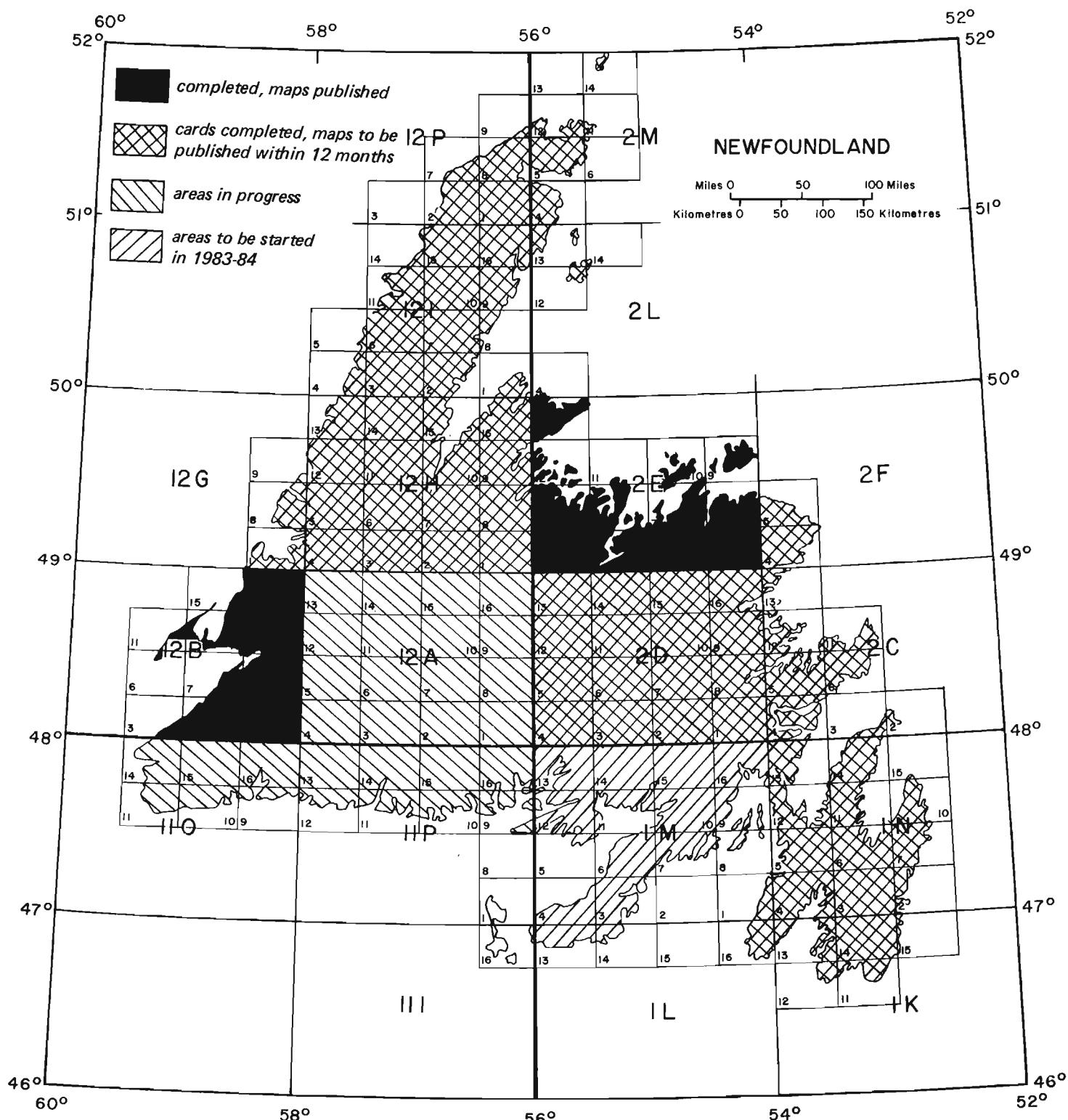


FIGURE 1: Index map for Mineral Occurrence Data System project, insular Newfoundland.

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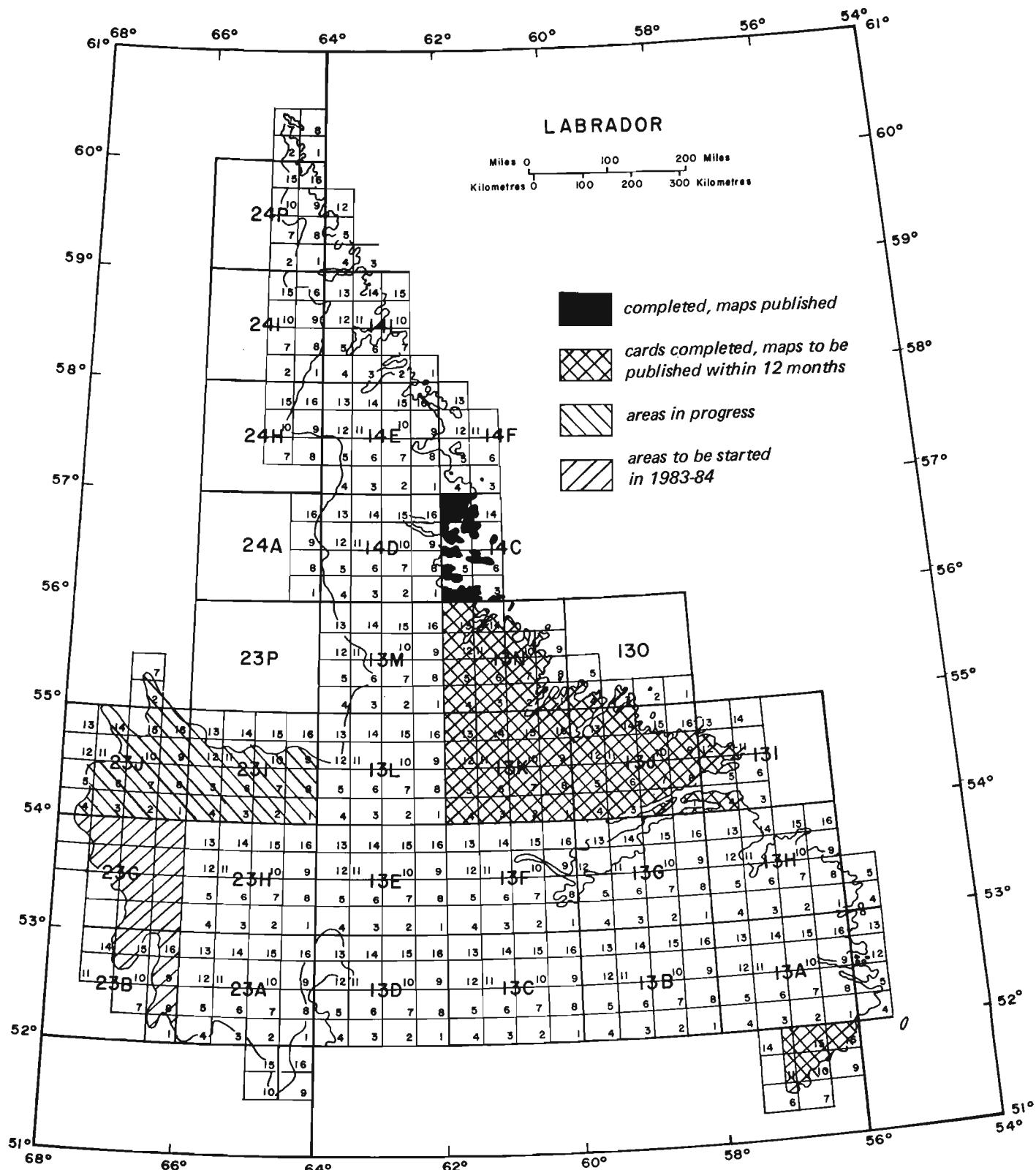


FIGURE 2: Index map for Mineral Occurrence Data System project, Labrador.

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maps published on the following areas by the spring, 1983: 13K (Snegamook Lake), 13K/5 (Wuchusk Lake), parts of 13J and O (Rigolet and Makkovik), 12H (Sandy Lake), and 13N (Hopedale).

Mineral inventory cards will be available on microfiche for mineral occurrences on all published maps within the next year.

### COMPUTERIZED MINERAL INDEX (Missan *et al.*, 1979)

The computerized Mineral Index is the additional part of the system and contains coded and free format data on mineral occurrences selectively extracted from the manual Mineral Inventory File. The purpose of the index is to organize efficiently important data on the occurrences so that a wide variety of retrievals can be made taking advantage of the powerful sorting capabilities offered by computerization. To manage the file, a computer program called GRASP (Bowen and Botbol, 1975) was installed on an IBM 370 computer at Newfoundland and Labrador Computer Services Limited.

By the use of computers, the retrieval capability from the data bank is optimized and complex retrievals can be made which would be virtually impossible if a manual inventory system were used.

Some examples of the types of possible retrievals are:

1. Listing all mineral occurrences in a geographical area;
2. Listing combinations of commodities which occur in particular environments;
3. Listing factors such as stage of exploration, production status, etc., for commodities in a geographical area;
4. Listing references for a particular occurrence or group of occurrences in a defined area;

5. Identification of mineral deposits with certain characteristics of mineralogy or lithology, e.g. Mississippi Valley-type deposits.

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