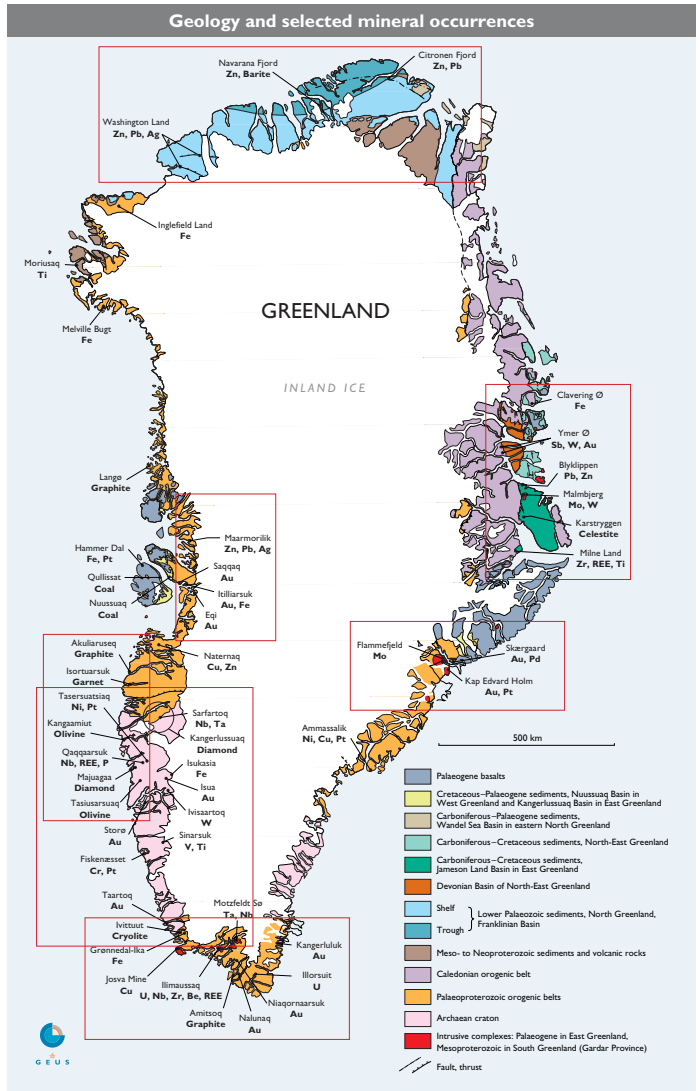
EXPLORATION AND MINING IN GREENLAND

Greenland Mineral Resources

Fact Sheet No. 5

Map of known mineral occurrences in Greenland



The main geological divisions on the geological map cover periods from Archaean to Palaeogene and are summarised in the map legend.

Chronology of Greenland mineral occurences

Major events shown on the map include:

1845: Collecting of graphite at Langø (NWG)
1852: Discovery and mining of copper at Josva mine (SG)
1852: Mining in Frederik VII mine (SG)
1854: Mining of lead in Ivittuut mine (SG)
1856: Mining of cryolite began in Ivittuut mine (SG)
1893: Discovery of zirconium in Kringlerne (SG)
1903: Discovery of graphite at Akuliaruseq (WG)
1905: Reopening of the Josva copper mine (SG)
1915: Opening of graphite mine in Amitsoq (SG)
1933: Mining of pyrite in Clavering Island (EG)
1936: Quarrying of marble in Maarmorilik (WG)
1951: Discovery of iron at Grønnedal-Ika (SG)
1954: Discovery of molybdenum in Malmbjerg (EG)
1955: Discovery of uranium in Kvanefjeld (SG)
1956: Mining initiated of lead/zinc near Mestersvig (EG)
1964: Discovery of chromium in Qeqertarsuatsiaat (WG)
1965: Discovery of the iron deposit at Isua (WG)
1968: Discovery of REE and phosphorous at Qaqqarsuk (WG)
1972: Discovery of gold in Taartoq (SG)
1973: Mining began of lead/zinc at Black Angel Mine (WG)
1973: Discovery of placer diamonds in Sarfartoq (WG)
1977: Discovery of niobium in Sarfartoq (WG)
1979: Test mining of uranium in Kvanefjeld (SG)
1979: Discovery of tungsten and antimony at Ymer Island (EG)
1980: Discovery of tantanlum at Motzfeldt Lake (SG)
1982: Discovery of tungsten and gold in Nuuk Fjord (WG)
1984: Discovery of zinc/barium in Navarana fjord (NG)
1985: Discovery of gold in Disko Bay area (WG)
1986: Discovery of gold and PGE's in Skaergaard (EG)
1992: Discovery of primary gold at Nalunaq (SG)
1993: Discovery of zinc at Citronen Fjord (NG)
1995: Find of in-situ diamonds near Maniitsoq (WG)
1995: Small-scale production of olivine at Evighedsfjord (WG)
1996: Discovery of gold at Kangerluluk (SEG)
2003: Establishing of gold mine at Nalunaq (SG)

The map of mineral occurrences is your shortcut to get acquainted with some of the mineral occurrences in Greenland. The presentation combines the geological map with knowledge of mineral prospects and deposits gathered through more than 150 years.

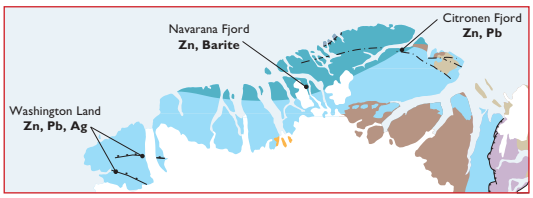
Geological observations in Greenland began with the first scientific expeditions in the early 1800s. Systematic geological mapping commenced in East Greenland with Dr. Lauge Koch's expeditions 1926–58. In West Greenland the systematic mapping was conducted by the Geological Survey of Greenland (now GEUS) in 1946. This survey was initiated in West Greenland and has subsequently been extended to all parts of Greenland. Coverage is not yet complete.

History of Greenland economic geology

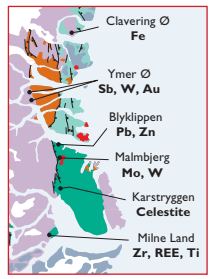
The history of Greenland economic geology dates back to the beginning of colonial European influence. Following the colonisation of Greenland in the mid-1700s the colonists (by order of the Danish King) were required to look for useful minerals. However, systematic exploitation and mining activity was not initiated until mid-1800. The early industrial activity in Greenland was concentrated on the sparsely inhabited west coast. The first traditional mining (non-fuel commodities) was based on local knowledge of commodities proved to be present in sufficient amounts, but soon led to wider exploration and systematic prospecting as geological knowledge accumulated. At the start of the Millennium the activity covers most parts of Greenland, and the exploration is continuing.

Greenland Mineral Resources

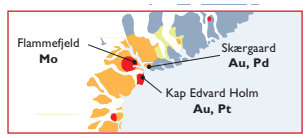
Lead-zinc prospects in Palaeozoic basins



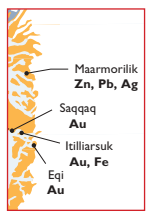
Prospects in Caledonian and younger terranes



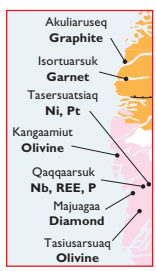
Magmatic deposits in Palaeogene intrusions



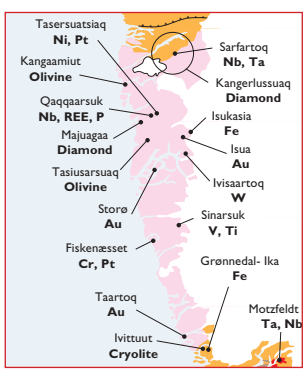
Gold and base metals in Palaeoproterozoic settings



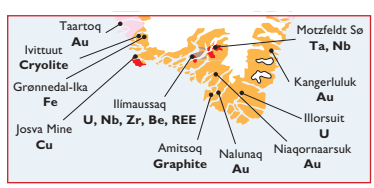
Industrial minerals in the West Greenland basement



Mineral occurrences in Archaean cratons



Mineral commodities of the Mesoproterozoic in South Greenland



The map with combined information about geology and known mineral resources may, together with similar maps displaying exploration geochemistry and various geophysical data, be of invaluable help to the explorationists.

Map details of selected regions

As examples of specialised information derived from the map, a series of enlarged sections are presented here under the themes:

- Mineral occurrences in Archaean cratons
- Gold and base metals in Palaeoproterozoic settings
- Mineral commodities of the Mesoproterozoic in South Greenland
- Prospects in Caledonian and younger terranes
- Lead-zinc prospects in Palaeozoic basins
- Magmatic deposits in Palaeogene intrusions
- Industrial minerals in the West Greenland basement

Concluding remarks

Combination of this information in one map makes it apparent where to look for specific minerals, both as single commodities, in selected geological environments or among known mineralisation types.

The map of selected mineral occurrences is incorporated in the information material and is available from the GEUS homepage.

Key references

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