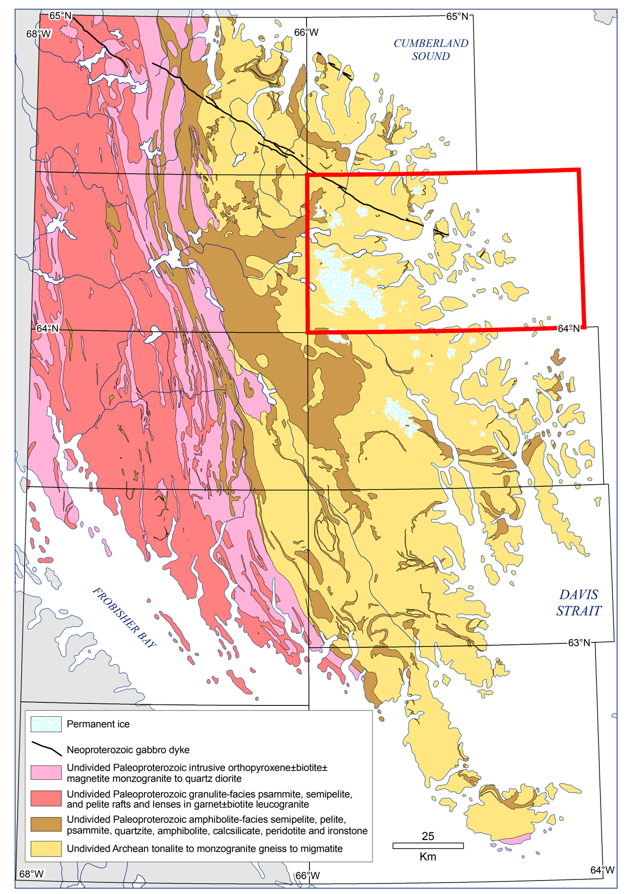


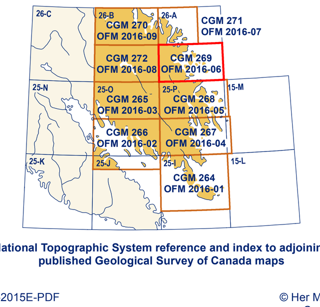

**Figure 1.** Simplified bedrock geology of the Hall Peninsula, Baffin Island, Nunavut, compiled from regional and targeted mapping conducted in 2012, 2013, and 2014, and supplemented by archival observations collected during the Geological Survey of Canada's Operation Amadjuak in 1965 (Blackadar, 1967), regional aeromagnetic data, scientific literature, and assessment report data from the mineral exploration industry. The Leybourne Islands (south) map sheet is outlined in red.


## Abstract

The Hall Peninsula Integrated Geoscience Program was led by the Canada-Nunavut Geoscience Office, and was designed to increase the geoscience knowledge and assess the economic potential of the area. Eastern Hall Peninsula is dominantly underlain by Archean tonalite to quartz diorite orthogneiss, while Paleoproterozoic supracrustal and intrusive rocks are exposed to the west. The supracrustal rocks are dominated by pelitic, psammitic, amphibolite and calc-silicate units, are interpreted as correlative with the Lake Harbour Group, and are cut by granulite-grade monzogranite to diorite intrusions. Hall Peninsula records three phases of metamorphism and deformation associated with the Trans-Hudson Orogen that have produced thick-skinned, east-verging fold and thrust structures and amphibolite to granulite facies mineral assemblages. Hall Peninsula hosts a highly prospective diamond kimberlite field, as well as mafic and carbonate supracrustal rocks, and ultramafic intrusions that may contain base and/or precious metal, semi-precious gemstone and carving stone resource potential.

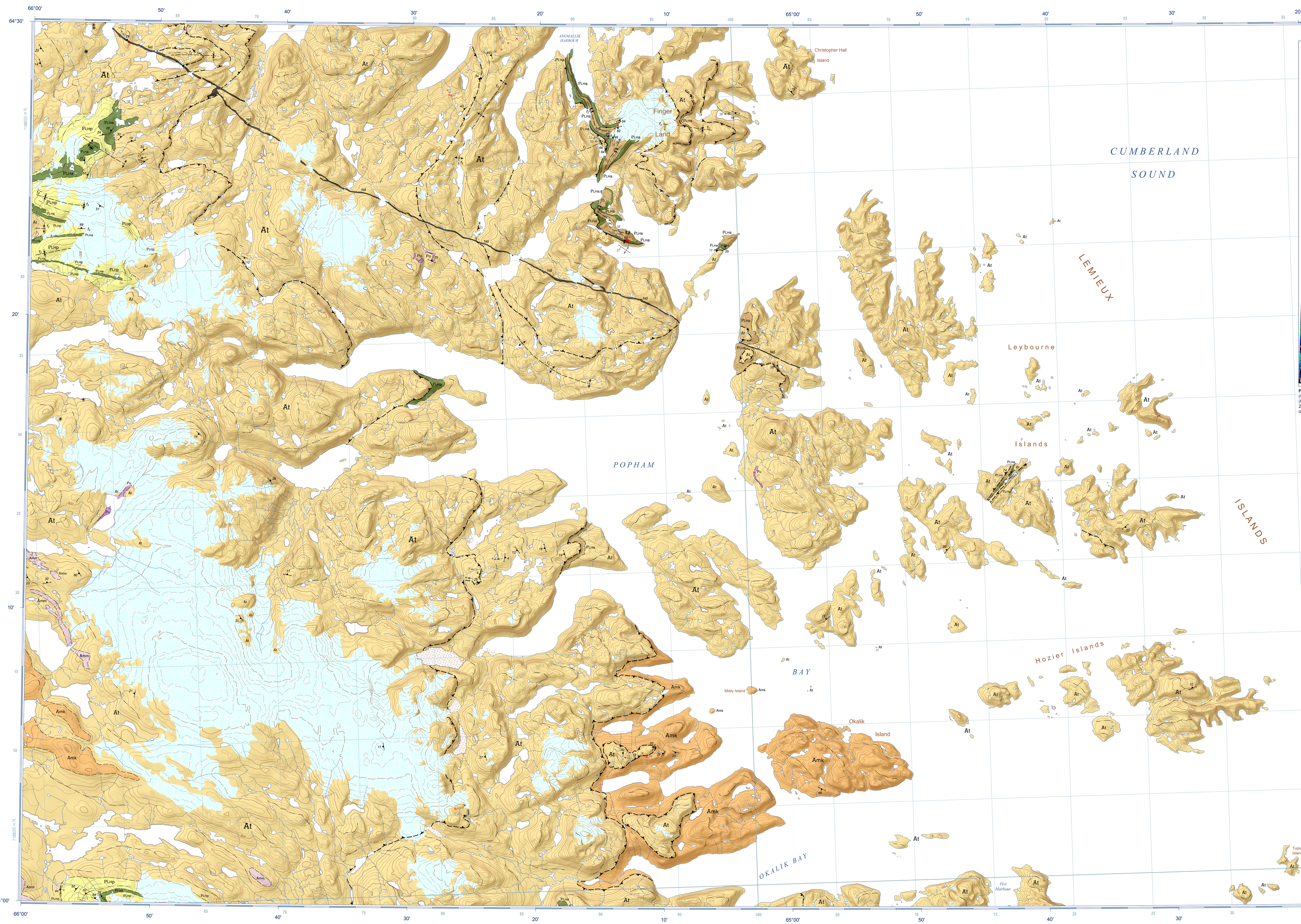
## Résumé

Le Programme géoscientifique intégré de la péninsule Hall, mené par le Bureau géoscientifique Canada-Nunavut, a été conçu pour accroître les connaissances géoscientifiques et évaluer le potentiel économique de la région. La partie est de la péninsule Hall contient principalement des orthogneiss tonalitiques à quartzodioritiques de l'Archéen, tandis que des roches supracrustales et intrusives du Paléoprotérozoïque affleurent à l'ouest. Les roches supracrustales sont dominées par des unités pélitiques, psammitiques, amphibolitiques et calcosilicatées et seraient corrélatives du Groupe de Lake Harbour. Elles sont recoupées par des intrusions de composition monzogranitique à dioritique du faciès des granulites. La péninsule Hall a conservé les traces de trois phases de métamorphisme et de déformation associées à l'orogène trans-hudsonien, qui ont donné lieu à une tectonique de socle caractérisée par la formation de structures de plissement et de chevauchement à vergence est, et à la création d'associations de minéraux du faciès des amphibolites au faciès des granulites. La péninsule Hall renferme un champ de kimberlites très prometteur pour le diamant, ainsi que des roches supracrustales mafiques et carbonatées et des intrusions ultramafiques susceptibles de contenir des ressources en métaux usuels ou précieux, en pierres semi-précieuses et en pierres à sculpter.


National Topographic System reference and index to adjoining published Geological Survey of Canada maps


GEOLOGICAL SURVEY OF CANADA
CANADIAN GEOSCIENCE MAP 269
CANADA-NUNAVUT GEOSCIENCE OFFICE
OPEN FILE MAP 2016-06
GEOLOGY
LEYBOURNE ISLANDS (SOUTH)
Baffin Island, Nunavut
NTS 26-A (south)
1:100 000


This legend is common to CGM 264, CGM 265, CGM 266, CGM 267, CGM 268, CGM 269, CGM 270, CGM 271, and CGM 272. Coloured legend blocks indicate map units that appear on this map. Not all symbols shown in the legend appear on this map.

**NEOPROTEROZOIC**

| | |
|---|---|
| Nd | Diabase dyke (Franklin swarm). |

**PALEOPROTEROZOIC**

| | |
|---|---|
| Pmg | Garnet-biotite±orthopyroxene monzogranite; commonly contains inclusions of metasedimentary rock. |
| Pmo | Orthopyroxene-biotite±magnetite monzogranite; locally with K-feldspar megacrysts. |
| Pgo | Orthopyroxene-hornblende-biotite±magnetite granodiorite. |
| Pu | Metaperidotite, metapyroxenite, metadunite. |

**LAKE HARBOUR GROUP**

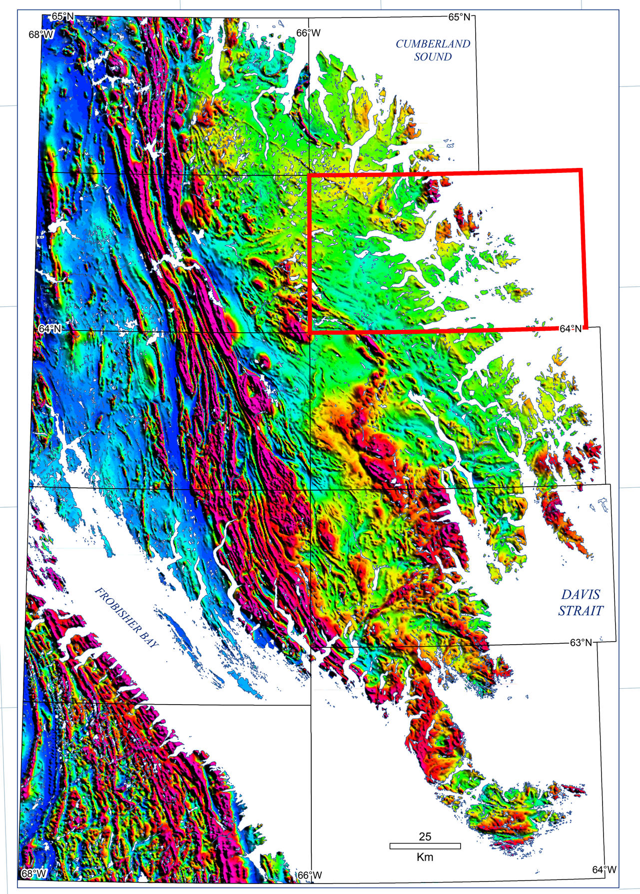
| | |
|---|---|
| PLHw | White biotite-garnet±cordierite leucogranite commonly interlayered with metasedimentary rock. |
| PLHp | Garnet-biotite psammite; semipelite; pelite, quartzite; white biotite-garnet leucogranite pods and seams. |
| PLHm | Diopside-clinohumite-phlogopite±apatite±spinel marble; calc-silicate; minor siliciclastic layers. |
| PLHa | Amphibolite locally with garnet porphyroblasts; quartz diorite; diorite; and minor metagabbro locally with garnet porphyroblasts. |
| PLHs | Garnet-sillimanite-biotite±muscovite semipelite, pelite, psammite; quartzite; minor marble and calc-silicate; white biotite-garnet leucogranite pods and seams; diorite; amphibolite; metaironstone; and layered mafic-ultramafic sills. |
| PLHq | Garnet±sillimanite±magnetite quartzite; feldspathic quartzite. |

**ARCHEAN**

| | |
|---|---|
| Amm | Magnetite-biotite monzogranite, locally crosscut by coarse-grained to pegmatitic magnetite-bearing syenogranite veins. |
| Amk | K-feldspar porphyritic biotite monzogranite to quartz monzonite. |
| Ag | Biotite±hornblende granodiorite to monzogranite. |
| At | Biotite±hornblende tonalite to granodiorite; commonly contains layers of diorite to quartz diorite, and locally contains pods and enclaves of gabbro. |

Geological contact
Defined
Approximate

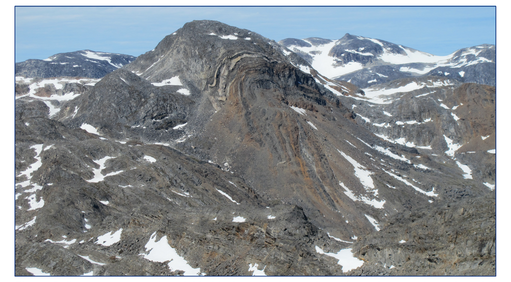
Ductile structural trend
Form lines




## Descriptive Notes

## Acknowledgements

## References



**Recommended citation**
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Geological Survey of Canada
Canadian Geoscience Maps


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