Previous work

Although remote from the usual routes taken by early explorers into geophysical investigations since 1821 (Parry, 1824, Jameson, 1826). The Fifth paleontological investigations since 1821 (Parry, 1824, Jameson, 1826). The Fifth paleontological data regarding the lower Paleozoic rocks of the Foxe Basin presence of late Proterozoic sandstones in the region. It was not until 1964 and investigated in two of the great postwar helicopter surveys of the Canadian North mapped in greater detail in selected areas (Bolton et al., 1977; Chernis et al. 1978; Becket, 1986; Schau and Digel 1989; Trettin, 1975). Regional geophysical and geochemical surveys have been conducted over parts of the peninsula (see lists formations, Wilson and Underhill, 1971; meta-ultramafic rocks, Eckstrand, 1975; Early mineral exploration pursued iron, nickel and copper potential focussed on gold potential of the iron formations. Selected assessment file

Early mineral exploration pursued iron, nickel and copper potential focussed on gold potential of the iron formations. Selected assessment file

The coverage is not systematic, and consequently unit 10, which represents undivided basement gneisses, is in part bounded by arbitrary straight lines and abruptly terminates geological elements mapped in adjacent areas. Early Heywood and Schau, 1978; Henderson, 1984; Schau and Ashton, 1988. Topical studies Jenner, 1975; Fryer and Jenner, 1978; Schau, 1977; have focussed on the two supracrustal sequences, the Prince Albert (Frisch and (Mazurski, 1982; Henderson, 1983), 1988), and on regional dyke sets (Fahring and This open file map release is a summary of the additional geological work companion map to Geological Survey of Canada Open File 2995 displaying

General Geology

Northern Melville Peninsula consists of basement gneisses forming a horst bounding the flat-lying cratonic Paleozoic carbonate rocks of the Foxe Basin

Lowlands. The basement gneisses contain evidence of a long and complex history.

Supragruetal groups and several dyke sets serve as markers to help unrayel Two supracrustal groups, and several dyke sets serve as markers to help unravel The oldest rocks consist of partially retrograded tonalite-granodiorite gneisses (unit 1), especially near the Ajaqutalik River and in the northwest, gneisses (unit 1), especially near the Ajaqutalik River and in the northwest, where they are cut by leucogranites (unit 2) and the earliest metamorphosed mafic rocks that possibly unconformably overlie units 1-3, include the Prince Albert Group (unit 4), a volcanogenic sequence containing meta-ultramafic rocks, more common pelitic and other clastic metasedimentary rocks. The Tasijuaq Suite members, as well as a characteristic ovoid plagioclase bearing porphyritic gabbro called "football gabbro" or "leopard" rock. Units were deformed together in a complex series of events starting with initial thrusting and interleaving of complex series of events starting with initial thrusting and interleaving of gneisses and supracrustals, followed by folding, plutonism and metamorphism. In many places the orogenesis generated well layered granitoid gneisses (unit 6) cut by early metadiabase dykes (unit 7). These units were in turn intruded by rocks of the Archean Hall Lake Plutonic Complex and related plutons (unit 8). The pluton contain septa of granitic gneiss or has been deformed to yield granitic pluton contain septa of granitic gneiss or has been deformed to yield granitic gneisses which may also contain unseparated unit 8 and/or unit 14 (unit 9). In units 1 through 9, is shown, indicating areas in which more detailed gneisses from mapping is neccessary. Inmost of the region, lithologic boundaries, gneissosities and foliations have steep northeasterly trends, although dip reversals and deform earlier structures and contain several sets of lineations indicating grade throughout most of this region although small regions near the east coast Granulite and upper amphibality grade. reached only greenschist grade.

Granulite and upper amphibolite grade gneisses in the northwestern part of the peninsula form shallow north plunging, open fold marked by shallow dipping gneissosities above the hanging wall of a shallow, west dipping thrust fault metadlabase dykes (unit 11) traverse the area, especially along parts of the Metadiabase upkes tunit 17, davisor of a superstance of a superstance of the superstance apparent unconformity on the gneisses mentioned above. It has been deformed at apparent unconformity on the gneisses mentioned above. It has been deformed at least twice with northeasterly trending structures, has been intruded (unit 13) Group is a northeast trending high strain zone, and other narrow northeast trending high strain zone, and other narrow northeast.

The exposed rocks were uplifted in mid-Proterozoic time and latitudinal faults with local hydrothermal alteration cut the region. Roche Bay granites (unit 15) are small miarolitic granite stocks emplaced in and near faults. Low (unit 15) are small miarolitic granite stocks emplaced in and near faults. Low grade, mid Proterozoic Folster Lake Formation, a sandstone rich sequence (unit 17), on the west coast, and an unnamed quartzite (unit 16) near the east coast, rest unconformably on the gneisses. In the north, the Fury-Hecla Supergroup (19) rest unconformably on the gneisses. In the north, the Fury-Hecia Supergroup (19) an orthoquartzite rich sequnce, was deposited later in the Proterozoic and it is little deformed. Mackenzie Dykes (18) were intruded at this time. Faults were reactivated, and fault blocks variably tilted. In the late Proterozoic, the Autridge Sill (unit 20) and, the Franklin Dyke Swarm (unit 21) were emplaced, especially in the north of the region. Ordovician carbonates (units 22, 23, 24)

were deposited in shallow seas. Devonian and cretaceous faulting probably formed the horst. Glacial sediments cover parts of the region (Dredge, 1991, in press).

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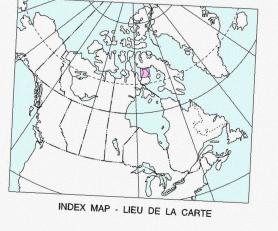
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Elevation in feet above mean sea level

Geographical names subject to revision

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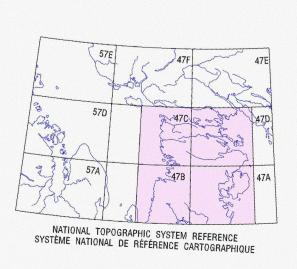
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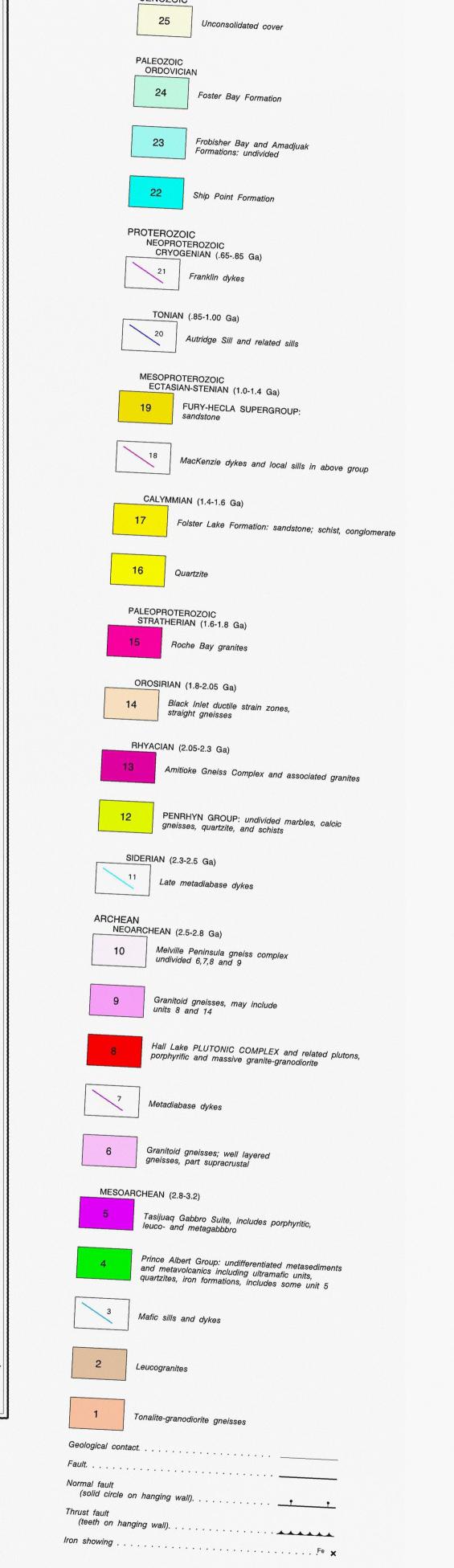
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