

LEGEND

SEDIMENTARY AND VOLCANIC ROCKS

CENOZOIC	QUATERNARY	Q	Stream, deltaic, glacial and marine beach sediments (mapped only where underlying bedrock geology cannot be inferred with reasonable certainty)		
	TERTIARY	Te	EUREKA SOUND FORMATION: sandstone, siltstone, conglomerate, shale, minor coal		
	CRETACEOUS	UPPER CRETACEOUS	Kk	KANGUK FORMATION: dark coloured shale, minor sandstone, siltstone and mudstone	
			Kh	HASSEL FORMATION: sandstone, minor siltstone and shale	
		LOWER CRETACEOUS	Kc	CHRISTOPHER FORMATION: dark coloured shale, minor siltstone, sandstone, mudstone and pyroclastic rocks	
			Kv	Unnamed formation: basalt flows	
			Ki	ISACHSEN FORMATION: sandstone, minor shale, siltstone and conglomerate	
	MESOZOIC	JURASSIC AND CRETACEOUS	UPPER JURASSIC AND LOWER CRETACEOUS	JKd	DEER BAY FORMATION: dark coloured shale, minor siltstone, sandstone and mudstone
		JURASSIC (undivided)	J	AWINGAK FORMATION (Upper): sandstone, siltstone, minor shale SAVIK FORMATION (Lower, Middle and Upper): sandstone, dark coloured shale, siltstone BORDEN ISLAND FORMATION (Lower): sandstone	
		TRIASSIC	UPPER TRIASSIC	Tih	HEIBERG FORMATION: sandstone, siltstone, minor shale
		Tba	MIDDLE AND UPPER TRIASSIC BLAA MOUNTAIN FORMATION: dark coloured shale, siltstone, light grey calcareous siltstone, minor sandstone, (Tba1, see note 1)		
		Tbl	LOWER TRIASSIC BLIND FIORD FORMATION: siltstone, minor shale and sandstone		
		Ts	MIDDLE AND UPPER TRIASSIC SCHEI POINT FORMATION: calcareous siltstone and sandstone, shale, minor limestone		
		Tb	LOWER TRIASSIC BUJONE FORMATION: sandstone (mainly red weathering), minor siltstone and shale		
PERMIAN		UPPER PERMIAN	Pd	DEGERBØLS FORMATION: light coloured limestone, cherty limestone and chert	
		Pv	LOWER PERMIAN VAN HAUEN FORMATION: dark coloured shale, chert and siltstone		
		Pe	LOWER PERMIAN ESAYOO FORMATION: basalt flows, minor pyroclastic rocks		
PALEOZOIC	CARBONIFEROUS AND PERMIAN	UPPER CARBONIFEROUS AND LOWER PERMIAN	CPh	HARE FIORD FORMATION: dark coloured siltstone, shale, limestone	
		UPPER CARBONIFEROUS AND LOWER PERMIAN	CPn	NANSEN FORMATION: light coloured limestone, minor sandstone, chert and dolomite	
	CARBONIFEROUS	UPPER CARBONIFEROUS	Co	OTTO FIORD FORMATION: anhydrite, gypsum, minor limestone and shale	
		UPPER CARBONIFEROUS	Cc	CANYON FIORD FORMATION: red sandstone, siltstone, limestone, conglomerate	
		UPPER CARBONIFEROUS AND LOWER PERMIAN	CPbc	BELCHER CHANNEL FORMATION: limestone, minor siltstone and sandstone	
		UPPER CARBONIFEROUS AND LOWER PERMIAN	CPan	ANTOINETTE FORMATION: limestone, minor siltstone and shale	
		UPPER CARBONIFEROUS AND LOWER PERMIAN	Pmb	MOUNT BAYLEY FORMATION: anhydrite, gypsum, minor limestone, siltstone and shale	
		UPPER CARBONIFEROUS	Pt	TANQUARY FORMATION: limestone, sandstone, siltstone	
		ORDOVICIAN, SILURIAN AND DEVONIAN	IP	Clastic and carbonate strata underlying unconformably rocks of the Sverdrup Basin. These rocks have not been studied critically	
	INTRUSIVE ROCKS	TERTIARY	Col	OTTO FIORD FORMATION: anhydrite, gypsum, minor limestone and shale (see note 3)	
CRETACEOUS			Gabbro, diabase and basalt dykes (solid circle indicates downthrow side of fault intruded by dyke) see note 4		

**NOTES**

- Throughout the greater part of the map-area the contact of the Blind Fiord and Blaå Mountain Formations coincides with the Lower and Middle Triassic boundary. However, in the north-western extremity of the map-area the lowest beds of the Blaå Mountain Formation include shale of Early Triassic age by virtue of a facies change in which upper siltstone beds of the Blind Fiord Formation grade westward and northward into shale that is inseparable from the lower shale member of the Blaå Mountain. Blaå Mountain outcrops that include beds of Early Triassic age are distinguished by the letter symbol 'Tba1'.
- The line of facies change mapped between the Troid Fiord and Degerbøls Formations north of Oobloyah Bay in the Krieger Mountains has not been studied on the ground. The facies change boundary as shown here is based on observations made from the air; the fact that the two formations occupy similar stratigraphic positions and therefore are assumed to be correlative; and ground studies made on the Degerbøls Formation near Mount Barrel and the Troid Fiord Formation north of the head of Esayoo Bay.
- Exposures of the Otto Fiord Formation occur in normal stratigraphic succession on the north side of Hare Fiord in the adjoining Otto Fiord map-area, and it is there that the age of the Otto Fiord has been established as Late Carboniferous. Intrusive bodies of the Otto Fiord Formation are especially common on Axel Heiberg Island where they cut various formations including, in some instances, the Tertiary Eureka Sound Formation. The intrusions are generally related to faults and folds formed by Tertiary earth movements, and are accordingly dated as Tertiary.
- Basic dykes and sills intrude upper Paleozoic and Mesozoic sediments of the Sverdrup Basin throughout much of Axel Heiberg Island and western Ellesmere Island. They intrude all formations older than and including the Strand Fiord (volcanic) Formation of Late Cretaceous age. Dykes and sills have not been observed to intrude the Kanguk or Eureka Sound Formations. They are especially common in Mesozoic rocks that predate the Kanguk Formation, and while it is possible that more than one episode of emplacement is represented it is probable that the vast majority of dykes and sills are Cretaceous in age.

The larger and more conspicuous dykes are shown on the map but sills have not been mapped. In this map-area sills are numerous and commonly thick (up to about 300 feet) in the Blaå Mountain Formation and tend to dominate the landscape developed on that formation. Sills are relatively abundant in the Blind Fiord Formation in the environs of the Blue Mountains, and to a lesser extent in outcrops of the Heiberg Formation that are situated west of the longitude of Borup Fiord. Sills are generally thin and relatively rare in Carboniferous and Permian formations in the map-area.

- The area outlined here represents the upper part of the Slide Fiord geologic map that accompanies the present series of 1:250,000 geologic maps. The Slide Fiord map-area is a detailed geologic map of the environs of the Eureka weather station on a scale of 1:50,000.
- The map-area contains the type sections of the Esayoo Formation, Troid Fiord Formation and Blaå Mountain Formation.

Geological boundary (defined, approximate, assumed) .....  
 Bedding (horizontal, inclined), .....  
 Bedding (from air photographs or observed from aircraft) .....  
 Fault (defined, approximate, solid circle indicates downthrow side) .....  
 Thrust fault (defined, approximate, teeth indicate upthrust side) .....  
 Anticline (defined, approximate, overturned, showing culmination and plunge of axis) .....  
 Syncline (defined, approximate, arrow indicates plunge of axis) .....  
 Fossil locality .....  
 Measured section showing approximate line of traverse .....  
 Boundary of Quaternary sediments .....  
 Line of facies change (approximate) .....  
 Geological boundary, fold axis, or fault, inferred beneath water, glacier or Quaternary sediments .....  
 Type section (see note 6) \*

Geology by R. Thorsteinsson 1956, 1957, 1961, 1962, 1963 and E.T. Tozer 1956, 1961, 1962  
 Compiled by R. Thorsteinsson 1969  
 Geological cartography by the Institute of Sedimentary and Petroleum Geology,  
 Geological Survey of Canada, 1971

Horizontal control point .....  
 Intermittent stream .....  
 Lake, indefinite .....  
 Contours (interval 500 feet) .....  
 Dry river bed with channel .....  
 Icefield, glacier .....  
 Height in feet above mean sea-level ..... 14452

Topographic base-map at the same scale published by Surveys and Mapping Branch in 1966, with revisions by the Institute of Sedimentary and Petroleum Geology, 1971

The daily change of the North Magnetic Pole causes the magnetic compass to be very erratic in this area

N.W.T. GREELY FIORD WEST  
1:250,000  
MAP 1311A



Published, 1971  
 Copies of this map may be obtained from the Geological Survey of Canada, Ottawa

MAP 1311A  
 GEOLOGY  
**GREELY FIORD WEST**  
 DISTRICT OF FRANKLIN  
 Scale 1:250,000

Miles 4 0 4 8 12 Miles  
 Kilometres 6 0 6 12 18 Kilometres  
 Geographical names subject to revision

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NATIONAL TOPOGRAPHIC SYSTEM REFERENCE AND INDEX TO ADJOINING GEOLOGICAL SURVEY OF CANADA MAPS

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