

FINLAYSON LAKE YUKON TERRITORY 105G



EDITION: 2 PRINT DATE: JULY 21, 1999

NOTE: THIS MAP HAS BEEN PRODUCED BY THE COMBINATION OF DATA FROM VARIOUS SOURCES. IT IS NOT TO BE CONSIDERED A LEGAL DOCUMENT.

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BEDECK GEOLOGY (Templeman-Kluitt, 1977)

The Finlayson Lake map area is entirely within the Omineca Belt. The Tintina Trench rocks across the southwestern part of the map area.

Southwest of the Tintina Trench, the Pelly-Casalar Terrane is underlain by Omineca Crystalline Terrane and Pelly-Casalar Platform rocks. Collectively these rocks comprise the Casalar Terrane which is composed of assemblages of pre-550 million year old silty slate, stony quartzite, feldspathic sandstone, orthoquartzite, calcareous argillite, limestone and dolomite overlain by 550-440 million year old chlorite-muscovite-quartz phyllite, silty phyllite, calcareous shale, silty limestone, calcareous siltstone, tuff, silty limestone, amygdaloidal basalt, diabase and diorite; 500-370 million year old black slate, dolomitic siltstone and sandstone, calcareous shale and gabbro, argillaceous limestone, orthoquartzite and blocky limestone; 380-320 million year old black siliceous slate, sandy tuff, volcanic breccias, andesite flows, rhyolitic chert, cherty tuff, blocky and silty limestone; and 220 million year old blocky and silty limestone. These volcanic rock units are faulted together along thrust and strike-slip faults near the Tintina Fault.

North of the Tintina Fault, Yukon-Tanana Terrane rocks are dominant and include pre-70 million year old barite-muscovite-quartz-kalbarite argillite and biotite-muscovite-quartz schist, and 200-250 million year old Kluitt Schist metagabbro, granophyllite, muscovite-quartz, biotite-schist, and quartzite. The Tintina Trench, a major tectonic zone, separates the Yukon-Tanana Terrane from the Omineca Crystalline Terrane. The extreme northern portion of the map area is underlain by Simpson Basin sedimentary rocks, mainly black shale and chert of the 530 to 325 million year old Road River and Eain Groups.

Numerous 100 and 50 million year old granite plutons mostly of the Selwyn Plutonic Suite intrude the map area. Three small successions (10 km² of 1-10 million year old calcareous sandstone, fresh brown olive-brown basalt and basalt breccia occur in the northwest portion of the map area.

Mineral deposits and occurrences

The Finlayson Lake map area contains 117 mineral prospects, approximately half of which host mineralization of a wide range of mineral deposit styles. Base-metal sulfide deposits are dominant and include four major types: zinc-lead-silver deposits in limestone; zinc-lead-silver-barite deposits in black shale (pyrite); copper-lead-zinc-barite deposits associated with volcanic rocks (volcanogenic massive sulfide); and a variety of tungsten, copper, and lead-zinc deposits hosted in marble (skarns). The most notable deposit is the recently discovered Road River, a 15 million tonne massive sulfide deposit with grades of 0.5% zinc, 1% copper, 125 grams per tonne silver and 1.2 grams per tonne gold. Other deposits include the Tintina vein deposit which hosts 81 000 tonnes grading 688 grams per tonne silver, 10% zinc and 0% lead; and the Five volcanogenic massive sulfide deposits which contain 1.59 million tonnes of 1% copper, 1% zinc, 5.14 grams per tonne silver and 0.89 grams per tonne gold. There are also numerous silver-lead-zinc and copper-silver veins throughout the map area. Also of note are a few occurrences of coal, asbestos and jade.

NOTE: A new digital compilation of Yukon geology is now available by Steve Gorye and Andrew Makiacepa (GSC Open File D3626 and/or DIAND Open File 1999-103). and more recent MNF/LE updates should also be verified (Yukon MNF/LE, 2001).

References

Finlayson Lake Map Area - NTS 105G

Note: To be thorough, check the references for adjacent NTS map sheets and the General Reference List.

Most of the following references should be available for viewing in the DIAND Library on the third floor of the Elijah Smith building in Whitehorse. The library and call number of some internal government reports are listed.

*Canadian Earthquake Exploration File: Maintained by the Geological Survey of Canada, Geophysics Division.

Du-Roick, A., Jackson, L.E., Jr., and Rodkin, O., 1986. A composite profile of the Cordilleran Ice Sheet during McConnell Glaciation, Gleydon and Tay River map areas, Yukon Territory. Geological Survey of Canada, Paper 86-18, p. 257-262.

Gabriel, H., Templeman-Kluitt, D.J., Blusson, S.L., and Campbell, R.B. (comp.), 1980. MacMillan River, Yukon - District of Mackenzie-Asa. Sheet 105, 115. Geological Survey of Canada, Map 1398A (1:1 000 000 map, NTS 105, 115).

Gabriel, H. and Yorath, C.J. (eds), 1991. Geology of the Cordilleran Orogen in Canada. Geological Survey of Canada, No. 4, 844 p. (Contains summary of Yukon geology.)

Geological Survey of Canada, 1990. Regional stream sediment and water geochemical reconnaissance data. Geological Survey of Canada, Open File 1648.

Gordey, S.P., 1981. Stratigraphy, structure and tectonic evolution of southern Pelly Mountains in the Ingha Lake area, Yukon Territory. Geological Survey of Canada, Bulletin 318, 44 p. (NTS 1055, 105F).

Indian and Northern Affairs, 1963. Yukon MNF/LE 105G - Finlayson Lake. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada.

Jackson, L.E., Jr., 1986. Terrain Inventory, Finlayson Lake, Yukon Territory. Geological Survey of Canada, Open File 1379, scale 1:125 000.

Jackson, L.E., 1993a. Surficial geology, Fortu Lake, Yukon Territory. Geological Survey of Canada, Map 1795A, scale 1:100 000.

Jackson, L.E., 1993b. Surficial geology, Hoole River, Yukon Territory. Geological Survey of Canada, Map 1794A, scale 1:100 000.

Jackson, L.E., 1993c. Surficial geology, Lonly Creek, Yukon Territory. Geological Survey of Canada, Map 1796A, scale 1:100 000.

Jackson, L.E., 1993d. Surficial geology, Rainbow Creek, Yukon Territory. Geological Survey of Canada, Map 1797A, scale 1:100 000.

Jackson, L.E., 1994. Terrain Inventory and Quaternary History of the Pelly River Area, Yukon Territory. Geological Survey of Canada, Memoir 437, 41 p. (NTS 105J, 105K, 105L, 105M).

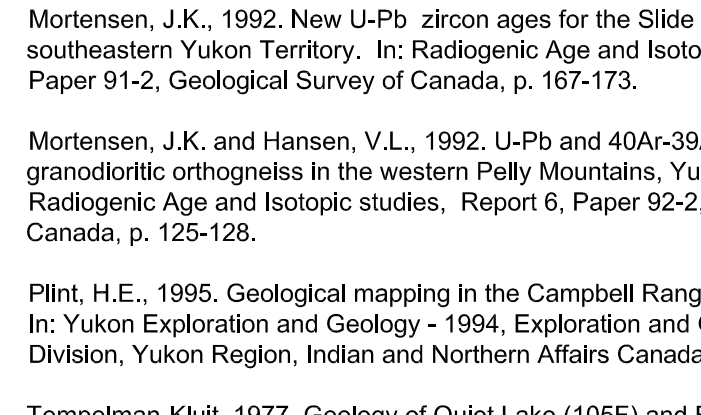
Jackson, L.E., Goresky, S.P., Armstrong, R.L., and Harsjak, J.E., 1988. Bimodal Paleogene volcanism near Tintina Fault, east-central Yukon, and their kinematic relationship to glacial gold. In: Yukon Geology, Vol. 1. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, p. 139-147.

Jackson, L.E., Jr., and Ince, A.S., 1990. Rock avalanches in the Pelly Mountains, Yukon Territory. Geological Survey of Canada, Paper 90-1E, p. 263-269.

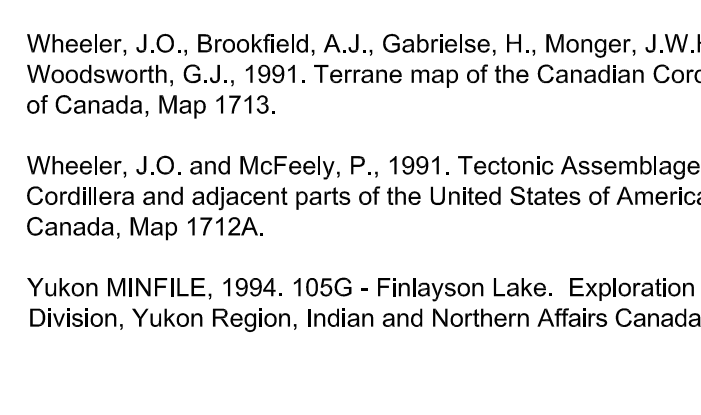
Jackson, L.E., Jr., and MacDonald, G.M., 1980. Movement of an ice-core rock glacier, Turgun, N.W.T., Canada, 1963-1980. Arctic, v.33, no.4, p. 642-647.

Mallard, J.O., 1982. Terrain Analysis Study, North Canal Road, Yukon Territory. J.O. Mallard and Associates Limited (120,000 scale).

Tectonic Belts and Terranes



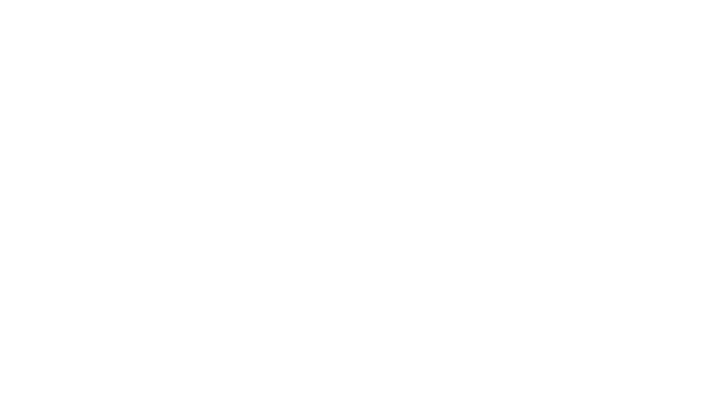
Glacial Limits



Distribution of Recent Soils



Permafrost



Location Map



LEGEND

LEGEND TERRAIN HAZARDS

Table with columns: MAP SYMBOL, DESCRIPTION, ASSOCIATED RISK LEVELS, COMMENTS. Lists various terrain hazards like Mass Movement Processes, Permafrost present, Thermokarst present, etc.

LEGEND GEOLOGICAL PROCESSES

Table with columns: MAP SYMBOL, DESCRIPTION, ASSOCIATED RISK LEVELS, COMMENTS. Lists geological processes like Landslide, Floodplain, etc.

LEGEND SEISMIC EVENTS

Table with columns: SYMBOL, MAGNITUDE REPRESENTED. Lists seismic event symbols for different magnitude ranges.

LEGEND FAULTS

Table with columns: SYMBOL, DESCRIPTION. Lists fault symbols for different types of faults.

LEGEND QUATERNARY VOLCANISM

Table with columns: SYMBOL, DESCRIPTION. Lists quaternary volcanism symbols for different types of volcanic features.

OTHER FEATURES

Table with columns: SYMBOL, DESCRIPTION. Lists other features symbols for roads, streams, lakes, marshes, etc.

NOTE: Where areas have more than one identified process or hazard, the colour of the encompassing polygon is assigned based on a hierarchical scheme relating to the severity of the hazard. The relative order of severity is: Terrain Hazards (Mass Movement Processes then Fluvial Processes then Arctic, Alpine and Periglacial Processes) followed by Geological Processes.

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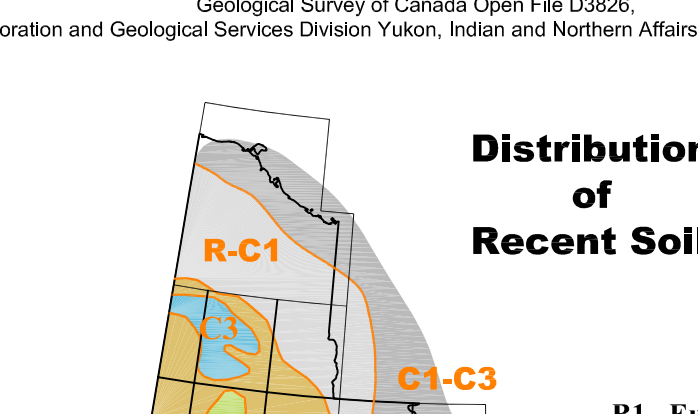
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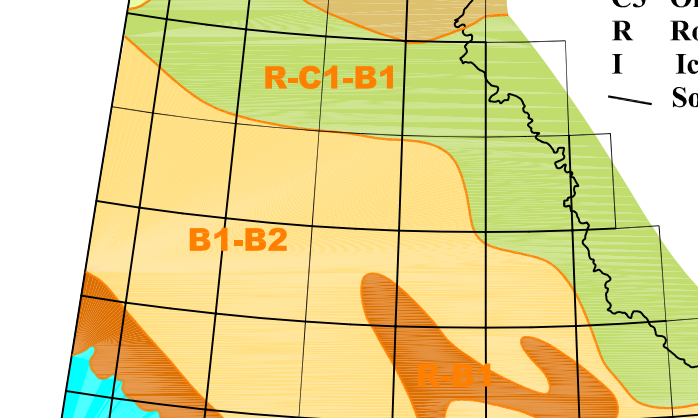
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Tectonic Belts and Terranes



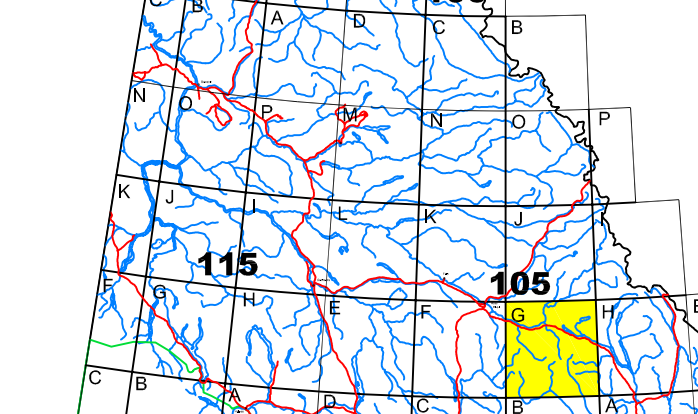
Glacial Limits



Distribution of Recent Soils



Permafrost



Location Map



Exploration and Geological Services Division Yukon Region Indian and Northern Affairs Canada

Yukon GEOPROCESS File of Finlayson Lake 105G by Mougout, C.M. and Walton, L.A.

Copies of this map may be obtained from Geoscience and Information Sales, c/o Whitehorse Mining Recorder, Indian and Northern Affairs Canada, Room 102, 300 Main Street, Whitehorse, Yukon Y1A 2B5 (867) 667-2366, FAX: (867) 667-2027

Recommended citation: Mougout, C.M. and Walton, L.A., 1995. Yukon GEOPROCESS File (2002). Geological Processes and Terrain Hazards of Finlayson Lake, 105G. Exploration and Geological Services Division, Yukon Region, Indian and Northern Affairs Canada, 1:250 000 scale.