



SOUTHWESTERN FACIES (105-07,10,15)

UPPER PALEOZOIC NORTHEAST OF HESS RIVER (105 - 09,10,15,16)  
(southwest part of area) (northeast part of area)

SOUTHEASTERN FACIES (105-0,8,9)

COMBINED UNITS

<p><b>DEVONIAN</b></p> <p>LOWER TO MIDDLE DEVONIAN DM MISFORTUNE FORMATION: chert, dark grey to black; minor black shale; whitish weathering</p> <p><b>SILURIAN</b> SS STEEL FORMATION: argillite; rusty green to buff; minor black shale and chert; and prominent bed of bright orange weathering dolomite</p> <p><b>ORDOVICIAN</b> OC ELMER CREEK FORMATION: (u) chert and siliceous shale; black, argillitic; (l) chert, siliceous argillite; grey, upper part bedded; minor limestone</p> <p><b>CAMBRIAN TO SILURIAN</b> LOWER CAMBRIAN TO SILURIAN COC OLD CABIN FORMATION: basic volcanics, breccias, lapilli tuff, flows, sills, dykes; minor sedimentary rock units</p> <p><b>CAMBRIAN</b> Cg GULL LAKE FORMATION: argillite, buff, green; minor units of shale, chert, quartzite, limestone and volcanics rocks (v where volcanics are abundant) Cc OLD CABIN TONGUE: basic volcanics, breccias, lapilli tuff, flows, sills, dykes; minor sedimentary rock units</p> <p><b>PROTEROZOIC AND CAMBRIAN</b> UPPER PROTEROZOIC TO LOWER CAMBRIAN PCNa MARCHILLA FORMATION (PCNa - PCNa) Arrowhead Lake Member: argillite, maroon and pale green; minor quartzite, conglomerate, limestone. Lower Cambrian in map-area PCNs Senech Member: argillite, grey green buff; minor, thick units of quartzite and quartz-pebble conglomerate; also minor units of limestone and silty limestone</p> <p><b>PROTEROZOIC</b> UPPER PROTEROZOIC PA ALGAE LAKE FORMATION: limestone, arenaceous limestone; minor dolomite, argillite, breccia; upper part resistant; lower part recessive, thin bedded PY YUSEZYU FORMATION: quartzite, calcareous quartzite; thick bedded thin beds argillite, argillaceous limestone (upper part present immediately west of map area)</p>	<p><b>DEVONIAN</b></p> <p>UPPER DEVONIAN DTH THOR HILLS FORMATION: shale, black, rusty, with 10-20% brown sandstone; (sh) shale; (s) siliceous shale DTH Conglomerate Member: with chert pebbles DTH Middle to Upper Devonian DM MISFORTUNE FORMATION: shale, chert, black (u) shale, black, siliceous, white weathering (l) shale, rusty black DTH Lower to Middle Devonian DH HALSTONE FORMATION: limestone, clastic, grey-silty, grey, crinoid stems with thin axial canals; minor shale, black; minor breccia and conglomerate</p> <p><b>DEVONIAN AND SILURIAN</b> UPPER PROTEROZOIC TO LOWER CAMBRIAN PCb BACKBONE RANGES FORMATION: quartzite, red-brown, grey-green, massive or laminated, blocky; minor siltstone, minor weathering</p>	<p><b>DEVONIAN AND SILURIAN</b></p> <p>UPPER SILURIAN TO LOWER DEVONIAN SDs SAPPER FORMATION: limestone, silty, buff weathering; shale, black; includes volcanic units south of map-area</p> <p><b>SILURIAN</b> SS STEEL FORMATION: argillite; rusty to green buff; minor black shale and chert and prominent bed of bright orange weathering dolomite</p> <p><b>ORDOVICIAN AND SILURIAN</b> LOWER ORDOVICIAN TO SILURIAN OCb DUO LAKES FORMATION: shale, black, argillitic; minor thin bedded limestone</p> <p><b>CAMBRIAN AND ORDOVICIAN</b> UPPER CAMBRIAN TO LOWER ORDOVICIAN COR RABBITKLE FORMATION: limestone; pale yellow weathering, thin bedded</p> <p><b>CAMBRIAN</b> MIDDLE CAMBRIAN Gh HESS RIVER FORMATION: shale, black, calcareous, marred variation in thickness; minor limestone, locally silty chert Cs SEKWY FORMATION: argillite, buff, green; minor units of shale, chert, quartzite, limestone and volcanics rocks (v where volcanics are abundant) Cg GULL LAKE FORMATION: argillite, buff, green; minor units of shale, chert, quartzite, limestone and volcanics rocks (v where volcanics are abundant) Cc OLD CABIN TONGUE: basic volcanics, breccias, lapilli tuff, flows, sills, dykes; minor sedimentary rock units</p> <p><b>PROTEROZOIC AND CAMBRIAN</b> UPPER PROTEROZOIC TO LOWER CAMBRIAN PCb BACKBONE RANGES FORMATION: quartzite, red-brown, grey-green, massive or laminated, blocky; minor siltstone, minor weathering</p>	<p><b>PALEOZOIC</b> Pu Paleozoic strata, undivided</p> <p><b>CAMBRIAN TO SILURIAN</b> MIDDLE CAMBRIAN TO LOWER SILURIAN CS-Hb HESS RIVER AND RABBITKLE AND DUO LAKE FORMATIONS, undivided</p> <p><b>MIDDLE CAMBRIAN TO LOWER SILURIAN</b> CS-Hb HESS RIVER AND DUO LAKE FORMATIONS, undivided</p> <p><b>CAMBRIAN AND ORDOVICIAN</b> MIDDLE CAMBRIAN TO LOWER ORDOVICIAN CO-Hr HESS RIVER AND RABBITKLE FORMATIONS, undivided</p> <p><b>PROTEROZOIC AND CAMBRIAN</b> UPPER PROTEROZOIC TO LOWER ORDOVICIAN PCNa-Cs Undivided tectonic complexes of Gull Lake Formation and Arrowhead Lake Member, Marchilla Formation</p> <p><b>PCb</b> MARCHILLA FORMATION</p> <p><b>PCNs</b> Senech Member: argillite, grey green, buff; minor thick units of quartzite and quartz-pebble conglomerate; also minor units of limestone and silty limestone</p>
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Outcrop in covered area . . . . . X  
Geological boundary (defined, approximate, assumed) . . . . . - - - - -  
Stylized geological boundary . . . . . - - - - -  
Contact alteration halo . . . . . - - - - -  
Bedding: top known (horizontal, inclined, vertical, overturned) . . . . . - - - - -  
Bedding: top unknown (inclined, vertical) . . . . . - - - - -  
Minor fold (with attitude of axial plane and plunge) . . . . . - - - - -  
Normal fault (solid circle indicates downthrow side; defined, approximate)  
Thrust or reverse fault (both indicate upthrow side; defined, approximate)  
Thrust or reverse fault (both indicate upthrow side; assumed, overturned)  
Strike slip fault (arrow indicates relative movement)  
Anticline (spright, overturned; arrow indicates plunge)  
Syncline (spright, overturned; arrow indicates plunge)  
Monoclinial bend, anticlinal  
Cleavage (inclined, vertical)  
Granitic dyke (Detaccous)  
Veins  
Boundary across which geological units are combined  
Stratigraphic facies boundary  
Stratigraphic section or traverse, available from author on request  
Line of section  
Mineral occurrence with major element or composition indicated  
Fossil: microfossil; GSC catalogue number; abbreviated age (e.g. IDFa - Late Devonian, Famennian)  
Macrofossils observed but not collected; g-graptolites, s-sally material  
v-vascular plant material; f-fossiliferous; abbreviated age (e.g. IDFa - Late Devonian, Famennian)  
Microfossil collection taken but sample barren of conodonts

**NOTES**

1. The prefix "T" designates a map unit that is represented by 70-90% of the stratigraphic unit profiled, but which is structurally repeated numerous times on small scale, local detachment surfaces. The mapped area can also include fault repetitions, as well as synclinal and anticlinal beds of underlying and overlying stratigraphic units in 10-30% of the area. Units with the "T" prefix are mapped both as single and tectonic units (e.g. SS or ISS).

2. Detailed structure based on measured traverses.

3. Rogue detachment surface inferred from the observation that strata above are shortened to 20% of their original length while strata below the detachment are shortened to 60-80% of their original length.

4. Fold of the scale and size are observed north of section. Thinning of the tectonic unit PCNa over PCNs and older units anticlines is observed west of section.

5. SapePCNa member detachment displacement dissipates to zero; this is the front of the Rogue Decollement Complex.

6. Section 18 - Fossils (from east to west)  
C-089252 - F IO, C-089098 - F mIO, C-089059 - F sIO, C-089058 - F mIO, C-089056 - F mIO, C-089110 - F sIO, C-089070 - F sIO, C-089066 - F mIO, C-089251 - F sIO

7. Section 19 - Fossils (from east to west)  
C-089253 - F IO, C-089254 - F mIO, C-089256 - F IS, C-089255 - F IO, C-089257 - F IS, C-089258 - F IS, C-089259 - F IO, C-089260 - F mIO, C-089261 - F IS, C-089262 - F sIO, C-089263 - F sIO, C-089264 - F sIO, C-089265 - F sIO, C-089266 - F sIO, C-089267 - F IO, C-089268 - F IO, C-089269 - F sIO, C-089270 - F sIO, C-089271 - F IO, C-089272 - F sIO, C-089273 - F mIO, C-089274 - F IS, C-089275 - F IO, C-089276 - F sIO, C-089277 - F mIO, C-089278 - F sIO, C-089279 - F sIO, C-089280 - F sIO

Compiled from ground traverses by M.P. Coole (1979, 1980, 1983, 1984, 1985) with assistance by Rob Gibson (1979), Brian Fisher (1980), Hans Smit (1983), and Craig Hart (1984). Helicopter support was given by Northern Mountain Helicopters (1979, 1983, 1984, 1985), Kestrel Helicopters and La Verendrye Helicopters (1980). Expediting was provided by Ross River Services. The understanding of the geology was greatly assisted by discussions with J.C. Alcock (DMMO), S.F. Goody, W.D. Goodfellow (GSC), E. Deekel, B. Robertson (Canadian Nickel), K. Taylor (Hudson's Bay Mining), R. Baltes, P. Hudoback, G. McArthur (Huron-Capline), and D. Rhoads (Cominco). Fossil determinations are by S.E. Hurlford, A.W. Norris, T.T. Uyeno, W.H. Fritz (GSC), D.E. Jackson (University of Texas), H.J. Hofmann (University of Montreal), and R.S. Tappin (Saskatchewan). Digitizing and initial cartography by M. Dowling and P.J. Neelands.

Digital cartography by S.D. Orzech, Geological Survey of Canada (Calgary)

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada.

Digital base map at the same scale from Geomatics Canada, Natural Resources Canada, modified for publication by the Geological Survey of Canada.

Copies of the topographical edition of this map may be obtained from the Canada Map Office, Natural Resources Canada, Ottawa, Ontario, K1A 0E9

Approximate magnetic declination 1996, 30°78' East, increasing 14.3" annually

Elevations in metres above mean sea level

