

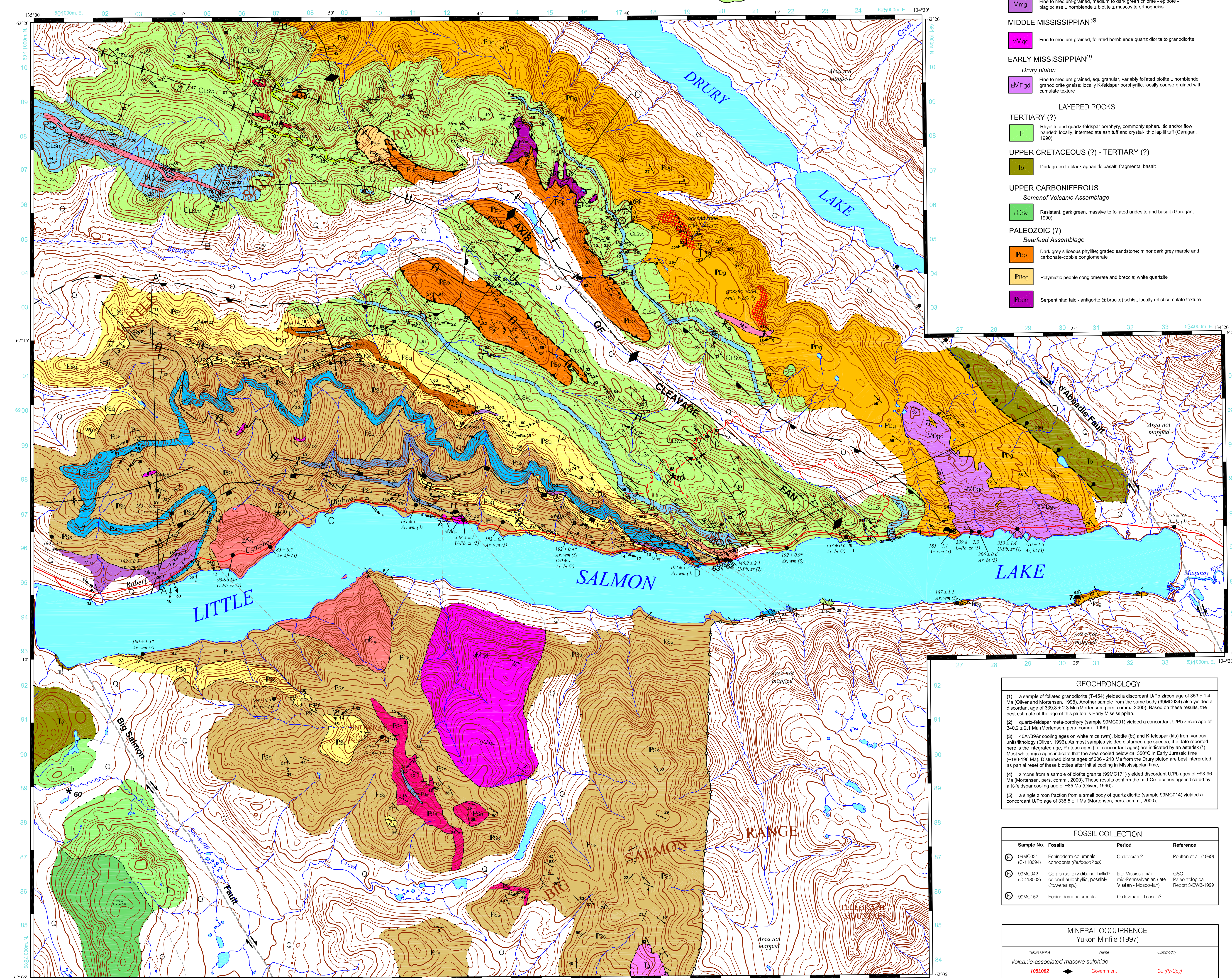
- QUATERNARY**
- Q Unconsolidated alluvium, colluvium and glacial deposits
- INTRUSIVE ROCKS**
- Tg K-feldspar porphyritic biotite granite
 - aKg Medium-grained, equigranular biotite granite
- MID-CRETACEOUS⁽¹⁾**
- Mgb Fine- to coarse-grained, massive augite gabbro
 - Mlg Medium-grained, equigranular, weakly foliated hornblende leucogabbro
- MESOZOIC (?)**
- Mcd Coarse-grained, strongly foliated hornblende diorite
 - Mmg Fine to medium-grained, medium to dark green chlorite - epidote - plagioclase + hornblende + biotite + muscovite orthogneiss
- MISSISSIPPIAN (?)**
- tMgd Fine to medium-grained, foliated hornblende quartz diorite to granodiorite
- MIDDLE MISSISSIPPIAN⁽²⁾**
- Psq Light grey to light green quartzite, locally calcareous, locally girt; minor dark grey phyllite; quartz + muscovite (c. cobble) schist; minor light grey schistose marble
 - Psa Dark grey to black carbonaceous phyllite, locally calcareous; minor brown-weathering dolomitic marble
 - Psb Fine to medium-grained, dark green, hornblende - biotite - garnet - plagioclase + calcite amphibolite; greenstone; minor brown weathering marble
 - Psc Polymictic pebble to boulder conglomerate with either calcareous or siliceous matrix; medium to dark grey marble (predominant in the west); buff-weathering dolomitic marble; light to dark grey quartzite; carbonaceous schist
 - Psm Light grey, yellow to cream-weathering marble
- EARLY MISSISSIPPIAN AND OLDER (?)**
- Snowcap Assemblage**
- Pss Unfoliated, light to medium grey quartzite and psammite schist, commonly garnetiferous; medium to dark grey carbonaceous muscovite - quartz (s. garnet) schist; light green chlorite - actinolite - carbonate schist; light green quartzite; minor marble; North of Little Salmon Lake, abundant, discontinuous orthogneiss
- DRURY PLUTON**
- tMgdg Fine to medium-grained, equigranular, variably foliated biotite + hornblende granodiorite gneiss, locally K-feldspar porphyritic, locally coarse-grained with cumulate texture
- LAYERED ROCKS**
- Tr Rhyolite and quartz-feldspar porphyry, commonly spherulitic and/or flow banded; locally, intermediate ash tuff and crystal-rich lapilli tuff (Garagan, 1990)
- UPPER CRETACEOUS (?) - TERTIARY (?)**
- Tb Dark green to black aphanitic basalt; fragmental basalt
- UPPER CARBONIFEROUS**
- Semenof Volcanic Assemblage**
- CSv Resistant, dark green, massive to foliated andesite and basalt (Garagan, 1990)
- PALEOZOIC (?)**
- Bearfeet Assemblage**
- Psp Dark grey siliceous phyllite; graded sandstone; minor dark grey marble and carbonate-calcite conglomerate
 - Pbcg Polymictic pebble conglomerate and breccia; white quartzite
 - Pbum Serpentine; talc - antigorite (a. brucite) schist; locally relic cumulate texture

- MIDDLE MISSISSIPPIAN AND YOUNGER**
- CLsv Metavolcanic rocks - predominantly light grey, light green and medium green sandstone intercalated with dark grey phyllite; brown-weathering calcareous schist and olive-green phyllite; locally graded (epistatic), banded chlorite - epidote - plagioclase schist; intermediate to mafic (epistatic) - muscovite - biotite schist (felsic tuff); in the northern part of the map area - plagioclase-phylic crystal tuff; locally polymictic volcanic conglomerate and breccia (bar?) hornblende-phylic gneiss
 - CLsv Intermediate to mafic metavolcanic rocks - predominantly medium green, massive chlorite - plagioclase - epidote - biotite schist; locally intercalated with minor light green, banded calcareous schist; dark grey carbonaceous schist and matrix; locally display pillow structures and mafic dyke swarms
 - CLsv Light grey to light green aphanitic rhyolite; commonly contains brown-weathering carbonate pods
 - CLsm Light to medium grey marble, light grey phyllite; marble, black calcareous phyllite and minor dark grey carbonaceous phyllite; locally carbonate rhythmic with poorly sorted carbonate micro-conglomerate beds; locally contains rugose corals and crinoid fragments
- MIDDLE MISSISSIPPIAN⁽²⁾**
- MMLSp Quartz - feldspar meta-phyllite; light grey to light green meta-phyllite
- EARLY MISSISSIPPIAN AND OLDER (?)**
- Snowcap Assemblage**
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 - Psb Fine to medium-grained, dark green, hornblende - biotite - garnet - plagioclase + calcite amphibolite; greenstone; minor brown weathering marble
 - Psc Polymictic pebble to boulder conglomerate with either calcareous or siliceous matrix; medium to dark grey marble (predominant in the west); buff-weathering dolomitic marble; light to dark grey quartzite; carbonaceous schist
 - Psm Light grey, yellow to cream-weathering marble
- EARLY MISSISSIPPIAN AND OLDER (?)**
- Drury Assemblage**
- Pdg Coarse-grained arkosic girt; grey and light green quartzite; minor dark grey phyllite

- SYMBOLS**
- Geological contacts (defined, approximate, assumed, covered).....
 - Thrust fault (defined, assumed, covered).....
 - Extension fault (assumed, covered).....
 - Dextral strike-slip fault (covered).....
 - Limit of outcrop.....
 - Limit of mapping.....
 - Bedding (inclined, upright, overturned).....
 - Compositional layering.....
 - Dominant foliation (inclined, vertical).....
 - Mylonitic foliation.....
 - Crenulation cleavage.....
 - Elongation or mineral lineation (kinematic unknown, reverse).....
 - Intersection lineation (vergence determined by bedding/foliation relation; unknown, clockwise, counterclockwise, symmetrical).....
 - Tight to isoclinal fold axis (dominant phase) (vergence: unknown, clockwise, counterclockwise, symmetrical).....
 - Crenulation lineation (first, second).....
 - Open fold axis (vergence: clockwise, counterclockwise, symmetrical).....
 - Fold axial surface trace (antiform; upright, overturned; synform; upright, overturned).....
 - Metamorphic isograd (biotite, garnet).....
 - Line of cross-section.....
 - Apparent dip of bedding in cross-section (stratigraphic top; unknown, indicated by ball).....
 - Apparent dip of foliation in cross-section.....
 - Fossil locality.....
 - Geochronology sample (U-Pb; Ar = 40Ar/39Ar; zr = zircon; wm = white mica; bt = biotite; kf = K-feldspar; number refers to Geochronology Table).....
 - Gossan zone.....
 - Roads (highway, track).....

- ACKNOWLEDGEMENTS**
- Rod Kennedy provided invaluable assistance in the field and in the preparation of the digital topographic base map. Geology southwest of the Big Salmon fault is compiled from mapping by A.M. Carlos reported in Garagan (1990). Safe helicopter service was provided by Karl Zehle and Trevor Bosall of Heli Dynamics Ltd. (Whitehorse, Yukon).
- REFERENCES**
- COLPRON, M., 1999. Preliminary geological map of Little Salmon Range (parts of NTS 105/L1, 2 & 7), central Yukon (1:50 000 scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, 1:50 000.
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- OLIVER, D.H., and MORTESENSEN, J.K., 1998. Stratigraphic succession and U-Pb geochronology from the Teslin suture zone, south-central Yukon. In: Yukon Exploration and Geology 1997. Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 69-75.
- POULTON, T., ORCHARD, M.J., GORDEY, S.P., and DAVENPORT, P., 1999. Selected Yukon fossil determinations. In: Yukon digital geology, S. P. Gordey and A. J. Mapecke (comp.), Geological Survey of Canada, Open File 6326, also Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 1999-10D.
- YUKON MINIFILE, 1997. Geology, NTS 105L, Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada. Also available from Hyperborean Productions, Whitehorse, Yukon.

- RECOMMENDED CITATION**
- COLPRON, M., 2000. Geological map of Little Salmon Lake (parts of NTS 105/L1, 2 & 7), central Yukon (1:50 000 scale). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, Open File 2000-10.
- Digital cartography and drafting by Maurice Colpron, Yukon Geology Program.
- Any revisions or additional geological information known to the user would be welcomed by the Yukon Geology Program.
- Copies of this map, the accompanying report and Yukon Minfile may be purchased from the Geoscience Information and Sales, c/o Whitehorse Mining Recorder, Indian and Northern Affairs, Canada, Room 102-300 Main St. Whitehorse, Yukon, Y1A 2B6, Ph. 867-667-3266, Fax. 867-667-3267.
- Keep this map in a dark area to keep colours from fading.
- Indian and Northern Affairs Canada
Exploration and Geological Services Division
Yukon Region
- Open File 2000-10
Geological Map of Little Salmon Lake
(parts of NTS 105/L1, 2 & 7),
Central Yukon (1:50 000 scale)
- by
Maurice Colpron
Yukon Geology Program



GEOCHRONOLOGY

- A sample of foliated granodiorite (T-454) yielded a discordant U-Pb zircon age of 353 ± 1.4 Ma (Oliver and Mortensen, 1998). Another sample from the same body (99MC034) also yielded a discordant age of 330.8 ± 2.3 Ma (Mortensen, pers. comm., 2000). Based on these results, the best estimate of the age of this pluton is Early Mississippian.
- quartz-feldspar meta-phyllite (sample 99MC001) yielded a concordant U-Pb zircon age of 340.2 ± 2.1 Ma (Mortensen, pers. comm., 1999).
- 40Ar/39Ar cooling ages on white mica (wm), biotite (bt) and K-feldspar (kf) from various units (Oliver, 1996). As most samples yielded disturbed age spectra, the date reported here is the integrated age. Plateau ages (i.e. concordant ages) are indicated by an asterisk (*). Most white mica ages indicate that the area cooled below ca. 350°C in Early Jurassic time (~180-190 Ma). Disturbed biotite ages of 200-210 Ma from the Drury pluton are best interpreted as partial reset of these biotites after initial cooling in Mississippian time.
- zircon from a sample of biotite granite (99MC171) yielded discordant U-Pb ages of ~93-96 Ma (Mortensen, pers. comm., 2000). These results confirm the mid-Cretaceous age indicated by a K-feldspar cooling age of ~65 Ma (Oliver, 1996).
- a single zircon fraction from a small body of quartz diorite (sample 99MC014) yielded a concordant U-Pb age of 338.5 ± 1 Ma (Mortensen, pers. comm., 2000).

FOSSIL COLLECTION

| Sample No. | Fossils | Period | Reference |
|------------|--|--|---------------------------------------|
| 99MC001 | Echinoderm columnals: <i>Conocorymbus</i> sp. | Ordovician? | Poulton et al. (1999) |
| 99MC040 | Corals (solitary <i>Alcyonophylax</i> ?; colonial <i>Alcyonophylax</i> , possibly <i>Conoveria</i> sp.) | late Mississippian - mid-Permian/Carboniferous (late Viséan - Moscovian) | GSC Paleontological Report 3-EWB-1999 |
| 99MC152 | Echinoderm columnals | Ordovician - Triassic? | |

MINERAL OCCURRENCE
Yukon Minfile (1997)

| Yukon Minfile | Name | Commodity |
|---------------|------------|-------------------------|
| 105L062 | Government | Cu (Py-Cay) |
| 105L014 | Drury | Cu-Zn (Bn-Mal-Arn-TB) |
| 105L063 | Highway | Cu-Pb-Ag-Au (Py) |
| 105L064 | Jaspis | Cu-Pb-Zn-Ag (Py-Mal-Bn) |
| 105L008 | Little | Cu (Py) |
| 105L011 | Studi | Cu (Py) |
| 105L007 | Red Knoll | Py |
| 105L009 | Wheaton | magnetic anomaly |
| 105L010 | Lark | Py |
| 105L012 | Brandy | Cu |
| 105L060 | Martle | geochemical anomaly |

