



Geology, Geochronology, Lithogeochemistry and Metamorphism of the Mahatta Creek Area, Northern Vancouver Island

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G.T. Nixon, J.L. Hammack, J.V. Hamilton, H. Jennings, J.P. Larocque, A.J. Orr, R.M. Friedman, D.A. Archibald, R.A. Creaser, M.J. Orchard, J.W. Haggart, H.W. Tipper, E.T. Tozer, F. Cordey and C.A. McRoberts

PALeONTOLOGY

 M.J. ORCHARD, E.T. TOZER, H.W. TIPPER and J.W. HAGGART (Geological Survey of Canada)
 F. CORDEY (University of Lyon, France)
 C.A. McROBERTS (SUNY, Cortland)

GEOLOGY
 G.T. NIXON, J.L. HAMMACK, J.V. HAMILTON, H. JENNINGS, J.P. LAROCQUE and A.J. ORR (BC Geological Survey)

GEOCHRONOLOGY
 R.M. FRIEDMAN (The University of British Columbia)
 D.A. ARCHIBALD (Queen's University)
 R.A. CREASER (University of Alberta)

 Scale 1:50 000

LAYERED ROCKS
UPPER CRETACEOUS NANAIMO GROUP EQUIVALENTS (IN PART)
Campanian to ?Maastrichtian

 uKN
 Grey to greenish grey and brown, medium to coarse-grained, arkosic to lithic wacke, pebble to cobble conglomerate, and minor coal; locally fossiliferous

LOWER CRETACEOUS
Upper Valanginian to Barremian
LONGARM FORMATION EQUIVALENTS

 uKL
 Greenish to brownish grey, finely bedded to massive sandstone, siltstone, mudstone, pebble conglomerate and minor coal; locally fossiliferous

UPPER TRIASSIC TO LOWER JURASSIC
BONANZA GROUP
Lower Jurassic (Hettangian to Upper Sinemurian)

LE MARE LAKE VOLCANIC UNIT

 uL
 Undifferentiated basic to mafic flows and pyroclastic rocks (likely subaerial); includes ash-flow and tephra tuff, minor lava, breccia, and minor volcaniclastic rocks; rare pumiceous and rare pyroclastic surge deposits, locally intercalated with massive concretionary volcanic conglomerate, sandstone, siltstone, mudstone, impure limestone and debris-flow breccia

 uLm
 Dark grey-green, basaltic to andesitic flows with minor intercalated volcanoclastic and interbedded lithotypes similar to unit uL; locally include minor pillow lava/breccia, may include minor rhythmic flows and pyroclastic rocks

 uLf
 Mainly bimodal basaltic and pyroclastic flows and pyroclastic rocks with subordinate, interbedded volcanoclastic and sedimentary lithotypes similar to unit uLs

 uLs
 Medium grey, pyrolic to dacitic flows, flow domes and/or pyroclastic rocks, including andesitic and aphanitic facies, may include interbedded sedimentary facies and bimodal to andesitic flows

 uLx
 Dark grey-green, plagioclase-megacrystic (0.2-2cm) basalts; texturally similar to plagioclase-megacrystic Karmutsen basalt in unit uTrQ

 uLx
 + Small outcrop of dark grey-green, plagioclase-megacrystic (1-2cm) basalts; flow commonly amygdaloidal and locally exhibiting trachydioritic texture, interbedded with aphanitic or plagioclase-phryic basalts near the top of the succession

 uLx
 ▽ Thin (0.5-6m) beds of pale to medium grey, metric to rarely bioclastic limestone intercalated with basalts near the top of the flow succession

 uLx
 Middle Karmutsen Formation: Hyaloclastite Member

 uTrKh
 Dark grey-green, massive to medium bedded, black hyaloclastite breccia, including pillow/laminae breccia, and medium bedded to laminated hyaloclastite sandstone; may locally pass laterally into pillow basalts flows

 uTrKh
 uTrKh
 Dashed line

 uTrKl
 Dark grey-green, variably amygdaloidal basalts flows; typically aphanitic

 uTrKl
 uTrKl
 Dashed line

 uTrKl
 uTrKl
 Dashed line