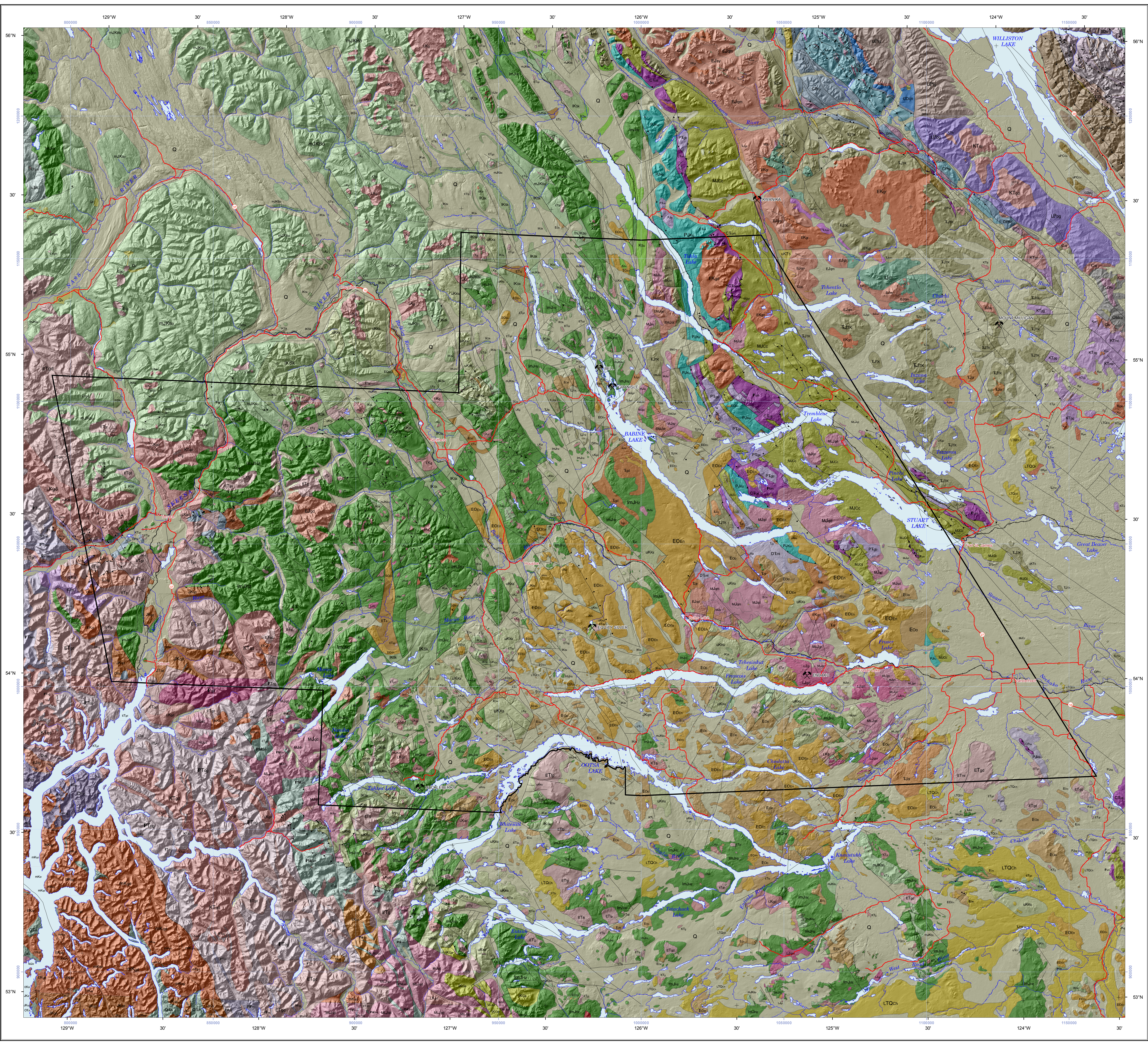


1:500 000 GEOLOGY - HILLSHADE COMPOSITE

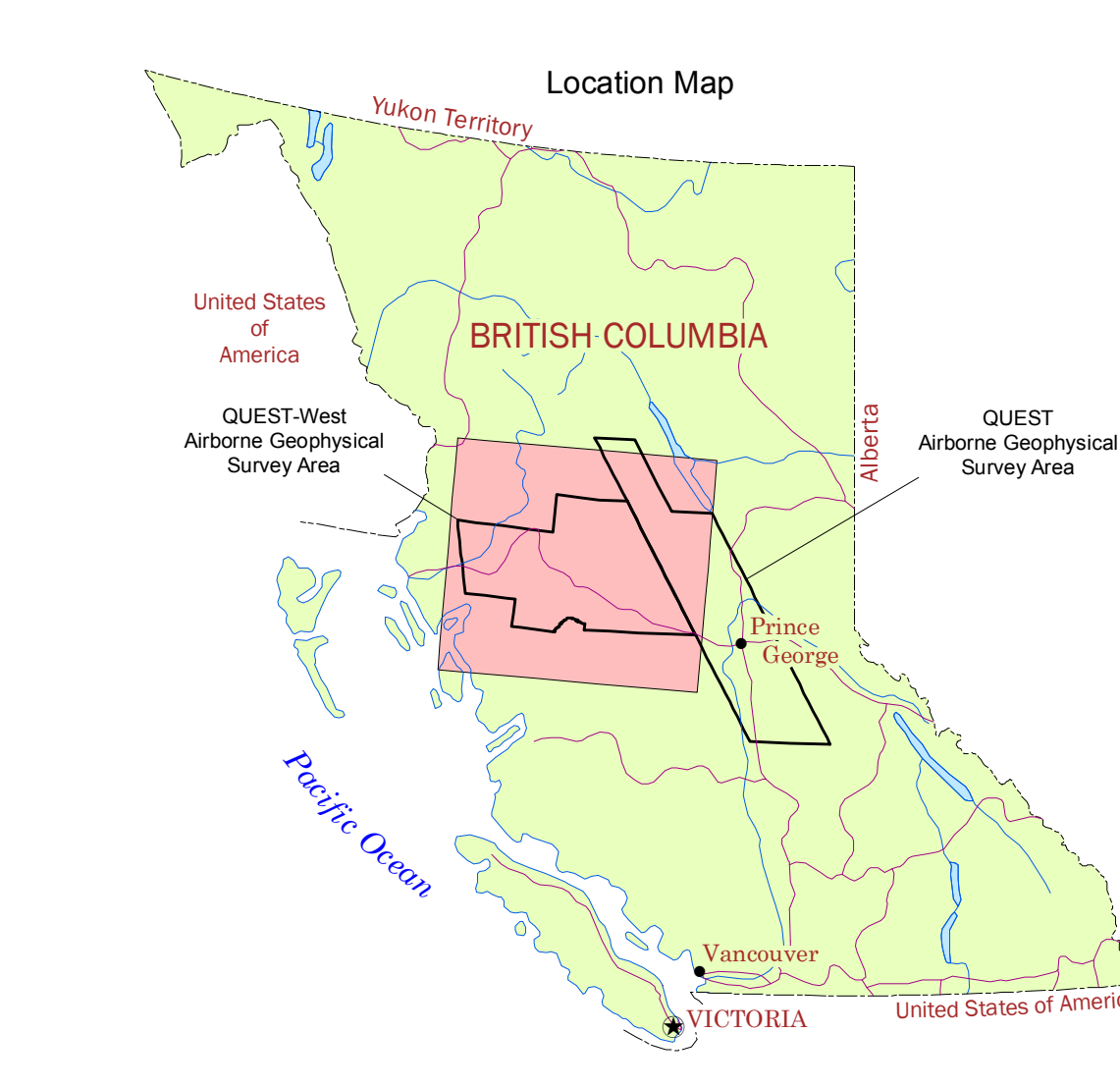


- CENOZOIC**
- Neogene to Quaternary**
- Q** Quaternary cover: Alluvium, glaciofluvial gravels and sand, etc. (Note: the extensive Quaternary deposits of the Rocky Mountain foothills and the Peace River area have been omitted.)
 - Qv** Quaternary volcanics including Blue Lake Volcanics, Lamy Creek Basalt, Lake Island and Big Raven Formations. Basalt, olivine basalt, unconsolidated ash, scoria, agglomerate and breccia.
 - LTQch** Chibouhau Group: Vesicular, columnar jointed basalt, olivine basalt; minor andesite, rhyolite breccia, obsidian, tuff, breccia, conglomerate, sandstone, siltstone, shale and distalite.
 - OPFr** Oligocene to Pliocene: Poorly consolidated Tertiary sediments (includes the Fraser Bend and Australian Creek Formations); poorly consolidated to unconsolidated conglomerate, sandstone and mudstone, minor dolomite, lignite, basalt.
- Paleogene**
- ETs** Paleogene sediments including Chuckanut, Kitlanok, Satechuck, Tanzihi Canyon, Kliahne and Sohier Mountain Formations; Conglomerate, sandstone, siltstone, shale, silt, minor coal, minor silt and tuffaceous siltstone; basalt.
 - EOen** Enderby Group: Andesite, basalt, minor dacite; flow, breccia and tuff, vesicular, amygdaloid, locally tuffaceous; minor gabbro basalt and rhyolite; conglomerate, sandstone, siltstone, shale, lignite.
 - EOo** Omineca Lake Group (including Neuman Formation) and unnamed equivalents: Rhyolite, diatrite, trachyte flows, related tuff and breccia, andesite and basalt; minor conglomerate, grit, greywacke and tuffaceous silt.
- MESZOZOIC**
- Cretaceous to Tertiary**
- UKTs** Sifton and Ulnika Formations, Bowser River Coal Beds and Reynolds Creek Succession: Pebble to boulder conglomerate, sandstone, siltstone, shale, minor coal.
 - KSu** Sault Group and unnamed equivalents: Sandstone, siltstone, mudstone, chert and quartz pebble conglomerate, felsic ash-tuff, minor coal.
 - mJXbo** Bowser Lake Group: Helveticite conglomerate, sandstone, siltstone, mudstone, shale, felspathic wacke, minor coal; minor basalt and andesite flows, breccia and tuff, dacite lava flows, lapilli tuff.
 - uKCa** Kasaska Group unnamed equivalents: Hornblende-felspathic porphyry; andesite to basalt flows and related pyroclastics, breccias and epistatic beds, lesser dacite, rhyolite, basaltic andesite, quartz porphyry, sandstone, conglomerate.
 - IKOa** Zander Group: Monach Volcanics, Omineca Formation; and equivalents including the Canadian Lake Unit: Conglomerate, sandstone, shale, argillite, minor igneous; basaltic andesite to rhyolite flow, crystal and lapilli tuff, tuffaceous sandstone, volcanic conglomerate and breccia, schist, gneissic schist.
 - IKSk** Steena Group: Felspathic and volcanic sandstone, siltstone, shale, mudstone, chert-pebble conglomerate, minor coal; augite-plagioclase phytic alkalic basalt to basaltic andesite, plagioclase phytic andesite to dacite; quartz basalt, green to maroon mafic lapilli tuff, volcanic breccia, rhyolite to dacite flows.
 - ImJHJz** Lower to Middle Jurassic: Hazleton Group, Griffin Creek and Homako Volcanics: Cataclastic basalt to rhyolite pyroclastics and flows, derived volcanoclastic conglomerates, breccia, sandstone, siltstone, shale, minor limestone and marl.

- Lower Jurassic**
- LICI** Cowichan Lake Succession: Pebble grit, polymictic conglomerate containing abundant rhyolite clasts, sandstone, siltstone, dark grey shale, lesser cherty dust tuff, maroon and green, porphyritic laths, mafic and andesite, augite, olivine basalt flows and breccia, lapilli tuff.
 - LTW** Twin Creek Succession and equivalents: Helveticite, lapilli tuff, plagioclase-augite and plagioclase, quartz porphyry flows and agglomerate; tuffaceous breccia, andesite, gneiss, sandstone, siltstone, minor conglomerate and coal.
 - TJJK** Triassic to Jurassic: Tantalus Group may include deformed Astles Group; Tazewell Sequence; and unnamed equivalents: Augite-physics and quartz basalt breccia, agglomerate, tuff, pillowed and massive flows, mafic to felsic tuff, ash tuff, lapilli tuff, breccia and conglomerate; tuffaceous argillite and siltite, greywacke, conglomerate, sandstone, siltstone and chert; phyllite, phyllite schist, limestone, minor diam.
 - TJS** Triassic: Spray River Group: Halfway, Land, Charlie Lake, Baskinford, Parsonford, Ludington, Toad and Grayling Formations; unnamed equivalents: Limestone, dolomite, carbonaceous - argillaceous limestone, calcareous and dolomite siltstone, calcareous sandstone, shale, sandstone, orthoquartzite and minor gneiss.
 - uTS** Upper Triassic: Stuhni Group: Mosley and Mount Moore Formations; and unnamed equivalents: Mafic to intermediate light tuff, ash, breccia and tuffite, massive argillite to pyroclastic and augite-physics flows and siltite; felsic tuff, tuffaceous siltstone, wacke, argillite, polymictic conglomerate, limestone, shale, gneissic schist, rare black chert, ribbon chert.
- PALEOZOIC TO MESOZOIC**
- PMm** Permian to Jurassic: Garbally Complex: Schistose and mylonitic felsic and mafic flows, tuff, volcaniclastic sediments, amphibole, assemblage, tonalite to granodioritic orthogneiss, minor mafic and staurolite.
 - PJKu** Permian to Jurassic: Kootenai Formation, Sitka Assemblage and possible equivalents: Basaltic to rhyolite schist, greenstone, pillowed metabasalt, heterolithic breccia; shale, phyllite, banded sandstone, sandstone and conglomerate; minor limestone, marble, chert and green chlorite phyllite.
 - MJC** Mesozoic to Jurassic: Cache Creek Complex and equivalents: Granitoid, amphibolite, mafic pillow lavas, volcanic breccia, agglomerate, tuff, rare felsic flows and tuff, phyllite, siliceous phyllite, metabasalt, ribbon chert, chlorite schist, sandstone; mafic to dacite limestone, argillite, mafic, chert and green chlorite phyllite.
 - OTa** Ordovician to Triassic: Unnamed Ordovician to Triassic volcanic and sedimentary rocks (Alexander/Tarner) within the Coast Complex: Siltstone, mudstone, shale, limestone, mafic and felsic volcanic; quartzite and conglomerate; other metamorphosed to slate, phyllite, schist, mafic, gneiss, amphibolite and greenstone.
- PALEOZOIC**
- DPas** Devonian to Permian: Anhe Group: Massive, grey, bioclastic limestone; argillaceous, thin bedded, recrystallized limestone with chert nodules; slate, silty siltstone and chert; sericite and chlorite phyllite and schist; metaquartzite, basalt, rhyolite, tuff, minor serpentinite and talusite.
 - DPbc** Big Creek Group: Basalt breccia, tuff and pillow; dacite and rhyolite tuff; shale, argillite, slate, calcareous argillite, limestone, tuffaceous argillite, sandstone, wacke.
 - DPSt** Sitka Assemblage: Maroon and green tuff, phyllite, volcanic conglomerate, wacke, pyroclastic argillaceous breccia, pillowed and massive basalt flows, andesite, minor rhyolite and dacite; siltstone, sandstone and lesser chert; limestone, bioclastic limestone, calcareous, foliated mafic metamorphosed equivalents.
 - CPni** Carboniferous to Permian: Nixa Creek Group: Cherty argillite, chert, argillite, massive and pillowed basalt, volcanic breccia, gabbro, siltstone, wacke, dacite.

- INTRUSIVE ROCKS**
- LT** Late Tertiary: granite (gr).
 - ET** Early Tertiary: diorite (di), monzodiorite (dg), gabbro (gb), granodiorite (gd), granite (gr), quartz diorite (qd), quartz monzonite (qm), quartz porphyry (qp), felsic porphyry (fp), migmatite (mi) and undifferentiated intrusive rocks (gi).
 - KT** Cretaceous to Tertiary: diorite (di), granodiorite (gd), granite (gr), quartz diorite (qd), syenite (sy), felsic porphyry (fp) and undifferentiated intrusive rocks (gi).
 - LK** Late Cretaceous: diorite (di), gabbro (gb), granodiorite (gd), granite (gr), quartz diorite (qd), quartz monzonite (qm), quartz porphyry (qp), tonalite (to), felsic porphyry (fp) and undifferentiated intrusive rocks (gi).
 - mK** Middle Cretaceous: diorite (di), monzodiorite (dg), gabbro (gb), granodiorite (gd), quartz diorite (qd), quartz monzonite (qm), quartz porphyry (qp), tonalite (to), felsic porphyry (fp) and undifferentiated intrusive rocks (gi).
 - EK** Early Cretaceous: diorite (di), gabbro (gb), granodiorite (gd), granite (gr), quartz diorite (qd), quartz monzonite (qm) and orthogneiss (og).
 - K** Cretaceous: granite (gr) and pegmatite (pe).
 - JT** Jurassic to Tertiary: quartz diorite (qd).
 - JK** Jurassic to Cretaceous: diorite (di), granodiorite (gd), granite (gr), quartz diorite (qd), quartz monzonite (qm), quartz porphyry (qp), orthogneiss (og) and undifferentiated intrusive rocks (gi).
 - J** Jurassic: granodiorite (gd) and quartz monzonite (qm).
 - LJ** Late Jurassic: diorite (di), granodiorite (gd), granite (gr), quartz diorite (qd) and quartz monzonite (qm).
 - MJ** Middle Jurassic: diorite (di), granodiorite (gd), granite (gr), quartz diorite (qd), quartz monzonite (qm), syenite (sy), quartz porphyry (qp), felsic porphyry (fp) and undifferentiated intrusive rocks (gi).
 - MLJ** Middle to Late Jurassic: diorite (di), gabbro (gb), granodiorite (gd), granite (gr), quartz diorite (qd) and orthogneiss (og).
 - EMJ** Early to Middle Jurassic: diorite (di), granodiorite (gd) and diabase (db).
 - EJ** Early Jurassic: diorite (di), monzodiorite (dg), gabbro (gb), granodiorite (gd), quartz diorite (qd), quartz monzonite (qm), syenite (sy) and orthogneiss (og).
 - TK** Triassic to Cretaceous: gabbro (gb).

- AGE UNKNOWN**
- Age unknown or poorly constrained: granite (gr) and orthogneiss (og).**
- METAMORPHIC ROCKS**
- Mesozoic (includes KT): greenstone to mid-amphibole facies rocks (m), mm, calcic talc (ca) and garnetiferous (gg): gq, KTm, and KTg.**
 - Paleozoic (includes PJ): greenstone to low-amphibole facies rocks (m) and undifferentiated metamorphic rocks (m): D1m, P1m and P1m.**
 - Proterozoic: Paragneiss (pg): LPg.**



National Topographic Sheet Index

104A BOWSER LAKE	094D MCCORMICK CREEK	094C LEACH RIVER	094B HULL RIVER
103P MACE RIVER	093M HAZELTON RIVER	093N FOOT FRASER	093O MCCOY LAKE
103I TERRELL	093L BUTTERS	093K FOOT FRASER	093J MCCOY LAKE
093H COCKLES CHANNEL	093E WILSON LAKE	093F NECHKO RIVER	093G NECHKO GEORGE
103A LAREDO SOUND	093D BELLA COOLA	093C ANANIM LAKE	093B QUEENSLAND

- Legend**
- Geological contact
 - Fault
 - normal (thrust beneath on upper plate)
 - extension
 - unconform
 - Railroad (unclassified)
 - Road (unclassified)
 - Mineral deposit (selected)
 - Populated place (unclassified)
- QUEST-West airborne geophysical survey area**
- Geological contact**
- Fault**
- Railroad (unclassified)**
- Road (unclassified)**
- Mineral deposit (selected)**
- Populated place (unclassified)**

The geology on this map is from the British Columbia Geological Survey and has been cartographically prepared by Geoscience BC as part of a suite of maps for the QUEST-West Project.

Mineral Deposit Data

MINFILE (2010): MINFILE B.C. mineral deposits database, B.C. Ministry of Energy, Mines and Petroleum Resources, URL: <http://minfile.ca/> (September 2010).

Elevation Model Data

Canadian Council on Geomatics (2004): Canadian digital elevation data: Natural Resources Canada, GeoBase, URL: <http://www.geoscience.ca/geobase/en/visit/visit.do?description.html> (October 2004).

Geology and Topographic Data

Nessary, N.W.D., MacIntyre, D.G., Desjardins, P.J. and Cooney, R.T. (2005): Digital Geology Map of British Columbia: Whole Province. B.C. Ministry of Energy and Mines, Geofiles 2005-1, URL: <http://www.enr.gov.bc.ca/Mining/GeosciencePublications/Catalogue/GeoFiles/Pages/2005-1.aspx> (November 2007).

Acknowledgments

Cartography by Stephen P. Williams and Fiona Ma, Geoscience BC

Elevation model prepared by Kaz Shimamura, Geological Survey of Canada

Geoscience BC is funded through grants from the Provincial Government of British Columbia.

QUEST-West is funded in partnership with the Northern Development Initiative Trust - www.nditrust.ca and the Regional District of Bulkley-Nechako - www.rdnb.bc.ca

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MAP 2010-12-3

GEOLOGY - HILLSHADE COMPOSITE

QUEST-WEST PROJECT

NTS SHEETS 93E,F,K,L,M,N
PART OF NTS SHEETS 93B,C,D,G,J,O; 94B,C,D; 103A,H,I,P; 104A

1:500,000

0 5 10 15 20 25 30 35 40 45 50 kms

Albers Projection, Central Meridian 120° W, Latitude of origin 45° N, First standard parallel 50° N, Second standard parallel 38° S, False easting 1,000,000, North American Datum 1983

Mean magnetic declination 2010, 19°46' E, decreasing 15.7" annually. Readings vary from 18°45' E in the southeast corner to 20°38' E in the northwest corner of the map.

December 2010

Citation:
Geoscience BC (2010): QUEST-West - Geology - Hillshade Composite, Geoscience BC, Map 2010-12-3, scale 1:500,000.