

Coloured legend blocks indicate map units that appear on this map.

- CRETACEOUS
KBR Belly River Group: mudstone, silty, grey and green, sandstone: grey and green, very fine- to medium-grained, cross-bedded; limestone: pedogenic, occurs as concretions or calcitic nodules, rare coal, bentonite.
KDP Deadhorse Coulee and Pakowki formations: undivided.
KPK Pakowki Formation: mudstone and shale: dark grey to greenish-grey, contains distinctive bed of floating chert pebbles at base; minor sandstone silty, very fine to fine-grained, grey to olive-grey, thin- to medium-bedded, parallel to current-rippled or hummocky cross-stratified, trace fossils common, interbedded with shale, coarsens and thickens upward. Unit is recessive, typically 25 m to less than 10 m thick. Unconformably overlies Deadhorse Coulee Formation.
Milk River Group (KTC-KCv)
KDH Deadhorse Coulee Formation: sandstone: fine- to medium-grained, light greenish-grey, thin- to thick-bedded, massive, trough cross-bedded, or current-rippled, may contain mica, chert, and plant debris; shale: silty, greenish-grey, rubbly, mudstone and shale: carbonaceous, grey or greenish-grey, locally well-sorted, silty, concretionary; minor coal: impure. Overlain unconformably by Pakowki Formation.
KV Virgelle Formation: sandstone: quartz arenite, locally calcareous or iron-bearing, fine- to medium-grained, light grey to white or light brown, very thick-bedded, massive to cross-bedded, contains small rusty concretions, sandstone: magnesian quartz arenite; prominent chert and ridge former.
KTC Telegraph Creek Formation: shale: silty or sandy, dark grey, sandstone: very fine- to medium-grained, light grey, coarsening and thickening upward; siltstone: locally nodular; bentonite: contains limestone concretions, lower and upper contacts gradational.
ALBERTA GROUP (Kb-Kv)
KvWp Wapahla Formation: shale: locally calcareous, locally silty, dark grey to black, contains siliceous concretions; siltstone: thin-bedded, sandstone: calcareous, fine-grained, grey, thin-bedded, limestone: contains ammonites.
KC Cardium Formation: sandstone: quartz arenite, fine-grained, grey to dark grey, thin- to medium-bedded, locally cross-bedded, cross-laminated, or tabular-bedded; shale: silty or sandy, conglomerate: calcareous, at base of unit; limestone: occurs as concretions, contains ammonites and trace fossils.
Kb Blackstone Formation: shale and mudstone: silty, locally calcareous, dark grey to black, siliceous concretions, sandstone: locally calcareous, very fine- to fine-grained, grey, thin-bedded, limestone: argillaceous, conglomerate: chert-pebble at base of unit; bentonite: contains ammonites and belemnites.
WEST OF LEWIS THRUST
KGBM Gladiolus, Beaver Mines, and Mill Creek formations: sandstone: quartzite or feldspathic, locally calcareous, white, grey, or greenish-grey; conglomerate: quartzite, chert, or igneous clasts, pebbles- or cobble-sized; mudstone and siltstone: green, grey, and maroon; limestone: aphatic, dark grey, light grey-weathering; bentonite: present in upper part of unit.
KCD Cadomin Formation: conglomerate: chert and quartzite clasts, pebbles- to cobble-sized, matrix of quartz sand, and silty mudstone; sandstone: coarse-grained, mottled brown-weathering, resistant; sandstone: quartz arenite, locally carbonaceous, light grey.
KE Elk Formation: sandstone: lithic, fine- to coarse-grained, grey; siltstone: carbonaceous, mudstone: silty, carbonaceous, minor coal: bituminous, occurs as thin seams; conglomerate: chert-pebble, medium to light grey, resistant; Lithologies are interbedded.
JURASSIC-CRETACEOUS
JKMM Mist Mountain Formation: shale and mudstone: carbonaceous, dark grey to black; siltstone: light to dark grey, greyish-brown-weathering; sandstone: lithic or quartz arenite, locally carbonaceous, fine- to coarse-grained, light to dark grey, coal: low to high-volatile, bituminous to semi-bituminous, some economic seams; conglomerate: chert- and quartzite-pebble, rare, but conspicuous beds.
JMbs Morrissey Formation: sandstone: very fine- to very coarse-grained, light grey, grey- to brownish-grey or orange-brown-weathering, minor shale and mudstone: carbonaceous. Unit coarsens and becomes better indurated upward.
JF Fernie Formation: basal sandstone: phosphatic, dolomitic, feld, black, fossiliferous, minor pebbles, 0-1 m thick; lower shale and mudstone: dark grey to black, brownish-grey-weathering, soft, commonly laminated and fissile, may contain concretions and belemnites (Poker Chip Shale); middle sandstone: quartzose, finely laminated, light grey, buff-weathering, with thin grey limestone beds (Rock Creek Member); overlain by shale and limestone: phosphatic, nodular, black, fossiliferous, strongly pyritic, grading upward to shale, silt, shaly, grey, with local concretions (Highland Member); upper shale, siltstone, and sandstone: very fine- to fine-grained, thin-bedded, brown-weathering, increasing in grain size, and bed thickness upward with local sandstone, massive or cross-bedded, fine-grained, brown-weathering in upper part (Passage Beds).
TRIASSIC
TSR Spray River Group: siltstone and sandstone: dolomitic or calcareous, dark grey to rusty brown, dolomite and limestone: silty or sandy, quartzose, vuggy, light weathering; shale: carbonaceous, silty, dark grey; minor breccia in western exposures: solution collapse or stratiformal; evaporite: gypsum or anhydrite, occurs as lenticular beds; conglomerate: phosphate-pebble, black.
PENNSYLVANIAN-PERMIAN
PPRM Rocky Mountain Supergroup: sandstone: quartz arenite, variably dolomitic, minor chert nodules, grey- to tan or brown-weathering; dolomite: silty sandy, contains chert nodules, grey- to brown-weathering; siltstone: dolomitic, calcareous, phosphatic or cherty, chert bedded or nodular; limestone: silty or sandy, fossiliferous, grey, minor chert nodules, conglomerate: chert-pebble, locally phosphatic; fossil content includes brachiopods, corals, bryozoans, and fusulines; prominent resistant chert unit (Rangier Canyon Formation) at top.
MISSISSIPPIAN
Rundie Group (ML-Mli)
MEI Etherington Formation: dolomite: variably sandy and fossiliferous, minor chert nodules, grey, limestone: lime mudstone to skeletal granitstone, locally oolitic, minor chert nodules, grey; sandstone: dolomitic, orange to grey, locally cross-laminated, shale and siltstone: variably calcareous or dolomitic, green or maroon, cyclical recurrence throughout unit; fossil content includes crinoid ossicles, bryozoans, brachiopods, and algae.
MMH Mount Head Formation: limestone: skeletal and oolitic wackestone to grainstones, light grey to dark grey; dolomite: argillaceous, silty, cherty, grey to tan, laminated and cross-laminated, minor fenestral fabric and solution-collapse breccia; shale: calcareous, dark grey, olive-grey, or black, contains chert and limestone nodules; dark grey recessive to resistant limestone prevalent in western exposures, lighter grey resistant limestone to the east, fossil content includes solitary horn corals, crinoid ossicles, bryozoans, and brachiopods.
MLV Livingstone Formation: limestone: skeletal granitstone, locally dolomitic or cherty, finely to coarsely crystalline, grey, pale grey-weathering, locally vuggy, massive, resistant; dolomite: grey, fossil content includes crinoid ossicles and bryozoans.
MBF Battif Formation: limestone: lime mudstone to skeletal packstone, variably argillaceous and cherty, grey to dark grey, thin- to thick-bedded; siltstone and mudstone: variably calcareous, dark grey to black, chert black, bedded, shale black; fossil content includes crinoid ossicles and bryozoans.
UPPER DEVONIAN-MISSISSIPPIAN
DMes Exshaw Formation: shale: carbonaceous, silty, black; siltstone: grey; limestone: argillaceous, cherty, dark grey.
UPPER DEVONIAN
DP Paliser Formation: limestone: dolomitic, finely crystalline, grey and brownish-grey, mottled, massive, lenticular-bedded; dolomite: crystalline, brownish-grey, anhedral; beds typically dissolved in outcrop causing local brecciation of carbonate; rare brachiopods.

- Contact
Defined
Approximate
Inferred
Fault, normal, symbol on hanging wall
Inferred
Fault, thrust, symbol on hanging wall
Defined
Approximate
Inferred
Fault, back thrust, symbol on hanging wall
Approximate
Fault, steep dip
Inferred
Fault zone
Zone of faults with sheared rock
Arcline, upright
Defined
Approximate
Inferred
Arcline, overturned
Defined
Approximate
Inferred
Syncline, upright
Defined
Approximate
Inferred
Syncline, overturned
Defined
Approximate
Inferred
Outcrop visited, attitude not determined
Bedding, top known
Vertical, ball on younger side
Overturned
Bedding, top known (historical)
Inclined
Overturned
Bedding, top unknown
Inclined
Bedding, top unknown (historical)
Inclined
Vertical

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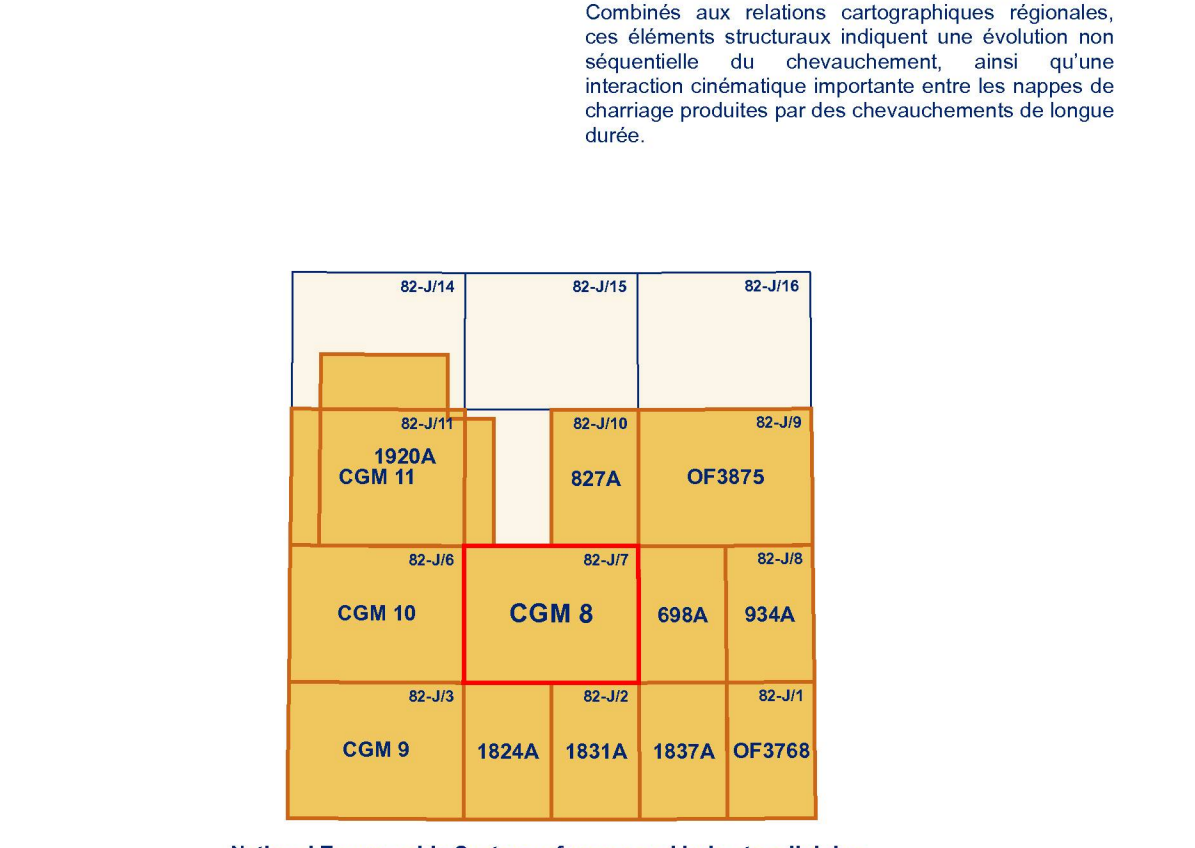
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Abstract
This 1:50 000-scale bedrock geological map of Mount Head (NTS 82-J17) is the result of completion and reinterpretation of pre-existing maps combined with new geological mapping conducted during the 2008 field season. The map covers the transition zone between the Southern Rocky Mountain Forelands to the Front Ranges and includes the Great Divide. The bedrock geology is characterized by Late Devonian to Late Cretaceous sedimentary strata that were deformed by a series of probable Late Cretaceous to Early Tertiary thin-skinned thrust faults and associated folds. The three major thrusts, the McCormick-Serifini Peak, Lewis, and Bourgeois (from east to west), dominate the structural geology. Mapped structures include folded thrusts, duplexes, thrust-overridden folds, and prominent plunge magnitudes related to probable subhorizontal lateral ramps. Coupled with regional map relationships, these features indicate a progressive eastward migration and substantial kinematic interaction between thrust sheets carried on long-lived thrusts.



Cover illustration
View looking southeast of Camovon Lake and environs, needed in the immediate hanging wall of the Lewis Thrust, Alberta.
Photograph by G.S. Stockmal, 2010-278
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Natural Resources Canada / Ressources naturelles du Canada

CANADIAN GEOSCIENCE MAP 8
GEOLOGY
MOUNT HEAD
Alberta-British Columbia
1:50 000



Compiler: G.S. Stockmal
Geological interpretation and compilation by G.S. Stockmal, based on 2008 field observations including those of L. Currie, K. Falls, and M.E. MacMahon; published maps and reports by J.A. Allan and J.L. Carr (1947), R.J.W. Douglas (1946), D.A. Greve (1993), and field notes by R.A. Price (unpublished field work in 1964 and 1969)

Cartography and geomatics by K. Falls, L. MacDonald, S. Cross, N. Raska, and R.L. Worsnik
Scientific editing by E. Ingle

CANADIAN GEOSCIENCE MAP 8
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MOUNT HEAD
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Map projection Universal Transverse Mercator, zone 11, North American Datum 1983
Base map at the scale of 1:50 000 from Natural Resources Canada, with modifications. Elevations in feet above mean sea level
Mean magnetic declination 2012, 19°2'E, decreasing 12'V annually

The Geological Survey of Canada welcomes corrections or additional information from users.
Data may include additional features not portrayed on this map. See documentation accompanying the data. Additional descriptive notes are included in the map information document.
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