

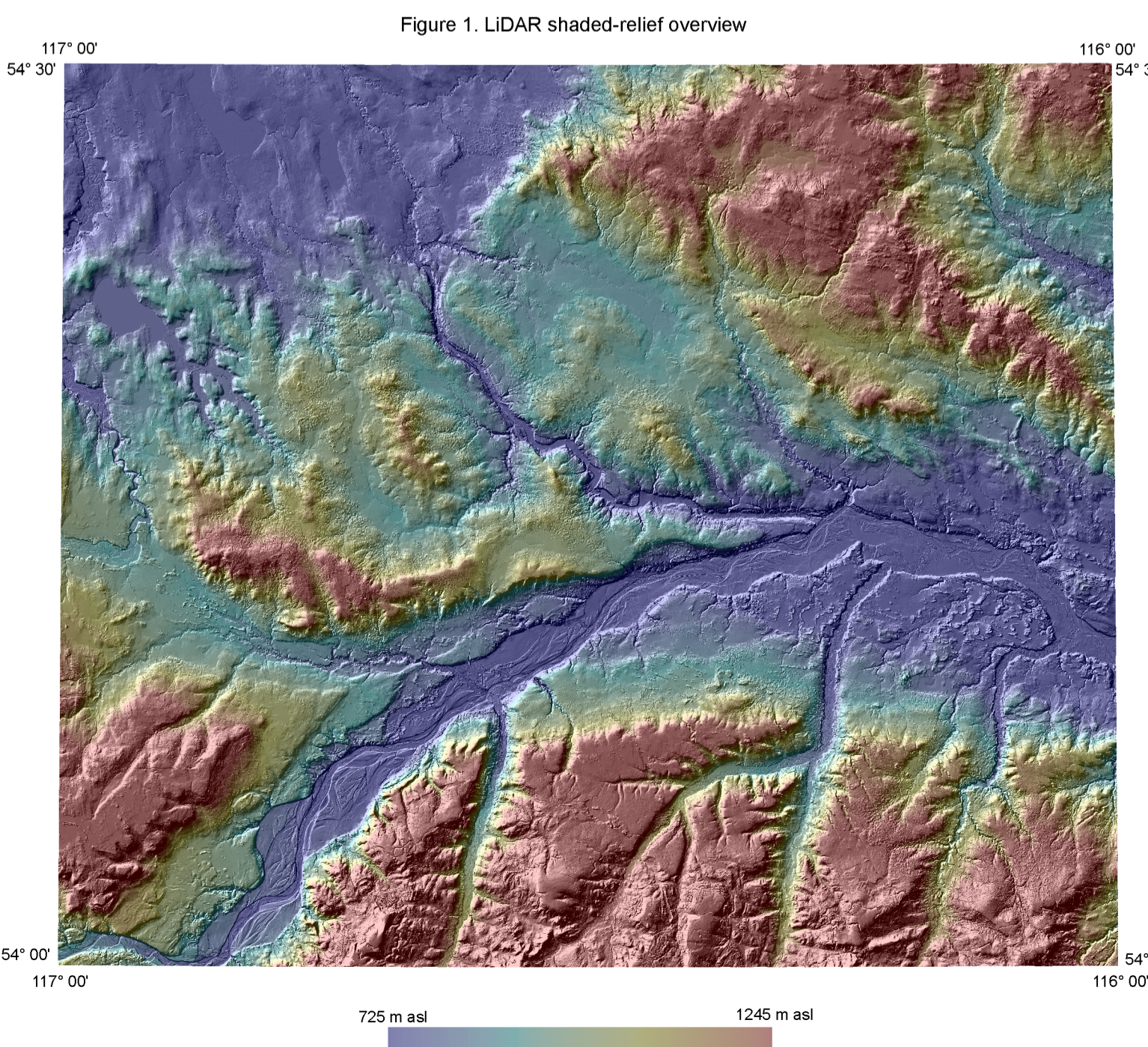


This is a common map legend for the surficial geology of northern Alberta. Coloured legend blocks indicate map units that appear on this map. Not all map symbols shown in the legend necessarily appear on this map.

UNIT	UNIT NAME	DESCRIPTION AND GENESIS
QUATERNARY		
HOLOCENE		
A	ANTHROPOGENIC MATERIALS	Artificially made ground or geological materials that have been disturbed by human activity, such that their physical properties (e.g. structure, cohesion, compaction) have been drastically altered.
O	ORGANIC DEPOSITS	Undifferentiated peat (woody to fibrous muck) occurring in wetlands; commonly underlain by fine-grained, poorly drained glaciolacustrine deposits; includes marshes, swamps, bogs and fens.
OB	Bog peat	Occurs in a peatland with a fluctuating water table and commonly a raised surface; peatland surface is dominated by sphagnum mosses, heath shrubs and short, stunted trees.
OF	Fen peat	Occurs in peatland which receives water from slowly flowing streams and groundwater, with the water table lying at the land surface; peatland surface is dominated by sedges, with grasses and reeds near local pools, and is sparsely treed.
C	COLLUVIAL DEPOSITS	Materials that have reached their present position as a result of direct, gravity-induced movement; commonly occurs as slope and slump deposits confined to valley slopes and floors; includes pre-existing bedrock, till, glaciolacustrine, glaciofluvial and eolian sediments, generally poorly sorted.
F	FLUVIAL DEPOSITS	Sediments transported and deposited by streams and rivers; synonymous with alluvium. Includes well-sorted stratified sand, gravel, silt, clay and organic sediments occurring in channel and overbank deposits (e.g., postglacial floodplains, terraces, fans and deltas).
L	LACUSTRINE DEPOSITS	Sediments deposited in and adjacent to recent and modern lakes; includes offshore sand, silt and clay, minor organic deposits; may also include minor littoral (nearshore) beaches and bars composed of sand, silt and clay.
E	EOLIAN DEPOSITS	Wind deposited sediments; comprise well-sorted, medium- to fine-grained sand and minor silt; generally massive to locally cross-bedded or ripple-laminated; includes both active and vegetated dunes and sand sheets.
PLEISTOCENE		
LG	GLACIOLACUSTRINE DEPOSITS	Primarily fine-grained, distal sediments deposited in or along the margins of glacial lakes, including sediments released by the melting of floating ice. Includes laminated (rhythmically bedded) to massive fine sand, silt and clay, and may contain ice-ratified debris.
LGL	Littoral and nearshore sediments	Massive to stratified, well-sorted silty sand, pebbly sand and minor gravel; occurs in beaches, bars, spits and deltaic foresets deposited during regression and lowering of glacial lakes.
FG	GLACIOFLUVIAL DEPOSITS	Sediments deposited by glacial meltwater streams as subaerial or subaqueous outwash. Includes sand and gravel, often stratified, minor silt, and may show evidence of ice melting (slumped structures). Features include meltwater channels, kettle holes, terraces and minor ice-contact sediments.
FGI	Ice-contact sediments	Sediments deposited by meltwater streams flowing either in direct contact with the ice margin (kame terraces) or within and/or under glacial ice (eskers, crevasse ridges). Includes massive to stratified, poor to moderately sorted, coarse-grained sediments (predominately pebble gravel and coarse-grained sand, locally till) and may show evidence of ice melting (slumped structures).
M	MORAINE	Diamicton (B) deposited directly by glacial ice and consisting of a mixture of clay, silt, sand and minor pebbles, cobbles and boulders. Locally, this unit may contain blocks of bedrock, pre-existing stratified sediment and till, or lenses of glaciolacustrine and/or glaciofluvial sediment.
MS	Stagnant ice moraine	Material resulting from the collapse and slumping of englacial and supraglacial sediment in response to the melting of buried stagnant ice at the ice margin; sediment is mainly diamictic, but locally includes stratified sediments of glaciolacustrine or glaciofluvial origin. Characterized by low to high-relief hummocky topography.
MT	Ice-thrust moraine	Terrain formed from the glaciotectonic displacement of materials as blocks or rafts in a more or less intact state. Materials may include syngenetic till, as well as masses of pre-existing sediments and/or bedrock. Characterized by high to moderate relief and features include hill-hole pairs and glaciotectonic moraines.
MF	Fluted moraine	Glacially streamlined terrain; varies from alternating furrows and ridges to nearly equidimensional smooth hills; all landforms parallel the local ice flow direction; includes flutes, drumlins and drumlinoids.
FP	PREGLACIAL FLUVIAL DEPOSITS	Sediments transported and deposited by streams and rivers prior to glaciation. This includes sand and gravel deposited in paleovalleys (i.e., preglacial floodplains, terraces, fans and deltas).
RT	UNCONSOLIDATED FLUVIAL GRAVELS	Predominantly well-sorted, quartzite and chert gravel and cobbles; Cordilleran source, Paleogene to Neogene.
R	BEDROCK	

SYMBOL LEGEND		BASEMAP LEGEND	
Landslide and active layer failure scar (small)	↓	Primary road, paved	—
Landslide and active layer failure scar (large)	⏏	Primary road, gravel	—
Eolian forms, dune ridges	⏏	Unimproved road	—
Beach or strandline	—	Truck trail	—
Wave-cut bench	—	River	—
Escarpment	—	Lake	—
Meltwater channel (minor)	—	UTM, Zone 11 Grid	—
Meltwater channel (minor, paleoflow direction known)	—	Contour, intervals 50 metres	—
Meltwater channel (major)	—	Town	—
Meltwater channel (major, paleoflow direction known)	—		
Meltwater channel (lateral)	—		
Crevasse filling	—		
Esker (paleoflow direction unknown)	—		
Esker (paleoflow direction known)	—		
Drumlinoid or streamlined landform	—		
Buried drumlinoid or streamlined landform	—		
Minor moraine ridge	—		
Major moraine ridge	—		
Iceberg scour	—		
Ice-thrust ridge	—		

UNIT NOTATION	
Example: sandy GLACIOLACUSTRINE plain	
Textural modifier	Geomorphic unit
Textural Modifier	
Textural characteristics may be applied to the terrain classification as a prefix based on field observations or by inference from distinctive genesis and/or morphology. When two modifiers are given, the second letter is the dominant texture, with the first letter indicating the secondary texture; i.e., sc for sandy clay.	
p	pebble
g	gravel
s	sand
S	silt
c	clay
a	sand-silt clay
GENETIC & GEOMORPHOLOGICAL MODIFIERS	
c	crevasse fill
d	doughnut rings and ridges
e	eroded
f	fan
g	gullied
h	hummock
k	collapse
m	meander
p	plain
r	ridged
s	slumped
t	terrace
v	vener
y	dissected
z	delta
Complex	
Where two or more classes of terrain are interspersed in a mosaic on a scale too small to warrant meaningful differentiation, the proportion of each component in the combination is given in a two or three-position designation set off by slashes denoting arbitrary percentage limits. Examples are:	
'MpLg'	indicates the area is underlain by approximately 60% morainal plain and up to 40% glaciolacustrine veneer
'MvLgFg'	indicates at least 60% of the area is underlain by morainal veneer, with up to 40% glaciolacustrine veneer and less than 15% glaciofluvial plain
'LgP/M'	indicates more than 60% of the area is underlain by a glaciolacustrine plain, with less than 15% moraine
Stratigraphic Sequence	
Where materials of different origins or textures are known to be superimposed or can be confidently inferred, the sequence is indicated in conventional order using vertical separators, such as:	
'sLgV Mp'	indicates sandy glaciolacustrine veneer deposited on morainal plain
Transitional Association	
Locally, two or more terrain units are juxtaposed by reason of related origin, temporal sequence or ambiguous geomorphological distinction. In the last case, both components may or may not be present. Such situations are identified by a compound designation marked by a hyphen. Examples are:	
'FG-LGz'	indicates ice-contact delta indistinguishable from glaciolacustrine delta
'LG-LGL'	indicates glaciolacustrine indistinguishable from littoral and nearshore glaciolacustrine sediment
Morphological Overprint	
Where a sequence of geomorphological processes has produced a multi-aspect or compound terrain fabric, the geomorphological modifier suffixes are appended in the inferred order of superposition. 'Mpy' indicates a morainal plain has been moulded into ridges and finally dissected by streams. 'FGp' indicates a glaciofluvial plain that includes discontinuous hummocks and ridges.	
Methodology	
Alberta Geological Survey completed the surficial mapping in 2012. This map represents surficial geology interpretations based on Light Detection and Ranging (LiDAR) bare-earth data (Figure 1), orthorectified aerial photographs (1:50 000 scale) and previously published maps of the area (St-Onge, 1966; Knapp and Lindsay, 1983). The LiDAR digital elevation model was used to create shaded-relief images from multiple illumination directions. The shaded relief shown as an underlay on the main map was produced by fusing shaded-relief (315° illumination azimuth, 45° declination) and slope-gradient images.	
Acknowledgements	
S.M. Pawley provided constructive comments that improved this map. K. McKay completed the digital cartography and GIS. Spatial Data Warehouse Ltd. provided the base data.	
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Alberta Geological Survey
(780) 422-1927
www.ags.gov.ab.ca
Published 2013
ISBN 978-1-4001-0092-9

Map 562
Surficial Geology of the Fox Creek Area (NTS 83K/SE)
Geology by: D.J. Utting

