Central Foreland NATMAP: Some Highlights of Surficial Geological Studies near Fort Liard, N.W.T (NTS 95C)

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To aid petroleum and mineral exploration and development, the Central Foreland NATMAP project includes studies of surficial geology. The objective of these studies is to map and explain the surficial materials and geomorphic features in the Liard Basin region of the southern Northwest Territories and adjacent Yukon (NTS 95B and 95C). The last glaciation has strongly affected the regional geomorphology in several ways. This area lies in a former contact zone between continental (Laurentide) and Cordilleran ice sheets, which eroded and redeposited large amounts of bedrock. The Fort Liard area has many streamlined landforms that were produced subglacially. Reconstructing the ice-flow history, together with reconnaissance till sampling, will provide a basis to the search for mineral resources. Mapping the thickness and extent of surficial materials will also abet the execution and interpretation of seismic surveys. During deglaciation the, Laurentide ice sheet blocked the regional drainage to the northeast resulting in large-scale ponding and diversions of meltwater. Consequently, mapping surficial materials has identified accessible sources of aggregate necessary for economical construction of roadways, buildings, well sites, and pipelines. Lastly, glacial erosion of the Liard and Kotaneelee ranges has destabilized many valley slopes, particularly were thick sandstone units cap recessive shales. These areas have experienced landslides at various times in the past and an inventory of landslides and other slope failures will provide essential information for land use planning.