Controls on northern Cordilleran Foothills structures: Results of Central Foreland NATMAP bedrock mapping.

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ABSTRACT

The Central Foreland NATMAP Project has completed mapping in two transects through the Cordilleran foothills. The two areas are located in northeast British Columbia and the southern Territories, and straddle the Liard Line, a Late Proterozoic crustal-scale discontinuity. Twelve new detailed bedrock maps in northern Liard Basin and 8 new detailed bedrock maps in northeast British Columbia will be accompanied by new regional scale maps of the Fort Liard (NTS 95B), La Biche River (NTS 95C), and Trutch (NTS 94G) areas. A project-wide compilation at 1:500,000 scale is being updated to present an overview of structural and stratigraphic variations within the project region and to identify knowledge gaps and inconsistencies between the old and new maps. Fully functional GIS products, available on CD-ROM, contain georeferenced interactive maps supported by a relational database containing lithological and structural data from each outcrop.

Bedrock mapping has revealed some of the controls on structural variation both within and between transects. Within the northern transect, detailed mapping has clarified the geometry of apparently sinuous structural trends, as being due to interference between northwest and northeast trends. These interference patterns probably result from the influence of early Paleozoic facies transitions combined with a weak regional decollement.   Within the southern transect, stratigraphic thickness and facies trends as well as abrupt changes in structural trends reflect the tectonic inheritance of Proterozoic and Late Paleozoic structures. Between transects, the scale and orientation of structures, and the thickness and preservation of stratigraphic units differ dramatically.