

TECTONIC ASSEMBLAGES AND PLUTONIC SUITES
(from Wheeler and McFeely, 1991)

Tectonic assemblages represent distinctive successions of stratified rocks, mainly bounded by unconformities or faults, deposited in specific tectonic environments during particular intervals of time. Thus they are fundamental components of Cordilleran geology that reflect its evolution and allow comparisons of the tectonic behaviour of various regions during specific intervals of time.

An assemblage may comprise one or more formations from a single region or from several separate regions. Most assemblages are named for an important constituent or group, although a few are named after the region in which the assemblage is best developed. Very few are not yet named. The age assigned to each assemblage reflects the age range of its components. Each assemblage is characterized in terms of its tectonic or depositional setting, the latter illustrated by descriptions of its principal lithologies, facies variations, source areas and other criteria.

The degrees of confidence in the identification of the associated tectonic or depositional regimes vary considerably and, in some cases are controversial. Most assemblages are categorized in terms of environments currently observable on modern continental margins, island arcs and ocean basins. Others are defined with reference to their positions relative to the orogen (foredeep clastic wedge) or to the craton (passive continental margin sediments).

The plutonic suites are defined mainly by age and subdivided on the basis of composition or other attributes. They are grouped, for the most part, into magmatic episodes (Armstrong, 1985).

REFERENCES

Armstrong, R.L.
1985: Mesozoic - early Cenozoic plutonism in the Canadian Cordillera - distribution in time and space; Geological Society of America, Abstracts and programs, 1985, v. 17, p. 338

Wheeler, J.O. and McFeely, P.
1991: Tectonic Assemblage Map of the Canadian Cordillera and adjacent parts of the United States of America; Geological Survey of Canada, Map 1712A, scale 1:2 000 000

SOURCES OF INFORMATION

Geological information contained in the GIS map library and the 1:1 000 000 scale folio series is derived directly from John Wheeler's Tectonic Assemblage Map of the Canadian Cordillera (Wheeler and McFeely, 1991; Map 1712A), and is subject to all Copyright laws for distribution in either digital or hard copy form. This map is a revision of the Geological Survey of Canada Map 1505A by Tipper, Woodsworth, and Gabrielse, published in 1981. It is a compilation of published maps, theses, and unpublished information from officials of the Geological Survey of Canada, from J.G. Abbott, G.W. Lowey, and J.A. Mehin of the Geology Section, Department of Indian and Northern Affairs, Whitehorse, Yukon; from D.A. Brew, J.H. Dover, C. Dusel-Bacon, H.L. Foster, J.E. Harrison, W.J. Nolleberg, G. Pfafker, and R.W. Tabor of the U.S. Geological Survey; and from R.L. Armstrong, M.T. Brandon, R.L. Brown, D.S. Cowan, P. Erdmer, J. Filippone, R.M. Friedman, J.T. Fyfes, J.M. Hamilton, C.J.R. Hart, R.A. Haugenrud, C.J. Hickson, P.M. Hobek, G.A. Jilson, D.L. Jones, A. Jung, W.C. McLellan, E.W. Mountjoy, J.K. Mortenson, D.C. Murphy, J.S. Oldew, R.A. Price, P.B. Read, T.A. Richards, M.E. Rusmore, C.M. Rubin, P.S. Simony, A. Sutherland Brown, R.S. Tolbert, P. van der Heyden, and W.J. Wolfe. Geological cartography for the original version of this map was by M. Sigouin, Geoscience Information Division.

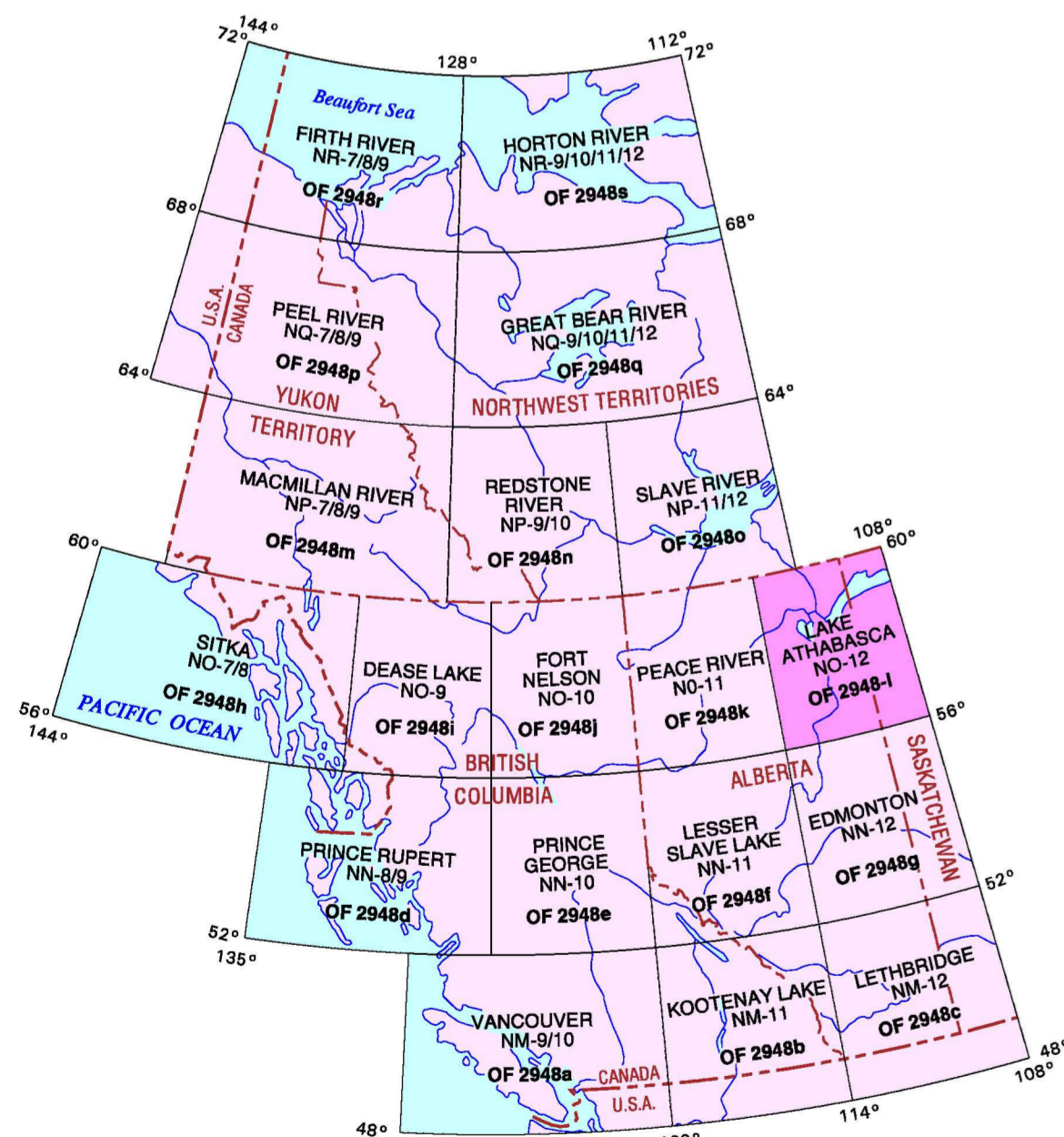
GIS MAP LIBRARY

The Cordilleran GIS Map Library was initiated in March, 1993 as a collaborative research and development project by the Pacific Division and the Geoscience Information Division (GID) of the Earth Sciences Sector (ESS). The goal is to develop an integrated 1:1 000 000 scale digital geoscience database for the Canadian Cordillera that can be used as an archive and research facility by the Geological Survey of Canada (GSC) and its clients. This map is part of a new series of 1:1 000 000 scale tectonic assemblage maps for the Canadian Cordillera based on the Wheeler and McFeely (1991) Tectonic Assemblage Map of the Canadian Cordillera (Map 1712A). It is one of 19 digital data sets derived from the Cordilleran GIS Map Library CDROM (GSC Open File 2948).

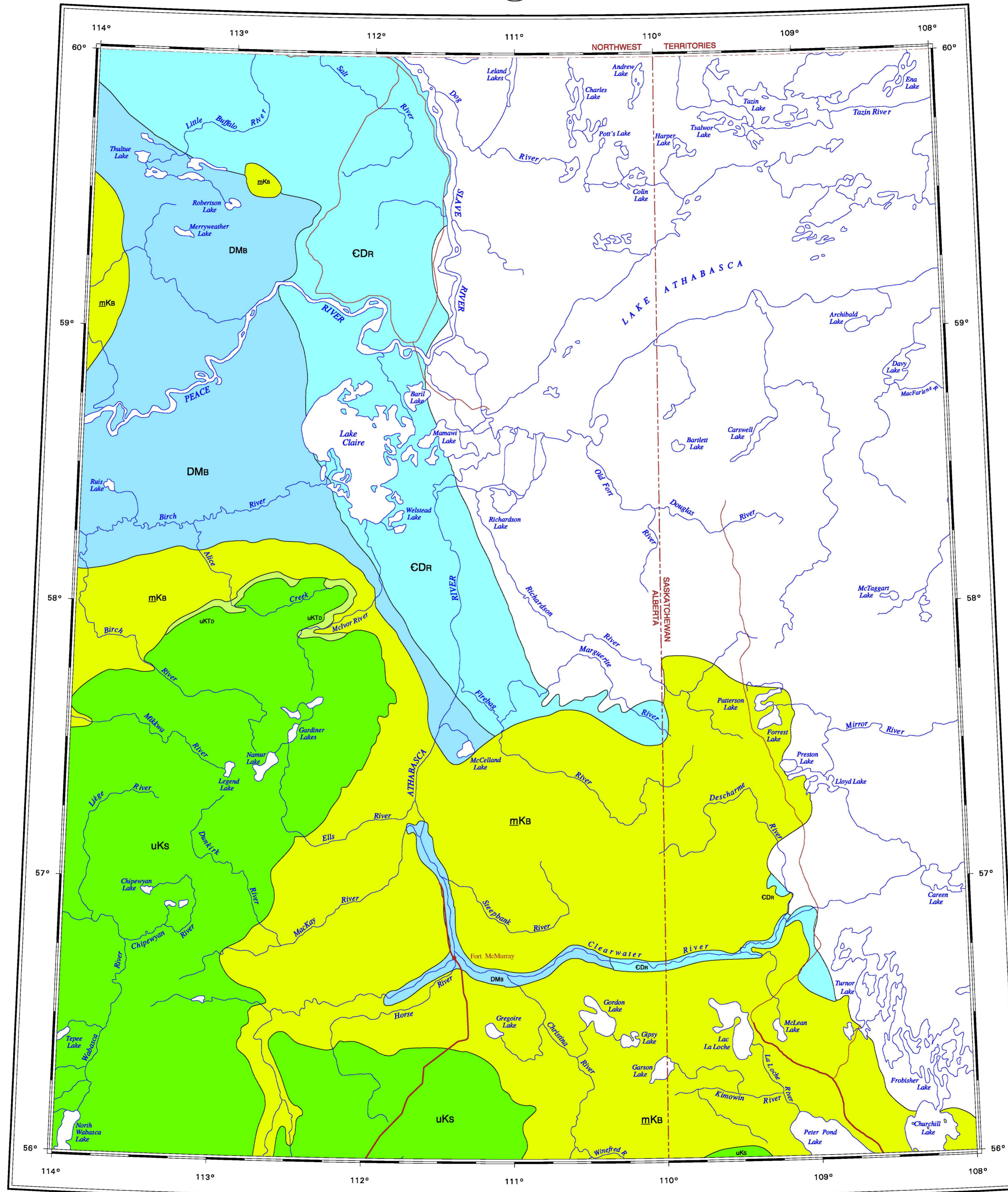
The legend which accompanies Map 1712A was converted to digital format and made available to the GSC by Doug Brownlee, and has been modified and expanded for use as a GIS database. Design and implementation of the digital GIS map library structure, final editing and attributing of all geological and geographic features and cartographic production of the 1:1 000 000 scale folio series were performed by Stephen Williams and Murray Journey of the GSC Pacific Division, and Richard Alford of the Geoscience Information Division.

The geographic base for the GIS library and the 1:1 000 000 scale folio series is derived from the National Atlas Information System (NAIS) 1:2 000 000 digital map series and is subject to all Copyright laws for distribution in either digital or hard copy form.

CORDILLERAN TECTONIC ASSEMBLAGE MAP LIBRARY



TECTONIC ASSEMBLAGES OF THE LAKE ATHABASCA MAP AREA
1:1 000 000
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OPEN FILE 2948-1
TECTONIC ASSEMBLAGE MAP
LAKE ATHABASCA
ALBERTA - SASKATCHEWAN

Scale 1:1 000 000 - Échelle 1/1 000 000

kilometres 25 0 25 50 75 kilometres

Lambert Conformal Conic Projection
Standard Parallels 56°40' and 59°20'
Projection conique conforme de Lambert
Parallèles d'échelle conservés 56°40' et 59°20'

Her Majesty the Queen in Right of Canada, 2000

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Geological Survey of Canada, Open File 2948-1, scale 1:1 000 000