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Geological map of Québec, edition 2002

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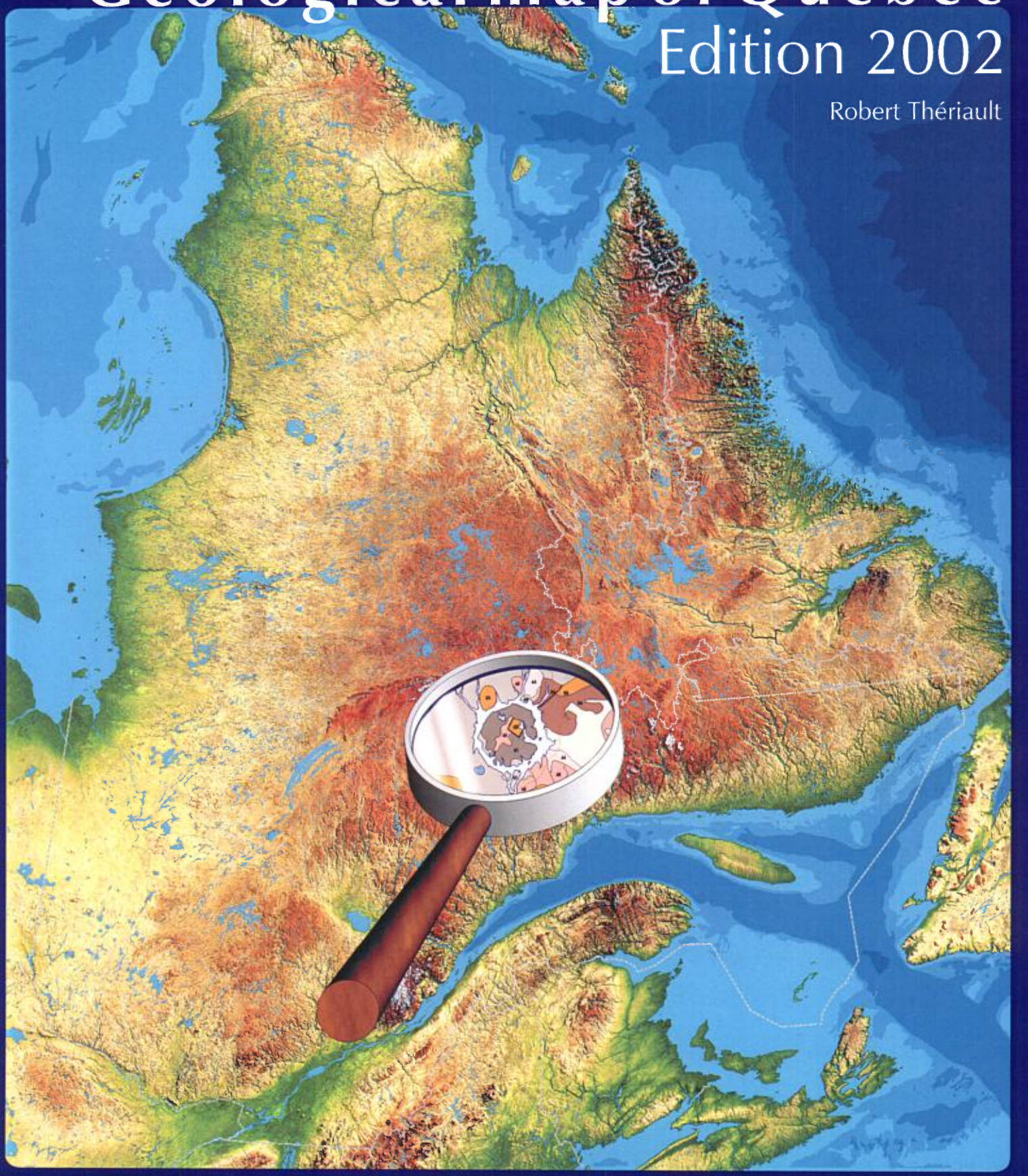
Geological map of Québec

Edition 2002

Robert Thériault



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DV 2002-07 : Geological map of Québec – Edition 2002

Robert Thériault

INTRODUCTION

This document includes a new geological map of Québec (edition 2002) at a scale of 1 : 2 000 000 prepared by the Ministère des Ressources naturelles (MRN) during the last year.

The map is an updated version of the 2001 edition, which was produced in order to incorporate the results of several new geological mapping surveys in various parts of Québec by the MRN and the Geological Survey of Canada (GSC) over the last 15 years, that is since the publication of the former geological compilation map of Québec by the MRN (Avramtchev, 1985).

The 2002 edition of the geological map of Québec is a compilation of the results of geological mapping surveys carried out by the MRN at a scale of 1 : 250 000, and of geological compilation maps from various sources ranging in scale from 1 : 50 000 to 1 : 1 000 000. While being based on lithological caracteristics, the map also presents the major stratigraphic units recognized in Québec. The geology of Québec is subdivided into 5 major divisions, which are : 1) Superior Province; 2) Churchill Province; 3) Grenville Province; 4) Appalachian Province; and 5) St. Lawrence and Hudson Bay platforms.

The Superior Province is an Archean craton that occupies the central part of the Canadian Shield. It is composed of Archean terranes discordantly overlain by Proterozoic and Paleozoic sedimentary rocks. The geology of the northern part of the Superior Province has been simplified from 1 : 250 000 scale geological maps completed during the last four years by the MRN as part of the Far North mapping project. The integration of new geoscientific data in this portion of the map represents a significant improvement compared to the previous geological map of Québec, where the geology was compiled from 1 : 1 000 000 scale reconnaissance mapping surveys dating back to the fifties and sixties (Eade, 1966; Stevenson, 1968). The geology of the southern part of the Superior province, which is made up of the Abitibi and Pontiac subprovinces, is taken mainly from a 1 : 500 000 scale compilation map prepared by the MRN (Hocq, 1990).

The Churchill Province is composed of an assemblage of cratonic blocks of Archean to Paleoproterozoic age, which are bordered by the Nouveau-Québec, Ungava and Torngat Paleoproterozoic orogenic belts. The geology of the eastern part of the Churchill is taken mainly from a 1 : 1 000 000 scale compilation map prepared by the GSC (Wardle *et al.*, 2000), whereas the northern portion was compiled from geological maps published at a scale of 1 : 50 000 and 1 : 100 000 by the MRN and the GSC (St-Onge and Lucas, 1997).

The Grenville Province is a Preoterozoic orogenic belt consisting of an assemblage of diverse lithologies that include widely exposed, high-temperature intrusive rocks (anorthosites, mangerites, charnockites). The geology of the Grenville Province is still the same as on the older geological map of Québec of Avramtchev (1985). However, the preparation of new 1 : 250 000 scale compilation maps expected in the coming years will take into account the recent geological mapping surveys. Hence the updated geology of the Grenville Province will likely be included in the following editions of the geological map of Québec.

The Appalachian Province and the platform sequences consist mainly of Paleozoic sedimentary rocks occurring along the edge of the Canadian Shield. In the Province of Québec, the Appalachians have been affected by two tectonic events, the Taconian and Acadian orogenies. In the southern part of Québec, the Cretaceous Monteregian Hills crosscut rocks of the St. Lawrence Platform and Appalachians. The geology of the Appalachian Province and St. Lawrence Platform is taken from the geological highway map of the Lower St. Lawrence and Gaspé Peninsula published by the MRN in 1991, and also incorporates results of the new geological mapping surveys.

This version of the geological map of Québec will be updated periodically, and will incorporate the results of the new geological mapping surveys, as well as the new 1 : 250 000 scale compilation maps prepared by the MRN.

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The production of this new geological map of Québec required the collaboration of several people. I am particularly grateful to Christian Garneau and David Bisier for their technical expertise regarding the computer-assisted drafting and the conception of the map layout. I would also like to express my gratitude to the following MRN geologists for their judicious comments concerning the geological interpretations : Alain Berclaz, Charles Gosselin, Jean Goutier, Alain Leclair, Marc Legault, Louis Madore, Charles Maurice, Abdelali Moukhsil, Martin Parent, Patrice Roy and Martin Simard.

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MRN (SIGÉOM) COMPILATION MAPS USED DURING PREPARATION OF THE 1 : 2 000 000 SCALE MAP

1 : 50 000 scale

NTS* 12L/03	(SI-12L03-C3G-98J)	NTS 35F/16	(SI-35F16-C3G-98E)
NTS 12L/04	(SI-12L04-C3G-98J)	NTS 35G/01	(SI-35G01-C3G-99I)
NTS 31G/09	(SI-31G09-C3G-99F)	NTS 35G/02	(SI-35G02-C3G-00H)
NTS 35F/01	(SI-35F01-C3G-98E)	NTS 35G/03	(SI-35G03-C3G-00G)
NTS 35F/02	(SI-35F02-C3G-98E)	NTS 35G/04	(SI-35G04-C3G-00H)
NTS 35F/03	(SI-35F03-C3G-00H)	NTS 35G/05	(SI-35G05-C3G-00H)
NTS 35F/04	(SI-35F04-C3G-98E)	NTS 35G/06	(SI-35G06-C3G-00H)
NTS 35F/05	(SI-35F05-C3G-98E)	NTS 35G/07	(SI-35G07-C3G-00H)
NTS 35F/06	(SI-35F06-C3G-98E)	NTS 35G/08	(SI-35G08-C3G-98F)
NTS 35F/07	(SI-35F07-C3G-98E)	NTS 35G/09	(SI-35G09-C3G-98F)
NTS 35F/08	(SI-35F08-C3G-00G)	NTS 35G/10	(SI-35G10-C3G-00H)
NTS 35F/09	(SI-35F09-C3G-00G)	NTS 35G/11	(SI-35G11-C3G-00H)
NTS 35F/10	(SI-35F10-C3G-98E)	NTS 35G/12	(SI-35G12-C3G-00H)
NTS 35F/11	(SI-35F11-C3G-98E)	NTS 35G/13	(SI-35G13-C3G-00H)
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NTS 35F/13	(SI-35F13-C3G-99H)	NTS 35G/15	(SI-35G15-C3G-00G)
NTS 35F/14	(SI-35F14-C3G-99H)	NTS 35G/16	(SI-35G16-C3G-98E)
NTS 35F/15	(SI-35F15-C3G-98I)		

1 : 250 000 scale

NTS 11N	(SI-11N-G2B-00C)	NTS 33G	(SI-33G-C2G-01K)
NTS 12E	(SI-12E-C2G-00B)	NTS 33H	(SI-33H-C2G-00B)
NTS 21M	(SI-21M-C2G-01A)	NTS 33I	(SI-33I-C2G-99D)
NTS 23K	(SI-23K-C2G-01A)	NTS 33J	(SI-33J-C2G-99D)
NTS 23N	(SI-23N-G2P-00I)	NTS 33K	(SI-33K-C2G-00I)
NTS 24A	(SI-24A-C2G-01A)	NTS 33L	(SI-33L-C2G-00I)
NTS 24B	(SI-24B-C2G-01A)	NTS 33M	(SI-33M-C2G-99A)
NTS 24F	(SI-24F-G2P-01B)	NTS 33N	(SI-33N-C2G-99A)
NTS 24G	(SI-24G-C2G-00B)	NTS 33O	(SI-33O-C2G-99A)
NTS 24H	(SI-24H-C2G-00B)	NTS 33P	(SI-33P-C2G-99A)
NTS 24J	(SI-24J-C2G-00B)	NTS 34B	(SI-34B-C2G-99D)
NTS 24N	(SI-24N-C2G-01A)	NTS 34C	(SI-34C-G2P-99D)
NTS 25F	(SI-25F-C2G-OOK)	NTS 34F	(SI-34F-G2P-98E)
NTS 31M	(SI-31M-C2G-00G)	NTS 34K	(SI-34K-C2G-99D)
NTS 32E	(SI-32E-C2G-00K)	NTS 34L	(SI-34L-C2G-99D)
NTS 32G	(SI-32G-G2P-02B)	NTS 34M	(SI-34M-C2G-99D)
NTS 32I	(SI-32I-G2P-01B)	NTS 34N	(SI-34N-C2G-99D)
NTS 32J	(SI-32J-G2P-01A)	NTS 34O	(SI-34O-C2G-99F)
NTS 32K	(SI-32K-C2G-01L)	NTS 35B	(SI-35B-C2G-00B)
NTS 32L	(SI-32L-C2G-00A)	NTS 35C	(SI-35C-C2G-99A)
NTS 32M	(SI-32M-C2G-00A)	NTS 35D	(SI-35D-C2G-99A)
NTS 32N	(SI-32N-C2G-01A)	NTS 35E	(SI-35E-C2G-00B)
NTS 33C	(SI-33C-C2G-01K)	NTS 35I	(SI-35I-C2G-00B)
NTS 33D	(SI-33D-C2G-01K)	NTS 35J	(SI-35J-C2G-00B)
NTS 33E	(SI-33E-G2P-00J)	NTS 35K	(SI-35K-C2G-00B)
NTS 33F	(SI-33F-C2G-01K)	NTS 35L	(SI-35L-C2G-00B)

* NTS : National Topographic System

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