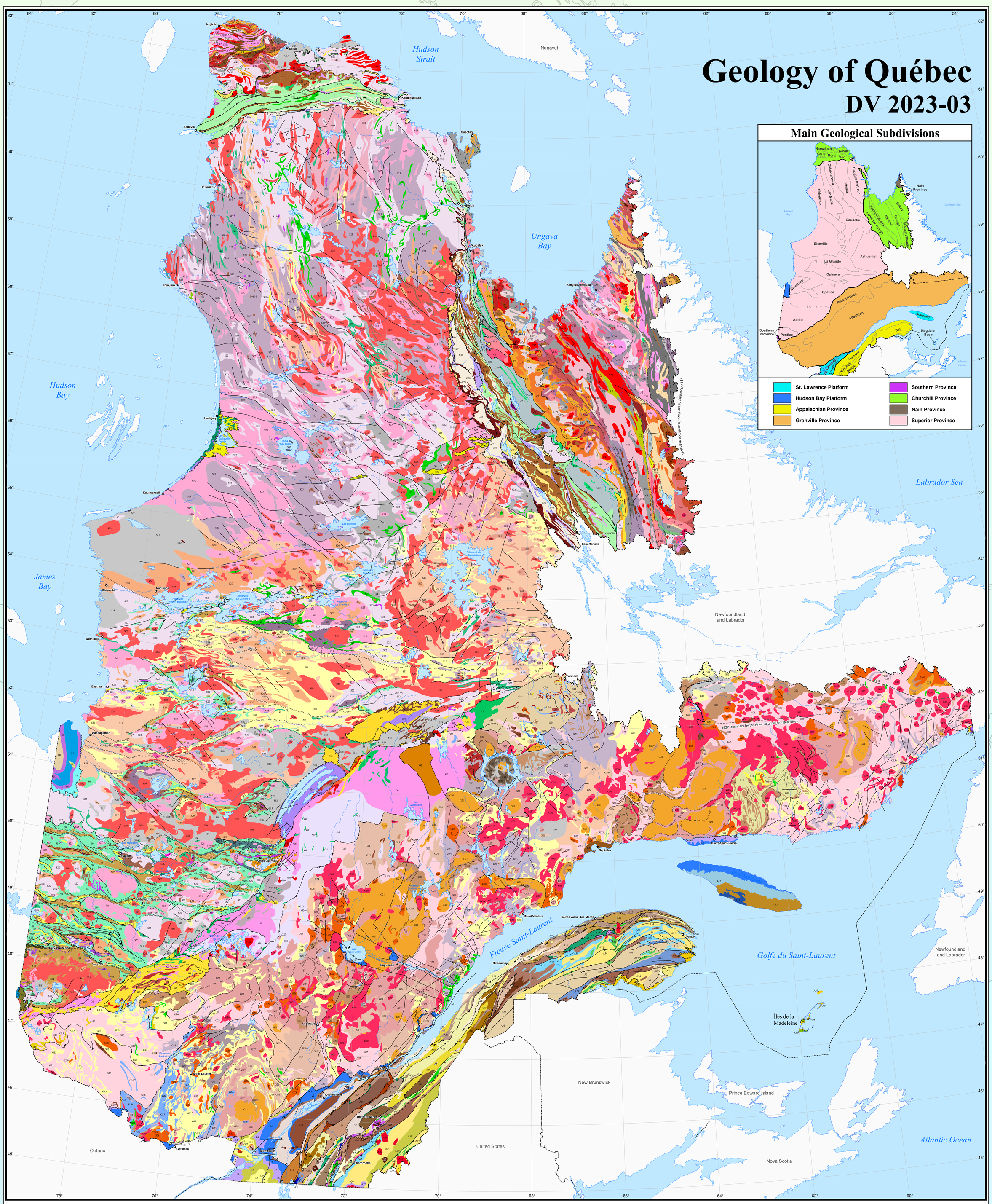
Geology of Québec

DV 2023-03



MONTEREGIANS

MESOZOIC

CRETACEOUS

- **M** Intermediate to ultramafic alkaline intrusive rocks, associated diatreme breccias and hornfels

ST. LAWRENCE PLATFORM

(St. Lawrence Lowlands and Anticosti platforms)

PALEOZOIC

LOWER SILURIAN

- **L15** Mudstone, limestone and reefal limestone
- **L14** Crinoidal and reefal limestone
- **L13** Limestone, shale, mudstone and limestone conglomerate

UPPER AND MIDDLE ORDOVICIAN

- **L12** Sandstone, siltstone and shale
- **L11** Mudrock, slate, dolostone and sandstone
- **L10** Red shale, green sandstone, siltstone, gypsum and anhydrite
- **L9** Shale, mudstone, sandstone, siltstone and limestone
- **L8** Calcareous shale and argillaceous limestone
- **L7** Limestone, shale, dolostone and sandstone
- **L6** Breccia with fragments of dolostone, limestone and sandstone in a calcareous matrix

LOWER ORDOVICIAN

- **L5** Dolomitic sandstone, quartzitic sandstone and dolostone
- **L4** Dolostone, sandstone, limestone and shale

UPPER CAMBRIAN

- **L3** Quartzitic sandstone, arkosic sandstone, feldspathic sandstone and conglomerate

LOWER CAMBRIAN

- **L2** Feldspathic sandstone, quartzitic sandstone and conglomerate
- **L1** Dolostone, limestone and shale

HUDSON BAY PLATFORM

PALEOZOIC

LOWER DEVONIAN

- **H5** Sandstone and arkose

UPPER AND MIDDLE SILURIAN

- **H4** Gypsiferous mudstone, siltstone, sandstone, dolostone and limestone
- **H3** Limestone, dolostone, chert, sandstone and siltstone
- **H2** Dolostone, sandstone, limestone and calcareous breccia

UPPER ORDOVICIAN

- **H1** Limestone, dolostone and claystone

APPALACHIAN PROVINCE

PALEOZOIC

CARBONIFEROUS TO PERMIAN

- **A39** Conglomerate, sandstone, mudrock and limestone
- **A38** Basalt, collapse breccia, volcaniclastic rocks, mudrock, sandstone, limestone, gypsum and anhydrite

SILURIAN TO DEVONIAN

- **A37** Hornfel
- **A36** Granite, granodiorite, tonalite, monzonite, syenite and monzodiorite
- **A35** Diorite and gabbro
- **A34** Sandstone, arenite, mudrock, limestone and conglomerate
- **A33** Arkosic wacke, mudslate, phyllite and sandstone
- **A32** Siltstone, mudstone, sandstone, limestone and conglomerate
- **A31** Mudrock, sandstone, limestone and conglomerate
- **A30** Limestone, calcareous mudstone, sandstone and conglomerate
- **A29** Basalt, andesite, chlorite schist, rhyolite, dacite and volcaniclastic rocks

ORDOVICIAN TO LOWER SILURIAN

- **A28** Granite and tonalite
- **A27** Sandstone, arenite, wacke, siltstone, shale and conglomerate
- **A26** Siltstone, shale, sandstone and chert
- **A25** Mudstone, siltstone, sandstone, limestone and conglomerate
- **A24** Slate, slaty schist, phyllite, sandstone, limestone, siltstone and conglomerate
- **A23** Limestone, mudstone and sandstone
- **A22** Tectonic mélange
- **A21** Ultramafic rocks, amphibolite, gabbro and ultramafic and sedimentary rocks mélange
- **A20** Felsic volcaniclastic rocks, rhyolite, rhyolitic breccia and quartz schist
- **A19** Basalt, mafic volcaniclastic rocks and chlorite schist

CAMBRIAN TO LOWER ORDOVICIAN

- **A18** Feldspathic sandstone, wacke, slaty schist and siltstone with conglomerate and mudslate interbeds
- **A17** Mudrock, slate, sandstone, limestone and conglomerate
- **A16** Slate, schist and siltstone
- **A15** Shale and mudstone with conglomerate and limestone interbeds
- **A14** Grey and green mudslate with mudstone, siltstone, sandstone and limestone interbeds
- **A13** Red, green and grey mudslate with mudstone, siltstone, phyllite, sandstone, limestone and conglomerate interbeds
- **A12** Dolomitic or calcareous claystone and limestone
- **A11** Limestone, dolostone and sandstone
- **A10** Quartzitic sandstone, quartzite and quartzitic arenite
- **A9** Slaty schist with sandstone and quartzite interbeds
- **A8** Phyllite, schist, slate, sandstone, quartzite, dolostone and conglomerate
- **A7** Tectonic mélange composed of lithologies of the Rivière-Ouelle, Tourelle and Des Landes formations
- **A6** Ultramafic to felsic intrusive rocks, mafic volcanic rocks, volcaniclastic rocks and amphibolite
- **A5** Basalt, chlorite schist, mafic tuff and gabbro

NEOPROTEROZOIC TO LOWER ORDOVICIAN

- **A4** Sandstone, mudrock, mafic volcanite rocks, breccia and conglomerate
- **A3** Schist, quartzite, phyllite, amphibolite and gabbro
- **A2** Basalt, metabasalt and metasedimentary rocks

PROTEROZOIC

- **A1** Quartzofeldspathic metasedimentary rock (diamictite)

GRENVILLE PROVINCE

MESOZOIC

TRIASSIC

- **G34** Impactite: monzonite
- **G33** Impactite: latite and spherulitic basalt

NEOPROTEROZOIC

EDICARIAN

- **G32** Syenite, monzonite, monzodiorite, granite and carbonatite
- **G31** Gabbro, troctolite, magnetite, nelsonite and dunite

PALEOPROTEROZOIC AND MESOPROTEROZOIC

GRANITOIDS

- **G30** Granite, monzonite, monzogranite, monzodiorite, granodiorite, syenite and pegmatite
- **G29** Tonalite, granodiorite, diorite and monzodiorite
- **G28** Syenite, monzonite, monzodiorite, diorite and related alkaline intrusions
- **G27** Hypersthene-bearing granitoids : magerite, charnockite, enderbite, jotunite, opdalite, hypersthene syenite and diorite
- **G26** Migmatite complex, migmatitic paragneiss and granitic gneiss
- **G25** Granitic, granodioritic, tonalitic, quartzofeldspathic, monzonitic, monzodioritic and syenitic gneiss
- **G24** Charnockitic, mangeritic and enderbitic gneiss and mixed gneiss
- **G23** Tonalitic, granodioritic, granitic and/or dioritic gneiss; migmatite, enderbite and tonalite
- **G22** Unsubdivided gneiss

MAFIC TO ULTRAMAFIC ROCKS

- **G21** Anorthosite, leuconorite, norite, leucotroctolite, leucogabbro, gabbronorite and ultramafic rocks
- **G20** Gabbro, gabbronorite, norite, troctolite, diorite, mangerite, amphibolite, schist and ultramafic rocks
- **G19** Mafic gneiss, amphibolite, schist and gabbro

SEDIMENTARY ROCKS

- **G18** Arenite, arkose, sandstone, wacke, conglomerate, quartzite and schist
- **G17** Iron formation
- **G16** Marble, calcosilicate rocks, paragneiss, quartzite and pegmatite
- **G15** Quartzite, schist, paragneiss, calcosilicate rocks and gneiss
- **G14** Schist, phyllite and varied gneiss
- **G13** Paragneiss, migmatized paragneiss, calcosilicate rocks, quartzite, marble, pegmatite, iron formation and amphibolite

VOLCANIC ROCKS

- **G12** Felsic volcanic rocks
- **G11** Amphibolite, basalt, andesite and mafic gneiss

ARCHEAN

GRANITOIDS

- **G10** Granite, granodiorite, quartz monzonite and pegmatite
- **G9** Tonalite, granodiorite, diorite and monzodiorite
- **G8** Syenite, monzonite, monzodiorite and granite
- **G7** Diatexite, metatexite, anatectic granite and gneiss
- **G6** Varied granitoid gneiss
- **G5** Charnockitic gneiss, granulitic gneiss and mixed gneiss
- **G4** Varied gneiss, migmatite and felsic intrusive rocks

MAFIC ROCKS

- **G3** Anorthosite, gabbro and diorite

SEDIMENTARY ROCKS

- **G2** Paragneiss: presence of migmatite, felsic intrusive rocks, gneiss and amphibolite

VOLCANIC ROCKS

- **G1** Amphibolite, metabasalt and mafic gneiss of volcanic origin

SOUTHERN PROVINCE

PALEOPROTEROZOIC

- **SU** Quartz arenite, arkose, wacke and conglomerate

CHURCHILL PROVINCE

MESOPROTEROZOIC

- **C46** Granite
- **C45** Hypersthene quartz syenite and syenogranite, mangerite and quartz monzonite
- **C44** Quartz syenite, alkali feldspar syenite, granite and monzonite
- **C43** Anorthosite, troctolite, leuconorite, gabbronorite, gabbro and monzodiorite

PALEOPROTEROZOIC

GRANITOIDS

- **C42** Granite, monzodiorite, granodiorite, tonalite and pegmatite
- **C41** Granodiorite, quartz monzodiorite, monzogranite and diorite
- **C40** Enderbite, opdalite, charnockite, jotunite and mangerite
- **C39** Tonalite and granite
- **C38** Diorite and hypersthene quartz diorite, jotunite, mangerite and opdalite
- **C37** Diorite, quartz diorite, monzodiorite, quartz monzodiorite and quartz monzonite
- **C36** Migmatitic rocks and anatectic granite derived from orthogneiss
- **C35** Diatexite, metatexite and anatectic granite
- **C34** Hypersthene gneiss
- **C33** Tonalitic, granitic, dioritic and granodioritic gneiss

MAFIC TO ULTRAMAFIC ROCKS

- **C32** Carbonatite and carbonatitic tuff
- **C31** Gabbro, gabbronorite, monzogabbro, diorite, norite and anorthosite
- **C30** Ultramafic rocks

SEDIMENTARY ROCKS

- **C29** Arkose, quartz arenite, sandstone, conglomerate, mudrock and dolostone
- **C28** Mudrock, wacke, schist, slate, phyllite and shale
- **C27** Dolostone, stromatolitic dolostone, dolomitic sandstone and siltstone, chert and chert breccia
- **C26** Iron formation, mudrock and quartz arenite
- **C25** Metawacke, meta-arkose, meta-arenite and paraschiste
- **C24** Quartzite
- **C23** Marble, dolostone, schist, limestone and calcosilicate rocks
- **C22** Migmatitized paragneiss

VOLCANIC ROCKS

- **C21** Metavolcanoclastites, rhyolite, augen schist and metabasalt
- **C20** Basalt, mafic volcaniclastic rocks and amphibolite
- **C19** Alkaline mafic volcanic rocks
- **C18** Amphibolite and metabasalt

ARCHEAN TO PALEOPROTEROZOIC

GRANITOIDS

- **C17** Granite, quartz monzonite and granodiorite
- **C16** Granodiorite, monzogranite and tonalite
- **C15** Tonalite, granodiorite and granite
- **C14** Enderbite, opdalite and charnockite
- **C13** Monzodiorite, monzogabbro and monzonite
- **C12** Quartz monzonite, quartz monzodiorite, quartz diorite and monzogranite
- **C11** Migmatitic rocks and anatectic granite
- **C10** Granitic, granodioritic and quartz monzodioritic gneiss
- **C9** Hypersthene granitic gneiss
- **C8** Tonalitic, dioritic, monzodioritic and granitic gneiss
- **C7** Hypersthene tonalitic gneiss

MAFIC ROCKS

- **C5** Gabbronorite, gabbro, hypersthene diorite and diorite

SEDIMENTARY ROCKS

- **C5** Meta-arkose, meta-arenite, metaconglomerate and paraschist
- **C4** Quartzite
- **C3** Migmatized paragneiss, paragneiss and paraschist

VOLCANIC ROCKS

- **C2** Felsic to intermediate metavolcanoclastites, felsic metavolcanites and metabasalt
- **C1** Amphibolite and metabasalt

NAIN PROVINCE

ARCHEAN TO PALEOPROTEROZOIC

GRANITOIDS

- **N7** Granite, granodiorite and tonalite
- **N6** Opdalite and charnockite
- **N5** Hypersthene quartz diorite, enderbite and hypersthene quartz monzodiorite
- **N4** Tonalitic, dioritic and granodioritic gneiss

MAFIC ROCKS

- **N3** Hypersthene anorthosite and norite
- **N2** Gabbro and diorite

SEDIMENTARY ROCKS

- **N1** Paragneiss, metatexite, diatexite and anatectic granite

SUPERIEUR PROVINCE

PALEOZOIC

PERMIAN

- **S36** Impactite, mylolisthenite, ignimbrite and breccia

ORDOVICIAN

- **S35** Limestone, sandstone, shale and dolostone

PALEOPROTEROZOIC

- **S34** Gabbro and diabase
- **S33** Ijolite, urtite, carbonatite, syenite and ultramafic intrusions
- **S32** Quartz arenite, sandstone, arkose, conglomerate and mudrock
- **S31** Conglomerate and sandstone
- **S30** Shale, wacke, siltstone and iron formation
- **S29** Stromatolitic dolostone, sandstone and conglomerate
- **S28** Iron formation
- **S27** Columnar basalt and subaerial basalt

NEOARCHEAN

GRANITOIDS

- **S26** Granite, monzogranite, syenogranite, granodiorite and monzonite
- **S25** Granodiorite, granite, tonalite, monzodiorite and monzonite
- **S24** Orthopyroxene- and/or clinopyroxene-bearing granite and granodiorite
- **S23** Orthopyroxene- and/or clinopyroxene-bearing intrusive tonalitic rocks
- **S22** Tonalite, trondhjemite, granodiorite, granite, diorite and tonalitic gneiss
- **S21** Orthopyroxene- and/or clinopyroxene-bearing quartz diorite and tonalite
- **S20** Diorite, monzodiorite, monzonite, syenite and felsic intrusive rocks
- **S19** Diatexite, metatexite and undifferentiated migmatite
- **S18** Tonalitic, dioritic, granitic and granodioritic gneiss

MAFIC TO ULTRAMAFIC ROCKS

- **S17** Anorthosite, gabbro, dunite, peridotite et pyroxenite
- **S16** Gabbro, gabbronorite, diorite, norite, anorthosite and ultramafic rocks
- **S15** Pyroxenite, peridotite, dunite, hornblendite, serpentinite, websterite, clinopyroxenite, carbonatite and mafic and ultramafic sills

SEDIMENTARY ROCKS

- **S14** Wacke, mudrock, sandstone, conglomerate, iron formation and arenite
- **S13** Conglomerate
- **S12** Iron formation
- **S11** Paragneiss, migmatitic paragneiss, schist, metawacke, quartzite, iron formation, metatexite and diatexite

VOLCANIC ROCKS

- **S10** Felsic volcanic and volcaniclastic rocks
- **S9** Basalt, andesite, mafic to felsic volcaniclastic rocks, amphibolite, gabbro and sedimentary rocks
- **S8** Amphibolite, mafic gneiss, metabasalt and undifferentiated mafic to intermediate rocks
- **S7** Komatiite, magnesian basalt and ultramafic sills

MESOARCHEAN

- **S6** Granodiorite
- **S5** Tonalite, diorite, quartz diorite and granodiorite
- **S4** Tonalitic and dioritic gneiss
- **S3** Paragneiss
- **S2** Metavolcanic and metasedimentary rocks

EOARCHEAN

- **S1** Metavolcanic and metasedimentary rocks

SYMBOLS

- Unconformity
- Thrust fault
- Normal fault
- Undefined fault
- Shear zone

BOUNDARIES

- International boundary
- Interprovincial or inter-state boundary
- Québec – Newfoundland and Labrador boundary (this boundary is not definitive)

Metadata

Geodetic reference frame:	GRS 80 ellipsoid
Geodetic reference system:	NAD 83 compatible with the world geodetic system WGS 84
Cartographic projection:	Lambert conical
Central meridian:	68° 30' West

0 50 100 150 km

1/2 000 000

Sources

Data	Organization	Year
Geology:	Ministère des Ressources naturelles et des Forêts Direction de l'information géologique et de la promotion	2022
Topography:	Ministère des Ressources naturelles et des Forêts Direction générale de l'information géographique	2010

Realization

Geological compilation:	Ghyslain Roy, géo
Technical assistance:	Kathleen O'Brien
Production:	Ministère des Ressources naturelles et des Forêts Direction générale de Géologie Québec
Distribution:	Ministère des Ressources naturelles et des Forêts Direction de l'information géologique et de la promotion

Learn more :https://gq.mines.gouv.qc.ca/documentation_en/additional_information/geological-map-of-quebec/

This document has no legal value
© Gouvernement du Québec, 1st quarter of 2023

Location

Ministère des Ressources naturelles et des Forêts
Québec