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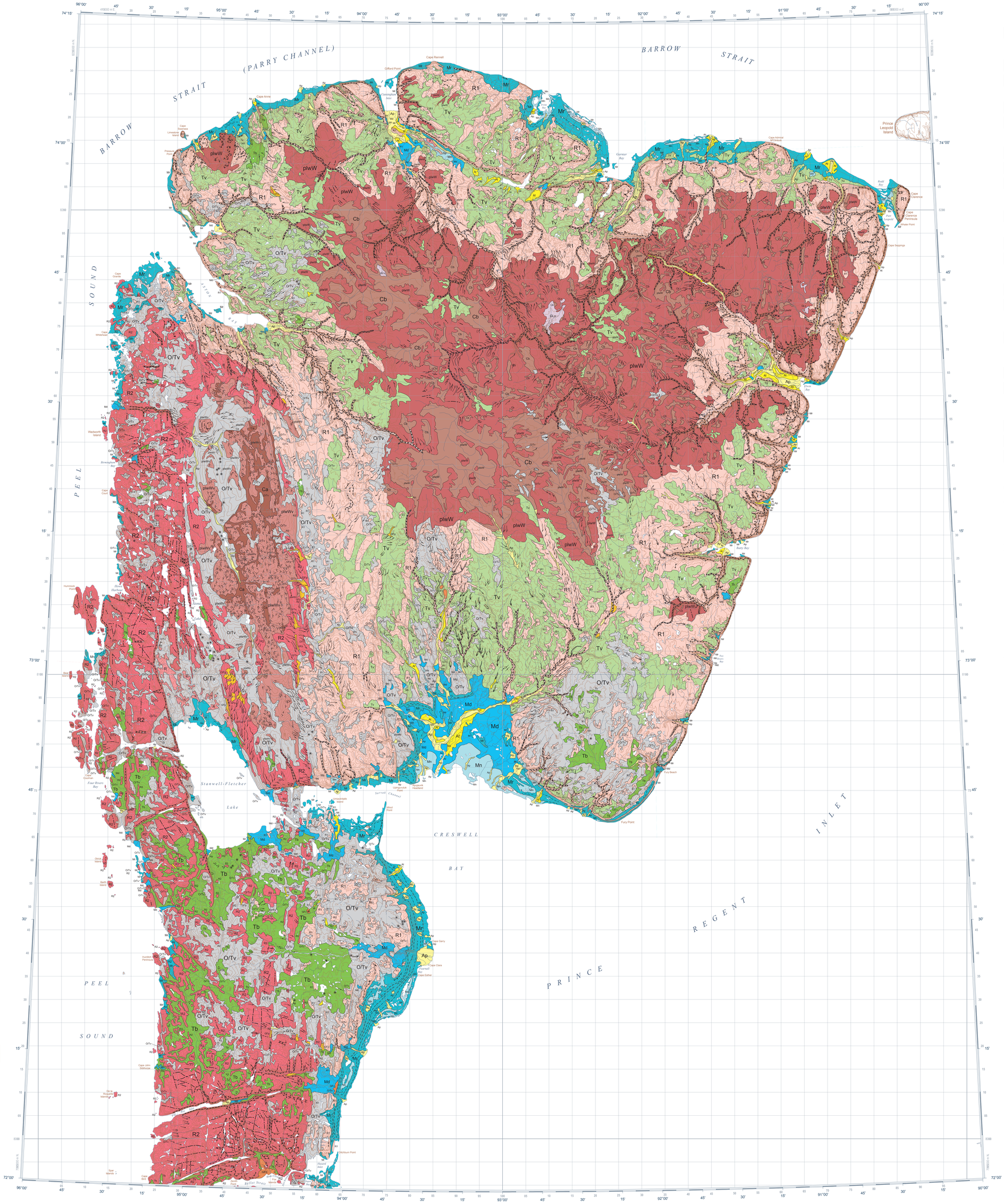
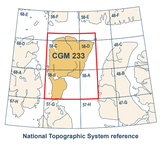



### Abstract


This new surficial geology map product represents the conversion of Map 1555A and its legend, using the Geological Survey of Canada's Surficial Data Model (SDM version 2.1) which can be found in Open File 7741. All geoscience knowledge and information from Map 1555A that conformed to the current SDM were maintained during the conversion process. The purpose of converting legacy map data to a common science language and common legend is to enable and facilitate the efficient digital compilation, interpretation, management and dissemination of geologic map information in a structured and consistent manner. This provides an effective knowledge management tool designed around a geo-database which can expand following the type of information to appear on new surficial geology maps.


### Résumé


Ce nouveau produit cartographique de la géologie des formations superficielles correspond uniquement à la conversion de la Carte 1555A et de sa légende, en se servant du Modèle de données pour les formations superficielles (MDFS version 2.1) de la Commission géologique du Canada, lequel peut être consulté dans le Dossier public 7741. Toutes les connaissances et l'information de nature géoscientifique de la Carte 1555A qui sont en conformité avec le modèle de données ont été conservées pendant le processus de conversion. Le but de cette conversion de cartes publiées antérieurement suivant un langage scientifique commun et une légende commune est de permettre et de faciliter la compilation, l'interprétation, la gestion et la diffusion efficaces de l'information géologique cartographique en mode numérique de façon structurée et cohérente. Cette façon de faire offre un outil efficace de gestion des connaissances élaboré à l'aide d'une géodatabase qui pourra évoluer suivant le type d'information à paraître sur les nouvelles cartes des formations superficielles.


National Topographic System reference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2nd EDITION

## CANADIAN GEOSCIENCE MAP 233

### SURFICIAL GEOLOGY

# SOMERSET ISLAND

Nunavut

NTS 58-B, C, and parts of 58-A, D, E, and F

**1:250 000**

## QUATERNARY

### POST-LAST GLACIATION

#### NONGLACIAL ENVIRONMENT

**O** — **Organic deposits, undifferentiated:** vegetation cover; variable thickness; generally occurs as 30–60 % cover over till veneer.

**COLLUVIAL DEPOSITS:** nonsorted debris; 1–10 m thick; mantling lower slopes and valley floors; solifluted and washed from upslope weathered rock areas; deposition active since deglaciation but basal sediments probably date from earlier nonglacial intervals.

**Ca** — **Colluvial apron:** muddy sands; 1–10 m thick; derived from weathered gneiss (plwWv).

**Cb** — **Colluvial blanket:** slightly stony sandy muds; 1–10 m thick; derived from weathered carbonates (plwW).

**ALLUVIAL SEDIMENTS:** gravel and sand; 2–20 m thick; deposited on floodplains and fans.

**Ap** — **Floodplain sediments:** gravel and sand; 2–20 m thick; seasonally flooded.

**At** — **Terraced sediments:** gravel and sand; 2–20 m thick; above present flood zone.

**MARINE SEDIMENTS:** gravel, sand, silt, and clay; 1–100 m thick; deposited in deltaic, beach, and nearshore environments during regression of the postglacial sea.

**Mr** — **Beach sediments:** gravel and sand; 1–5 m thick; forming ridges and swales.

**Md** — **Deltatic sediments:** clay, silt, sand, and gravel; coarsening upward sequences; 10–100 m thick; with flat terraced, dissected, or gullied surfaces; some deltas at marine limit are glaciomarine features.

**Mn** — **Nearshore sediments:** silt and fine sand; 1–5 m thick; forming plains.

### LAST GLACIATION (LATE WISCONSIN)

#### PROGLACIAL AND GLACIAL ENVIRONMENT

**GLv** — **Glaciolacustrine veneer:** clay, silt, and sand; less than 1 m thick; deposited in ice-dammed lakes; surface mimics form of underlying weathered rock or colluvium.

**GLACIOFLUVIAL SEDIMENTS:** gravel and sand; 1–100 m thick; deposited beneath and in front of the marginal zone of a glacier.

**GFp** — **Outwash plain sediments:** gravel and sand; 1–10 m thick; proglacial; terraced; deposited on floodplains and fans.

**GFc** — **Ice-contact sediments:** gravel and sand; 5–100 m thick, forming kames, conical hills, and ridges.

**GLACIAL SEDIMENTS (TILL):** nonsorted debris; 0.5–20 m thick; with contrasting vegetation covers reflecting undetermined compositional differences in till; dominantly lodgment till.

**Tv** — **Till veneer:** diamicton; 0.5–2 m thick; surface mimics form of underlying rock surface; some areas have 1–5 % vegetation cover.

**Tb** — **Till blanket:** diamicton; 2–20 m thick; gently rolling surface; fluted in places; 30–60 % vegetation cover.

### PRE-LAST GLACIATION (PRE-LATE WISCONSIN)

#### NONGLACIAL AND PERIGLACIAL ENVIRONMENT

**plwMd** — **Marine deltaic sediments:** clay, silt, sand, and gravel; coarsening upward sequences; 10–100 m thick; with flat terraced, dissected, or gullied surfaces; thought to predate the last glaciation on the basis of elevation and radiocarbon-dated driftwood.

**WEATHERED BEDROCK OR REGOLITH (RESIDUUM):** residual soils of various textures; about 1 m thick; overlying metamorphic and sedimentary rocks on smooth, gentle slopes interrupted by tors, cryoplanation terraces, and nivation hollows.

**plwWv** — **Regolith veneer:** felsenmeer; composed of blocks 1–2 m across; with interstitial grus; about 1 m thick; mantling gneiss.

**plwW** — **Regolith, undifferentiated:** platy felsenmeer and silty, sandy rubble; about 1 m thick; mantling limestone, dolostone, and sandstone; minor gravel mantling conglomerate.

## PRE-QUATERNARY

**BEDROCK:** rock of various lithologies and ages; hilly and hummocky with basins, steep slopes, and cliffs produced by glacial scouring.

**R1** — **Sedimentary bedrock:** limestone, dolostone, and sandstone; Late Precambrian to Early Devonian age; with discontinuous veneer of rubble and till about 0.5 m thick.

**R2** — **Igneous and metamorphic bedrock:** gneiss, granite, and minor quartzite of Precambrian age; relatively unweathered.

**R** — **Bedrock, undifferentiated:** unconsolidated sedimentary rock; quartz sandstone of Late Cretaceous to Early Tertiary age; unweathered.

A stratigraphic relationship is shown with a maximum of two map unit designators separated by a slash ( " / ) (e.g. O/Tv designates organic deposits overlying till veneer)

Area of tors, 1–5 m high

Area of meltwater channels, outwash and eskers formed by small Neoglacial ice caps

Geological contact:

*Defined*

*Approximate (gradational)*

*Inferred*

Cryoplanation terrace scarp, in bedrock, 1–2 m high

Beach crest, 1–3 m high

Marine limit of submergence recorded as washing limit on till

Meltwater channel:

*Minor, direction known, subglacial, 1–5 m deep*

*Lateral, 1–5 m deep in bedrock, residuum, or till; barb on upslope side*

Esker (direction of flow known, inferred)

Drumlinoid

Crag-and-tail

Fluted bedrock, direction known, more than 500 m long

Cirque headwall, large nivation hollow

Bedrock scarp, 10–300 m in height

Lineament in bedrock, 1–10 m deep fractures

Retrogressive thaw flowslide

Kame, small conical gravel hill

Glacial striations:

*Ice flow direction unknown*

*Ice flow direction known*


**Recommended citation**
Geological Survey of Canada, 2016. Surficial geology, Somerset Island, Nunavut, NTS 58-B, C, and parts of 58-A, D, E, and F; Geological Survey of Canada, Canadian Geoscience Map 233 (2nd edition, preliminary, Surficial Data Model v. 2.1 conversion of Map 1555A), scale 1:250 000. doi:10.4095/298713




Geological Survey of Canada
Canadian Geoscience Maps

Canada


**Author: Geological Survey of Canada**

Geology based on airphoto interpretation (1:60 000 scale) by A.S. Dyke, 1978, and field work by J.A. Netterville, A.S. Dyke, R.D. Thomas, K.A. Drabinsky, 1975, and by A.S. Dyke, 1977.

Geology conforms to Surficial Data Model v. 2.1

Data conversion by D.E. Kerr, 2015

Geomatics by L. Robertson and M. Smith

Cartography by G.S. Hanna

Initiative of the Geological Survey of Canada, conducted under the auspices of Natural Resources Canada's Geo-mapping for Energy and Minerals (GEM) program

Map projection Universal Transverse Mercator, zone 15. North American Datum 1983

Base map at the scale of 1:250 000 from Natural Resources Canada, with modifications.
Elevations in metres above mean sea level



SURFICIAL GEOLOGY
SOMERSET ISLAND
Nunavut
NTS 58-B, C, and parts of 58-A, D, E, and F


**1:250 000**

5 0 5 10 15 20 km

Proximity to the North Magnetic Pole causes the magnetic compass to be erratic in this area.
Mean magnetic declination 2016, 22°39'W, decreasing 31.6' annually. Readings vary from 13°55'W in the SW corner to 31°01'W in the NE corner of the map.

This map is not to be used for navigational purposes.

The Geological Survey of Canada welcomes corrections or additional information from users.

Data may include additional observations not portrayed on this map. *See* map info document accompanying the downloaded data for more information about this publication.

This publication is available for free download through GEOSCAN (http://geoscan.nrcan.gc.ca/).

**Preliminary publications in this series have not been scientifically edited.**


CANADIAN GEOSCIENCE MAP 233
SURFICIAL GEOLOGY
SOMERSET ISLAND
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