

# NFLD 2616v7 Bedrock Geology Dataset for the Island of Newfoundland User Guide

## Recommended citation:

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2012: Bedrock geology dataset for the Island of Newfoundland. Newfoundland and Labrador Department of Natural Resources, Geological Survey, Open File NFLD/2616 version 7.0.

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## INTRODUCTION

This dataset contains bedrock geological maps and data for the Island of Newfoundland, as assembled up to October, 2012. The geological features are separated into three file sets: polygons, contacts, and faults.

The polygon data and legend files have been generated from a *GeoLegend* database (Colman-Sadd, 2003a); the overall methodology is described by Colman-Sadd *et al.* (1997).

This open file will be updated periodically with additions to the area covered and changes to the existing coverage.

Users are cautioned that this is a preliminary release and its accuracy is not guaranteed. The compilers would appreciate being notified of errors in the data and they welcome suggestions for improved formats. Comments can be e-mailed to the compilers at [lorettacrisbywhittle@gov.nl.ca](mailto:lorettacrisbywhittle@gov.nl.ca)

Derivative products should acknowledge the source of the data (see "Recommended citation", "References" and [NFLD2616v7 reference list.pdf](#)).

## DISCLAIMER

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## **DIGITAL GEOLOGICAL MAP**

The files contain a digital geological map created by joining together digitized versions of published maps. For any particular part of the digital map, the published source map chosen for inclusion is the one deemed to be the most accurate and informative. Most of these maps were originally published at a scale of 1:50,000.

The digital map reproduces all the detail of the line work shown on the published maps and no changes have been made to line positions or attributes. There are, therefore, discontinuities where the geological line work crosses from one published map to another. As far as possible, the effect of these discontinuities has been minimized by careful selection of the joins between maps, and by the standardization of unit labels and legends.

### **Unit Labels and Legends**

The unit labels and legends that accompanied the published maps are not used. In their places are standardized labelling systems keyed to new, standardized legends. The new labels are the same for equivalent units on adjoining source maps. Use the "Find" tool in Adobe Acrobat to help locate labels on the legends. For reference purposes, the original labels from the published maps are recorded in the UNIT\_ID field on the polygon attribute list.

Data layers for the map are presented at four levels of detail and four labelling systems and legends are provided to correspond to each level of detail:

1. On the detailed version of the map, every unit that was distinguished on the original published maps is distinguished on the digital map. The matching legend is [NFLD2616v7 Detailed Stratigraphy Age Legend.pdf](#) and fields on the polygon attribute list starting with **D\_** are specific to this map.
2. On the generalized version, units are labelled according to the most senior stratigraphic division to which they belong, e.g., all units of the Buchans Group are labelled "O:B" standing for "Ordovician Buchans Group". On the map, contacts separating subdivisions of a lumped unit are omitted but otherwise the line work is the same as in the detailed version. The matching legend is [NFLD2616v7 Generalized Stratigraphy Age Legend.pdf](#) and fields on the polygon attribute list starting with **G\_** are specific to this map.
3. On the lithofacies version, units are slightly modified from those on the printed 1:1 million map, Map 90-01 "Geology of the Island of Newfoundland" (Colman-Sadd *et al.*, 1990). The line work is the same as for the detailed version except that contacts within lumped units are omitted. The matching legend is [NFLD2616v7 Lithofacies Legend.pdf](#) and fields on the polygon attribute list starting with **L\_** are specific to this map.

4. In the tectonic assemblage version, the classification is similar to that used in the Western Cordillera (Gabrielse *et al.*, 1991) and distinguishes terranes in more detail than the lithofacies version. For example, the Notre Dame Subzone is subdivided into a number of different arc-backarc systems. The line work is the same as for the detailed version except that contacts within lumped units are omitted. The matching legend is [NFLD2616v7\\_Tectonic\\_Assemblage\\_Legend.pdf](#) and fields on the polygon attribute list starting with **A\_** are specific to this map.

Note that the line work at each level of detail is derived from the same original line work file and has the same degree of topographic accuracy. On the DVD dataset, the full line work can be turned on at any time by selecting the NFLD2616v7\_total\_contacts file.

Maps with any level of detail can be produced using the uncoloured polygon layer and constructing suitable queries on the unit fields (fields 15 to 22). It is also possible to produce thematic maps, showing, for example, age groupings, rock types or an index of source maps, by colouring on polygon attributes other than map units.

### **Attribute Lists**

Attributes for each polygon, including labels, stratigraphic names, unit ages and source map reference, can be displayed in a window and can be used for searches, labelling and producing customized maps. The different fields are described in [polygon\\_Attributes.pdf](#).

*N.B.* Be sure to look at the appropriate attributes for the level of detail of the map being viewed (e.g., for the detailed version of the map, look at attributes prefixed with **D\_**). Attributes for lines include the nature of the line (e.g., geological contact, fault, or map boundary) and its degree of certainty (e.g., defined, approximate, or assumed). The feature codes are described in [Line\\_Attributes.pdf](#).

### **Time Scale**

The geological time scale that was used to calibrate ages in the polygon attributes window and on the legends is reproduced in the [Time\\_Scale.pdf](#). It is based on the "Geological Time Chart" of Okulitch (2004) with the addition of the new Ediacaran Period. The time scale is useful when searching for units by age because this is done most efficiently by specifying the age in millions of years (*N.B.* In polygons containing unseparated units, the age information in the polygon attribute window only applies to the first unit in the polygon).

### **Rock Types**

The characteristic rock type of map units is represented by descriptive keywords in the polygon attribute list. There are four rock-type fields for the four levels of detail because each keyword summarizes the rock type of an entire unit at a particular level of detail – be sure to use the one applicable to the map being viewed. The keywords allow the map to be searched by rock type (*N.B.* In polygons containing unseparated units, the rock-type keyword in the polygon attribute window only applies to the first unit in the polygon). The keywords are listed in [Rock\\_Types.pdf](#).

### **References**

***Maps derived from this dataset should reference the original source maps and legend descriptions, wherever possible.*** Every polygon has a reference to the map

from which it was digitized and every legend description on the Generalized and Detailed Legends has a reference to the source of the description. All of these references are listed in full in the [NFLD2616v7 reference list.pdf](#) file. Note that some polygons have been truncated where they abut against a neighbouring source map and may be only partly shown.

### **OTHER DATA**

Many of the geological source maps in the Bedrock Geology Dataset are only partially reproduced because of the way that the maps have been joined together. Most of these source maps were originally digitized in their entirety and the line work has been archived. The digitized line work for these maps is available on request from the Geological Survey but the user is responsible for assigning any geological attributes that may be needed to make the line work usable.

**Structural point data** are available for some areas and may be obtained from the Geological Survey on request.

### **Topography**

For copyright reasons, only 1:1 million scale topographic data can be included on the DVD version. These data may be inaccurate by 500 m or more. The geological map is best viewed with 1:50 000 scale topographic base maps. Digital versions of these can be purchased from the Department of Environment and Conservation, Government of Newfoundland and Labrador at: <http://www.env.gov.nl.ca/env/maps/productlist.html> Alternatively, more up-to-date CanVec digital topographic data is available free of charge from the federal government at <http://geogratis.cgdi.gc.ca/geogratis/en/download/topographic.html>.

### **Geological Contacts**

Geological contact files are reproduced at three levels of detail:

1. The detailed version contains all the line work present on the original source maps (excluding the map boundaries). Files related to this version are indicated by **detailed** in their file names. They should be used with the [NFLD2616v7 Detailed Stratigraphy Age Legend.pdf](#).
2. The generalized version shows map units generalized to their highest stratigraphic rank. Files related to this version are indicated by **generalized** in their file names. They should be used with the [NFLD2616v7 Generalized Stratigraphy Age Legend.pdf](#).
3. The lithofacies version shows map units modified from those on the printed 1:1 million map, Map 90-01 "Geology of the Island of Newfoundland" (Colman-Sadd *et al.*, 1990). Files related to this version are indicated by **lithofacies** in their file names. They should be used with the [NFLD2616v7 Lithofacies Legend.pdf](#).
4. In the tectonic assemblage version, the line work is the same as for the detailed version except that contacts within lumped units are omitted. They should be used with the [NFLD2616v7 Tectonic Assemblage Legend.pdf](#).

### **Projection Information**

Documentation files are in Adobe Acrobat format.

All GIS files on the DVD use North American Datum 1927 (NAD 27) and the map projection for UTM Zone 21 (although NTS map sheets 02F, 02C, 01N and 01K actually lie in Zone 22). All GIS files downloaded from the Geoscience Atlas use the latitude-longitude geographic coordinate system based on NAD27.

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