

MAP 2002-09  
**UNTITLED**  
 NEWFOUNDLAND  
 Scale 1:50 000



**LANDFORM CLASSIFICATION**

Each outlined area is assigned a classification consisting of up to three generic categories and modifiers that designate the type of deposits within each area. Each category, within a classification, is listed in order of dominance and is separated from the other categories by a slash (e.g., Tu-Rc). Generally, the areas are divided so that three landforms or deposit types are identified within a given area. The classification system is also used to derive the approximate percentage of landforms occurring within an outlined area, but those which comprise less than 5 percent of the area are not included in the classification. Four variations of the landform system are as follows:

- Where four different landforms are included in a single map unit they are each separated by a single slash (/) and their relative percentages are (50-60), (20-30), (10-20), and (5-10).
- Where three different landforms are included in a single map unit they are each separated by a single slash (/) and their relative percentages are (60-85), (15-35), and (5-15).
- Where two landforms are included in a single map unit, a double slash (//) or single slash (/) is used to separate them, and their relative percentages are (80-95) and (15-20) or (60-80) and (15-40) for a single slash.
- A hyphen between two landform types indicates that they are approximately equal in area. For example, Tu-Rc indicates that till veneer and rock concealed by vegetation or a thin regolith are equal in area.
- A composite symbol is used to show combinations of the above cases. For example, T<sup>50</sup> indicates that about 60-85 percent of the area is covered by fluvial sediment, 15-40 percent by glaciolacustrine sediments, and is underlain by RL.

The station data reported on this map have been referenced from the Newfoundland Station Database (Taylor, 2001).

**LANDFORM CLASSIFICATION: GENETIC**

Symbol	Depositional Environment	Origin and Characteristics of Materials
F	Fluvial	Alluvium consisting of silt and clay to bouldery gravel; forms terraces and plains associated with modern stream channels, their floodplains and deltas; usually less than 1 m thick, deposited by fluvial action at or below maximum flood levels.
C	Colluvial	Colluvium consists of coarse-grained bedrock derived materials, but may include sand, silt or clay; accumulates on the lower parts, or at the base of steep rock faces; transported by gravity.
E	Aeolian	Medium to fine grained sand and silt, well sorted, poorly compacted; commonly occur as dunes up to 10 m high; transported and deposited by wind.
G	Glaciolacustrine	Fine grained sand to coarse grained silt; gravel occur as plains, ridges ( eskers), hummocks, terraces and deltas; generally greater than 1 m thick; deposited as outwash in an ice-covered landscape.
L	Lacustrine	Silt, clay, gravel and sand occur as plains and blankets; silt and clay deposited in freshwater lakes from suspension, sand and silt by lake-floor currents, gravel and sand by shoaline wave action.
M	Marine	Clay, silt, gravel and diamict; sand is present in some places, generally moderately to well sorted and commonly stratified, but may be massive; occurs as beach ridges, deltas, terraces and bars deposited in a marine environment; gravel and sand by shoaline wave action; may include shells, clay and silt deposited from suspension and turbidity currents; gravel is generally a wave-washed lag.
T	Glacial	Includes all types of till; composed of diamict; transported and subsequently deposited by ice from glacial ice with no significant sorting by water.
O	Bog	Poorly drained accumulations of peat, peat moss and other organic matter; developed in areas of poor drainage.
R	Rock	Bedrock

**LANDFORM CLASSIFICATION: MORPHOLOGY**

Symbol	Morphology	Description
a	apron	A relatively gentle slope at the foot of a steeper slope, commonly used to describe a scarp face at edge of fluvial terrace.
b	blanket	Any deposit greater than 1.5 m thick; minor irregularities of the underlying unit are masked but the major topographic form is still evident.
c	concealed by vegetation	Vegetation that developed on either colluvium surfaces or a thin layer of angular frost-shattered and frost-heaved rock fragments overlying bedrock; includes areas of shallow (less than 1 m), discontinuous outwash.
d	dummock	Elongate ridges between 1.5 and 20 m high, 20 and 300 m wide, and 200 to 5000 m long; ridges have a rounded end pointing in the up-ice direction and gently sloping sides that taper in the down-ice direction; each a concave longitudinal profile, commonly with a steeper slope in the up-ice direction; consist of subglacially formed deposits shaped in a streamlined form parallel to the direction of glacial flow; commonly consist of till, although some may contain stratified drift; may have a rock core.
e	eroded and dissected	Series of closely spaced gullies or deeply incised channels; can have a dendritic pattern or may be a single straight or anastomosing channel; gullies and channels may contain undercut streams.
f	fan	A gently sloping accumulation of debris deposited by a stream issuing from a valley onto a levelled, flat floor at the mouth of the valley from which the stream issues; the fan shape results from the deposition of material as the stream swings back and forth across the levelled, flat floor and is usually derived from eroded glacial and glaciolacustrine deposits; glaciolacustrine fans (deltas) are deposited in standing water rather than a terrestrial environment; colluvial fans are derived from bedrock and are usually steeper (i.e., cone shaped).
h	hummock	An apparently random assemblage of knobs, mounds, ridges and depressions without any pronounced parallel, sigmoidal form or orientation; formed by glacial melting during ice migration and disintegration; includes subglacial, englacial, supraglacial and stratified materials.
k	kettle	A basin or bowl-shaped closed depression or hollow in glacial drift; results from the melting of a buried or partly buried detached block or lens of glacial ice; commonly occurs in association with hummocks.
i	ineated	Elongate spindle-shaped ridges between 6 and 60 m high, 75 and 300 m wide and up to 4000 m long; ridges are commonly straight sided; taper at one or both ends, and have a flat longitudinal profile; consist of subglacially formed deposits shaped in a streamlined form parallel to the direction of glacial flow; commonly consist of till, although some may contain stratified drift; may have a rock core; includes slope treated logs (STL).
p	plain	A comparatively flat, level, or slightly undulating tract of land; materials are either till, glaciolacustrine, alluvial, marine, lacustrine or organic sediments; bedrock features are commonly masked by the covering sediments.
r	ridge	Narrow, elongated and commonly steep-sided feature that rises above the surrounding terrain; materials are rock, till, glaciolacustrine, fluvial, marine, lacustrine, aeolian, or organic sediments; includes string logs (SL).
t	terrace	Long, narrow, level or gently inclined step-like surface, bounded along one edge by a steeply sloping scarp and along the other by a less steep ascending slope or scarp; materials are either till, glaciolacustrine, fluvial or lacustrine sediments; generally formed by fluvial and glaciolacustrine action and marine wave action.
v	veneer	A thin layer generally less than 1.5 m thick; morphology of the underlying unit is evident.
w	weathered	A thin layer generally less than 1 m thick, of frost-heaved and frost-shattered bedrock fragments.
x	complex	Commonly used to indicate numerous esker ridges that are closely spaced; can be used where any generic category entails numerous surface expressions in a small area, and in which no single element can be defined.

**LANDFORMS AND SURFICIAL GEOLOGY OF THE NTS MAP SHEET 13A/10 (Untitled)**

**MAP 2002-09**

**LANDFORM CLASSIFICATION**

MORPHOLOGY	GENETIC									
	Fluvial (F)	Colluvial (C)	Aeolian (E)	Glaciolacustrine (G)	Lacustrine (L)	Marine (M)	Glacial (T)	Organic (O)	Rock (R)	
apron (a)		Ca								
blanket (b)	Fb	Cb		Gb	Lb	Tb				Rb
concealed by vegetation (c)		Cc								
dummock (d)							Td			Rd
eroded and dissected (e)	Fe	Ca	Ea	Ga	La	Ma	Ta			Re
fan (f)	Ff	Cf		Gf						Rf
hummock (h)			EH	Gh			Th			
kettle (k)				Gk			Tk			
ineated (i)			Ei	Gi	Li	Mi	Ti	Oi		
plain (p)	Fp			Gp	Lp	Mp	Tp			Rp
ridge (r)	Fr			Gr	Lr	Mr	Tr			Rr
terrace (t)	Ft			Gt	Lt	Mt	Tt			Rt
veneer (v)	Fv	Cv		Gv	Lv	Mv	Tv			Rv
weathered (w)				Gw	Lw	Mw	Tw			Rw
undefined	F	C	E	G	L	M	T	O		R

**SYMBOLS**

Geological boundary (assumed)	.....
Scarp face at edge of fluvial terrace	.....
Cirque	.....
Esker (flow direction known or assumed, unknown)	.....
Meltdown channel (small, large)	.....
Crestline of major moraine ridge	.....
Trend of ribbon or minor moraine ridges	.....
Beach ridges	.....
Crevasses fill ridge	.....
Sand dunes	.....
Drumlin	.....
Comp-and-fall hill	.....
Fluting	.....
Roché Moutonnée	.....
Straton (direction known, unknown)	.....
Avalanche tracks	.....
Kettle hole (small, large)	.....
Spring (small, large)	.....
Observation site	.....
Delta	.....

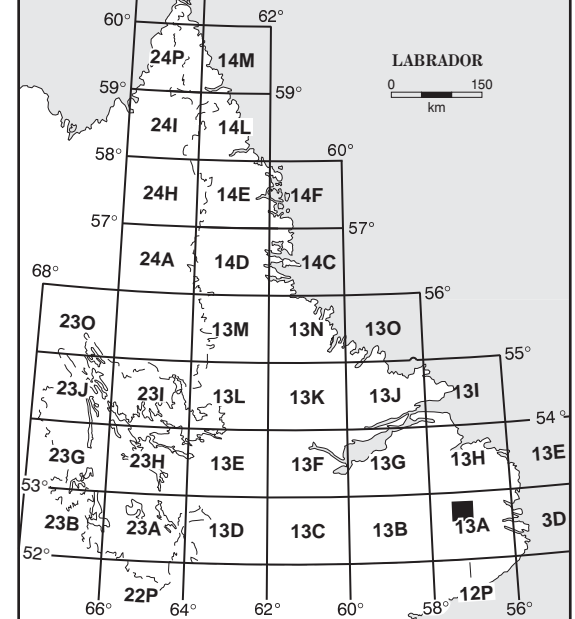
Elevation in metres above mean sea level. Contour interval 50 metres.  
 NOTE: All symbols and classifications may not occur on this map.  
 Geology by S.J. McCaug, Geological Survey, Department of Mines and Energy, Government of Newfoundland and Labrador.  
 Digital Cartography by T.J. Seers, Geological Survey, Department of Mines and Energy, Government of Newfoundland and Labrador.  
 Copies of this map may be obtained from the Geoscience Publications and Information Section, Geological Survey, Department of Mines and Energy, P.O. Box 8700, St. John's, Newfoundland, Canada, A1B 4X6.  
 E-mail: pub@nzpp.geosurvey.gov.ca  
 URL: www.geosurvey.gov.ca

**Note**  
 The purchaser agrees not to provide a digital reproduction or copy of this product to a third party. Derivative products should acknowledge the source of the data.

**Disclaimer**  
 The Geological Survey of Newfoundland and Labrador, a division of the Department of Mines and Energy (the "authors and publisher"), retains the sole right to the original data and information found in any product produced. The authors and publisher assume no legal liability or responsibility for any alterations, changes or misrepresentations made by third parties with respect to these products or the original data. Furthermore, the Geological Survey of Newfoundland and Labrador assumes no liability with respect to digital reproductions or copies of original products or for derivative products made by third parties. Please consult with the Geological Survey of Newfoundland and Labrador in order to ensure originality and correctness of data and/or products.

OPEN FILE 015A100047  
 PUBLISHED 2002  
 References  
 Taylor, D.M. 2001. Newfoundland and Labrador Station Database, version 4. Newfoundland and Labrador Department of Mines and Energy, Geological Survey, Open File NFD2195.  
 McCaug, S.J. 2000. Quaternary geology of the Annis River area and the Basin-Station to Mary's Harbour road corridor, southern Labrador. In Current Research - Newfoundland and Labrador Department of Mines and Energy, Geological Survey Report 02-1, pages 1-20.  
 McCaug, S.J. 2002. The geomorphology of the Annis River region, Newfoundland and Labrador Department of Mines and Energy, Geological Survey, Open File 015A046, 106 p.

**Recommended Citation:**  
 McCaug, S.J. 2002. Landforms and surficial geology of the NTS map sheet 13A/10 (Untitled). Newfoundland and Labrador Department of Mines and Energy, Geological Survey, Map 2002-09, Open File 015A100047.



INDEX MAP