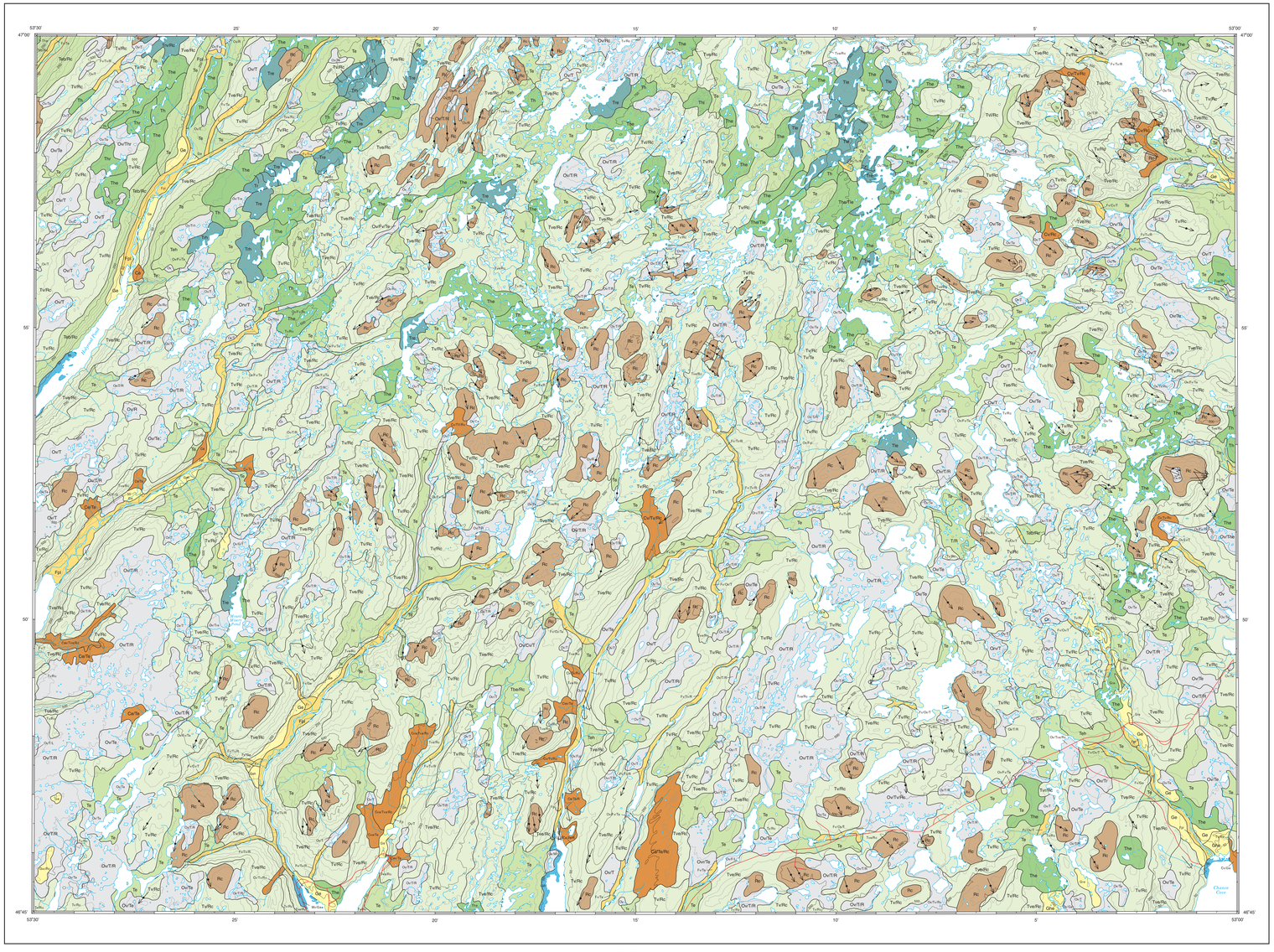

MAP 98-59

BISCAY BAY RIVER

NEWFOUNDLAND

1 0 1 2 3 4
km
Scale 1 : 50 000

1K/14

GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Mines and Energy
Geological Survey

LANDFORM CLASSIFICATION

Each outlined area is assigned a classification consisting of up to three genetic categories and modifiers that designate the types 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., Tv/R). 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 denote 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:

1. 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 - 30), and (5 - 15) .
2. 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 (85 - 95) and (5 - 15) for double slash, or (60 - 85) and (15 - 40) for a single slash.
3. A hyphen between two landform types indicates that they are approximately equal in area. For example, Tv-Rc indicates that till veneer and rock concealed by vegetation or a thin regolith are equal in area.
4. A composite symbol is used to show combinations of the above cases. For example, F/G(T) indicates that about 60 - 85 percent of the area is covered by fluvial sediment, 15 - 40 percent by glaciofluvial sediments, and is underlain by till.

The striation data reported on this map has been referenced from the Newfoundland Striation Database (Taylor et al, 1994)

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	Glaciofluvial	Fine grained sand to coarse grained cobbly gravel occur as plains, ridges (eskers), hummocks, terraces and deltas; generally greater than 1 m thick; deposited as outwash in an ice-contact position or proglacially
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 shoreline wave action
M	Marine	Clay, silt, gravel and diamicton; 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 shoreline wave action; may include shells, clay and silt deposited from suspension and turbidity currents; gravel is generally a wavewashed lag
T	Glacial	Includes all types of till; composed of diamicton; transported and subsequently deposited by/or from glacier 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 colluvium at the base of a rock escarpment; consists of materials derived from the usually steeper upper slope
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 mat 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 overburden
d	drumlinoid	Elongate ridge(s) 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 curving sides that taper in the down-ice direction; exhibit a convex 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 consists 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 arcuate channel; gullies and channels may contain underfit streams
f	fan	A gently sloping accumulation of debris deposited by a stream issuing from a valley onto a lowland; has its apex 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 lowland; fluvial fans are usually derived from eroded glacial and glaciofluvial deposits; glaciofluvial 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 parallelism, significant form or orientation; formed by glacial melting during ice stagnation 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 glacier ice; commonly occurs in association with hummocks
l	lineated	Elongate spindle-shaped ridge(s) 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 lineated bogs (Ol)
p	plain	A comparatively flat, level, or slightly undulating tract of land; materials are either till, glaciofluvial, alluvial, marine, lacustrine or organic sediments; bedrock features are commonly masked by the overlying sediments
r	ridge	Narrow, elongated and commonly steep-sided feature that rises above the surrounding terrain; materials are either rock, till, glaciofluvial, fluvial, marine, lacustrine, aeolian, or organic sediments. Includes string bogs (Or)
t	terrace	Long, narrow, level or gently inclined step-like surface, bounded along one edge by a steeper descending slope or scarp and along the other by a steeper ascending slope or scarp; materials are either till, glaciofluvial, fluvial or lacustrine sediments; generally formed by fluvial and glaciofluvial erosion and marine wave action
v	veneer	Any deposit 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 genetic category exhibits numerous surface expressions in a small area, and in which no single element can be defined

LANDFORMS AND SURFICIAL GEOLOGY OF THE BISCAY BAY RIVER MAP SHEET (NTS 1K/14)

MAP 98 - 59

LANDFORM CLASSIFICATION

MORPHOLOGY	Fluvial (F)	Colluvial (C)	Aeolian (E)	Glaciofluvial (G)	Lacustrine (L)	Marine (M)	Glacial (T)	Organic (O)	Rock (R)
	GENETIC								
apron (a)		Ca							
blanket (b)	Fb	Cb		Gb	Lb	Mb	Tb	Ob	
concealed by vegetation (c)		Cc							Rc
drumlinoid (d)							Td		
eroded and dissected (e)	Fe	Ce	Ee	Ge	Le	Me	Te		Re
fan (f)	Ff	Cf		Gf					
hummock (h)				Gh			Th		
kettle (k)				Gk			Tk		
lineated (l)			El				Tl	Ol	
plain (p)	Fp			Gp	Lp	Mp	Tp	Op	
ridge (r)	Fr		Er	Gr	Lr	Mr	Tr	Or	Rr
terrace (t)	Ft			Gt	Lt	Mt	Tt		Rt
veneer (v)	Fv	Cv	Ev	Gv	Lv	Mv	Tv	Ov	
weathered (w)									Rw
complex (x)				Gx	Lx	Mx	Tx		
undivided	F	C	E	G	L	M	T	O	R

SYMBOLS

- Geological boundary (assumed)
- Scarp face at edge of fluvial terrace
- Esker (flow direction known or assumed, unknown)
- Meltwater channel (small, large)
- Crestline of major moraine ridge
- Trend of ribbed or minor moraine ridges
- Beach ridges
- Crevasse fill ridge
- Sand dunes
- Drumlin
- Crag-and-tail hill
- Fluting
- Röche Moutonnée
- Striation (direction known, unknown)
- Kettle hole (small, large)
- Sinkhole (small, large)

Elevation in feet above mean sea level. Contour interval 50 feet.

NOTE : All symbols and classifications may not occur on this map.

Geology by N. R. Catto, Department of Geography, Memorial University of Newfoundland. The surficial geology and landforms presented on this map are based upon aerphoto interpretation with limited ground verification.

Digital cartography by T.J. Sears, map editing by D.M. Taylor, 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 4J6.
E-mail: pub@zappo.geosurv.gov.nf.ca
http://www.geosurv.gov.nf.ca

OPEN FILE 001K/14/0040

PUBLISHED 1998

REFERENCE

Taylor, D.M., St. Croix, L. and Vatcher, S.V., 1994: Newfoundland striation data base. Newfoundland Department of Mines and Energy, Geological Survey Branch, 174 pages, Open File NFLD 2195 (version 3).

Recommended citation:

[1] Catto, N.R. and [2] Taylor, D.M.
1998: Landforms and Surficial Geology of the Biscay Bay River Map Sheet (NTS 1K/14), Newfoundland Department of Mines and Energy, Geological Survey, Map 98-59, Open File 001K/14/0040

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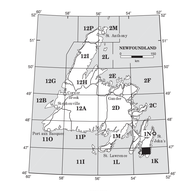
NEWFOUNDLAND
Corner Brook
St. Lawrence
Fort Hill
Stephenville
Port aux Basques
Burgeo
Grand Bank
Marystown
Bonavista
Gander
Grand Falls
Buchans
Deer Lake
Stephenville Crossing
Port Saunders
Roddickton
Flower's Cove
Hawkes Bay
Port Anson
Nipper's Harbour
Port Hope Simpson
Cape Harrison
Nain
Hopedale
Makkovik
Postville
Rigolet
Cartwright
Goose Bay
Wabush
Labrador City
Churchill Falls
Happy Valley-Goose Bay
Nain
Natuashish
Sheshatshi
Mud Lake
Stony Brook
Cape Charles
Port Hope Simpson
Mary's Harbour
Lodge Bay
Paradise River
Port Manvers
Cartwright
Sandwich Bay
Rigolet
Makkovik
Postville
Hopedale
Nain
Davis Inlet
Utshimassits
Natuashish
Sheshatshi
Goose Bay
Happy Valley
Mud Lake
Stony Brook
Wabush
Labrador City
Churchill Falls
Esker
Ste. Marie
Port Burwell
Sandwich Bay
Cape Harrison
Indian Harbour
Nutak
Okak Bay
Hebron
Saglek
Zoar
Okak
Nain
Cape Mugford
Makkovik
Postville
Rigolet
Cartwright
Goose Bay
Wabush
Labrador City
Churchill Falls
Happy Valley-Goose Bay