

Map 2007-14
LAMALINE
 NEWFOUNDLAND

1 0.5 0 1 2 3 4
 km

LEGEND

Each outlined area is assigned a classification consisting of up to three generic categories and modifiers that designate the types of deposits within each area. Each category within a classification is based on order of dominance and is separated from the other categories by a slash (e.g., TuRt). Generally, the areas are divided so that up to 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 form less than 5 percent of the area are not included in the classification. Four variations of the landform system are as follows:

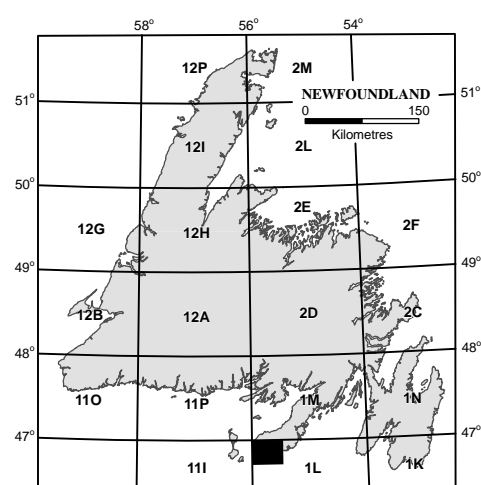
- Where three different landforms are included in a single map unit they are each separated by a single slash (/) and their relative percentages are (60-85) (15-30) and (5-15).
- Where two landforms are included in a single map unit, a double slash (//) or single slash (/) is used to separate them, and their relative percentages are (65-90) (10-15) for double slash, or (65-85) (10-40) 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// indicates that about 60-85 percent of the area is covered by fluvial sediments, 15-40 percent by glaciolacustrine sediments, and is unconformable on it.

GENETIC CLASSIFICATION

Symbol	Depositional Environment	Origin and Characteristics of Materials
O	Bog	Poorly drained accumulations of peat, peat moss and other organic matter; developed in areas of poor drainage.
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	Coarse-grained bedrock derived materials; may include sand, silt and 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 forms as dunes up to 10 m high; transported and deposited by wind.
G	Glaciolacustrine	Fine-grained sand to coarse-grained cobbly gravel; forms plains, ridges (eskers), hummocks, terraces and deltas; generally greater than 1 m thick; deposited as outwash in an ice-contact or proglacial position.
L	Lacustrine	Silt, clay, gravel and sand; forms as plains and blankets; silt and clay is 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 diamict; sand is present in some places; generally moderately to well sorted and commonly stratified; may be massive; forms beach ridges, eskers, terraces and fans deposited in a marine environment; gravel and sand are formed by shoreline wave action; may include shell, clay and silt deposited from suspension and turbidity currents; gravel is generally a well-sorted lag.
Tv	Glacial	Includes all types of till; composed of diamict; transported and subsequently deposited by/for from glacial ice with no significant sorting by water; these include massive till (Tv) or tiller (Tt), Tt, Tt) till with little or no surface expression; features produced by actively flowing ice (Tc, Tt, Tr) or sediments deposited through ice disintegration (Tn, Tu).
R	Rock	Bedrock, either exposed (R) or concealed by vegetation (Rc).

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 outcrop; 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 that developed on either colluvial surfaces or a thin layer of angular frost-shattered and frost-heaved rock fragments covering bedrock; includes areas of shallow (less than 1 m), discontinuous outwash.
d	dismantled	Elongate spindle-shaped ridges between 1.0 and 30 m high, 50 and 300 m wide, and 200 to 3000 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 consist of till, although some may contain stratified drift; may have a rock core.
e	eroded and dissected	A series of closely spaced gullies or deeply incised channels; can have a dendritic pattern or may be a single straight or anastomosing channel; gullies or channels may contain undercut streams.
f	fan	A gently sloping accumulation of debris deposited by a stream issuing from a valley onto a lowland; fans taper at the mouth of the valley from which the stream issues; the fan shape results from the deposition of material as the stream winds back and forth across the lowland; fluvial fans are usually derived from eroded glacial and glaciolacustrine deposits; glaciolacustrine fans (delta) are deposited in standing water rather than in 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 deglaciation and disintegration; includes subglacial, supraglacial and stratified materials.
k	kettle	A basin or bowl-shaped closed depression or hollow in glacial drift; results from the melting of a banded or partly buried detached block or lens of glacial ice; commonly occurs in association with hummocks.
l	lined	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 flow; commonly consist of till, although some may contain stratified drift; may have a rock core; includes slope-lined bogs (Cl).
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 overlying sediments.
r	ridge	Narrow, elongated and commonly steep-sided feature that rises above the surrounding terrain; materials are either rock, till, glaciolacustrine, fluvial, marine, lacustrine, aeolian, or organic sediments; includes string bogs (Cl).
t	terrace	Long, narrow, level or gently inclined step-like surface, bounded along one edge by a steep descending slope or scarp and along the other by a steeper ascending slope or scarp; materials are either till, glaciolacustrine, fluvial or lacustrine sediments; generally formed by fluvial and glaciolacustrine erosion or 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 generic category exhibits numerous surface expressions in a small area, and to which no single element can be defined at this scale.



Newfoundland Labrador
 DEPARTMENT OF NATURAL RESOURCES
 GEOLOGICAL SURVEY

SURFICIAL GEOLOGY OF THE LAMALINE MAP SHEET (NTS 1L/13)
MAP 2007-14

SYMBOLS

Geological boundary	Duress (direction known, unknown)
Scarp face at edge of fluvial terrace	Coag and tail fill
Cirque	Flating
Esker (flow direction known or inferred, unknown)	Réche moutonnée
Metwater channel (small, large)	Stratification (direction known, unknown) (numbers indicate relative age)
Crestline of major moraine ridge	Avulsion track
Triad of ribbed or minor moraine ridges	Kettle hole (small, large)
Beach ridges	Sinkhole (small, large)
Cirque M ridge	Observation site
Sand dunes	Delta
	Radiochron date

Note: All symbols and classifications may not occur on this map. Elevation in feet above mean sea level. Contour interval 50 feet.

Geology by M.J. Bateman. Map editing by D.M. Taylor.
 GIS / digital cartography by T. Mahabadi.

Digital elevation data supplied by the Shuttle Radar Topography Mission (SRTM), a partnership between NASA and the National Geospatial Intelligence Agency (NGA). From around the NASA Space Shuttle Endeavour (11-22 February 2000). Additional information available from: <http://edc.sgi.com/products/data/elevation/srtm/>

Copies of this map may be obtained from the Geoscience Publications and Information Section, Geological Survey, Department of Natural Resources, P.O. Box 8700, St. John's, NL, Canada, A1B 4X6.

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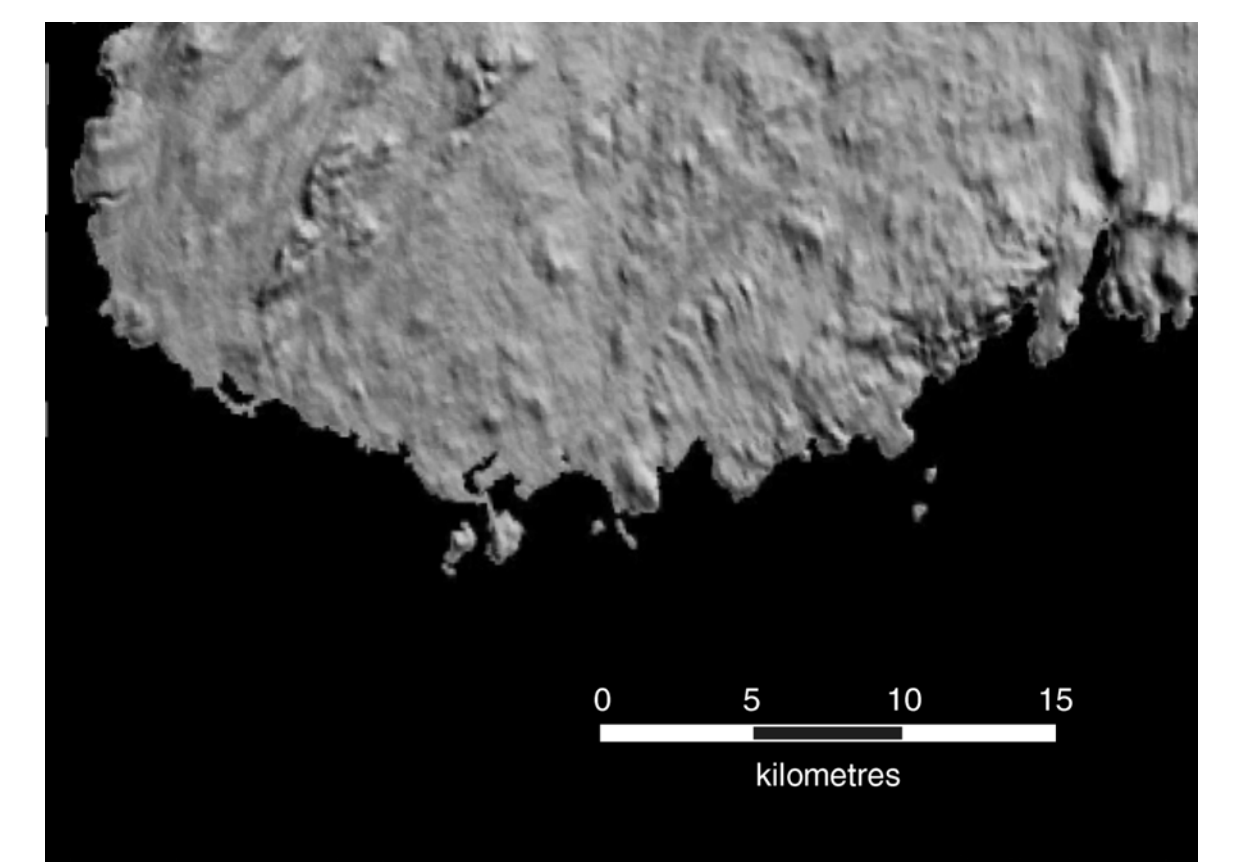
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 Taylor, D.M. and Bateman, M.J. 2001. Catalogue of maps for Newfoundland and Labrador. Geological Survey, Newfoundland Department of Mines and Energy, Open File NFDG195, Version 2. (<http://nrc.gov.nl.ca/geosurvey/>)

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Digital elevation model (DEM) from Shuttle Radar Topography Mission (SRTM) data of the Lamaline map area (shaded from the north-east). The image provides additional surface information not readily illustrated on the surficial map. Terrain variability is evident, with areas of bedrock highlighted as higher, rougher textured areas (consistent with surficial map), and areas of thicker till shown as smoother textured areas. Similarly, north-south oriented constructional landforms (all ridges) are evident, and also correspond to features identified on the surficial map.