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LEGEND EXPLANATION

Map Unit

For the convenience of this explanation the units being considered are referred to as landform systems. Each system consists of one or more landform units, a unit in this case being an area characterized by relatively homogeneous surface form and material, e.g.: a stream flood plain, a drumlin field or an area of eroded till. A landform system can be a single landform unit which is large enough to be mapped at the scale in use, or two or more units which are too small to be mapped individually. An example of the first case might be a drumlin field, an example of the second case would be a drumlin field with areas of bedrock or thinly veneered bedrock between the individual drumlins.

Each landform system is identified by a series of letters referred to as the system designator. Each system designator consists of one or more landform unit designators so that identity of the components of each landform system remain apparent.

Each landfrom unit designator consists of up to three parts. These parts are referred to as genetic category, morphologic modifier and textural modifier.

Genetic Category

Each unit is defined in terms of broad genetic categories which are used to give a general idea of the type of materials encompassed. For example an area referred to as morainal would probably consist of compact, unsorted structureless material, ranging in grain size from clay to boulder (till). An area referred to as lacustrine would probably consist of material that would be well stratified, well sorted and range in grain size from fine grained sand to clay. So far eight genetic categories have been set up. In the designator each category is symbolized by an upper case letter - generally the first letter of the category name. Categories are: morainal - M, glaciofluvial - G, lacustrine - L, marine - M, alluvial - A, colluvial - C, organic - O, and Eolian - E. A unit designated by an upper case letter alone is considered to be the general or undifferentiated form of that genetic category.

Morphologic Modifier

Differentiation of the genetic categories into morphologic units is shown by placing a morphologic modifier after the genetic category symbol. For example, Md refers to drumlinoid morainal deposits, Af to alluvial fan deposits, Ap to stream flood plain deposits, Me to eroded marine deposits and Mv to thin morainal deposits. It should be stressed that the morphologic modifier refers only to the form of the unconsolidated material denoted by the genetic category, e.g.: areas of thin till that are hummocky are shown as Mv rather than Mh as the relief seen is that of the underlying bedrock surface and does not necessarily indicate variation in till thickness as would be the case in a true hummocky moraine area. The accompanying Table lists the morphologic modifiers used and indicates the names applied to the landform units designated by different combinations of genetic category and morphic modifier. Examples of the combining forms are: Md for drumlinoid moraine, Mp for ground moraine, Gp for glaciofluvial plain, Lv for thin lake deposits and Mr for marine beaches.

Textural Modifier

In some places it is possible to show the texture in more specific terms than those implied by the genetic category. This is done by use of a textural modifier which is a lower case letter placed in front of the genetic category symbol. Five of these categories have been used: rocks and rubble - r, gravel and sand - g, sand - s, fine sand and silt - st, and silt and clay - c. In general a textural modifier is not used as the genetic category gives all the textural information that is available.

Landform System Designator

Each system designator consists of one or more unit designators which maintain the individual unit identities. Unit designators are arranged to show the approximate contribution of each unit to the system. For this purpose the system designator contains as many as three positions which are referred to as primary, secondary, and tertiary positions. The unit or units in the primary position make up 60% or more of the system, those in the secondary position from 15 to 40% and the unit or units in the tertiary

position compose of 5 to 15% of the system. The positions are separated by slashes e.g.: Md / At / O (primary / secondary / tertiary) or Mdv/O/R. When the secondary position is not filled double slashes are used e.g.: O//Md.

Definitions

Genetic Categories

1. Morainal deposits - mainly till or unsorted to poorly sorted, unstratified to partially stratified clay, silt, sand, pebble and boulder sized material. These deposits are considered to be direct deposits of ice without intervening transportation by water but some of the in situ material may have had fines removed by meltwater. In the Goose Bay area the till generally is sandy with very little clay and in some areas contains or is overlain by large subangular boulders.

2. Glaciofluvial deposits - gravel and sand varying from well sorted to poorly sorted and well stratified to poorly stratified. These deposits are considered to have been deposited by glacial meltwater in proximity to ice. Materials are placed in this category only if there is direct evidence of deposition in contact with or adjacent to ice. In the Churchill Falls areas where exposures are abundant, glaciofluvial deposits are coarse bouldery gravel. It could be assumed that they have a similar composition in the Goose Bay area.

3. Lacustrine deposits - silt, fine-grained sand and clay generally well sorted and well stratified. Lacustrine deposits are defined as materials that have been deposited in quiet fresh water. Lacustrine deposits in the Goose Bay area are dominantly silt and fine grained sand with minor clay.

4. Marine deposits - silt, sand, clay and gravel, well sorted to moderately sorted, well stratified to moderately stratified and sometimes containing shells. Marine deposits are laid down in salt or brackish water. Differentiating marine from lacustrine

deposits when fossils are not present, is difficult in the field. The following operational definition is used: marine deposits are materials containing marine fossils or similar nonfissiliferous deposits located in an area that might reasonably be considered to have contained salt water at the time of maximum marine submergence. The division between alluvial and marine deposits presents a problem at delta fronts as deltas are built into brackish water. To solve this problem, alluvial is restricted to areas apparently cut or planed by running water; unmodified slopes, and areas modified by wave action are referred to as marine. Sandy textures appear to predominate in marine deposits of the Goose Bay area but this conclusion is based on a limited number of observations.

5. Colluvial deposits - texture ranging from clay to rubble and boulders, generally poorly sorted and massive to crudely stratified. The nature of colluvial deposits depends on the material from which they are derived. Colluvial deposits are defined as loose material accumulated on and at the foot of slopes by the various processes of mass movement. Areas mapped as colluvial deposits consist of steep rock controlled slopes, that appear to be underlain by a thin loose mantle and landslide deposits.

6. Organic deposits - peat, muck and marl generally unstratified and locally containing inorganic detritus. Organic deposits are materials of organic origin which commonly accumulate in and around closed basins or on gentle slopes. The organic deposits of the Goose Bay area generally appear to be sphagnum and sedge bogs - commonly 1 to 3 m deep - which in many places contain and interfinger with open water.

7. Alluvial deposits - sand, gravel, silt and clay well stratified and sorted to moderately stratified and sorted. Alluvial deposits are defined as detrital material laid down by streams and rivers. Alluvial deposits in the Goose Bay area were generally sand. Locally they include gravel and boulder pavements, washed bedrock, bouldery channel deposits and channel fillings of silt and clay.

8. Eolian deposits - sand and silt, generally massive to poorly sorted and moderately to well sorted. Eolian deposits are materials laid down by the wind. They have not been mapped as a unit in the Goose Bay area but a symbol has been used to show the location of individual dunes. Use of this genetic category in other parts of the country is however anticipated.

Rock - R- for rocks is used to denote bare or moss covered bedrock and areas where near surface rock severely restricts the growth of trees. Areas with a covering mantle of up to 25 cm are included as rock.

Morphologic Modifiers

1. Drumlinoid - stream-lined hills, linear grooves and ridges.
2. Plain - flat, undulating rolling.
3. Hummocky - rolling to steep and hilly with roughly equidimensional hills and hollows.
4. Ridged - rolling to steep and hilly with linear ridges and troughs.
5. Veneer - cover roughly 25 cm to 2 m thick.
6. Terraced - relatively flat surfaced and terminated by an abrupt change in slope on one or more sides.
7. Channeled - cut by a series of relatively closely spaced deeply incised channels.
8. Eroded - dissected by a series of closely spaced gullies or a tightly knit dendritic drainage network.
9. Complex - a mixture of several morphologic elements.
10. Fan - shaped like a fan with a noticeable slope towards the fan toe.

Symbols

Drumlinoid trends- long axis orientation of drumlinoid ridges, crag and tail, flutings and other macro-features developed parallel to the ice flow direction. (direction of ice movement known, unknown)

Glacial striae (direction of movement known, unknown; where number used 1 is the oldest)

Moraine ridge transverse to ice flow direction

Minor moraine ridges- washboard moraine, "annual" moraines and other till ridges transverse to ice flow direction

Esker- ridge of glaciofluvial material (direction of flow known, unknown)

Kettle hole- depression formed by the melting of ice buried in glaciofluvial or glaciolacustrine material (generally not used for depressions, possibly of similar origin, in till)

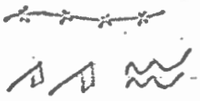
Subglacial meltwater channel (used only where very positive evidence that channel was formed under ice)

Abandoned or underfit valley (large, small)

Limit of submergence

Abandoned strands

Dunes (active, inactive)

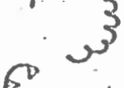


Pulsas

Escarpment in unconsolidated material

Landslide scar

Cirque



Fault-line valley or trough

Observation (ground, from air)

MORPHIC MODIFIER / GENETIC CATEGORY	M Morainal	G Glaciofluvial	L Lacustrine	*M* Marine	A Alluvial	C Colluvial	O Organic
d - drumlinoid	drumlinoid M.						
p - plain	ground Moraine thick till	Glaciofluvial plain outwash plain	Lacustrine plain thick lake deposits	*Marine* plain thick *Marine* dep.	flood plain		
h - hummocky	hummocky M. disintegration M.	hummocky G. kame and kettle	hummocky L. collapsed L.			landslide deposit	
r - ridged	ridged Moraine end Moraine ribbed Moraine	esker complex	Lacustrine	*Marine* beaches		landslide deposit	
v - veneer	veneer Moraine thin till		Lacustrine veneer thin lake deposits	*Marine* veneer thin *Marine* dep.			
t - terraced		Glaciofluvial terrace		terraced *Marine*	Alluvial terrace fluvial terrace		
c - channelled	channelled M.						
e - eroded	eroded Moraine	eroded G.	eroded L.	eroded *Marine*			
f - fan		Outwash fan			Alluvial fan	talus cone	
x - complex							