

# ENVIRONMENTAL LEGEND: CODING SYSTEM FOR ECOLOGICAL LAND SURVEY – ARCTIC NETWORK (Jorgenson et al. 2009)

## Geomorphology Units

### **BEDROCK**

- Bxw Bedrock, weathered (undiffer.)
- Sc Sedimentary, carbonate (limestone, dolostone)
- Sn Sedimentary, noncarbonate (shale, siltstone, conglomerate)
- Sm Sedimentary, mixed noncarbonate and carbonate
- Vfy Volcanic-felsic-young
- Vfo Volcanic-felsic-old
- Vmy Volcanic-mafic-young (Quatern.)
- Vmo Volcanic-mafic (dark)-old
- Vp Volcanic-pyroclastics If Intrusive-felsic
- Im Intrusive-mafic
- Nc Metamorphic-carbonate
- Nn Metamorphic-noncarbonate
- Mcn Metamorphic-mixed carb/noncarb

### **COLLUVIAL DEPOSITS**

- C Colluvial deposits
- Ch Hillslope colluvium
- Cl Landslide deposit
- Cs Solifluction deposits

### **EOLIAN DEPOSITS**

- Esa Eolian active sand
  
- Esi Eolian Inactive Sand
- Essi Eolian Inactive Sand Sheet

### **FLUVIAL DEPOSITS**

- Fu Fluvial, undifferentiated**
- Fd Delta Floodplain**
- Fdra Delta active channel deposit
- Fdri Delta inactive channel deposit (high-water channel)
- Fdoa Delta active overbank deposit
- Fdoi Delta inactive overbank deposit
- Fdob Delta abandoned overbank dep.
- Fpm Meander Floodplain**
- Fmr Meander channel dep. (riverbed)
- Fmrac Meand course active chan. dep.

Fmrif Meander fine inactive chan dep.  
Fmo Meander overbank deposit (complex)  
Fmoa Meander active overbank dep.  
Fmoi Meander inactive overbank dep.  
Fmob Meand. abandoned overbank dep.

**Fb Braided Floodplain**

Fbr Braided channel dep. (riverbed)  
Fbrac Braided course active chann. dep.  
Fbrif Braided fine inactive chann. dep.  
Fbo Braided overbank dep. (complex)  
Fboa Braided active overbank deposit  
Fboi Braided inactive overbank dep.  
Fbob Braided abandoned ovrbank dep.

**Fhl Headwater Lowland Floodplain**

**Fto Old Terrace** (lower terraces)

**Ff Alluvial Fan**

**GLACIAL and NON-GLA. DEPOSITS**

FGp Alluvial plain deposits

**GLACIAL DEPOSITS**

Gmo Older moraine  
Gmy Younger moraine  
Gto Older till sheet  
Gty Younger till sheet

**GLACIOFLUVIAL DEPOSITS**

GFo Glaciofluvial Outwash  
GFk Kame Deposits

**GLACIOLACUSTRINE DEPOSITS**

GL Glaciolacustrine deposits

**L LACUSTRINE DEPOSITS**

Ltnu Ice-poor thaw basin (young)  
Ltnc Ice-poor centers  
Ltnm Ice-poor margins  
Ltiu Ice-rich thaw basin (old)  
Ltic Ice-rich centers  
Ltim Ice-rich margins  
Ltip Ice-rich-pingos

## **MAN-MADE DEPOSITS**

Hfg Fill, gravel  
Hfo Fill, overburden  
Hfp Fill, peat  
He Excavations

## **MARINE DEPOSITS**

Mb Beach deposits  
Mta Active tidal flat  
Mti Inactive tidal flat  
Mp Coastal plain deposit  
Mps Sandy coastal plain deposit  
Mpf Fine coastal plain deposit

## **GLACIOMARINE DEPOSITS**

MG Glaciomarine deposits

## **ORGANIC DEPOSITS (Org >40cm)**

Of Organic Fens  
Ob Bogs

## **WATER**

### **Wr Rivers and Streams**

Wrln Lower perennial, non-glacial  
Wrlg Lower perennial, glacial  
Wrun Upper perennial, non-glacial  
Wrug Upper perennial, glacial  
Wldcr Deep connected lake, riverine  
Wldct Deep connected lake, thaw  
Wldcm Deep connected lake, morainal  
Wldir Deep isolated lake, riverine  
Wldit Deep isolated lake, thaw  
Wldim Deep isolated lake, morainal  
Wlscr Shallow connected pond, river.  
Wlsct Shallow connected pond, thaw  
Wlscm Shallow connected pond, morainal  
Wlsir Shallow isolated pond, riverine  
Wlsit Shallow isolated pond, thaw  
Wlsim Shallow isolated pond, morainal

### **Wm Marine**

Wmn Nearshore water

### **We Estuarine**

Welt Tidal ponds (affected by tides)  
Wert Tidal river (brackish)

Weld Brackish deep lake  
Wels Brackish shallow lake  
**Wh Man-made Waterbodies**  
Whid Drainage impoundment  
Whir Reserve pit

## **MACROTOPOGRAPHY CLASSES**

C Top, Crest, Summit or Ridge  
Fh Plateau (high flats)  
Sh Shoulder Slope  
XP Pingo

### **Steep Slopes**

Sb Bluff or Bank (unconsolidated)  
Sbs Steep bluff, south-facing  
Sc Cliff (rocky)  
Sbr Riverbanks  
**Su UPPER SLOPE** (convex, creep)  
Suc Concave (water gathering)  
Suv Convex (water shedding) Sup Plane  
**SI LOWER SLOPE** (concave)  
Slc Concave (water gathering)  
Slch Nivation hollows, snowbanks,  
Slv Convex (water-shedding)  
Slp Plane

### **T TOE Slope**

**D Drainage** or Water Track

### **B BASINS OR DEPRESSIONS**

Bd Drained basin  
Bk Kettle

### **F FLAT OR FLUVIAL RELATED**

Fn Nonpatterned  
Fm Flats margins (transition)  
Fc Channel, swale or gut,  
Fi Interfluv or flat bank  
Fl Levee  
Fb Bar (point, lateral, mid-channel)  
Fs Crevasse splay  
Ft Terrace  
Ff Flood basin (behind levee)

### **L LAKES AND OCEAN**

Wi	Islands present
Ls	Smooth flat lake margin
Fwb	Wave cut bench (shore)
Fwt	Wave cut terrace (shore)
<b>R</b>	<b>RIVER OR STREAM</b>
Rp	Deep pools (>1.5 m)
Rs	Shallow runs (<1.5 m)
Ri	Riffles
Rr	Rapids
<b>XC</b>	<b>CHANNEL COMPLEX</b>
Xcb	Braided channels and interfluves
Xcm	Meander scrolls
CR	Ridge and swale complex
E	Eolian patterns
El	Eolian linear dunes
Ep	Eolian parabolic dunes
Hm	Human modified

## **MICROTOPOGRAPHY CLASSES**

### **N NONPATTERNED FROST FEATURES**

Fh	Hummocks (mineral cored)
Fr	Reticulate
Ff	Frost Scars and Boils
Fc	Circles (non-sorted, sorted)
Fs	Stripes (non-sorted, sorted)
Fn	Nets (non-sorted, sorted)
Ft	Steps (non-sorted, sorted)

### **Polygons**

Pd	Disjunct polygon rims
PIII	Low-centrd. low-relief, low-density
PIIh	Low-centrd. low-relief, high-density
Plhh	Low-centrd high-relief, high-density
Pm	Mixed high and low polygons
Phl	High-centrd. low-relief (flat-cent.)
Phh	High-centered, high-relief

### **Thermokarst**

Tm	Mixed thermokarst pits and polygons
Tb	Beaded stream

### **MOUNDS (ice and peat related)**

Mi Ice-cored mounds  
 Mpm Peat mounds  
 Ms String (strang)  
 Mg Gelifluction lobes (saturated flow)  
 Mir Ice-shoved ridge  
 Mid Ice-rafted debris  
 Mrb Rocks, blockfields  
 Mrm Rocky mounds (soil covered rocks)  
 Mw Mounds caused by wildlife  
 Mh Mounds caused by humans  
 Mu Undifferentiated mounds (distinct)

#### **DRAINAGE or EROSION RELATED**

Dt Water tracks (non-incised drainages)  
 Df Feather pattern (in fens)  
 Dr Ripples  
 Dd Flow dunes  
 Ds Scour channels-ridges

#### **EOLIAN RELATED**

Es Small dune  
 Eb Scour depression

#### **W WATER**

Wi Islands present  
 Lp Polygonized margin (>10%)

#### **X COMPLEXES**

#### **VEG CLASSES (VIERECK\*\*)**

Bbg Barrens (<5% veg)  
 Bpv Partially vegetated (5–30)  
 Haf Aquatic fresh herb  
 Hab Aquatic brackish herb  
 Hame Eelgrass  
 Hfm Moist forb meadow  
 Hfwhh Halophytic herb wet meadow  
 Hgdl Elymus (Leymus)  
 Hgmb Bluejoint Meadow  
 Hgmsw Sedge -willow tundra  
 Hgmsd Sedge-dryas tundra  
 Hgmt Tussock tundra  
 Hgwfg Fresh grass marsh

Hgwfs Fresh sedge marsh  
 Hgwst Wet sedge meadow tundra  
 HgwsW Wet sedge-willow tundra  
 Hgwhg Halophytic grass wet meadow  
 Hgwhs Halophytic sedge wet meadow tundra  
 Hgwk Salt-killed wet meadow  
 Hafm Common marestalk  
 Stca Closed tall alder  
 Stoa Open tall alder  
 Stcw Tall closed willow  
 Stow Tall open willow  
 Slcb Low closed shrub birch  
 Slcbw Low closed shrub birch-willow  
 Slcbe Closed shrub birch-ericaceous  
 Slcw Low closed willow  
 Slow Low open willow  
 Slob Low open shrub birch  
 Slobw Open shrub birch-willow  
 Slobe Open shrub birch-ericaceous  
 Slott Mixed shrub-sedge tussock tundra  
 Sdee Crowberry tundra  
 Sddt Dryas tundra (low sedge or lichen)  
 Sdds Dryas-sedge tundra  
 Sddl Dryas-lichen tundra  
 Sdec Cassiope tundra  
 Sdww Dwarf willow tundra  
 Sdwg Halophytic willow-graminoid  
 W Water

## **ECOTYPE VEGETATION STRUCTURE**

BP Barrens, partially vegetated  
 FA Aquatic forb  
 SE Sedge marsh  
 GE Grass marsh  
 FE Forb marsh  
 SM Sedge meadow  
 GM Grass meadow  
 FM Forb meadow  
 TM Tussock  
 KM Salt-killed meadow  
 DS Dwarf shrub

LS Low shrub  
TS Tall shrub  
Ow Open water

\*\* Viereck et al. 1992

## **DISTURBANCE CLASS LEV2**

**A ABSENT (mature vegetation)**  
**N Naturally occurring**  
Nf Fire  
Ng Geomorphic Process  
Nw Weather Processes (e.g. wind)  
**H Human generated**  
Hd Human Developed Sites (urban complex)  
Hf Fill  
He Excavation/Pits (undifferentiated)  
Hc Clearings (Non-agricultural or undifferentiated)  
Ha Agricultural Field  
Ht Trail  
Hs Structures and Debris  
Hw Waterbodies, Man-made  
Hp Pollutants/Contaminants  
DC Disturbance complex  
nd no data