A FIELD GUIDE TO
FOREST SITE IDENTIFICATION AND
INTERPRETATION FOR THE
CARIBOO FOREST REGION

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RELATIVE SOIL MOISTURE REGIME IDENTIFICATION KEY

This key is an aid for identifying relative soil moisture regime using readily observable site features. It should be applied with caution, as all possible combinations of site factors potentially encountered have not been incorporated into the key. As well, the season in which observations are being made may affect the user’s interpretation of site factors. For example, a water table or seepage water may exist for a brief period immediately following snow melt in the spring in an otherwise moderately well-drained site. Also, soils with two or more contrasting soil textures will require an interpretation of their combined effect on the soil’s ability to hold moisture.

When more than one moisture regime is indicated in the key, the user should evaluate the combined attributes of the site relative to the range of variability of each attribute specified in the key. A moisture regime should then be selected based on the relative position of the site attributes along the range of variability specified in the key. For example, if the soil texture is at the fine end of the range given, the slope gradient is at the gentler end of the range given, and the soil depth is at the deeper end of the range given, then the wetter of the two moisture regimes given should be selected.

Definition of Terms Used in Soil Moisture Regime Key

Ridge crest is uppermost portion of hill or other raised land area; usually with convex slope shape.

Upper slope is upper portion of slope below the crest; usually with convex slope shape.

Middle slope is portion of the slope between the upper and lower slope position; slope shape is usually neither distinctly concave nor convex, but straight.

Lower slope is slope portion near the base of the slope where slope gradient is generally decreasing; slope shape is generally concave.

Toe slope is area at base of slope demarcated from adjacent lower slope position by an abrupt decrease in slope gradient; generally level areas (<5% gradient) at base of slope, where moisture status is influenced by adjacent slope.

SE to W is any slope aspect from 135 to 280°, inclusive.
Level (flats) is any level area sufficiently removed from a slope that moisture status is not affected by runoff from a slope; the surface may be undulating with very low relief raised areas and very short slopes; surface shape is generally straight and has no clearly defined aspect.

Depression is an area that slopes upward in all directions; slope shape is concave; depressions usually occur at base of a slope or in level topography.

Soil depth is depth from mineral soil surface to a strong root-restricting layer such as bedrock or strongly compacted or cemented materials (e.g., hardpan).

Climate dry is climate of any of the following biogeoclimatic subzones: BGxh, BGxw, IDFxw, IDFxm, SBPSxc.

Gleyed soils are soils influenced by periodic or sustained water saturation as indicated by gleyed colors (dull yellowish, blue, or olive) or prominent mottles (reddish or orange spots, or blotches at least 1 mm in cross-section and occupying at least 2% of the exposed, unsmeread soil face) occurring throughout a layer at least 10 cm thick and within 50 cm of the mineral surface; strongly gleyed soils have a dominant colour of dull blue, olive, or yellowish resulting from sustained water saturation and reducing conditions.

Free water is water in excess of that which can be held against gravity by the soil particles; soil moisture in excess of field capacity.

Water table is the surface of a zone of prolonged water saturation and free water; primarily on level or gently sloping sites.

Soil particle size refers to the particle size composition of the soil including the proportion of sand (0.05–2.0 mm), silt (0.002–0.05 mm), and clay (<0.002 mm) sized particles as well as the proportion of coarse fragments (>2.0 mm). Very coarse, Coarse, Medium, Fine, and Very fine particle size classes are defined in Appendix 10.

Seepage refers to saturated soils resulting from downslope subsurface movement of free water, generally above an impeding layer; to be considered seepage, the volume of soil water movement and the resulting duration of soil saturation should be sufficient to affect vegetation or soil colour.
Moisture regime code refers to relative soil moisture regime:

- **0** = very xeric
- **1** = xeric
- **2** = subxeric
- **3** = submesic
- **4** = mesic
- **5** = subhygric
- **6** = hygric
- **7** = subhydric
- **8** = hydric

Electrified cat’s-tail moss
*Rhytidiadelphus triquetrus*

Pipecleaner moss
*Rhytidiopsis robusta*

Wavy-leaved moss
*Dicranum polysetum*
APPENDICES

RELATIVE SOIL MOISTURE REGIME IDENTIFICATION KEY

RIDGE CRESTS

UPPER SLOPES

Soils shallow (<50 cm)

FALSE

TRUE

Slope >35%

y

n

y

Soil particle size coarse or very coarse

y

n

y

n

Exposed bedrock dominant

y = 0

n = 1

Aspect SE to W

y = 1

n = 2

Slope position crest or aspect SE to W and slope >20%

y = 1-2

n = 2

Soil depth <1m

y = 2

n = 2-3

a. Soil depth <1m or
b. Climate dry and aspect SE to W and slope >20%

y = 2-3

n = 3

MIDDLE SLOPES

Water table or seepage or gleyed soils within 80 cm

FALSE

TRUE

Slope >35%

y

n

y

Soil particle size coarse or very coarse

y

n

y

n

Water table or persistent seepage or strongly gleyed soils within 30 cm

y = 7-8

n = 5-6

Soil particle size very coarse or soil depth <1m or aspect SE to W

y = 1-2

n = 2-3

Aspect SE to W and slope >20%

y = 2

n = 3

Soil depth <1m or aspect SE to W

y = 2

n = 3

a. Soil depth <1m or
b. Climate dry and aspect SE to W and slope >20%

y = 3

n = 4

LOWER OR TOE SLOPES OR DEPRESSION

Water table or persistent seepage or gleyed soils within 80 cm

FALSE

TRUE

Soil particle size coarse or very coarse

y = 4

n = 5

Water table or strongly gleyed soils present within 30 cm

y = 7-8

n = 5-6

LEVEL (FLATS)

Water table or gleyed soils present within 80 cm

FALSE

TRUE

Soil particle size coarse or very coarse

y = 2

n = 3

Soil particle size fine

y = 4-5

n = 4