

Major Land Resource Area 043A

Northern Rocky Mountains

Accessed: 05/11/2025

Ecological site keys

43A Areas of Purcell or Cabinet Mountains, Lewis, Livingston, Mission and Swan Ranges

I. Resides in the Lewis and/or Livingston Ranges in the northeastern most portion of this MLRA.

A. Alpine LifeZone

1 Treeline - Krummholtz ... F043AX958MT – Alpine Krummholtz Coniferous subalpine fir-whitebark pine/grouse whortleberry *Abies lasiocarpa*-*Pinus albicaulis* (*Picea engelmannii*)/*Vaccinium scoparium*

2 Nonforested

i. Site has concave shape, vegetation dominated by low growing sedges ... R043AX979MT – Alpine Nivation Hollow Payson's sedge / black alpine sedge -northern singlespike sedge / Drummond's rush (*Carex paysonis*/ *Carex nigricans*-*Carex scirpoidea*/ *Juncus drummondii*)

ii. Site experience frost heave action resulting in solifluction lobes ... R043AX971MT – Alpine Solifluction Terrace *Dryas octopetala* (*Arctostaphylos uva-ursi*/*Salix arctica*)

iii. Site is a steep, unstable to stabilizing colluvial slope ... R043AX962MT – Alpine Unstable Talus rocky ledge penstemon (*Penstemon ellipticus*)

iv. Site has shallow soils on a cirque floor ... R043AX972MT – Alpine Shallow Cirque Floors Arctic willow – pink mountainheath-alpine laurel /smallwing sedge -shortstalk sedge (*Salix arctica*-*Phyllodoce empetrifolia*/*Kalmia polifolia*/*Carex microptera*-*Carex podocarpa*)

v. Site is a shallow meadow ... R043AX963MT – Alpine Shallow Meadow yellow avalanche-lily-Scouler's St. Johnswort-alpine leafybract aster-Sitka valerian- heartleaf arnica/Hitchcock's smooth woodrush

B. Subalpine LifeZone

1 Forested

i. Upper subalpine ... F043AX954MT – Upper Subalpine Cold Coniferous subalpine fir (Engelmann spruce) /thinleaf huckleberry-rusty menziesia/ Hitchcock's smooth woodrush-beargrass/yellow avalanche lily.

ii. Mid Subalpine

a. Cool dry site conditions ... F043AX956MT – Subalpine Coniferous Cool Moderately Dry subalpine fir (*Abies lasiocarpa*) / Engelmann spruce (*Picea engelmannii*)

b. Cool, moist site conditions ... F043AX955MT – Subalpine Coniferous Cool Moist subalpine fir (*Abies lasiocarpa*)-Engelmann spruce (*Picea engelmannii*)

iii. Lower Subalpine

a. Moderately dry site conditions ... F043AX951MT – Lower Subalpine Cool Dry Coniferous subalpine fir- Engelmann spruce/ Sitka alder/ thinleaf huckleberry/ common beargrass

b. Moist site conditions ... F043AX952MT – Lower Subalpine Cool Moist Coniferous subalpine fir- Engelmann spruce/Rocky Mountain maple-thinleaf huckleberry/thimbleberry

c. Frigid soil temperature regime ... F043AX957MT – Lower Subalpine Frigid Coniferous western redcedar (*Thuja plicata*)-western hemlock (*Tsuga heterophylla*)

2 Non-forested

i. Site is an avalanche including head, chute and run-out zones. ... R043AX961MT – Subalpine Avalanche Rocky Mountain maple-Redosier dogwood *Acer glabrum*-*Conus sericea* ssp. *sericea*-*Amelanchier alnifolia*

C. Montane LifeZone

1 Forested

- i. Site resides on a floodplain ... F043AX960MT – Montane Deciduous Alluvial Flood Plain black cottonwood (paper birch)/redosier dogwood *Populus balsamifera* ssp. *trichocarpa* (*Betula papyrifera*)/*Cornus sericea* ssp. *sericea*
- ii. Site does not reside on a floodplain ... F043AX959MT – Montane Warm Dry Coniferous Douglas fir/white spirea-common snowberry/pinegrass

2 Non-forested

i. Riparian areas

- a. Soils organic and vegetation dominated by sedges ... R043AX973MT – Montane Fen woollyfruit sedge (*Carex lasiocarpa*)
- b. Soils organic and vegetation of shrubs and sedges ... R043AX974MT – Montane Swale Drummond's willow (*Salix drummondii*)-alderleaf buckthorn (*Rhamnus alnifolia*)
- c. Soils subirrigated and not organic

ii. Non-riparian areas

- a. Site is a loamy outwash terrace ... R043AX966MT – Montane Loamy Outwash Terrace Richardson's needlegrass (*Achnatherum richardsonii*)
- b. Site is a stable colluvial slope ... R043AX968MT – Montane Stable Colluvial Slope Saskatoon serviceberry-common snowberry/Sitka alder/ Rocky mountain maple/thimbleberry/mountain brome-Geyer's sedge

II. Site does not reside in the Lewis or Livingston Ranges and is not forested, and resides in the 13-17 or 17-20 inch precipitation range

A. Range site in 13-17" precipitation zone and is listed below, otherwise go to PES key. Sites included here:

Gravelly, Droughty, Droughty steep, Shallow Droughty, Very shallow.

1 Moderately deep to very deep soils and skeletal. Soils moderately deep, deep, or very deep (≥ 20 " deep to bedrock, lithic, or paralithic root restrictive layer). Soil skeletal to within 20" of soil surface (averages $> 35\%$ rock fragments in the 10"-20" layer)

ii. Droughty Soils Soil loamy-skeletal or clayey-skeletal

- a. Steep slopes Slope $\geq 15\%$ – Droughty Steep (DrStp) ... R043AA038MT – Droughty Steep (Drstp) LRU 43A-A
- b. Flat to moderate slopes Slope $< 15\%$ – Droughty (Dr) ... R043AA036MT – Droughty (Dr) LRU 43A-A

2 Shallow to very shallow soils

- i. Shallow soils Soil shallow (10" – 20" deep to bedrock, lithic, or paralithic root restrictive layer) ... R043AA138MT – Shallow Droughty (Swdr) LRU 43A-A

B. Range site in 17-20" precipitation zone and is listed below, otherwise go to PES key. Sites included here:

Droughty, Droughty Steep, Loamy steep, Stony, Shallow Droughty, Thin Loamy.

1 Soils shallow and droughty ... R043AB138MT – Shallow Droughty (Swdr) LRU 43A-B

2 Soils moderately deep to deep Soils moderately deep, deep, or very deep (≥ 20 " deep to bedrock, lithic, or paralithic root restrictive layer)

ii. Not stony surface

- a. Soil skeletal to within 20" of soil surface (averages $> 35\%$ rock fragments in the 10"-20" layer). Soil loamy-skeletal or clayey-skeletal

1) Slope $< 15\%$ – Droughty (Dr) ... R043AB036MT – Droughty (Dr) LRU 43A-B

2) Slope $\geq 15\%$ – Droughty Steep (DrStp) ... R043AB038MT – Droughty Steep (Drstp) LRU 43A-B

b. Soils not skeletal

1) Soils loamy and steep and mollic epipedon present: Soil not skeletal within 20" of soil surface (averages $< 35\%$ rock fragments in the 10"-20" layer) and Slope $\geq 15\%$ and Clay content is $< 32\%$ (ribbon < 2 " long) in surface mineral 4" ... R043AB040MT – Loamy Steep (Lostp) LRU 43A-B

III. ALL OTHER SITES NOT LISTED ABOVE USE SEPARATE KEY (PES KEY 4)- See separate expanded key for forested and non-forested provisional ecological sites.