Major Land Resource Area 043B
Central Rocky Mountains

Accessed: 05/10/2025

Ecological site keys

MLRA 43B Wyoming East Divide Absaroka and Bighorn Subalpine Zone Ecological Site Key

I. Site receives additional effective moisture[1] – If no, refer to Group II

A. Sites with a water table present for at least part of the growing season, site dominated by hydrophilic plants

1 Site has water above soil surface part of the growing season, and a water table present within 0-12” (0-30 cm) annually ... EX043B23C178 – Wetland (WL) Absaroka Subalpine Zone

2 Site has a seasonal water table

i. Seasonal water and receives higher than normal soil moisture because of stream overflow or subsurface seep occurring within the channel system of an intermittent or perennial stream channels ... EX043B23C182 – Riparian Lowlands (RLL) Absaroka Subalpine Zone

ii. Seasonal water table from snowmelt or seeps, site regularly receives higher than normal soil moisture because of run-in, occurs upslope from riparian systems ... EX043B23C180 – Wet Meadows (WM) Absaroka Subalpine Zone

B. Site receives periodic overflow from adjacent slopes, but without a water table within 78” (200 cm)

1 Soil has ≥ 35% clay in the upper 8” (20 cm) of the mineral soil surface ... EX043B23C106 – Clayey Overflow (CyO) Absaroka Subalpine Zone

2 Soil has < 35% clay in the upper 8” (20 cm) of the mineral soil surface ... EX043B23C130 – Overflow (Ov) Absaroka Subalpine Zone

II. Site does not receive additional effective moisture[1]

A. Soil is very shallow (< 10” (25 cm) or shallow (< 20” (50 cm) to bedrock (lithic or paralithic contact)

1 Soils very shallow, includes areas of exposed bedrock and may include pockets of deep soil, often on steep (up to 55%) slopes with very low productivity potential

i. Soil with igneous or volcanic bedrock ... EX043B23C116 – Igneous (Ig) Absaroka Subalpine Zone

ii. Soil with sedimentary bedrock, common on windswept ridges, (if productivity is high and > 35% rock fragments are present use Gravelly (Gr)) ... EX043B23C176 – Very Shallow (VS) Absaroka Subalpine Zone

2 Soils shallow, productivity potential is LOW

i. Soil derived from igneous parent material (igneous or volcanic bedrock) ... EX043B23C160 – Shallow Igneous (SwIg) Absaroka Subalpine Zone

ii. Soil derived from sedimentary parent material (i.e. sandstone or shale bedrock) ... EX043B23C157 – Shallow Sedimentary (SwS) Absaroka Subalpine Zone

B. Soils moderately deep to very deep (> 20” (50 cm) to bedrock (lithic or paralithic contact)

1 Soil is skeletal (> 35% rock fragments[7]) in the upper 20” (50 cm) of the mineral soil surface

i. Soil is skeletal within the upper 8” (20 cm) of the mineral soil surface

a. Soil has < 18% clay; surface fragments and fragments in the soil profile are dominantly < 3” (76mm) in diameter, but may range in size ... EX043B23C112 – Gravelly (Gr) Absaroka Subalpine Zone

b. Soil has ≥ 18% but < 60% clay; surface fragments and fragments in the soil profile are dominantly

≥ 3” (76mm) in diameter but < 10” (250 mm), but may range in size ... EX043B23C175 – Skeletal (Sk) Absaroka Subalpine Zone

ii. Soil is skeletal starting within the upper 8-20” (20-50 cm) from the mineral soil surface; Soil has ≥ 18% but < 60% clay through the upper 20” (50 cm) of the mineral soil surface

a. Fragments typically consisting of stones and boulders (fragments > 10” (250 mm) in diameter), surface fragments (3-15%) increase in stones and boulders, common on Glacial outwash

1) Slope > 20% ... EX043B23C170 – Steep Stony Upland (SStU) Absaroka Subalpine Zone

2) Slope ≤ 20% ... EX043B23C172 – Stony Upland (StU) Absaroka Subalpine Zone

b. Fragments typically consisting of cobbles (fragments are dominantly > 3” (76 mm) but < 10” (250 mm) in diameter); a few stones and boulders (0-3%) are present, common on landslides ... EX043B23C109 – Cobbly Upland (CoU) Absaroka Subalpine Zone

2 Soil is not skeletal in the upper 20” (50 cm) of the mineral soil surface

i. Soil has ≥ 35% clay starting within the upper 4” (10 cm) from the mineral soil surface

a. Abrupt clay increase[6] to > 40% clay present within 4-8” (10-20 cm) of the mineral soil surface, significant surface cracking ... EX043B23C110 – Dense Clay (DC) Absaroka Subalpine Zone

b. Soil has ≥ 35% clay throughout the upper 20” (10 cm) of mineral soil ... EX043B23C104 – Clayey (Cy) Absaroka Subalpine Zone

ii. Site not as above

a. Soil has < 18% clay starting within the upper 4” (10 cm) and continues throughout the upper 20” (50 cm) of mineral soil ... EX043B23C150 – Sandy (Sy) Absaroka Subalpine Zone

b. Soil has ≥ 18% but < 35% clay in the upper 20” (50 cm) of the mineral soil surface in Absaroka Mountains

1) Soils derived from granitic parent material (currently specific to Bighorn Mtns) ... EX043B23C113 – Granitic Loamy (GLy) Absaroka Subalpine Zone

2) Soil derived from sedimentary parent material (i.e. sandstone or shale bedrock)

a) Slope > 20%, may have indications of terrecettes ... EX043B23C168 – Steep Loamy (SLy) Absaroka Subalpine Zone

b) Slope ≤ 20% ... EX043B23C122 – Loamy (Ly) Absaroka Subalpine Zone

c. Soil has ≥ 18% but < 35% clay in the upper 20” (50 cm) of the mineral soil surface in Bighorn Mountains

1) Soils derived from granitic parent material (currently specific to Bighorn Mtns) ... EX043B05C113 – Granitic Loamy Bighorn Mountains Sub-alpine Zone

2) Soil derived from sedimentary parent material (i.e. sandstone or shale bedrock) ... EX043B05C122 – Loamy Bighorn Mountains Sub-alpine Zone

7. When calculating percent rock fragments in the profile to determine if a site is skeletal, pararock fragments (parachanners) are not considered, however, channers are. The difference between a parachanner and a channer is how “hard” the rock is. Soft flat fragments (ruptured by hand) are parachanners, while harder flat fragments are channers.

1. For areas that receive additional moisture through snow trapping, consider adjusting to a wetter LRU consistent with the vegetation observed for the site keyed. It is anticipated that most snow-trap sites will not have a water table.

2. Specific plant species listed in the key are not to be used as the only determining factor. Management or disturbance may have removed or altered the plant composition that could reflect the wrong ecological site.

6. The dense clay site will have a lighter textured cap or “A” horizon with an abrupt clay increase, which will then back off or become lighter as move lower in the profile. The abrupt increase in the upper portion of the profile with significant cracking is the key for this site. Clayey may have a lighter textured cap but typically maintains or increases in clay as move through the profile.