

# Major Land Resource Area 048A

## Southern Rocky Mountains

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### Ecological site keys

#### MLRA 48A - Utah

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- I. Site receives extra water beyond normal precipitation through high water table and/or run-in water
  - A. Water table depth is generally 50 inches or greater below the surface and soils are loamy skeletal (>35% rock fragment)
    - 1 Dominant aspect of this site is shrubs ... R048AY007UT – Loamy Bottom (Basin Big Sagebrush/Basin Wildrye)
    - 2 Dominant aspect of this site is shrub
      - i. Site dominated by willows, soil profile is fine loamy (low rock content, 18-35% clay) ... R048AY008UT – Wet Fresh Meadow (Willow-Sedge)
      - ii. Site dominated by willow, and soil profile is coarse loamy (<35% rock fragments) ... R048AY010UT – Wet Fresh Streambank (Willow)
    - 3 Soil sub-surface gravel volume is generally greater than 30% and dominant tree is narrowleaf cottonwood
      - i. Soil sub-surface gravel volume is generally greater than 30% and dominant tree is narrowleaf cottonwood ... R048AY005UT – Semiwet Fresh Streambank (Narrowleaf Cottonwood)
      - ii. Soil sub-surface gravel volume is less than 10% and the dominant tree is water birch ... R048AY006UT – Semiwet Fresh Streambank
- II. Greater than 35" annual precipitation
  - A. Site is above timberline
    - 1 Gravels on surface are greater than 20% and soil profile is loamy-skeletal and fragmental (>35% rock fragments by volume) ... R048AY610UT – Alpine Slope
  - B. 22" - 40" annual precipitation
    - 1 Slope generally less than 30%
      - i. Surface soil texture loam and soil profile contains less than 10% rock fragment by volume ... R048AY516UT – High Mountain Loam (Mountain Big Sagebrush)
      - ii. Surface soil texture loam to silt loam and soil profile contains greater than 10% rock fragment by volume ... R048AY503UT – High Mountain Clay
      - iii. Soil depth is generally moderately deep to deep (20-60") with gravels on the surface less than 15% by volume ... F048AY506UT – High Mountain Loam (Aspen)
      - iv. Soil depth is generally moderately deep (20-40") and are generally associated/adjacent to aspen sites dominated by herbaceous species ... R048AY515UT – High Mountain Loam (Thurber Fescue)
      - v. Soil depths generally shallow (< 20%) with gravelly silt loam surface texture. ... R048AY518UT – High Mountain Gravelly Loam (Mountain Big Sagebrush)
    - 2 Slope generally greater than 30%
      - i. Rock fragments in the top 24" generally greater than 50% by volume
        - a. Surface textures are generally gravelly or cobbly loam with surface rock fragments greater than 10% ... F048AY524UT – High Mountain Stony Loam (Engelmann Spruce)
        - b. Surface textures are generally fine sandy loam to gravelly sandy loam with surface rock fragments

less than 10%. ... F048AY523UT – High Mountain Stony Loam (Douglas Fir)

ii. Rock fragments in the top 24" generally less than 50% by volume

a. Soil epipedon is generally pachic (mollic and greater than 20" thick) ... F048AY528UT – High Mountain Very Steep Loam (Aspen)

b. Surface soil texture is coarse (very stony or bouldery) ... F048AY530UT – High Mountain Very Steep Loam (Douglas Fir)

c. Surface soil texture is finer (loam to fine sandy loam)

1) Rock fragments on the soil surface are generally greater than 15%. ... F048AY532UT – High Mountain Very Steep Stony Loam (Engelmann Spruce)

2) Rock fragments on the soil surface are generally less than 15%. ... F048AY509UT – High Mountain Loam (Douglas-Fir)

III. 16" - 22" annual precipitation (except some south and west slopes or soils with poor water holding capacity), adjacent areas are capable of supporting gambel oak

A. Generally restrictive layer 20" or less from the soil surface

1 Surface textures are mostly cobbly loam (rocks 3-10" 10-20% of by volume) ... R048AY442UT – Mountain Shallow Loam (Salina Wildrye)

2 Surface textures are mostly channery loam with current or past evidence of trees occupying the site ... R048AY443UT – Mountain Shallow Loam (Mixed Conifer)

3 Surface textures are mostly very gravelly loam (gravels 10-30% by volume) ... R048AY433UT – Mountain Shallow Loam (Black Sagebrush)

4 Surface textures are mostly gravelly sandy loam with current or past evidence of trees occupying the site ... F048AY439UT – Mountain Shallow Loam (Ponderosa pine)

5 Surface textures are loam with Gambel's oak likely the dominant aspect of the site ... R048AY430UT – Mountain Shallow Loam (Oak)

6 Surface soil textures are predominately fine sandy loam, but have a gravel modifier as well ... R048AY436UT – Mountain Shallow Loam (Mountain Big Sagebrush)

B. Generally restrictive layer greater than 20" from the soil surface

1 Top 24" of soil profile generally contains greater than 50% rock fragments by volume

i. Surface soil texture mainly extremely boulder fine sandy loam or very channery loam ... R048AY478UT – Mountain Windswept Ridge

ii. Surface soil texture mainly channery/very channery loam with past or present evidence of tree occupying the site ... F048AY452UT – Mountain Stony Loam (Douglas Fir)

iii. Surface soil texture mainly loam to very fine sandy loam ... R048AY448UT – Mountain Stony Loam (Mountain Big Sagebrush)

iv. Surface soil texture mainly very cobbly very fine sandy loam to stony loam with past or present evidence of trees occupying the site ... F048AY457UT – Mountain Stony Loam (Ponderosa pine)

v. Surface soil texture mainly sandy loam to gravelly sandy loam and does not have rock fragments greater than 3" on the soil surface ... R048AY449UT – Mountain Stony Loam (Black sagebrush)

vi. Surface soil texture mainly gravelly sandy loam to loam, has less than 10% rock fragments on the soils surface greater than 3" ... R048AY451UT – Mountain Stony Loam (Shrub)

vii. Surface soil textures mainly extremely stony loam to extremely boulder fine sandy loam with slopes typically greater than 50% and past/present evidence of trees occupying the site ... F048AY475UT – Mountain Very Steep Stony Loam (Douglas Fir)

viii. Surface soil textures mainly gravelly sandy loam with slopes generally greater than 50% ... R048AY473UT – Mountain Very Steep Stony Loam (Shrub)

2 Top 24" of soil profile generally contains less than 50% rock fragments by volume

i. Slopes on site typically greater than 50%

a. Surface soil texture sandy loam with past/present evidence of trees occupying the site ... F048AY463UT – Mountain Very Steep Loam (Douglas Fir)

- b. Surface soil textures mainly stony/extremely stony loam, to very channery loam ... R048AY466UT – Mountain Very Steep Loam (Salina Wildrye)
- d. Surface soil textures are mainly very channery loam and rock fragment on the soil surface is larger than 3" ... R048AY471UT – Mountain Very Steep Loam (Curlleaf mountainmahogany)
- c. Surface soil textures mainly fine sandy loam to loam with past/present evidence of Gambel's oak on the site ... R048AY465UT – Mountain Very Steep Loam (Oak)
- ii. Slopes on site typically less than 50%
  - a. Site occurs in area that receive additional moisture from adjacent upland sites ... R048AY410UT – Mountain Loamy Bottom (Basin Wildrye)
  - b. Site not as above
    - 1) Present or past evidence that trees dominated this site ... R048AY417UT – Mountain Loam (Ponderosa Pine)
    - 2) Surface soil texture mainly loam to stony loam with the past/present evidence of Gambel's oak as the dominant aspect of the site ... R048AY415UT – Mountain Loam (Oak)
    - 3) Surface soil texture mainly stony to clay loam with the dominant aspect of the site being a grass ... R048AY409UT – Mountain Loam (Salina Wildrye)
    - 4) Surface soil texture mainly gravelly fine sandy loam ... R048AY406UT – Mountain Loam (Shrub)
    - 5) Surface soil texture mainly loam, fine sandy loam to cobbly fine sandy loam ... R048AY405UT – Mountain Loam (Mountain Big Sagebrush)

IV. 12" - 16" annual precipitation. Up to 20" on south and west slopes or soils with poor water holding capacity, site is too dry to support gambel oak

A. Generally restrictive layer 20" or less from the soil surface

- 1 Surface textures are mostly clay loam ... R048AY315UT – Upland Clay Loam (Utah Juniper-Pinyon)
- 2 Surface textures are mostly channery or gravelly sandy loam (surface fragments 10-30% by volume) ... R048AY320UT – Upland Shallow Loam (Black sagebrush)
- 3 Surface textures are mostly very channery loam (surface fragments 10-30% by volume) ... R048AY322UT – Upland Shallow Loam (Two-Needle Pinyon / Utah Juniper)
- 9 Surface textures are mostly very channery loam and rock content in the top 24" is greater than 35% by volume. ... F048AY330UT – Upland Shallow Stony Loam (Two-Needle Pinyon /Douglas Fir)
- 8 Surface soil textures are fine gravelly silty clay loam to gravelly loam and rock content is generally less than 35% of the soil volume ... R048AY309UT – Upland Loam (Birchleaf Mountain Mahogany)
- 6 Surface soil textures are predominately gravelly loam on outwash terraces (surface fragments 10-30%). ... R048AY323UT – Upland Shallow Hardpan (Black Sagebrush)
- 7 Surface soil texture mainly very channery loam (surface fragments 20-70%) with slopes greater than 35%. ... R048AY366UT – Upland Very Steep Loam (Salina Wildrye)
- 4 Surface textures are mostly gravelly fine sandy loam (surface fragments 10-40% by volume) ... R048AY332UT – Upland Shallow Stony Loam (Bonneville Big Sagebrush)
- 5 Surface textures are channery loam with slopes greater than 35% ... R048AY342UT – Upland Very Steep Shallow Loam (Pinyon-Utah Juniper)

B. Generally restrictive layer greater than 20" from the soil surface

- 1 Top 24" of soil profile generally contains greater than 35% rock fragments by volume
  - i. Surface soil texture mainly channery/extremely channery loam (surface fragments 10-60%). ... R048AY331UT – Upland Stony Loam (Pinyon-Utah Juniper)
  - ii. Surface soil texture mainly channery or bouldery sandy loam (surface fragments greater than 35%). ... R048AY334UT – Upland Stony Loam (basin big sagebrush-saline wildrye)
- 2 Top 24" of soil profile generally contains less than 35% rock fragments by volume
  - i. Surface soil texture mainly channery fine sandy loam (surface fragments 10-30%). ... R048AY311UT –

Upland Gravelly Loam (Bonneville Big Sagebrush)

ii. Surface soil texture mainly loamy sand are excessively drained on alluvial fans ... R048AY312UT – Upland Sand (Basin big sagebrush)

iii. Surface soil texture mainly loam, may have a gravelly modifier, has less than 10% rock fragments on the soils surface ... R048AY306UT – Upland Loam (Wyoming Big Sagebrush)

iv. Surface soil texture mainly loam to silty clay loam, may have a gravelly modifier, has less than 10% rock fragments on the soils surface ... R048AY308UT – Upland Loam (Bonneville Big Sagebrush)