

# Major Land Resource Area 034A

## Cool Central Desertic Basins and Plateaus

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### Ecological site keys

#### Pinedale Plateau Ecological Site Key 34A

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- I. Site in a lowland position (bottom) that receives significant additional moisture from runoff of adjacent slopes or intermittent/perennial streams or a water table (HIGH productivity potential)
- A. Site moderately to strongly saline (>8mmhos/cm) within 20" (50cm) and dominated by salt tolerant species
- 1 Site has a water table within rooting depth of herbaceous species (20-40" (50-100cm)) during most of the growing season ... R034AY242WY – Saline Subirrigated Foothills and Basins West (SS)
  - 2 Site not as above
    - i. Site adjacent to perennial or intermittent streams, receiving some overland flow from adjacent slopes, with moderately good drainage, but water table within 36" (within rooting depth of woody plants, but not herbaceous plants) during most of the growing season ... R034AY238WY – Saline Lowland Foothills and Basins West (SL)
    - ii. Site may receive periodic overflow from adjacent slopes, located in lowland position but water is typically channeled into gullies so that plants are not receiving a lot of benefit from additional moisture ... R034AY240WY – Saline Lowland Drained Foothills and Basins West (SLDr)
- B. Site not saline
- 1 Site has fluctuating water table above surface part of growing season (redox features in top 12" (30cm)) ... R034AY278WY – Wetland Foothills and Basins West (WL)
  - 2 Site not as above
    - i. Site has a water table within rooting depth of herbaceous species (12-24" (30-60cm)) during most of the growing season ... R034AY274WY – Subirrigated Foothills and Basins West (Sb)
    - ii. Site not as above
      - a. Site adjacent to perennial or intermittent streams, with moderate to excessive drainage, and fluctuating water table 24-60" (60-152cm), within 36" (90cm) (rooting depth of woody plants, but not herbaceous plants) during some of the growing season, cottonwood or remnants may be present, (soil texture varies on gravel bars and pockets of bare gravel often present) ... R034AY228WY – Lowland Foothills and Basins West (LL)
      - b. Site drier than above, more likely on intermittent drainage without gravel bars and high water table during growing season
        - 1) Surface textures range from sandy loam to light silty clay loam (if redox features are present they are below 40" (100cm)) ... R034AY230WY – Overflow Foothills and Basins West (Ov)
        - 2) Site similar to above with heavier textured soils (clay loam, silty clay loam, and silty clay) (if redox features are present they are below 40" (100cm)) ... R034AY206WY – Clayey Overflow Foothills and Basins West (CyO)
- II. Soil depth very shallow (<10" (25cm)), shallow (10-20" (25-50cm)) OR moderately deep to deep (>20" (>50cm), skeletal (>35% coarse fragments by volume in top 20" (50cm)) soils on south and west aspects and/or with a root restricting layer which react like shallow soils (LOW productivity potential)
- A. Soils very shallow (<10" (25cm)), but may include areas of exposed bedrock and pockets of deep soil, often on steep (up to 55%) south and west facing slopes with VERY LOW productivity potential

1 Bedrock is soft or hard clay shale bedrock that may be saline, occurs in upland position on moderately to steeply sloping land (5-25% slope) ... R034AY254WY – Shale Foothills and Basins West (Sh)

2 Bedrock commonly fractured sandstone, shale, or siltstone, commonly on windswept ridges (within 8" (20cm), productivity very low (if productivity is higher and coarse fragments are present, go to II. B. 2. ii) ... R034AY276WY – Very Shallow Foothills and Basins West (VS)

B. Soils shallow (10-20" (25-50cm)), but may include moderately deep to deep (>20" (>50cm)) skeletal soils on south and west aspects, >15% slopes, productivity potential is LOW

1 Site with a highly calcareous subsoil (<10" (25cm)), often gravelly or skeletal subsoil OR underlain by soft calcareous materials and slopes >15%

i. Shallow sandy and loamy soils (10-20" (25-50cm)), often cobbly or channery with slopes >35%, underlain by soft calcareous materials with many outcrops of sedimentary rock (often associated with Limestone parent material) ... R034AY234WY – Rocky Hills Foothills and Basins West (RH)

ii. Moderately deep to deep soil (>20" (50cm)) with highly calcareous (violent effervescence (>15% CCE)) subsoil at <10" (25cm), often gravelly or skeletal and on 15 to 35% slopes, (compare with II. B. 2. i. a) ... R034AY263WY – Shallow Loamy Calcareous Foothills and Basins West (SwLyCa)

2 Site without highly calcareous subsoil or bedrock, OR if lime horizon present, accompanied by high volume of coarse fragments at soil surface, slopes variable

i. Soil is skeletal with coarse fragments common on surface and throughout profile (>35% by volume in top 20" (50cm))

a. Site occurs along terrace breaks, steep slopes, or terraces with coarse fragments up to 10" diameter covering 50-75% of surface and making up 40-50% volume in top 20" (50cm), may have lime horizon below 12", often westerly aspect and windswept ridges, soils are excessively well drained loamy sands, sandy loams and fine sandy loams ... R034AY212WY – Gravelly Foothills and Basins West (Gr)

b. Fractured sedimentary bedrock at 10-20" (25-50cm) with cobble, stone, and angular fragments on the surface and throughout soil profile, inclusions of very shallow to deep pockets of soil, loamy well drained soils commonly on south & west facing slopes (productivity potential higher than Very Shallow (VS) site) ... R034AY256WY – Shallow Breaks Foothills and Basins West (SwBr)

ii. Soils without high amount of coarse fragments at soil surface, but still may be skeletal, have root restricting layer, shallow to bedrock

a. Root restricting (7-15" 18-30cm) clay loam to clay subsoil layer (>40% clay) with sharply contrasting loam to clay loam surface textures, soil may develop large cracks when dry ... DX034A02X124 – Loamy Argillic Pinedale Plateau (LyA PP)

b. Well drained loamy sand, sandy loams, or fine sandy loams over sedimentary bedrock or calcium carbonate or similar layer that restricts rooting depth ... R034AY266WY – Shallow Sandy Foothills and Basins West (SwSy)

c. Well-drained fine sandy loam to silty loams over sedimentary bedrock or loams with root restricting layer (i.e. rock layer and/or similar layer) ... R034AY262WY – Shallow Loamy Foothills and Basins West (SwLy)

III. Soil depth moderately deep to deep (>20" (50cm)) without root restricting layer and is NOT skeletal and/or south or west facing that inhibits the productivity potential

A. Site affected by soil chemistry (salinity, sodicity, and/or calcium carbonates) within the rooting depth of herbaceous plants (Top 20" (50cm))

1 Soils slightly saline to moderately saline or greater (>4mmhos/cm), calcareous or not. Surface textures range from sandy loam to clay loam, moderately saline or greater (>8mmhos/cm), or sodic (SAR >13, EC <4mmhos) (if root restrictive layer present and productivity very low consider Shale site – Group II) ... R034AY244WY – Saline Upland Foothills and Basins West (SU)

2 Soils highly calcareous (>15% CCE within top 20" (50cm)), but not saline (<4mmhos/cm)

i. Soils very fine sandy loams to sandy clay loams, with violent effervescence (>15% CCE) between 10"

(25cm) and 20" (50cm) of the soil surface ... DX034A02X126 – Loamy Calcareous Pinedale Plateau (LyCa PP)

ii. Soils very fine sandy loams to sandy clay loams, violent effervescence (>15%CCE) at the soil surface ... DX034A02X120 – Limy Pinedale Plateau (Li PP)

B. Sites are not affected by soil chemistry

1 Sites with a high volume of coarse fragments in top 20" (>35% by volume). Site occurs along terrace breaks, steep slopes, or terraces with coarse fragments up to 10" diameter covering 50-75% of surface and making up 40-50% volume in top 20" (50cm), may have lime horizon below 12", often westerly aspect and windswept ridges, soils are excessively well drained loamy sands, sandy loams and fine sandy loams (See II. B. 2. i. a) ... DX034A02X112 – Gravelly Pinedale Plateau (Gr PP)

2 Sites without high volume of coarse fragments

i. Sandy clay loam, silty clay loam and clay loam surface, soil cracking common during dry summer months, though not severe (>36% clay in subsurface) ... DX034A02X104 – Clayey Pinedale Plateau (Cy PP)

ii. Sites not as above

a. Excessively drained soils that are very coarse (loamy sand to sand), on nearly level to rolling uplands or dunes, dark or light colored ... R034AY246WY – Sands Foothills and Basins West (Sa)

b. Soil textures range from loamy fine sand to clay loam

1) Soils loamy fine sand to fine sandy loam, (Note: Soils with <6" (15cm) sandy loam surface layer over sandy clay loam or clay loams are excluded, go to III.B.2.ii.b.2) ... DX034A02X150 – Sandy Pinedale Plateau (Sy PP)

2) Slopes <30%, productivity potential is high, well-drained site (Note: soils with <6" (15cm) sandy loam surface layer over sandy clay loam or clay loam is included) ... DX034A02X122 – Loamy Pinedale Plateau (Ly PP)