

# Major Land Resource Area 026X Carson Basin and Mountains

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## Ecological site keys

### Mono-Adobe-Long Valleys Key

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#### I. Site has a water table within 60 inches of the soil surface, or the site is on a landform that experiences flooding.

A. Site does not have a water table within 60 inches, but does experience flooding. ... R026XF006CA – Dry Floodplain

B. Site has a water table within 60 inches of the soil surface and experiences flooding.

1 Site is influenced by salt.

i. Water table is shallow (24 inches or less). ... R026XF016CA – Wet Sodic Meadow

ii. Water table is deeper (between 36 and 60 inches of the soil surface). ... R026XF007CA – Sodic Meadow

2 Site is not influenced by salt.

i. Site is found in a bottom location, not associated with a stream, but may have a drainageway. ... R026XF010CA –  
Wet Meadow

ii. Site is associated with a stream. ... R026XF017CA – Moist Floodplain

#### II. Site does not have a water table within 60 inches of the soil surface.

A. Site is shallow to a restrictive layer (less than 20 inches to a restrictive layer).

1 Site is located on volcanic flows. ... R026XF015CA – Mahogany Slope 8-12" P.Z.

2 Site is located on mountains or hill, but not volcanic flows.

i. Soil is shallow (10 to 20 inches to restrictive layer) and site occurs slightly lower on the landscape. ... R026XF042CA –  
Steep Rocky Loam (BLM)

ii. Site is very shallow (less than 10 inches to a restrictive layer). Site also occurs slightly higher on the landscape. ...  
R026XF613CA – Rocky Upland Loam (BLM)

B. Site is moderately deep to deep (20 inches or more to a restrictive layer).

1 Site is found on glacial moraines. ... R026XF014CA – Granitic Loam 8-12" P.Z.

2 Site is not found on glacial moraines.

i. Soil is moderately deep (20 to 40 inches to a restrictive layer). ... R026XF605CA – Sandy Juniper Flat  
(BLM)

ii. Soil is deep (over 40 inches to a restrictive layer).

a. Slope is greater than 15 percent. ... R026XF606CA – Sandy Upland Pinyon (BLM)

b. Slope is less than 15 percent.

1) Site located on stabilized dunes. ... R026XF002CA – Dune 8-12" P.Z.

2) Sites are located on lake terraces, alluvial fans, or valley floors.

a) Soil is a mollisol, with dark top horizon colors, and well developed. ... R026XF012CA – Ashy Loam 8-12" P.Z.

b) Soil is a entisol, does not have dark top horizon colors, and is not well developed.

(1) Soil surface texture is coarse sand to sand. See also R026XF046CA Gravelly Sand (BLM). ...

R026XF005CA – Deep Ashy 10-12" P.Z.

(2) Soil surface texture is finer (loamy sand to sandy loam).

(a) Soil surface or subsurface has less than 10 percent rock fragments by cover or volume. ...

R026XF001CA – Interdune 8-10" P.Z.

(b) Soil surface or subsurface has more than 10 percent rock fragments by cover or volume. All three sites should be field checked for site differences. See also R026XF004CA Gravelly Coarse Loamy 8-12", this site

has antelope bitterbrush in the community. ... R026XF003CA – Sandy 8-12" P.Z.

## Semiarid Fans and Basins

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I. Soil is shallow (less than 20 inches to a restrictive layer). ... R026XY025NV – CLAYPAN 8-10 P.Z.

II. Soil is moderately deep to deep (greater than 20 inches to a restrictive layer).

A. Site experiences flooding and has a water table within 60 inches of the soil surface.

1 Water table is typically at the soil surface or ponded in winter and spring. ... R026XY002NV – WET SODIC BOTTOM

2 Water table is typically deeper than 20 inches from the soil surface and is not present near the soil surface during any time of year.

i. Site occurs on a alluvial fan. ... R026XY032NV – DEEP SODIC FAN

ii. Site occurs on a flood plain or stream terrace.

a. Site is poorly drained.

1) Site is influenced by salts, high sodium adsorption ratio and electrical conductivity (up to 32 and 90). ...

R026XY013NV – SODIC FLOODPLAIN

2) Site does not have salt influence. ... R026XY001NV – MOIST FLOODPLAIN

b. Site is somewhat poorly drained.

1) Site has a duripan 20 to 40 inches below the soil surface. ... R026XY004NV – SALINE BOTTOM

2) Site does not have a restrictive layer. ... R026XY012NV – DRY FLOODPLAIN 8-10 P.Z.

B. Site does not have flooding, or if it does, it will not have a water table within 60 inches of the soil surface.

1 Site occurs on dunes and has a fine sand surface texture. ... R026XY014NV – DUNE 10-12 P.Z.

2 Site does not occur on dunes, site may have a sandy surface texture, but do not occur on dunes.

i. Site has less than 5 percent rock cover on the soil surface.

a. Site influenced by salt. ... R026XY021NV – SODIC FLAT

b. Site is not influenced by salt.

- 1) Soil surface texture is silty clay loam. ... R026XY031NV – SILTY 8-10 P.Z.
- 2) Soil surface texture is sandy loam. ... R026XY103NV – GRANITIC LOAM 10-12 P.Z.
- ii. Site has greater than 5 percent rock cover on the soil surface.
  - a. Site occurs in drainageways, often associated with alluvial fans. ... R026XY034NV – WASH 8-12 P.Z.
  - b. Site occurs on alluvial fans or fan remnants, but is not located in a drainageway.
    - 1) Site has a root restrictive layer, typically a increase in clay. This can be identified by a abrupt textural change.
      - a) Rocks on the soil surface and in the soil profile are typically greater than 20 percent cover/volume. ... R026XY047NV – DROUGHTY CLAYPAN 8-10 P.Z.
      - b) Rocks on the soil surface and in the soil profile are typically less than 20 percent cover/volume. ... R026XF048CA – CLAYPAN TERRACES
    - 2) Site does not have a root restrictive layer or an abrupt soil texture change.
      - a) Site typically has less than 15 percent cover or volume of rocks on the soil surface and subsurface. Both sites should be evaluated in the field for potential combination. See also R026XF049CA Intermediate mountains 6-12". ... R026XY020NV – SANDY 8-10 P.Z.
      - b) Site typically has greater than 15 percent rock cover or volume on the soil surface and subsurface.
        - (1) Site is found higher on the landscape, where the precipitation is typically between 10 to 12 inches. Soil is classified as a mollisol. Plant production is between 600 to 1,000 lbs per acre. ... R026XY008NV – GRANITIC FAN 10-12 P.Z.
        - (2) Site is found lower on the landscape, where the precipitation is typically between 8 to 10 inches. Soil is classified as an aridisol. Plant production is between 400 to 800 lbs per acre. ... R026XY016NV – LOAMY 8-10 P.Z.

## Sierra Influenced Ranges (Frigid)

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### I. Soil is shallow (less than 20 inches to a restrictive layer).

#### A. Slopes are typically less than 30 percent.

1 Site occurs at elevations greater than 8500 feet. ... R026XY028NV – MOUNTAIN RIDGE

2 Site occurs at elevations less than 8500 feet.

i. Surface soil texture is sand, with greater than 60 percent gravels. ... F026XY063NV – Shallow Sandy Pediment 13-15 P.Z. JUOS/ARTRW8/ACHY-HECO26

ii. Surface soil texture is sandy loam to fine sandy loam. See also R026XY078NV Claypan 12-14 P.Z. and R026XY009NV Mahogany Savanna. ... F026XY064NV – Shallow Clayey Summit 11-14 P.Z. PIMO-JUOS/ARAR8/ACTH7

#### B. Slopes are typically greater than 30 percent.

1 Site typically occurs at elevations greater than 8000 feet. Site is dominated by big sagebrush. ... R026XY056NV – SOUTH SLOPE 16+ P.Z.

2 Site typically occurs at elevations less than 8000 feet. Site is dominated by pinyon trees. See also F026XY044NV. ...

F026XY060NV – Shallow Loamy Slopes 12-16 P.Z PIMO/ARTRV/ACTH7

**II. Soil is moderately deep to deep (greater than 20 inches to a restrictive layer).**

**A. Rocks on site are less than 15 percent cover/volume. ... R026XF035CA – Ashy Loamy Sand (BLM)**

**B. Rocks on site are greater than 15 percent cover/volume.**

**1 Rocks on site are stone or boulder sized (greater than 10 inches in diameter).**

**i. Site occurs at elevations greater than 9000 feet. ... F026XY067NV – Steep Bouldery Loam 15-17 P.Z. PIFL2/ARTRV/LEKI2-KOMA**

**ii. Site occurs at elevations less than 9000 feet.**

**a. Rocks on the site are greater than 24 inches in diameter (boulder sized). ... R026XY006NV – GRANITIC LOAM 14+ P.Z.**

**b. Rocks on the site are between 10 and 24 inches in diameter (stone sized).**

**1) Site is found at slopes typically between 30 and 50 percent. ... F026XY060NV – Shallow Loamy Slopes 12-16 P.Z PIMO/ARTRV/ACTH7**

**2) Site is found at slopes typically less than 30 percent. See also R026XY009NV Mahogany Savanna. ... R026XY005NV – LOAMY 12-14 P.Z.**

**2 Rocks on site are cobble or gravel sized (less than 10 inches in diameter).**

**i. Site is typically found at elevations greater than 9000 feet. ... R026XY052NV – SHALLOW LOAM 16+ P.Z.**

**ii. Site is typically found at elevations less than 9500 feet.**

**a. Site has an increase in clay in the soil subsurface that influences rooting depth. Site is dominated by either Lahonton or low sagebrush. See also R026XY078NV Claypan 12-14 P.Z. ... R026XY039NV – CLAYPAN 14+ P.Z.**

**b. Site does not have an increase in clay that influences plant rooting depth. Dominant plants are either mahogany, big sagebrush, or aspen.**

**1) Mean annual precipitation at the site is 16 inches or less. The difference between these sites appear to be slight differences in elevation and position on the landscape. 038NV tends toward cool frigid/cryic and 040NV is frigid. See also R026XY040NV Gravelly Loam 14+ P.Z. ... R026XY038NV – LOAMY SLOPE 14+ P.Z.**

**2) Mean annual precipitation is greater than 16 inches.**

**a) Site is in a concave position and is dominated by aspen. ... F026XY066NV – Cool Concave Mountain Slope 16+ P.Z.**

**b) Site is in a convex position and is dominated by mahogany and/or big sagebrush. See also R026XY009NV Mahogany Savanna. ... R026XY075NV – GRAVELLY MOUNTAIN SHOULDERS 16+ P.Z.**

**I. Soil is very shallow (less than 10 inches) to shallow (10 to 20 inches) to a restrictive layer (duripan, paralithic, and/or lithic bedrock).**

**A. Soil has an increase in clay that restricts plant growth, site typically dominated by Lahontan or low sagebrush or pinyon and juniper.**

**1 Site is located on a ridge or mountain summit. Slope is between 2 to 15 percent. ... F026XY064NV – Shallow Clayey Summit 11-14 P.Z. PIMO-JUOS/ARAR8/ACTH7**

**2 Site is located on hills, mountains, fan remnants. Slopes range from 2 to 75 percent. Dominant vegetation is Lahontan or low sagebrush. Site R026XY033NV Sandy Claypan 8-10 P.Z. fit into this category, however, the site needs to be verified in the field.**

**i. Restrictive layer is 8 to 14 inches deep. ... R026XY090NV – SCABLAND 10-14 P.Z.**

**ii. Restrictive layer is 14 to 20 inches deep.**

**a. Average annual precipitation is typically between 8 to 10 inches. ... R026XY041NV – GRAVELLY CLAY 8-10 P.Z.**

**b. Average annual precipitation is typically between 10 to 12 inches. See also R026XY023NV Claypan 10-12 P.Z. ... R026XY050NV – GRAVELLY CLAY 10-12 P.Z.**

**B. Soil does not have an increase in clay below the soil surface that influences the site vegetation (sites are not dominated by Lahontan or low sagebrush).**

**1 Site is typically located lower on the landscape, between 4000 and 6000 feet. Average annual precipitation is typically less than 10 inches. See also R026XY011NV South Slope 8-12 P.Z. ... R026XY022NV – STONY SLOPE 8-10 P.Z.**

**2 Site is typically found from 5000 to 9000 feet in elevation and average annual precipitation is typically greater than 10 inches.**

**i. Soil has less than 15 percent rock fragments on the soil surface and subsurface. Surface soil texture is loam. Dominant vegetation is pinyon pine and low sagebrush. ... F026XY093NV – Very Shallow Loamy Hills PIMO/ARAR8/ACTH7-POA**

**ii. Soil has greater than 15 percent rock fragments on the soil surface and subsurface. Textures may be loam or coarser or always modified by rock fragments. Dominant vegetation may be trees or shrubs.**

**a. Soils are alfisols, which develop under long term tree cover. Site is dominated by pinyon trees. ... F026XY060NV – Shallow Loamy Slopes 12-16 P.Z PIMO/ARTRV/ACTH7**

**b. Soils are typically mollisols or entisols. Site may be dominated by trees or shrubs.**

**1) Soils are well developed with a dark top horizon (mollic epipedon). I would field check all the tree sites to make sure there has not been encroachment onto a sagebrush site.**

**a) Dominant vegetation is big sagebrush.**

**(1) Soils are typically shallow to moderately deep. Juniper is often a component in the plant community even under reference conditions. ... R026XY017NV – LOAMY HILL 10-12 P.Z.**

**(2) Soil is typically very shallow to shallow. Juniper is not a component in the plant community under reference conditions. ... R026XY015NV – SHALLOW LOAM 10-12 P.Z.**

**b) Site is dominated by juniper or pinyon, or a combination of both trees.**

**(1) Site is dominated by both pinyon and juniper trees. ... F026XY062NV – Shallow Sandy Loam Slope 10-14 P.Z**

**(2) Site is dominated by pinyon trees. See also F026XY069NV and F026XY104NV. ... F026XY044NV – Shallow Sandy Slope 10-12 P.Z.**

**2) Soils are less developed and do not have a dark upper horizon.**

a) Soil is very shallow (less than 10 inches to a restrictive layer).

(1) Site is typically found at elevations above 6000 feet. ... F026XY061NV – Very Shallow Steep Sandy Slopes 12-14 P.Z.

(2) Site is typically found at elevations below 7000 feet.

(a) Site is found on hills and pediments (low relief, erosional footslope). ... R026XY029NV – ERODED SLOPE 10-12 P.Z.

(b) Site is found on mountain slopes. ... F026XY065NV – Very Shallow Sandy Side Slope 12-14 P.Z. PIPO/ERRO10/CAREX

b) Soil is shallow with 10 to 20 inches to a restrictive layer.

(1) Site is typically found on south slopes and dominated by shrubs. Annual above ground production is greater than 400 pounds. ... R026XY018NV – GRANITIC SOUTH SLOPE 10-12 P.Z.

(2) Site is typically found on south slopes and dominated by trees. Annual above ground production is less than 300 pounds. ... F026XY104NV – Shallow Coarse Sandy Slopes 16+ P.Z. PIMO WSG:1R1

II. Soil is moderately deep (20 to 40 inches) to very deep 40 to over 60 inches).

A. Surface soil texture is clay. The difference between 091NV and 027NV should be precipitation amount and probably elevation, however, the NASIS data suggest that these site concepts have not been used accurately and there is mixing of concepts between sites. See also R026XY091NV Churning Claypan 10-12 P.Z. and R026XY037NV Clay Basin. ... R026XY027NV – CHURNING CLAY 8-10 P.Z.

B. Surface soil texture is sandy, sandy loam, much coarse than the sites above.

1 Site has a water table within 60 inches of the soil surface.

i. Site occurs along water ways, flood plains or stream terraces.

a. Site typically occurs at elevations less than 5000 feet. ... F026XY059NV – Sandy Flood Plain 8-10 P.Z

b. Site typically occurs at elevations greater than 6000 feet. ... F026XY074NV – Bouldery Stream Terrace 14-16 P.Z. POBAT WSG:6W1610

ii. Site occurs in concave landscape positions, but is not associated with flood plains or stream terraces. ... F026XY068NV – Poorly Drained Stream Terrace POTR5 WSG:2W1710

2 Site does not have a water table within 60 inches.

i. Site is only found at slopes less than 10 percent and does not have surface or subsurface rocks over 10 percent. ...

R026XY096NV – SANDY PLAIN

ii. Site found at all slopes, but soil surface and subsurface have rocks over 10 percent.

a. Site has a darker upper soil horizon (mollisol). All of these mollisols probably have overextended the site concepts. Certain soil series should be reevaluated for correlation to a different site.

1) Sites are typically lower on the landscape, between 4000 and 6000 feet, and have precipitation that averages between 10 and 12 inches.

a) Site has an increase in clay in the soil subsurface that influences species composition. Site is dominated by low sagebrush. ... R026XY023NV – CLAYPAN 10-12 P.Z.

b) Site may have an increase in clay in the subsurface, but not enough to influence rooting depth of shrubs.

Dominant shrub is big sagebrush. See also R026XY017NV and R026XY026NV. ... R026XY010NV – LOAMY 10-12 P.Z.

2) Sites are typically higher on the landscape, between 6000 and 8000 feet, and have precipitation that averages between 12 and 14 inches.

a) Site is dominated by pinyon trees. See also F026XY071NV. ... F026XY069NV – Shallow Clayey Summit 11-14 P.Z. PIMO/ARTRV/POA-KOMA

b) Site is dominated by big sagebrush. See also R026XY046NV Granitic Slope 12-14 P.Z. ... R026XY005NV – LOAMY 12-14 P.Z.

b. Site has a lighter soil upper horizon (not mollic, no mollic colors).

1) Soil surface texture is loamy sand to coarse sand. ... R026XF035CA – Ashy Loamy Sand (BLM)

2) Soil surface texture is loamy sand with cobble sized rocks on the soil surface. ... R026XF041CA – Rocky Loam Benches (BLM)

## Bodie Hills LRU

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I. Site has a watertable above 60 inches. Located in a concave position or along a waterway.

A. Site typically occurs next to a stream.

1 Site occurs on stream terraces and typically has over 15 percent rock fragments on the soil surface.

i. Water table 20 inches or less from the soil surface. ... R026XF018CA – Streambank

ii. Water table 40 inches or more from the soil surface. ... R026XF055CA – Willow Thicket

2 Site occurs on flood plains and has a mucky surface texture that has less than 15 percent rock fragments on the surface. ... R026XF054CA – Ashy Semi-Wet Meadow

B. Site typically occurs in a concave position, not next to a stream.

1 Soil texture is silty clay. ... R026XF068CA – Wet Ashy Basin

2 Soil texture is loam to loamy sand.

i. Site is influenced by salts and the pH is over 9. ... R026XF065CA – Ashy Sodic Basin

ii. Site is not influenced by salts as the site above.

a. Site has less than 15 percent gravels on the soil surface. ... R026XY049NV – MOUNTAIN BASIN

b. Site has greater than 15 percent gravels on the soil surface. ... F026XY086NV – Wet Loamy Stream Terrace POTR5/SYOR

II. Site does not have a water table within 60 inches of the soil surface. Location on the landscape is various.

A. Soil is shallow, less than 20 inches to a restrictive layer.

1 Site occurs as less than 5,800 feet and is very shallow, less than 10 inches to a bedrock restrictive layer. ... R026XY094NV – ERODED SLOPE 8-10

**2 Site occurs at elevations greater than 5,800 feet; soil may be very shallow to shallow.**

**i. Restrictive layer is un-weathered bedrock. ... R026XF060CA – Ashy Claypan 12-14 P.Z.**

**ii. Restrictive layer is weathered bedrock.**

**a. Restrictive layer is less than 14 inches from the soil surface. ... R026XF064CA – Granitic Upland 12-14 P.Z.**

**b. Restrictive layer is 14 inches or greater from the soil surface. See also R026XY105NV and R026XY111NV. ... R026XF057CA – Ashy Shallow Loam 14-16 P.Z.**

**B. Soil is moderately deep (20 to 40 inches to restrictive layer) to deep (40 inches or more to a restrictive layer).**

**1 Soil is moderately deep, 20 to 40 inches to a restrictive layer.**

**i. Slopes are less than 8 percent. Site is located on a summit with a high percentage of clay in the soil subsurface. ...**

**R026XF062CA – Ashy Mountain Basin**

**ii. Slopes are typically greater than 8 percent.**

**a. Site is located primarily on south slopes.**

**1) Site is found primarily below 8,000 feet and soil temperature regime is mesic. ... R026XF063CA – Ashy South Slope 12-14 P.Z.**

**2) Site is found primarily above 8,000 feet and soil temperature regime is frigid. ... R026XY110NV – GRAVELLY SOUTH SLOPE 16+ P.Z.**

**b. Site is located on any aspect.**

**1) Soil temperature regime is frigid and the site is typically lower in elevation. ... R026XY105NV – GRAVELLY LOAMY SLOPE 14-16 P.Z.**

**2) Soil temperature regime is cryic and site is typically higher in elevation.**

**a) Soil surface texture is loamy coarse sand and is located where snow accumulates. ... R026XY077NV – SNOW POCKET**

**b) Soil surface texture is ashy fine sandy loam. ... R026XY112NV – ASHY POCKET**

**2 Soil is deep, greater than 60 inches to a restrictive layer.**

**i. Site is located on stream terraces. ... R026XY057NV – LOAMY BOTTOM 14+ P.Z.**

**ii. Site is located on landforms other than stream terraces.**

**a. Site is located on a mountain shoulder position. ... R026XF059CA – Ashy Mountain Shoulders 16+ P.Z.**

**b. Site is located on a backslope, toeslope, or footslope position.**

**1) Site is typically found at lower elevations with a frigid soil temperature regime. ... R026XY105NV – GRAVELLY LOAMY SLOPE 14-16 P.Z.**

**2) Site is typically found at elevations greater than 7,000 feet and up to 10,000 feet with a cryic soil temperature regime. ... R026XY108NV – ASHY SLOPE 14-16 P.Z.**

**I. Site experiences flooding but does not have a water table within 60 inches of the soil surface.**

**A. Site occurs at elevation greater than 6,500 feet. ... R026XY057NV – LOAMY BOTTOM 14+ P.Z.**

**B. Site occurs at elevations less than 6,400 feet.**

**1 Site occurs on lake terraces and is influenced by salts and the soil surface texture is silt loam to silty clay. ... R026XY021NV  
– SODIC FLAT**

**2 Site occurs on alluvial fans, stream terraces, and drainageways. The soil surface texture is very gravelly sandy loam. ...  
R026XY034NV – WASH 8-12 P.Z.**

**II. Site experiences flooding, or ponding and the water table is within 60 inches of the soil surface.**

**A. Site typically occurs adjacent to a stream and the rock cover and volume is over 15 percent on the surface and subsurface. ...**

**R026XY073NV – STREAMBANK**

**B. Site may occur in a valley bottom but does not occur directly adjacent to a stream.**

**1 Water is typically ponded on the surface because of clay soils (site is episaturated). ... R026XY036NV – WET CLAY  
BASIN**

**2 Water is typically subsurface and rises to the surface during spring runoff and may remain high in the soil surface but is not  
ponded on the soil surface (site is endosaturated).**

**i. Water table is typically deeper than 20 inches below the soil surface.**

**a. Site is typically located on a low stream terrace. ... R026XY055NV – DRY MEADOW**

**b. Site is in a low position in the valley bottom but has a water table that is deeper than 30 inches from the soil surface. ...  
R026XY030NV – LOAMY BOTTOM 8-12 P.Z.**

**ii. Water table is typically at the soil surface to 20 inches deep.**

**a. Site is located on alluvial fans, adjacent to a meadow or valley bottom with a stream. ... R026XF619CA –  
Aspen Slopes (BLM)**

**b. Site is located on flood plains or stream terraces. Site concepts for each of these sites should be confirmed in the field since  
there is a bit of overlap between the sites. See also R026XY054NV Wet Meadow 14+ P.Z. ... R026XY003NV –  
WET MEADOW 10-14 P.Z.**