USDA Natural Resources Conservation Service

Ecological site R039XA018NM
Mountain Swale 17-22" p.z.

Last updated: 4/03/2020
Accessed: 05/18/2024

General information

Provisional. A provisional ecological site description has undergone quality control and quality assurance review. It contains a working state and transition model and enough information to identify the ecological site.

MLRA notes

Major Land Resource Area (MLRA): 039X–Mogollon Transition North

AZ 39.1 Mogollon Plateau Coniferous Forests

Elevations range from 7000 to 12,500 feet and precipitation averages 20 to 35 inches per year. Vegetation includes ponderosa pine, Gambel oak, Arizona walnut, sycamore, Douglas fir, blue spruce, Arizona fescue, sheep fescue, mountain muhly, muttongrass, junegrass, pine dropseed, and dryland sedges. The soil temperature regime ranges from mesic to frigid and the soil moisture regime ranges from typic ustic to udic ustic. This unit occurs within the Colorado Plateau Physiographic Province and is characterized by a sequence of flat to gently dipping sedimentary rocks eroded into plateaus, valleys and deep canyons. Sedimentary rock classes dominate the plateau with volcanic fields occurring for the most part near its margin.

Ecological site concept

This site occurs in depressions and drainages where water runs into from adjacent upland areas.

Table 1. Dominant plant species

Tree	Not specified
Shrub	(1) *Rosa woodsii var. woodsii* (2) *Salix*
Herbaceous	(1) *Poa fendleriana* (2) *Juncus*

Physiographic features

This site occurs in depressions and drainages. Elevation ranges from 5000-7800 feet.

Climatic features

Table 2. Representative climatic features

Frost-free period (characteristic range)	95 days
Freeze-free period (characteristic range)	131 days
Precipitation total (characteristic range)	406 mm
Frost-free period (actual range)	95 days
Freeze-free period (actual range)	131 days

Precipitation total (actual range)	406 mm
Frost-free period (average)	95 days
Freeze-free period (average)	131 days
Precipitation total (average)	406 mm

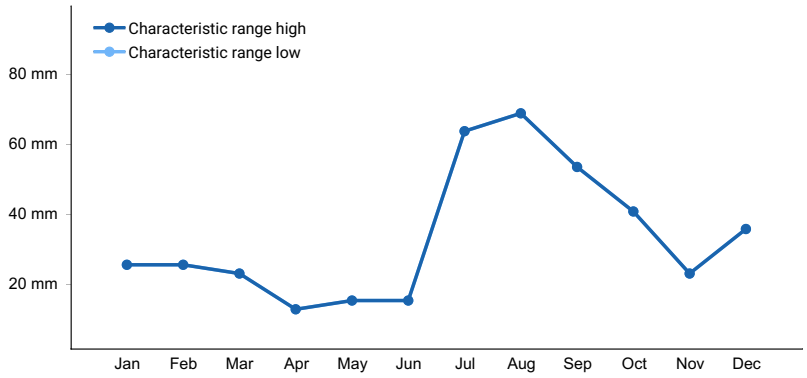


Figure 1. Monthly precipitation range

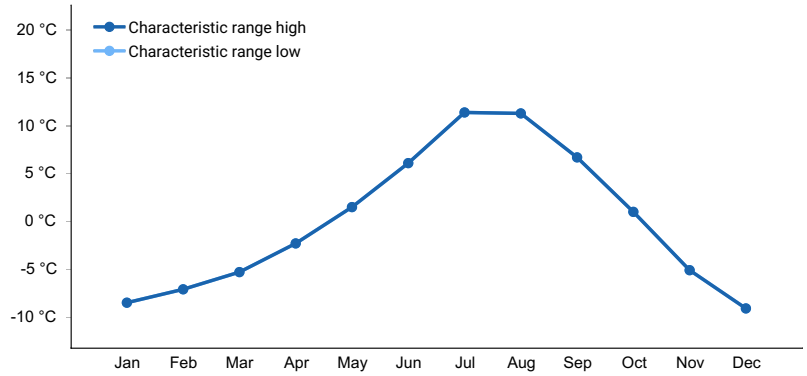


Figure 2. Monthly minimum temperature range

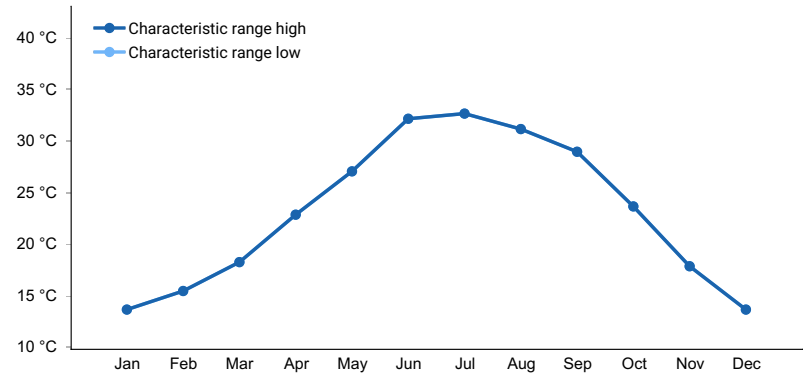


Figure 3. Monthly maximum temperature range

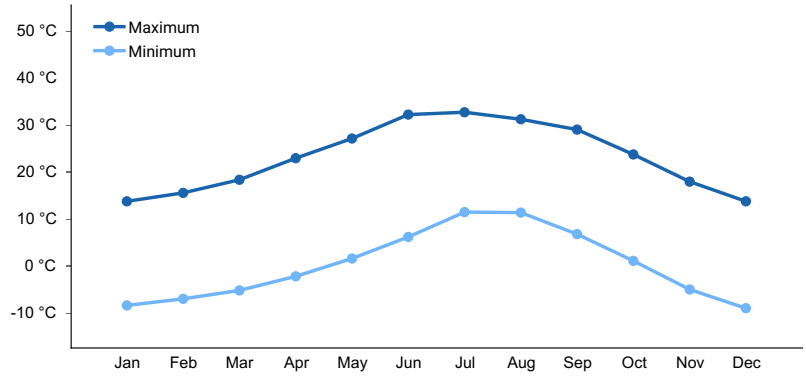


Figure 4. Monthly average minimum and maximum temperature

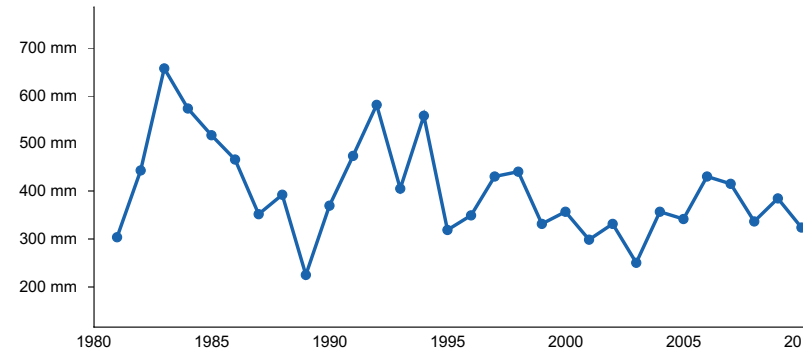


Figure 5. Annual precipitation pattern

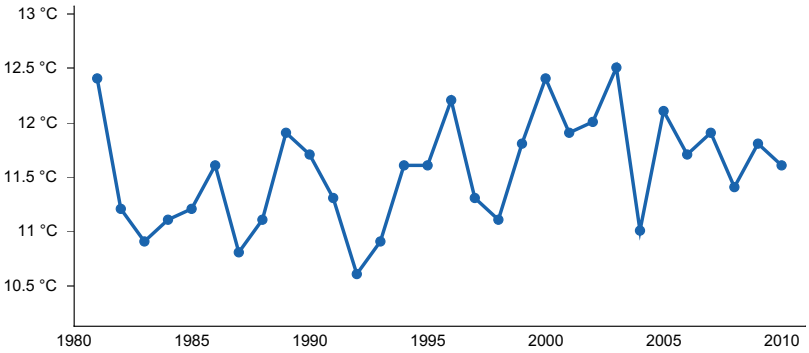


Figure 6. Annual average temperature pattern

Climate stations used

- (1) RESERVE RS [USC00297386], Reserve, NM

Influencing water features

This site receives run-on from adjacent areas.

Soil features

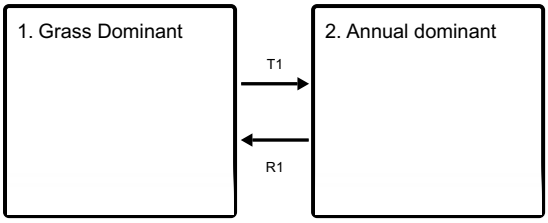
The soils are deep with a mollic epipedon. They fall into the fine-loamy partical size class. They are derived from alluvium of various geologies.

Ecological dynamics

This site is productive as it receives excess runoff from adjacent upland sites. Western wheat and vine mesquite dominate. This may be a key grazing area where utilization and length of use need to be monitored. Excessive utilization over extended periods may shift the site to excessive annuals.

State and transition model

Ecosystem states



State 1
Grass Dominant

Grasses such as western wheat and vine mesquite may dominate the site.

State 2
Annual dominant

Annual plants may dominate the site.

Transition T1
State 1 to 2

Long term, season-long grazing with heavy utiliztion

Restoration pathway R1
State 2 to 1

Grazing management with adequate rest and recovery periods.

Approval

Scott Woodall, 4/03/2020

Rangeland health reference sheet

Interpreting Indicators of Rangeland Health is a qualitative assessment protocol used to determine ecosystem condition based on benchmark characteristics described in the Reference Sheet. A suite of 17 (or more) indicators are typically considered in an assessment. The ecological site(s) representative of an assessment location must be known prior to applying the protocol and must be verified based on soils and climate. Current plant community cannot be used to identify the ecological site.

Author(s)/participant(s)	
Contact for lead author	
Date	05/18/2024
Approved by	Scott Woodall
Approval date	
Composition (Indicators 10 and 12) based on	Annual Production

Indicators

1. **Number and extent of rills:**

2. **Presence of water flow patterns:**

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3. **Number and height of erosional pedestals or terracettes:**

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4. **Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are not bare ground):**

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5. **Number of gullies and erosion associated with gullies:**

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6. **Extent of wind scoured, blowouts and/or depositional areas:**

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7. **Amount of litter movement (describe size and distance expected to travel):**

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8. **Soil surface (top few mm) resistance to erosion (stability values are averages - most sites will show a range of values):**

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9. **Soil surface structure and SOM content (include type of structure and A-horizon color and thickness):**

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10. **Effect of community phase composition (relative proportion of different functional groups) and spatial distribution on infiltration and runoff:**

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11. **Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site):**

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12. **Functional/Structural Groups (list in order of descending dominance by above-ground annual-production or live foliar cover using symbols: >>, >, = to indicate much greater than, greater than, and equal to):**

    Dominant:

    Sub-dominant:

    Other:

    Additional:

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13. **Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence):**

14. **Average percent litter cover (%) and depth (in):**

15. **Expected annual annual-production (this is TOTAL above-ground annual-production, not just forage annual-production):**

16. **Potential invasive (including noxious) species (native and non-native). List species which BOTH characterize degraded states and have the potential to become a dominant or co-dominant species on the ecological site if their future establishment and growth is not actively controlled by management interventions. Species that become dominant for only one to several years (e.g., short-term response to drought or wildfire) are not invasive plants. Note that unlike other indicators, we are describing what is NOT expected in the reference state for the ecological site:**

17. **Perennial plant reproductive capability:**