Ecological site group DX035X01IESG18
Little Colorado River Basin-sandstone or sandy loam, shallow soils, mid-elevation

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Key Characteristics

- Little Colorado River Basin
- Sandstone or sandy loam
- Shallow soils
- Mid elevation, MAST< 54 degrees F

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.

Physiography

This site occurs on summits of mesas, structural benches, and dip-slopes of cuestas on undulating plateaus. Slopes range from 1-15%, with occasional slopes up to 35%. It does not benefit from run-in moisture from adjacent areas nor does it suffer from excessive runoff. It occurs on all exposures. It is associated with sandstone rock outcrops.

Climate

The climate of the land resource unit is arid with warm summers and cool winters. Average annual precipitation ranges from 6 to 10 inches per year. 40 to 50 percent of the precipitation is received from October through early May. This precipitation comes as gentle rain or snow from frontal storms coming out of the Pacific Ocean. Snow is common from November through February. Generally no more than an inch or two of snow accumulates and usually melts within a day or two. The remaining precipitation, approximately 50 to 60 percent, is received from July through September as spotty, violent thunderstorms. The moisture for this precipitation originates in the Gulf of Mexico and the Pacific Ocean. Late May through late June is the driest period. The mean annual temperature ranges from 53 to 56 degrees Fahrenheit (F). The frost-free period (air temperature > 32 degrees F) ranges from 135 to 160 days (@ 50 percent probability). Strong winds are common, especially in the spring.

Soil features

Soils on this site are very shallow and well drained. They are formed in eolian, residuum and alluvium derived from sandstone. Surface textures include fine sand and channery loamy fine sand. Subsoil has textures of fine sandy loam, channery fine sandy loam, and channery loamy fine sand. Hard sandstone is at depths ranging from 8 to 10 inches. Permeability based on the most restrictive horizon above 20 inches is slow to very slow. Avaiable water capacity is very low. Runoff is medium to very high and the hazard of water erosion is moderate to severe. The hazard of soil blowing is severe. The soils are mildly to moderately alkaline (pH 7.4-8.4), non-saline to very slightly saline (EC 0-4), and non-to slightly sodic (SAR 0-13).

Vegetation dynamics

Reference State
The plant community on this site is primarily grasses and shrubs with some forbs. There is a mixture of both cool and warm season plants.
Plant species most likely to invade or increase on this site when it deteriorates are broom snakeweed, alkali sacaton, shadscale and annual forbs.

Major Land Resource Area

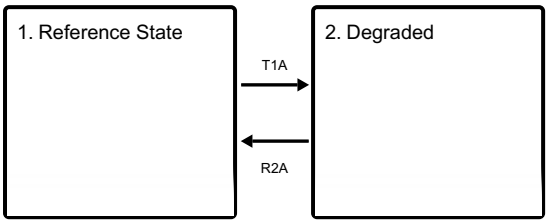
MLRA 035X
Colorado Plateau

Stage

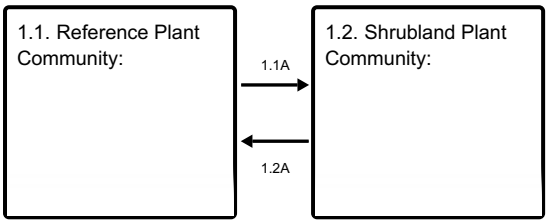
Provisional

State and transition model

Ecosystem states



State 1 submodel, plant communities



State 1
Reference State

This reference state is characterized as a native mid and short grassland with scattered shrubs and trees. The dominant herbaceous cover is warm season grasses such as black grama, blue grama and galleta. Dominant woody species is a mix of large and low growing shrubs along with scattered trees.

Community 1.1
Reference Plant Community:

This plant community is made up primarily of warm season grasses with a fair percentage of cool season grasses, shrubs and scattered juniper trees. This community is comprised mostly of grasses (about 70%), followed by shrubs (about 15%), then forbs (about 5%) and trees (about 5%).

Community 1.2
Shrubland Plant Community:

This plant community has a decrease in perennial grasses and palatible shrubs. Plants that invade or increase when this site deteriorates are blue grama, broom snakeweed, rabbitbrush, Mormon tea, various annual forbs and scattered trees. In this plant community there may be trace amounts (<2% by weight) of non-native annuals present. They do not affect the sites ecological processes in these minor amounts.

Pathway 1.1A
Community 1.1 to 1.2

With continued disturbance the plant community shifts toward a shrub/grass mix and scattered trees with a decline in favorable grasses and shrubs.

Pathway 1.2A
Community 1.2 to 1.1

Management where ecosystem function is better restored through increased plant and soil health.

State 2
Degraded

This site has a dominance of bare ground, low vigor blue grama and unpalatable shrubs such as broom snakeweed, and shadscale. Annual forbs will be prominent during wet springs.

Transition T1A
State 1 to 2

Repetitive, high utilization especially during drought will degrade the site decreasing palatable species. Bare ground and soil erosion have caused the site to cross a threshold.

Restoration pathway R2A
State 2 to 1

A slow process of restoring soil, plant and hydrologic health.

Citations