

Ecological site group DX035X01IESG08

Little Colorado River Basin-Loamy soils, run in moisture

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Key Characteristics

- Little Colorado River Basin
- Loamy
- Receive extra run-in moisture

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 in the bottom position of level to gently sloping flood plains, valley floors, stream terraces and drainageways. It benefits significantly from run-in moisture from adjacent areas. Slopes are mainly less than 5 percent.

Climate

50-60% of moisture falls as rain Jul-Sep and is the most effective moisture for plant growth. The remaining moisture comes as snow during the winter.

Mean temperature for the hottest month (Jul) is 72 F; for the coldest month (Jan) is 32 F. Extreme temperatures of 105 F and -28F have been recorded. Long periods with little or no effective moisture are relatively common.

Cool season plants begin growth in early spring and mature in early summer. Warm season plants take advantage of summer rains and are growing and nutritious Jul-Sep.

Soil features

Soils are deep to very deep (60+ inches), well-drained and have no plant root restricting layers. The surface textures are typically fine sandy loam to sandy clay loam. The subsurface horizons have textures of sandy loam, gravelly sandy loam, fine sandy loam, loam, gravelly loam, sandy clay loam, silty clay loam, or clay loam. Soluble salts are low and the soil reaction ranges from neutral to moderately alkaline (pH 6.6 to 8.4). The soil can absorb and hold all the moisture the climate supplies.

Vegetation dynamics

The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The reference community represents the natural potential plant communities found on relict or relatively undisturbed sites. Other plant communities described here represent plant communities that are known to occur when the site is disturbed by factors such as grazing, fire, or drought.

The reference state and the reference (climax) plant community has been determined by study of relict areas or areas protected from excessive disturbances. Trends in plant communities going from unmanaged grazed areas to managed grazed areas, seasonal use pastures and historical accounts have also been used.

This reference state is characterized as a native mixed grassland dominated by western wheatgrass and blue grama.

This plant community is made up primarily of mid and short grasses with a relatively small percentage of forbs and shrubs. Western wheatgrass and blue grama are the dominant grasses with fourwing saltbush and winterfat as the common shrubs.

Plant species most likely to invade or increase on this site when it deteriorates are rabbitbrush, broom snakeweed, annuals, cacti, and wooly groundsel. Unmanaged grazing during the winter and spring periods will decrease the cool season grasses, which are replaced by warm season, lower forage value grasses and shrubs.

As disturbances increase, shrub species increase. This creates a mixed grassland/shrub community with galleta and blue grama as the dominant grasses. There may be scattered non-native species, but they do not alter the function and processes of this phase.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- DX035X01I112–Loamy Wash 10-14" p.z.
- R035XB209AZ–Loamy Wash 6-10" p.z.
- R035XB212AZ–Loamy Bottom 6-10" p.z. Ephemeral
- R035XC312AZ–Loamy Wash 10-14" p.z.

Correlated Map Unit Components

22341070, 22341128, 22341127, 22341134, 22341169, 22341179, 22341646, 22353891, 22353901, 22353906, 22353931, 22353934, 22353944, 22353961, 22353967, 22353997, 22353440, 22353442, 22396687, 22396781, 22396710, 22396681, 22396720, 22396742, 22396743, 22396836, 22484773, 22484781

Stage

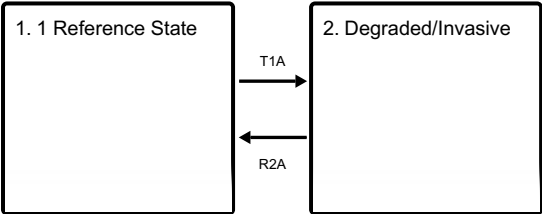
Provisional

Contributors

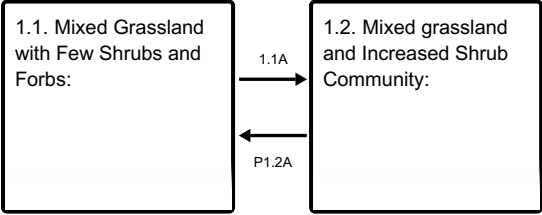
Curtis Talbot

State and transition model

Ecosystem states



State 1 submodel, plant communities



State 2 submodel, plant communities

2.1. Degraded/Invaded
Community

State 1

1 Reference State

The reference state and the reference (climax) plant community has been determined by study of relict areas or areas protected from excessive disturbances. Trends in plant communities going from heavily grazed areas to lightly grazed areas, seasonal use pastures and historical accounts have also been used. This reference state is characterized as a native mixed grassland dominated by western wheatgrass and blue grama.

Community 1.1

Mixed Grassland with Few Shrubs and Forbs:

This plant community is made up primarily of mid and short grasses with a relatively small percentage of forbs and shrubs. Western wheatgrass and blue grama are the dominant grasses with fourwing saltbush and winterfat as the common shrubs. Plant species most likely to invade or increase on this site when it deteriorates are rabbitbrush, broom snakeweed, annuals, cacti, and wooly groundsel. Repetitive, high utilization during the winter and spring periods will decrease the cool season grasses, which are replaced by warm season, lower forage value grasses and shrubs.

Community 1.2

Mixed grassland and Increased Shrub Community:

As disturbances increase, shrub species increase. This creates a mixed grassland/shrub community with galleta and blue grama as the dominant grasses. There may be scattered non-native species, but they do not alter the function and processes of this phase. Species present include galleta, blue grama, western wheatgrass, rabbitbrush, fourwing saltbush, broom snakeweed and trace amounts of non-native annuals.

Pathway 1.1A

Community 1.1 to 1.2

Repetitive defoliation at high utilization rates will allow for lesser-palatable plants to increase.

Pathway P1.2A

Community 1.2 to 1.1

Giving palatable species an opportunity to grow and reproduce will eventually lead back to the grass/shrub community.

State 2

Degraded/Invasive

This state is characterized by a decline in the site's ability to benefit from run-in moisture and/or flooding events. Active channels and gullies have changed the sites hydrologic function. Non-native species may occur along channels and drainageways, especially woody species such as tamarisk and Russian olive.

Community 2.1

Degraded/Invaded Community

This community has increased shrub species, such as broom snakeweed, Greene's rabbitbrush, rubber rabbitbrush and whipple cholla and a decrease in perennial grasses. Non-native annuals, shrubs and/or trees have composition

that affects the biotic integrity and hydrologic function of the site. Tamarisk may dominate.

Transition T1A

State 1 to 2

Degradation due to excessive grazing and drought coupled with invasion of invasive species such a tamarisk.

Restoration pathway R2A

State 2 to 1

Biological or mechanical control of invasive species coupled with long term management to improve soil dynamic properties.

Citations