

Ecological site group DX035X01IESG05

Little Colorado River Basin-Limey Uplands soils

Last updated: 10/12/2022
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Key Characteristics

- Little Colorado River Basin
- Limy

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 moderately deep to very deep, calcareous, well drained soils on fan terraces, mesas, and plateaus. Surface textures range from extremely gravelly coarse sandy loam to loam. Slopes are generally 1-15%, but there may be steeper spots within the site. The site does not benefit from run-on moisture.

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 early summer. Warm season plants take advantage of summer rains and are growing and nutritious Jul-Sep.

Soil features

Soils on this site are moderately deep to deep. These soils formed in alluvium derived from mixed sedimentary, igneous and metamorphic rocks. Surface textures range from extremely gravelly coarse sandy loam to loam. Subsoil textures range from gravelly sandy clay loam to extremely gravelly loam. Reaction ranges from neutral to slightly alkaline (pH 7.0 to 8.4). Lime content averages 15 to 50% in the soil profile. Calcium carbonate effervescence is high on the soil surface.

Vegetation dynamics

The reference state is best represented by a grassland plant community with scattered shrubs. With enough disturbance the grass community is diminished and shrubs become more prominent on this site.

The major grasses in this grassland community are blue grama, black grama and James' galleta. The shrub component is represented by winterfat, rubber rabbitbrush and fourwing saltbush.

Disturbance decreases native perennial grasses and shrubs increase. The shrubs that are most likely to increase on this site are broom snakeweed, Greene's rabbitbrush and rubber rabbitbrush.

Major Land Resource Area

MLRA 035X

Subclasses

- R035XA111AZ–Limy Upland 10-14" p.z.
- R035XC311AZ–Limy Upland 10-14" p.z.

Correlated Map Unit Components

22341148, 22341202, 22396786

Stage

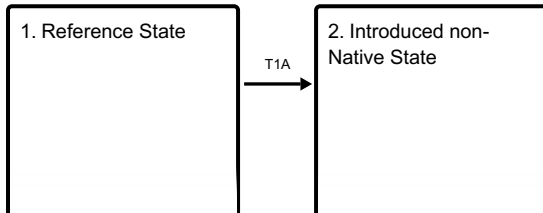
Provisional

Contributors

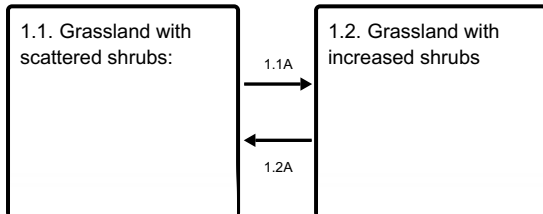
Curtis Talbot

State and transition model

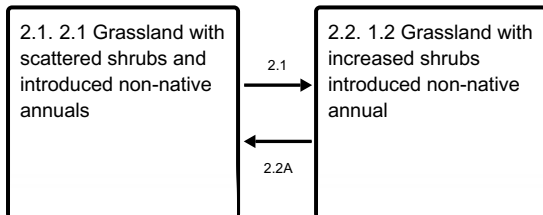
Ecosystem states



State 1 submodel, plant communities



State 2 submodel, plant communities



State 1 Reference State

The reference state is best represented by a grassland plant community with scattered shrubs. With enough disturbance the grass community is diminished and shrubs become more prominent on this site.

Community 1.1 Grassland with scattered shrubs:

Native grasses: Blue gramma, black gramma, James' galleta Native shrubs: Winterfat, rubber rabbit brush, fourwing salt bush

Community 1.2

Grassland with increased shrubs

Dominant native perennial grasses have decreased and shrubs have increased. Disturbance decreases native perennial grasses and shrubs increase. The shrubs that are most likely to increase on this site are broom snakeweed, Greene's rabbitbrush and rubber rabbitbrush.

Pathway 1.1A

Community 1.1 to 1.2

Disturbance - (herbivory, drought)

Pathway 1.2A

Community 1.2 to 1.1

Grazing management where palatable species increase in density and cover.

State 2

Introduced non-Native State

Non-native annuals have been introduced to the plant community. The common example is cheatgrass. Introduction of non-native annuals species creates an irreversible change in the plant community

Community 2.1

2.1 Grassland with scattered shrubs and introduced non-native annuals

This plant community resembles 1.1 and there are non-native annual plants present on the site. Native Grasses: Blue Grama, black grama, james galleta. Native shrubs: Winterfat rubber rabbitbrush, fourwing saltbush Non-native annual introduced: cheatgrass

Community 2.2

1.2 Grassland with increased shrubs introduced non-native annual

Dominant native perennial grasses decrease and shrub increase. increase shrubs include broomsnake weed, Greene's rabbitbrush and rubber rabbitbrush Non-native annual introduced: cheatgrass This community resembles plant community 1.2 and there can be a small to significant amount of introduced annual plants present on the site.

Pathway 2.1

Community 2.1 to 2.2

Over time shrubs have a competitive advantage and increase along with introduced non-native annuals.

Pathway 2.2A

Community 2.2 to 2.1

Increased production, cover and density of perennial grasses.

Transition T1A

State 1 to 2

Some degradation along with introduction of non-natives. It is unlikely, once introduced species have invaded for the site to return to reference.

Citations