

Ecological site group DX035X02GESG02

Marble Canyon - Typic Aridic - Saline Upland

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Key Characteristics

- Marble Canyon (G)
- Soil at site is saline.
- Site soils are typic aridic or within a 6-10" precipitation zone.
- Site is and/or located in an upland with slopes <15%.

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

Site is and/or located in an upland with slopes <15%. Aspects tend toward Marble Canyon, and more generally, the northeast.

Climate

Site soils are typic aridic or within a 6-10" precipitation zone. No clear pattern exists in the seasonal timing of precipitation, generally driest in late spring.

Soil features

Parent material is limestone. Soils are loamy and salt-affected. Site consists of limited amounts of gently sloping sheet alluvial or eolian deposits over residuum of plateaus and structural benches.

Vegetation dynamics

The dominant aspect of this site is a shrub-grassland. Shadscale saltbush dominates both the visual aspect and the production in pounds of the site. Several other shrubs, including Ephedra and several cactus species are common, but make up only a small proportion of the aspect. Perennial grasses, both warm and cool season, are common, but sub-dominate to shadscale saltbush. Common warm season grasses include sand dropseed and galleta. Common cool season grasses include Indian ricegrass and squirreltail. The occurrence and production of sand dropseed may be expected to decrease in years of below average warm season precipitation and increase in years of above average warm season precipitation. The same can be expected of squirreltail except a decrease would be the result of below average cool season precipitation and an increase due to above average cool season precipitation. Cool season annuals may increase as a result of above average cool season precipitation and decrease as a result of below average cool season precipitation.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- R035XB233AZ–Limestone/Sandstone Upland 6-10" p.z. Saline
- R035XY122UT–Desert Shallow Loam (Shadscale)

- R035XY130UT–Desert Shallow Sandy Loam (Shadscale)

Correlated Map Unit Components

22395435

Stage

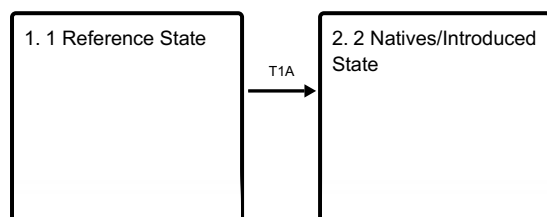
Provisional

Contributors

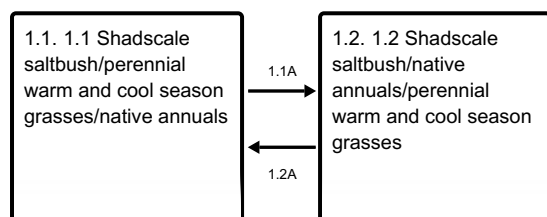
Curtis Talbot

State and transition model

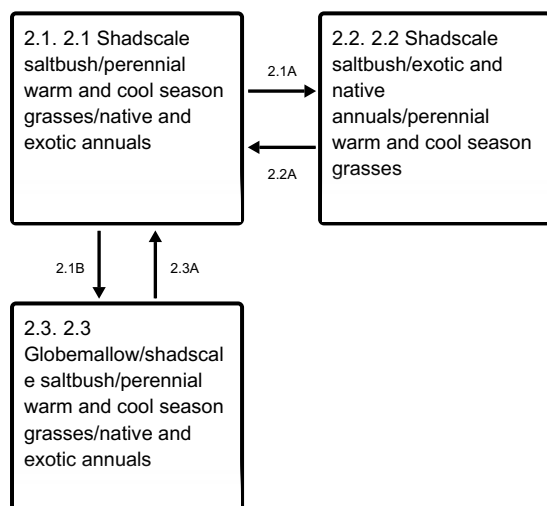
Ecosystem states



State 1 submodel, plant communities



State 2 submodel, plant communities



State 1

1 Reference State

The reference state includes the historic climax plant community that evolved over time with the soil forming process and long term changes in climatic conditions of the area. It is the native plant community that is best adapted to the unique combination of environmental factors associated with the site.

Community 1.1

1.1 Shadscale saltbush/perennial warm and cool season grasses/native annuals

The dominant aspect of this site is a shrub-grassland. Shadscale saltbush dominates both the visual aspect and the production in pounds of the site. Several other shrubs, including Ephedra and several cactus species are common, but make up only a small proportion of the aspect. Perennial grasses, both warm and cool season, are common, but sub-dominate to shadscale saltbush. Common warm season grasses include sand dropseed and galleta. Common cool season grasses include Indian ricegrass and squirreltail. The occurrence and production of sand dropseed may be expected to decrease in years of below average warm season precipitation and increase in years of above average warm season precipitation. The same can be expected of squirreltail except a decrease would be the result of below average cool season precipitation and an increase due to above average cool season precipitation. Cool season annuals may increase as a result of above average cool season precipitation and decrease as a result of below average cool season precipitation.

Community 1.2

1.2 Shadscale saltbush/native annuals/perennial warm and cool season grasses

The dominant aspect of this site is a shrub-grassland. Shadscale saltbush dominates both the visual aspect and the production in pounds of the site. Several other shrubs, including Ephedra and several cactus species are common, but make up only a small proportion of the aspect. Perennial grasses, both warm and cool season, are common, but sub-dominate to shadscale saltbush. Annuals and unpalatable perennial plants have become a major component, possibly more common than perennial grasses.

Pathway 1.1A

Community 1.1 to 1.2

A decrease in grass production and composition due to repetitive, high utilization.

Pathway 1.2A

Community 1.2 to 1.1

Management to improve ecosystem health and palatable species.

State 2

2 Natives/Introduced State

This state is very similar to the reference state, but exotic annuals have been introduced into the site. Observations to date indicate once these exotic annuals have been introduced into the plant community they cannot be removed completely, for an extended period of time, from the plant community.

Community 2.1

2.1 Shadscale saltbush/perennial warm and cool season grasses/native and exotic annuals

The dominant aspect of this site is a shrub-grassland. Shadscale saltbush dominates both the visual aspect and the production in pounds of the site. Several other shrubs, including Ephedra and several cactus species are common, but make up only a small proportion of the aspect. Perennial grasses, both warm and cool season, are common, but sub-dominate to shadscale saltbush. Common warm season grasses include sand dropseed and galleta. Common cool season grasses include Indian ricegrass and squirreltail. The occurrence and production of sand dropseed may be expected to decrease in years of below average warm season precipitation and increase in years of above average precipitation. The same can be expected of squirreltail except a decrease would be the result of below average cool season precipitation and an increase due to above average cool season precipitation. Exotic annuals occur in minor amounts. Cool season annuals, including exotic annuals, may increase as a result of above average cool season precipitation and decrease as a result of below average cool season precipitation.

Community 2.2

2.2 Shadscale saltbush/exotic and native annuals/perennial warm and cool season grasses

The dominant aspect of this site is a shrub-grassland. Shadscale saltbush dominates both the visual aspect and the production in pounds of the site. Several other shrubs, including Ephedra and several cactus species are common, but make up only a small proportion of the aspect. Perennial grasses, both warm and cool season, are common, but

sub-dominate to shadscale saltbush. Annuals, including exotic annuals, and unpalatable perennial plants have become a major component, possibly more common than perennial grasses.

Community 2.3

2.3 Globemallow/shadscale saltbush/perennial warm and cool season grasses/native and exotic annuals

Globemallow, acting as a pioneer plant, has filled the void left by the shrubs and perennial warm and cool season grasses killed by prolonged drought.

Pathway 2.1A

Community 2.1 to 2.2

Repetitive, high utilization of palatable grasses give shrubs a competitive advantage.

Pathway 2.1B

Community 2.1 to 2.3

Globemallow, acting as a pioneer plant, has filled the void left by the shrubs and perennial warm and cool season grasses killed by prolonged drought.

Pathway 2.2A

Community 2.2 to 2.1

A set back to the shrubs such as fire and favorable management for palatable grasses.

Pathway 2.3A

Community 2.3 to 2.1

A slow restoration of soil, plant, and hydrologic health.

Transition T1A

State 1 to 2

Invasion of introduced species. Once introduced species have spread it is unlikely the site can return to reference.

Citations