

Ecological site group DX035X02GESG06

Marble Canyon - Typic Aridic - Sandy Upland

Last updated: 09/02/2021
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Key Characteristics

- Marble Canyon (G)
- Soil at site is sandy.
- 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 sandstone. Soils are sandy. Site consists of limited amounts of gently sloping sheet alluvial or eolian deposits over residuum of plateaus and structural benches.

Vegetation dynamics

This plant community is made up primarily of mid and short grasses with a moderate percentage of forbs and shrubs. There is a mixture of both cool and warm season grasses and half-shrubs. Dominant grasses are Indian ricegrass, needle-and-thread, black grama, and dropseeds. Dominant shrubs are Cutler Mormon tea, sand sagebrush, rush scurfpea and gilia beardtongue.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

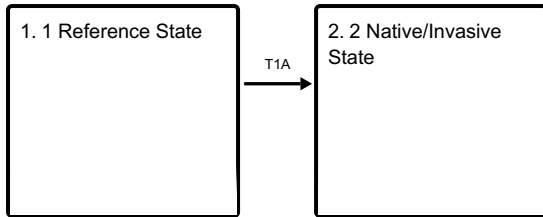
- R035XB206AZ–Sandy Upland 6-10" p.z. Warm
- R035XB217AZ–Sandy Upland 6-10" p.z.

Stage

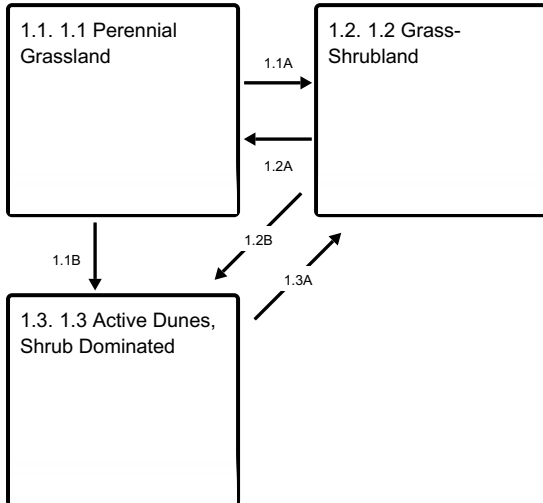
Provisional

State and transition model

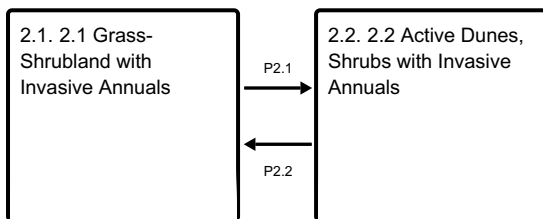
Ecosystem states



State 1 submodel, plant communities



State 2 submodel, plant communities



State 1

1 Reference State

This plant community includes the Historic Climax Plant Community (HCPC) and has been estimated by observing and sampling relatively undisturbed sites. This perennial grassland plant community has a mix of cool season bunchgrasses such as Indian ricegrass and needle-and-thread, and warm season grasses, such as black grama, galleta and blue grama. A mix of shrubs makes up the second most dominant component of the plant community followed by a mix of forbs, both perennial and annual. The production and percent composition of both individual plants and groups of plants varies from season to season and year to year due to the bi-modal nature of precipitation as well as variation from one year to the next in the amount and timing of precipitation received.

Community 1.1

1.1 Perennial Grassland

This plant community is made up primarily of mid and short grasses with a moderate percentage of forbs and shrubs. There is a mixture of both cool and warm season grasses and half-shrubs. Dominant grasses are Indian ricegrass, needle-and-thread, black grama, and dropseeds. Dominant shrubs are Cutler Mormon tea, sand sagebrush, rush scurfpea and gilia beardtongue.

Community 1.2

1.2 Grass-Shrubland

Shrubs such as sand sagebrush, rubber rabbitbrush, jimmyweed and broom snakeweed increase over more palatable shrubs. Perennial bunchgrasses such as Indian ricegrass and needle-and-thread decrease in relation to perennial sodgrasses such as sandhill muhly, galleta, and blue grama. Perennial forbs decrease in relation to

annual forbs.

Community 1.3

1.3 Active Dunes, Shrub Dominated

Cutler's jointfir and/or sand sagebrush dominate this site along with an increase of rubber rabbitbrush, frosted mint, broom snakeweed, and false pillar gumweed. Perennial grasses and forbs decline while annual grasses and forbs increase. Wind caused soil erosion is prevalent creating dunes and hummocks.

Pathway 1.1A

Community 1.1 to 1.2

Palatable species are decreased.

Pathway 1.1B

Community 1.1 to 1.3

A degradation of the site.

Pathway 1.2A

Community 1.2 to 1.1

Management to improve palatable species.

Pathway 1.2B

Community 1.2 to 1.3

A decrease in grasses and an increase in shrubs and bare soil.

Pathway 1.3A

Community 1.3 to 1.2

Managing to improve soil, plant, and hydrologic processes.

State 2

2 Native/Invasive State

This state is characterized by a increase of shrubs with scattered perennial grasses, but non-native annual grasses and forbs are well established in the plant community. In this state the amount of annual grasses and forbs varies from 2-20%, but will fluctuate from year to year due to variable precipitation and degree of disturbance. Soil surface disturbance, especially when frequently disturbed, can cause the amount of non-native annual grasses and forbs to increase.

Community 2.1

2.1 Grass-Shrubland with Invasive Annuals

Indian ricegrass, dropseeds and galleta, Mormon tea, sand sagebrush, broom snakeweed and rabbitbrush dominate along with Cheatgrass, Russian Thistle and/or other introduced annuals. Annuals are well established and can make up to 20% of the plant composition by weight.

Community 2.2

2.2 Active Dunes, Shrubs with Invasive Annuals

Mormon tea and/or Sand sagebrush dominate along with an increase of rubber rabbitbrush, frosted mint, broom snakeweed and false pillar gumweed. Perennial grass cover has decline while annual grasses and forbs increase. Annuals forbs along with grasses are well established and can make up to 30% of the plant composition by weight.

Pathway P2.1
Community 2.1 to 2.2

Degradation of plant, soil, and hydrologic resources.

Pathway P2.2
Community 2.2 to 2.1

Improving soil, water, and hydrologic process through management.

Transition T1A
State 1 to 2

Invasion of introduced species. Once this occurs it is unlikely the site can return to reference.

Citations