

Ecological site group DX035X02GESG18

Marble Canyon - Typic Aridic - Shale or Clayey Upland

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Key Characteristics

- Marble Canyon (G)
- shale
- soils are in the typic aridic or within the 6 to 10 inch annual precipitation range
- upland, slopes are $\leq 15\%$

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 shale. Soils are clayey. Site consists of limited amounts of gently sloping sheet alluvial or eolian deposits over residuum of plateaus and structural benches.

Vegetation dynamics

Mixed Native Grasses with Sagebrush Over-Story

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

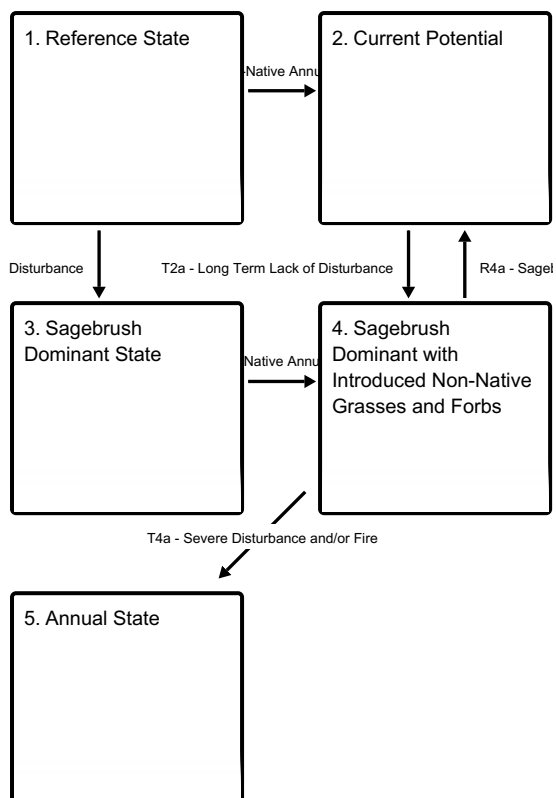
- R035XB220AZ–Shale Upland 6-10" p.z.

Stage

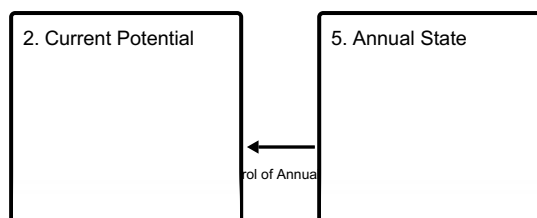
Provisional

State and transition model

Ecosystem states



States 2 and 5 (additional transitions)



State 1 Reference State

Mixed Native Grasses with Sagebrush Over-Story

State 2 Current Potential

Mixed Native Grasses with Sagebrush Over-Story with Introduced, Non-Native Annual Grasses and Forbs

Characteristics and indicators. Sagebrush is a major component of the plant community, but a mix of warm and cool season native perennial grasses and forbs dominate the plant community. Introduced non-native annual grasses and forbs are only a small portion of the plant community. The composition of non-native annuals fluctuates based on climatic conditions and/or soil surface disturbance.

Resilience management. Grazing should be managed to enhance the vigor of native grasses and forbs. Fire should be used with caution and only when native grass and forb composition and vigor is sufficient to limit additional invasion by introduced non-native annual grasses and forbs.

State 3 Sagebrush Dominant State

Sagebrush with Sparse Under-Story of Native Grasses and Forbs

Characteristics and indicators. The percent composition and canopy cover of sagebrush has increased resulting in a sparse under-story of native grasses and forbs which are generally in poor vigor and capable of responding to only the most optimum climatic conditions. Soil surface erosion is often accelerated.

Resilience management. Due to the lack of available under-story plants to respond when the sagebrush composition and canopy are reduced, attempts to increase the herbaceous component of this plant community most likely should include provisions for seeding desired grasses and forbs.

State 4

Sagebrush Dominant with Introduced Non-Native Grasses and Forbs

Sagebrush with Sparse Under-Story of Native Grasses and Forbs and Introduced Non-Native Grasses and Forbs

Characteristics and indicators. The percent composition and canopy cover of sagebrush has increased resulting in a sparse under-story of native grasses and forbs which are generally in poor vigor and capable of responding to only the most optimum climatic conditions. Soil surface erosion is often accelerated. Introduced non-native grasses and forbs are better adapted to surviving and flourishing in a wide variety of climatic conditions further reducing composition and vigor of native grasses and forbs.

Resilience management. Due to the lack of available under-story plants to respond when the sagebrush composition and canopy are reduced, compounded by the presence of introduced non-native grasses and forbs, attempts to increase the herbaceous component of this plant community most likely should include provisions for seeding desired grasses and forbs and possibly control of the non-native grasses and forbs.

State 5

Annual State

Non-Native Annual Grasses and Forbs Dominated

Characteristics and indicators. Annual grasses and forbs, predominantly non-native species, dominate the plant community. The composition of native perennial grasses and forbs and sagebrush is sparse, if found at all.

Resilience management. This is a self perpetuating plant community. A different mix of annual plants may occur every year, responding to differing climatic conditions from year to year. Restoring the plant community to one that is dominated by perennial grasses and forbs with a sagebrush over-story is difficult and will most likely require seeding desired plants and most likely control of non-native annual grasses and forbs.

Transition T1b - Introduced Non-Native Annual Grasses and Forbs

State 1 to 2

Transition T1a - Long Term Lack of Disturbance

State 1 to 3

Transition T2a - Long Term Lack of Disturbance

State 2 to 4

Transition T3a -Introduced Non-Native Annual Grasses and Forbs

State 3 to 4

Restoration pathway R4a - Sagebrush Control

State 4 to 2

Transition T4a - Severe Disturbance and/or Fire

State 4 to 5

Restoration pathway R5a - Seeding/Control of Annual Grasses and Forbs

State 5 to 2

Citations