

# Ecological site group DX035X01EESG10

## Green River Desert - Deep Rocky - mid elevation

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### Key Characteristics

- Green River Desert
- Deep Rocky Soils
- Mid-Elevation MAST < 54 degrees F.

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 ecological site group occurs on alluvial fans, fan remnants, stream terraces, hills, pediments, and structural benches. Slopes typically range from 2 to 15 percent, but can be as steep as 50 percent. Elevations range from 3700 to 6800 feet. Runoff is low to medium.

### Climate

The climate of this site is characterized by hot summers and cool winters. Average annual precipitation ranges from 5 to 11 inches, with as much as 45% of the summer moisture coming as convective thunderstorms from July through October. June is typically the driest month during the growing season, while July and August are the wettest. Large fluctuations in daily temperatures are common, and precipitation varies greatly from month to month and from year to year.

### Soil features

Soils are characteristically deep and well drained formed in alluvium, slope alluvium, or colluvium typically derived from sedimentary rocks but may include material of igneous origin. Soil textures typically range from sandy loam to clay loam. Rock fragments in the profile average more than 35 percent. The soil moisture regime ranges from typical aridic to ustic aridic and soil temperature regime is mesic. Available water-holding capacity ranges from 2 to 4.0 inches of water in the upper 40 inches of soil.

### Vegetation dynamics

This ecological site group developed under Colorado Plateau ecological conditions and the natural influences of herbivory and climate. This site's plant species composition is generally dominated by James' galleta and shadscale. Torrey's tea, snakeweed, prickly pear and yellow rabbitbrush are common shrubs, and Indian ricegrass blue grama, mesa dropseed, and sand dropseed are common grasses.

There is no evidence that these sites historically burned on a regular basis due to very large and persistent gaps between plants. However, modern disturbances such as recreation and livestock grazing, may result in an opportunity for invasive annuals to enter the system. Cheatgrass, Russian thistle and halogeton have all been documented on these sites, but they are not dominant.

This ecological site group has been grazed by domestic livestock since they were first introduced into the area around 1860. It is highly resistant to winter grazing, which is the common season of use. The introduction of domestic livestock and the use of fencing and reliable water sources have only minimally influenced the historic disturbance regime associated with these ecological sites.

# Major Land Resource Area

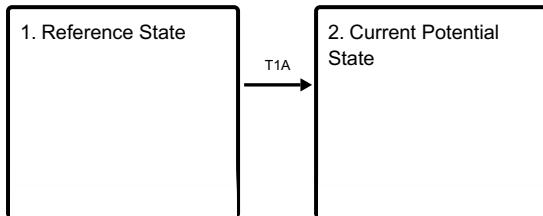
MLRA 035X  
Colorado Plateau

## Stage

Provisional

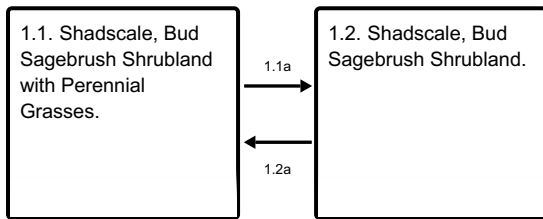
## State and transition model

### Ecosystem states



**T1A** - D = Drought E = Establishment of non-native invasive species ILG = Improper livestock grazing SD = Surface disturbances

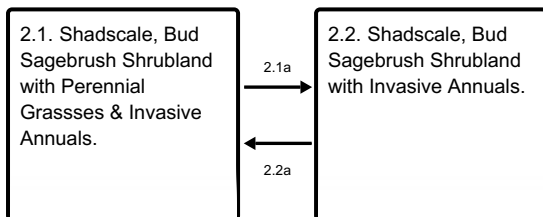
### State 1 submodel, plant communities



**1.1a** - D = Drought ILG = Improper livestock grazing SD = Surface disturbances

**1.2a** - PLG = Proper livestock grazing T = Time without disturbances W = Wet weather periods

### State 2 submodel, plant communities



**2.1a** - D = Drought ILG = Improper livestock grazing SD = Surface disturbances

**2.2a** - PLG = Proper livestock grazing T = Time without disturbances W = Wet weather periods

## State 1 Reference State

This state is dominated by warm season perennial grasses, shadscale, and bud sagebrush. The primary disturbance mechanism is climate fluctuations. The reference state is self sustaining and resistant to change due to high resistance to natural disturbances and high resilience following natural disturbances. When natural disturbances occur, the rate of recovery is relatively rapid due to niches being filled with highly adapted native vegetation.

**Characteristics and indicators.** A site dominated by shadscale and bud sagebrush where James galleta, Indian ricegrass and sand dropseed may or may not be present.

## **Community 1.1**

### **Shadscale, Bud Sagebrush Shrubland with Perennial Grasses.**

This plant community phase is dominated by shadscale, bud sagebrush, and perennial grasses. Grasses may include but are not limited to, Indian ricegrass and James galleta. James galleta is typically the dominant perennial grass species in this plant community phase. Other perennial grasses may or may not be present. Other perennial shrubs, and forbs may be present and cover is variable.

## **Community 1.2**

### **Shadscale, Bud Sagebrush Shrubland.**

This plant community phase is dominated by shadscale and bud sagebrush, where warm and cool season perennial grasses are minimally present. Grasses may include but are not limited to, Indian ricegrass and James galleta. James galleta is typically the dominant perennial grass species in this plant community phase. Other perennial grasses, shrubs, and forbs may or may not be present and cover is variable.

## **Pathway 1.1a**

### **Community 1.1 to 1.2**

This pathway occurs when climatic events, such as drought disfavor the establishment and persistence of perennial grasses. Season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization and/or surface disturbance may accelerate this transition.

## **Pathway 1.2a**

### **Community 1.2 to 1.1**

This pathway occurs when events, such as years with normal to above average precipitation favor the establishment of perennial grasses, and when grazing regimes are used that promote the establishment and persistence of perennial grasses.

## **State 2**

### **Current Potential State**

The current potential state is similar to the reference state in structure and function, however there are invasive species established in the understory—cheatgrass and halogeton being the most common. The primary disturbance mechanism is climate fluctuations; however livestock grazing may influence the ecological dynamics of the site.

**Characteristics and indicators.** A site dominated by shadscale and bud sagebrush, where Indian ricegrass and sand dropseed may or may not be present. Invasive species are present.

## **Community 2.1**

### **Shadscale, Bud Sagebrush Shrubland with Perennial Grasses & Invasive Annuals.**

This plant community phase is dominated by shadscale, bud sagebrush, and perennial grasses. Grasses may include but are not limited to, Indian ricegrass and James galleta. James galleta is typically the dominant perennial grass species in this plant community phase. Other perennial grasses may also be present. Other perennial shrubs, and forbs may be present and cover is variable. This plant community is very similar to plant community 1.1 in production and cover. The main difference is that invasive species are present in this phase.

## **Community 2.2**

### **Shadscale, Bud Sagebrush Shrubland with Invasive Annuals.**

This plant community phase is dominated by shadscale and bud sagebrush, where warm and cool season perennial grasses are minimally present. Grasses may include but are not limited to, Indian ricegrass and James galleta. James galleta is typically the dominant perennial grass species in this plant community phase. Other perennial grasses, shrubs, and forbs may also be present and cover is variable. This plant community is very similar to plant community 1.2 in production and cover. The main difference is that invasive species are present in this phase.

### **Pathway 2.1a**

#### **Community 2.1 to 2.2**

This pathway occurs when climatic events, such as drought disfavor the establishment and persistence of perennial grasses. Season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization and/or surface disturbance may accelerate this transition.

### **Pathway 2.2a**

#### **Community 2.2 to 2.1**

This pathway occurs when events, such as years with normal to above average precipitation favor the establishment of perennial grasses, and when grazing regimes are used that promote the establishment and persistence of perennial grasses.

### **Transition T1A**

#### **State 1 to 2**

This transition occurs as invasive species become established in the plant community. Common invasive species include cheatgrass, halogeton, and Russian thistle. Disturbances that may accelerate this transition include season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization, surface disturbance and extended drought. Invasive species such as cheatgrass have also been known to invade an intact perennial plant community where no disturbance has occurred. Short wet spells when annuals are germinating can significantly increase their annual production.

### **Citations**