

# Ecological site group DX035X02DESG03

## Grand Canyon - Ustic Aridic - Limestone or Loamy Hills

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### Key Characteristics

- Grand Canyon (D)
- Site parent material is limestone or dolomite, or soil is loamy.
- Site soils are ustic aridic or within a 10-14" precipitation zone.
- Site is and/or located on a hill 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 on a hill with slopes >15%. Physiography is complex.

### Climate

Site soils are ustic aridic or within a 10-14" precipitation zone. Precipitation comes monsoonal patterns during months of July, August, and September, and is supplemented by winter storm patterns from November through March.

### Soil features

Parent material is limestone. Soils are loamy. Site consists of gently dipping shallow residuum weathered from sedimentary rocks eroded into steep cliff faces and canyons.

### Vegetation dynamics

The dominant aspect of the site is a grass-shrub mix. Major grasses are muttongrass, blue grama and bottlebrush squirreltail. The dominant shrubs are Wyoming big sagebrush and/or Bigelow sage, fourwing saltbush, and Mormon tea. With severe disturbance, plants that will increase are Wyoming big sagebrush and broom snakeweed; plants that will invade are annual forbs.

### Major Land Resource Area

MLRA 035X  
Colorado Plateau

### Subclasses

- R035XC308AZ–Limestone/Sandstone Hills 10-14" p.z.
- R035XC344AZ–Limy Slopes 10-14" p.z. Calcareous
- R035XC348AZ–Limestone Hills 10-14" p.z.

### Correlated Map Unit Components

22394150, 22395047, 22395427, 22395050, 22395058, 22395463

## Stage

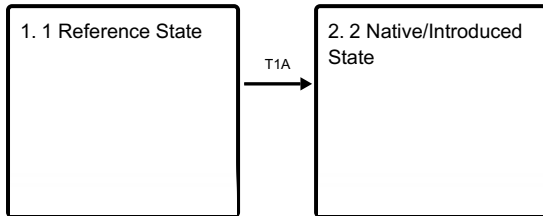
Provisional

## Contributors

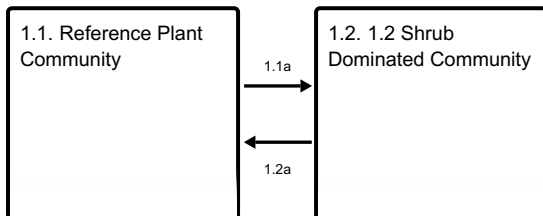
Curtis Talbot

## State and transition model

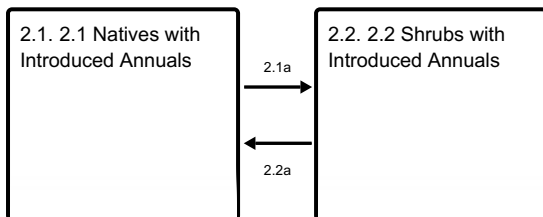
### Ecosystem states



### State 1 submodel, plant communities



### State 2 submodel, plant communities



## State 1

### 1 Reference State

#### Community 1.1

##### Reference Plant Community

The dominant aspect of the site is a grass-shrub mix. Major grasses are muttongrass, blue grama and bottlebrush squirreltail. The dominant shrubs are Wyoming big sagebrush and/or Bigelow sage, fourwing saltbush, and Mormon tea. With severe disturbance, plants that will increase are Wyoming big sagebrush and broom snakeweed; plants that will invade are annual forbs.

#### Community 1.2

##### 1.2 Shrub Dominated Community

This plant community is dominated by shrubs, including Wyoming big sagebrush, Bigelow sage, fourwing saltbush, broom snakeweed, rabbitbrush. The perennial grasses are primarily sod forming grasses. Annuals grasses and forbs are more abundant.

#### Pathway 1.1a

##### Community 1.1 to 1.2

Management that reduces palatable grass species and increases lesser palatable shrubs.

## **Pathway 1.2a**

### **Community 1.2 to 1.1**

A set back to the shrubs along with management to increase palatable grass speices.

## **State 2**

### **2 Native/Introduced State**

The plant communities in the Natives /Introduced state are the same as in the reference state, but the plant communities now contain introduced annuals such as red brome, cheatgrass, and Russian thistle that compete with the native species on the site.

## **Community 2.1**

### **2.1 Natives with Introduced Annuals**

This plant community resembles the historic climax plant community, but introduced annuals are now part of the plant community and compete with the native species. The biotic integrity, fire intensity/frequency, and/or hydrologic function on the site are altered from the reference state.

## **Community 2.2**

### **2.2 Shrubs with Introduced Annuals**

Native shrubs species dominate the site. Perennial grasses are primarily the sod forming grasses. Introduced annuals such as red brome, cheatgrass, and Russian thistle are part of the plant community and compete with the natives. Disturbances such as drought, fire, and grazing can allow the introduced species to continue to increase on the site.

## **Pathway 2.1a**

### **Community 2.1 to 2.2**

Management to decrease grasses and increase shrubs.

## **Pathway 2.2a**

### **Community 2.2 to 2.1**

A set-back for the shrubs along with management to improve grass species

## **Transition T1A**

### **State 1 to 2**

Introduced annuals have invaded.

## **Citations**