

# Ecological site group DX035X01JESG09

## Paria and Kaibito Plateaus Loamy Shallow Hills, Escarpments, and Cliffs

Last updated: 10/25/2022  
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### Key Characteristics

- Paria and Kaibito Plateaus
- Loamy
- Uplands
- Shallow
- Hille, slopes, cliffs

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 site occurs on steeper hillsides and escarpments that have shallow soils (<20 inches) over limestone and sandstone. Surface and subsoil textures are extremely gravelly loam. Rock outcrop is common. Overall slopes range from 15 to 60 percent, but there can be small areas with flatter or steeper slopes within the site.

### Climate

Winter/Summer moisture ratios range from 70:30 to 60:40. Late spring is usually the driest period, followed by summer rains falling from June to September; this moisture originates in the Gulf of Mexico and creates brief, intense convective thunderstorms. Fall moisture can be sporadic. Regular winter precipitation in the form of snow generally falls from October to May and is the result of fronts originating in the Pacific. Summer daytime temperatures are commonly 95 - 100 F and on occasion exceed 105 F. Winter air temperatures can regularly go below 10 F and have been recorded below - 20 F.

### Soil features

Soils are very shallow to shallow.

Surface and subsoil textures are extremely gravelly loam.

Parent materials are alluvium, colluvium and residuum from limestone and sandstone.

Geologic formation is Kaibab limestone and Moenkopi sandstone.

Available water capacity is very low.

Hazard of erosion by water and/or wind is moderate.

Soils are non-saline, non-sodic with a pH of 7.9-8.0.

Soil moisture regime is ustic aridic, 10 to 14 inch precipitation.

### Vegetation dynamics

This site occurs on bedrock-controlled hills of Kaibab limestone and is sometimes intermixed with Moenkopi sandstone. This site may or may not be dominated by Wyoming big sagebrush on north-facing slopes; sagebrush may be limited to inter-fingerings of cooler, moister areas or in protected areas, such as behind rocks.

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

- R035XB240AZ–Limestone/Sandstone Cliffs 6-10" p.z.
- R035XB251AZ–Mudstone/Sandstone Hills 6-10" p.z. Warm
- R035XC302AZ–Sedimentary Cliffs 10-14" p.z.
- R035XC308AZ–Limestone/Sandstone Hills 10-14" p.z.
- R035XC343AZ–Limestone/Sandstone Cliffs 10-14" p.z.
- R035XY240UT–Semidesert Steep Shallow Loam (Utah Juniper-Two-Needle Pinyon)

## Correlated Map Unit Components

22341622, 22340889

## Stage

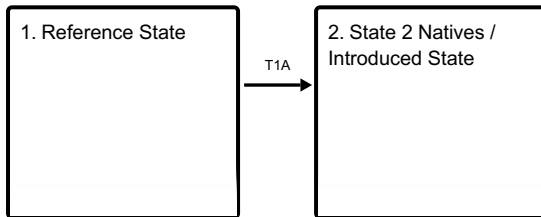
Provisional

## Contributors

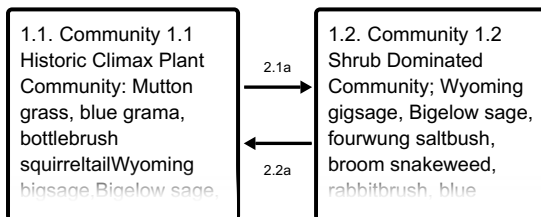
Curtis Talbot

## State and transition model

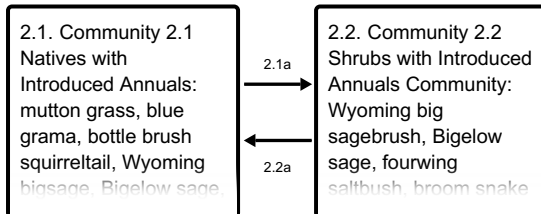
### Ecosystem states



### State 1 submodel, plant communities



### State 2 submodel, plant communities



## State 1 Reference State

State 1 Reference State

## Community 1.1

## **Community 1.1 Historic Climax Plant Community: Mutton grass, blue grama, bottlebrush squirreltail, Wyoming big sage, Bigelow sage, Mormon tea, fourwing saltbush**

Community 1.1 Historic Climax 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**

### **Community 1.2 Shrub Dominated Community; Wyoming big sagebrush, Bigelow sage, fourwing saltbush, broom snakeweed, rabbitbrush, blue grama, annual grasses**

Community 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. Annual grasses and forbs are more abundant.

## **Pathway 2.1a**

### **Community 1.1 to 1.2**

Drought, prolonged periods of winter dominated moisture patterns, reduction of normal fire cycles, and unmanaged grazing will reduce the perennial grass component on the site, and allow shrubs to increase.

## **Pathway 2.2a**

### **Community 1.2 to 1.1**

Normal precipitation patterns with well managed grazing and/or rest will allow native perennial bunchgrasses and other palatable shrubs to increase in the plant community. Allowing natural fires to burn will accelerate recovery.

## **State 2**

### **State 2 Natives / Introduced State**

State 2 Natives / 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**

### **Community 2.1 Natives with Introduced Annuals: mutton grass, blue grama, bottle brush squirreltail, Wyoming big sage, Bigelow sage, Mormon tea, fourwing saltbush, cheatgrass, red brome, Russian thistle.**

Community 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**

### **Community 2.2 Shrubs with Introduced Annuals Community: Wyoming big sagebrush, Bigelow sage, fourwing saltbush, broom snake weed, rabbitbrush, blue grama, cheatgrass, red brom, Russian thistle**

Community 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**

Drought, prolonged periods of winter dominated moisture patterns, reduction of normal fire cycles, and unmanged grazing will reduce the perennial grass component on the site, and allow shrubs to increase.

**Pathway 2.2a**  
**Community 2.2 to 2.1**

Normal precipitation patterns with well managed grazing and/or rest will allow native perennial bunchgrasses and other palatable shrubs to increase in the plant community. Allowing natural fires to burn will accelerate recovery, but may increase introduced annuals on the site.

**Transition T1A**  
**State 1 to 2**

Introduction of non-native annuals

**Citations**