Ecological site group DX035X02DESG15
Grand Canyon - Aridic Ustic - Sandstone or Sandy Loam Upland

Last updated: 10/26/2022
Accessed: 05/02/2024

Key Characteristics

- Grand Canyon (D)
- Site parent material is sandstone or soil is a sandy loam.
- Site soils are aridic ustic or within a 13-17" 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%. Physiography is complex.

Climate

Site soils are aridic ustic or within a 13-17" 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 sandstone. Soils are sandy or sandy loams. Site consists of limited amounts of gently sloping sheet alluvial or eolian deposits over residuum of plateaus and structural benches.

Vegetation dynamics

The representative plant community for this site is a grass / shrub plant community. Common grasses are needle and thread, blue grama and squirreltail. The dominant shrubs are Wyoming big sagebrush and winterfat.

High levels of grazing reduce grasses and help increase the shrub component.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

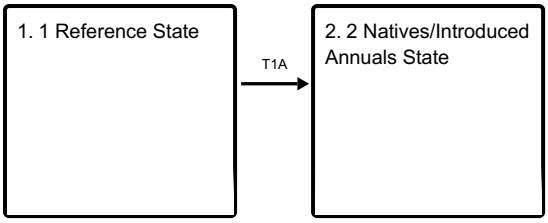
- R035XF606AZ–Sandy Loam Upland 13-17" p.z.

Stage

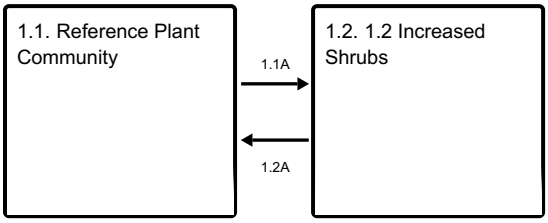
Provisional

State and transition model

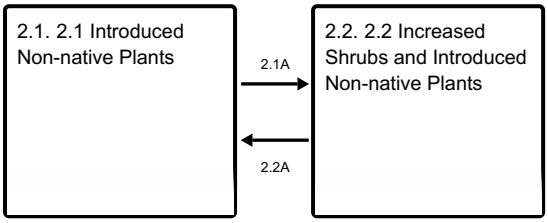
Ecosystem states



State 1 submodel, plant communities



State 2 submodel, plant communities



State 1
1 Reference State

The representative plant community for this site is a grass / shrub plant community. Common grasses are needle and thread, blue grama and squirreltail. The dominant shrubs are Wyoming big sagebrush and winterfat. High levels of grazing reduce grasses and help increase the shrub component.

Community 1.1
Reference Plant Community

Grassland - Shrub Community: Major grasses are needle and thread, blue grama and squirreltail. Major shrubs include winterfat, fourwing saltbush and Wyoming big sagebrush. Grasses are 50-60% of the plant community composition and shrubs are 30-40%. A few forbs are present along with an occasional tree.

Community 1.2
1.2 Increased Shrubs

High levels of grazing have diminished the most palatible perennial grass component. Wyoming big sagebrush and broom snakeweed have increased and shrubs are now the dominant plants. Less palatible Fendler threeawn has increased, too.

Pathway 1.1A
Community 1.1 to 1.2

Repetitive high utilization of grasses give shrubs a competitive advantage.

Pathway 1.2A
Community 1.2 to 1.1

Disturbance on the shrubs coupled with management to increase grass species.

State 2

2 Natives/Introduced Annuals State

Non-native plants have been introduced into the reference plant community 1.1. The most common and invasive on this site is cheatgrass. NOTE: Once non-native plants are introduced into the plant community, it is very difficult to almost impossible to eliminate these plants from the site. Therefore, this becomes an issue of management of the non-native understory plant species.

Community 2.1
2.1 Introduced Non-native Plants

Non-native plants have been introduced into the reference plant community 1.1. The most common and invasive on this site is cheatgrass. NOTE: Once non-native plants are introduced into the plant community, it is very difficult to almost impossible to eliminate these plants from the site. Therefore, this becomes an issue of management of the non-native understory plant species.

Community 2.2
2.2 Increased Shrubs and Introduced Non-native Plants

The disturbance has been great enough to allow Wyoming big sagebrush and snakeweed to increase. Less palatible grasses and annuals increase, also. Cheatgrass is the most common non-native plant species to invade the site. NOTE: Once non-native plants are introduced into the plant community, it is very difficult to almost impossible to eliminate these plants from the site. Therefore, this becomes an issue of management of the non-native understory plant species.

Pathway 2.1A
Community 2.1 to 2.2

Excessive grazing and lack of fire.

Pathway 2.2A
Community 2.2 to 2.1

Restoring ecological processes such as fire regime.

Transition T1A
State 1 to 2

Invasion of introduced species.

Citations