

Ecological site group DX035X01AESG10

Grand Staircase-Shallow Soils Shrub & Woodlands-Not Volcanic PM-Sandy Soils

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Key Characteristics

- Grand Staircase-Kaiparowits
- Shallow Soil Shrublands and Woodlands
- Soil parent material is not volcanic cinders
- Soils are sandy

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 sand sheets, dunes, and blowouts atop structural benches and mesas. It is found on 2-50% slopes at elevations between 4800 and 7900 feet.

Climate

Soil temperature and moistures regimes range from mesic, aridic ustic to frigid, typic ustic.

Soil features

The characteristic soils in this ecological site group are 4 to 20 inches deep over sandstone and somewhat excessively drained. They occur on eolian deposits derived from sandstone parent material. The soils are deposited and stabilized in the form of sand sheets or low dunes mixed with exposed bedrock and can contain some alluvium and residuum. Soil surfaces typically support biological crusts, but areas of bare sand or surface gravels are common. Plants are concentrated where the soil and available moisture are most conducive to plant growth. The soils are typically psamments. There are no distinguishing soil development characteristics; they are often composed of unconsolidated sand of various depths. The sand accumulates and is stabilized by vegetation or crust. Water often runs onto the soil from adjacent rock outcrop and may pool. When there is a large erosion event, soils will sometimes move and redeposit in nearby areas.

Vegetation dynamics

This ecological site group occurs on shallow sand sheets and low dunes interspersed in Navajo sandstone bedrock found in Major Land Resource Area (MLRA) D35—The Colorado Plateau. This site typically receives extra moisture in the form of run-on from the surrounding bedrock and outcroppings. The amount of this extra moisture, (i.e., size of the surrounding rock outcrop watershed) allows for the presence of a wide variety of shrubs with smaller amounts of forbs and grasses also present. Widespread fire is not an influencing factor in this community due to natural fire barriers in the form of bedrock and outcrops. Significant fire impact has been observed, however, from lightning caused spot fires which are small in nature but that can cause the understory to shift from one dominated by shrubs to one with a more herbaceous aspect. Cheatgrass and other invasive species rarely invade this site.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- R035XY225UT–Semidesert Shallow Sand (Cutler"s Jointfir)
- R035XY227UT–Semidesert Shallow Sand (Utah Juniper-Pinyon)
- R035XY314UT–Upland Shallow Sand (Pinyon-Utah Juniper)

Correlated Map Unit Components

22601283, 22601280, 22601753, 22601268, 22601697, 22601758, 22601776, 22728615, 22965242, 22965102, 22965380, 22965381, 22965735, 22965388, 22965091, 22965094, 22965193, 22965335, 22965331, 22965527, 22965701, 22965466, 22965165, 22963448, 22963372, 22963370, 22963411, 22963409

Stage

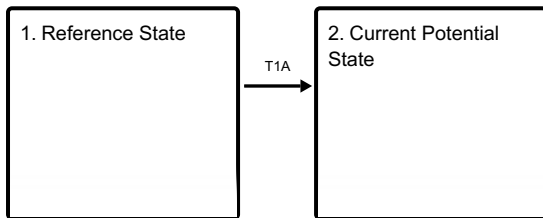
Provisional

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State and transition model

Ecosystem states



T1A - E = Establishment of non-native invasive plant species SD = Surface disturbance ILG = Improper livestock grazing

State 1 submodel, plant communities

1.1. Utah Juniper, two-needle pinyon, native shrubs, forbs, and perennial grasses.

State 2 submodel, plant communities

2.1. Utah juniper, two-needle pinyon, native shrub, forbs, and grasses with non-native species present.

State 1 Reference State

This state consists of a tree layer, typically Utah juniper and two-needle pinyon, a shrub layer of native shrubs, and a herbaceous understory dominated by perennial native grasses. In drier areas the dominant aspect is a jointfir shrubland with scattered trees. In some areas, Ponderosa pine may be present in the tree layer.

Community 1.1

Utah Juniper, two-needle pinyon, native shrubs, forbs, and perennial grasses.

This community phase is characterized by a twoneedle pinyon and Utah juniper upper canopy. Ponderosa pine may be present in places which are more moist or shaded by rock outcrops. In the lower canopy, commonly seen grasses include Indian ricegrass and galleta. Other perennial grasses, shrubs, and forbs may or may not be present and cover is variable. Cutler jointfir dominates the drier, warmer areas. Bare ground is variable depending on surface rock cover, which is also variable.

State 2

Current Potential State

The current potential state is similar to the reference state; however invasive species are present. This state is generally dominated by Utah juniper and twoneedle pinyon, however depending on disturbance history, native grasses, forbs, or other shrubs may dominate the site. Primary disturbance mechanisms include insect herbivory, domestic livestock grazing, and surface disturbances such as road and pipeline development and off road vehicle (OHV) use. Ponderosa pine may be present in some areas.

Community 2.1

Utah juniper, two-needle pinyon, native shrub, forbs, and grasses with non-native species present.

This community phase is characterized by a twoneedle pinyon and Utah juniper upper canopy. Ponderosa pine may be present in more moist areas or areas shaded by rock outcrops. In the lower canopy, commonly seen grasses include Indian ricegrass and galleta. Other perennial grasses, shrubs, and forbs may or may not be present and cover is variable. Cutler jointfir dominates the warmer, drier areas. Bare ground is variable depending on surface rock cover, which is also variable. Non-native annuals, such as cheatgrass, may be present but are rarely dominant.

Transition T1A

State 1 to 2

This transition occurs when non-native invasive species, particularly cheatgrass, establish on the site. Surface disturbances and season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization may contribute to this process.

Citations