

Ecological site group DX035X01AESG11

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

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 is located on mountain slopes, mesa tops, benches, hillsides, ridges, alluvial fans, and cuestras. Runoff is slow to moderate. Flooding and ponding are rare due to local landscape positions and the dry nature of the ecosystem. Slopes are generally low to moderate (0-30%) but can range up to 70%.

Climate

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

Soil features

This site occurs on shallow to moderately deep soils. The dry surface layer color is typically reddish or grayish and the surface soil textures range from sandy loams to very fine sandy loams which can include a stony or channery modifier. These soils are poorly developed, well drained, and have moderate water holding capacities. Erosion potential of soils on reference state sites typically depends on surface rock fragments. Sites with greater than 30% rock fragments have lower wind and water erosion potentials than sites with less than 30% surface rock fragments. Biological crust cover is characterized as crustless with the possible occurrence of light cyanobacteria and/or isolated lichen and moss pinnacles.

Vegetation dynamics

This ecological site group is characterized by a canopy of sparse Utah juniper, two-needle pinyon, and blackbrush. Commonly occurring grasses include Indian ricegrass, James galleta, needle-and-thread, and six weeks fescue. Other perennial grasses, shrubs, and forbs may also be present and cover is variable. Air dry composition of this site is approximately 10 percent forbs, 15 percent grasses, and 75 percent shrubs and trees. Bare ground is variable (2-50%) depending on biological crust cover, which is also variable (1-65%) and surface rock fragments (0-60%). Biological crusts can vary from sites dominated by light cyanobacteria in the plant interspaces, with occasional moss and lichen pinnacles under shrub canopies, to those dominated by lichen and moss pinnacles as well as cyanobacteria in the site interspaces.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- R035XY236UT–Semidesert Shallow Sandy Loam (Utah Juniper, Blackbrush)
- DX035X04B314–Sandstone Upland 10-14" p.z.
- F035XC322AZ–Sandstone Upland 10-14" p.z. (JUOS)
- R035XY133UT–Desert Shallow Sandy Loam (Blackbrush)
- R035XY233UT–Semidesert Shallow Sandy Loam (Blackbrush)

Correlated Map Unit Components

22340911, 22340915, 22397542, 22601465, 22601027, 22601029, 22601249, 22601656, 22601657, 22601492, 22601798, 22601275, 22601484, 22601689, 22601247, 22601070, 22601650, 22601648, 22601033, 22601034, 22601663, 22601653, 22965737, 22965120, 22965412, 22965138, 22965607, 22965142, 22965141, 22965763, 22965768, 22965564, 22965574, 22963381

Stage

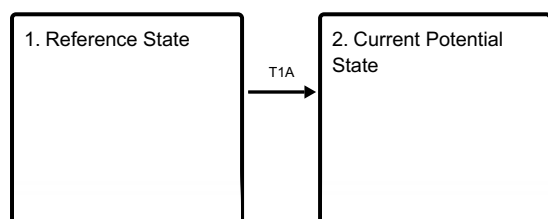
Provisional

Contributors

Curtis Talbot

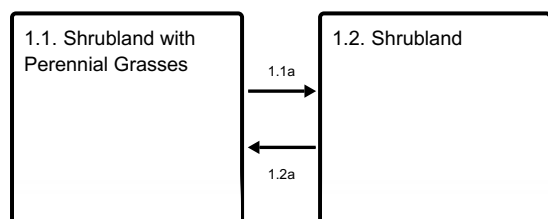
State and transition model

Ecosystem states



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

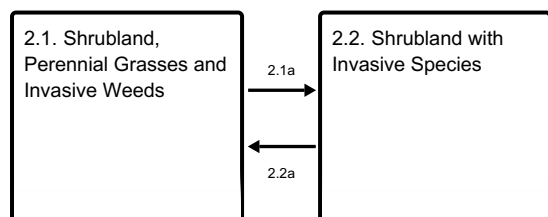
State 1 submodel, plant communities



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

The reference state is generally dominated by shrubs, usually blackbrush, however depending on disturbance history, native grasses, forbs, or other shrubs may occupy significant composition in the plant community.

Characteristics and indicators. A community dominated by blackbrush where native perennial grasses and forbs may or may not be present.

Community 1.1

Shrubland with Perennial Grasses

This community phase is characterized by a shrub canopy dominated by blackbrush and Torrey's jointfir, perennial grasses are also present. Commonly occurring grasses include Indian ricegrass, James galleta, needle-and-thread, six weeks fescue, and dropseed species. Grasses make up 10 to 20 percent of the annual production.

Community 1.2

Shrubland

This community phase is characterized by a shrub canopy dominated by blackbrush and Torrey's jointfir, perennial grasses may also be present. Herbaceous vegetation makes up less than 10 percent of the annual production.

Pathway 1.1a

Community 1.1 to 1.2

This community pathway occurs when any combination of season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization, drought or surface disturbance reduces the amount of herbaceous vegetation on the site.

Pathway 1.2a

Community 1.2 to 1.1

This community pathway occurs when proper livestock grazing, wet weather periods and time allow for the recovery of surface disturbance which increases the amount of perennial herbaceous vegetation on the site.

State 2

Current Potential State

The current potential state is similar to the reference state, however invasive species are now present in all community phases of the current potential state. This state is generally dominated by blackbrush and Torrey's jointfir, however, depending on disturbance history, native grasses, forbs, or other shrubs may also commonly occupy the site.

Characteristics and indicators. A community dominated by blackbrush where native perennial grasses and forbs may also be present. Invasive grasses and forbs are present.

Community 2.1

Shrubland, Perennial Grasses and Invasive Weeds

This community phase is characterized by a shrub canopy dominated by blackbrush and Torrey's jointfir, perennial grasses are also present. Commonly occurring grasses include Indian ricegrass, James galleta, needle-and-thread, six weeks fescue, and dropseed species. Non-native and/or invasive species are now present with cheatgrass being most common. Herbaceous species make up 20 to 30 percent of annual production.

Community 2.2

Shrubland with Invasive Species

This community phase is characterized by a shrub canopy dominated by blackbrush and Torrey's jointfir. Non-native, invasive species are now present on the site and may increase following wet weather periods. There is little perennial herbaceous cover in the shrub interspaces but annuals may be present. Perennial herbaceous species make up less than 10 percent of annual production. Invasive species account for 5 to 25 percent of annual production.

Pathway 2.1a

Community 2.1 to 2.2

This community pathway occurs when any combination of season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization, drought or surface disturbance reduces the amount of perennial herbaceous vegetation on the site. Invasive annual species may increase following short-term wet periods.

Pathway 2.2a

Community 2.2 to 2.1

This community pathway occurs when proper livestock grazing, wet weather periods and time allow for the recovery of surface disturbance which increases the amount of perennial herbaceous vegetation on the site. Non-native invasive species may also increase during this time.

Transition T1A

State 1 to 2

This transition is from the native perennial warm and cool season grass understory in the reference state to a state that contains invasive species. Events may include any combination of season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization, prolonged drought, and/or surface disturbances. However, invasive species such as cheatgrass have been known to invade intact perennial plant communities with little to no disturbances. Once invasive plants are found in the plant community a threshold has been crossed.

Citations