

Ecological site group DX035X01AESG15

Grand Staircase-Loam Soils Shrublands-Gravelly Soils

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Key Characteristics

- Grand Staircase-Kaiparowits
- Loam Soils Shrublands
- Soils are gravelly

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 alluvial fans and on steep hillsides associated with structural benches and escarpments. Slopes range from 10-80% and elevations are 4700 to 7500 feet.

Climate

The soil moisture regime is ustic aridic and the soil temperature regime is mesic.

Soil features

The characteristic soils of this site are loamy skeletal with an average of 15-35% rock fragments, by volume, in the profile. They formed in mixed alluvium or colluvium derived mainly from sandstone and shale parent materials. These soils are well drained and have surface textures ranging from loams to sandy loams.

Vegetation dynamics

This site is influenced by many of the natural disturbances typical of MLRA 35. Fire is among such disturbances. Following a burn, perennial grasses generally dominate the community. After a few years of average precipitation, Wyoming big sagebrush regains dominance of the site. In contrast, lack of fire results in juniper encroachment. Due to modern disturbances such as invasive species and OHV use, the resilience of the plant communities may be at risk. Disturbances that reduce the presence of the perennial plant community result in an opportunity for invasive annuals to enter into the system. Fire suppression has resulted in some areas transitioning to a juniper-pinyon dominated state.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

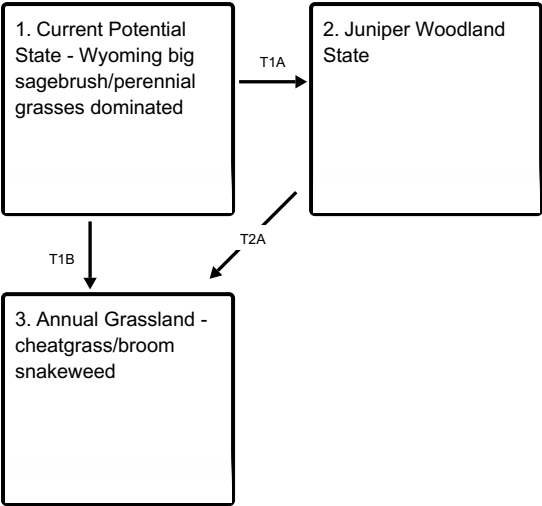
- R035XY204UT–Semidesert Gravelly Loam (Wyoming Big Sagebrush)

Stage

Provisional

State and transition model

Ecosystem states

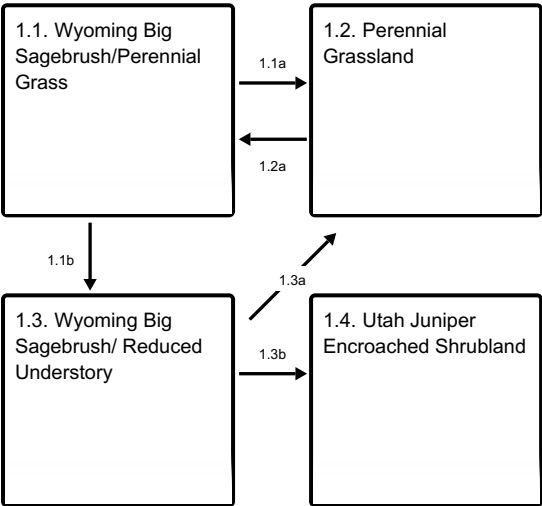


T1A - T = Time without natural fire

T1B - IF = Intense Fire

T2A - IF = Intense Fire

State 1 submodel, plant communities



1.1a - BR = Brush removal F = Fire

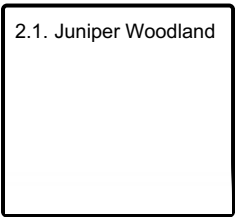
1.1b - ILG = Improper livestock grazing T = Time without disturbances or fire

1.2a - ILG = Improper livestock grazing T = Time without disturbances or fire

1.3a - BR = Brush removal F = Fire

1.3b - T = Time without disturbances or fire

State 2 submodel, plant communities



State 3 submodel, plant communities

3.1. Annual grasses
and sprouting shrubs

State 1

Current Potential State - Wyoming big sagebrush/perennial grasses dominated

Wyoming big sagebrush dominated community with other native shrubs; Indian ricegrass, sand dropseed, other cool-season and warm-season native, perennial grasses; perennial and annual forbs. Invasive species present, but not dominant

Community 1.1

Wyoming Big Sagebrush/Perennial Grass

This community is characterized by an overstory of Wyoming big sagebrush and an understory dominated by native perennial grasses, typically Indian ricegrass, galleta, and sand dropseed.

Community 1.2

Perennial Grassland

This community is characterized by perennial grasses with minimal shrubs present. Common species are sand dropseed, Indian ricegrass, galleta. Invasive species are present but not dominant

Community 1.3

Wyoming Big Sagebrush/ Reduced Understory

This community is characterized by an overstory of Wyoming big sagebrush, broom snakeweed, prickly pear and other shrubs with minimal perennial herbaceous understory. Invasive species are present in the interspaces between shrubs.

Community 1.4

Utah Juniper Encroached Shrubland

This community is characterized by a Utah juniper/ Pinyon woodland with an understory of Wyoming big sagebrush and grasses.

Pathway 1.1a

Community 1.1 to 1.2

Fire and/or brush removal can reduce the Wyoming big sagebrush dominance of this site and result in a grass dominated community.

Pathway 1.1b

Community 1.1 to 1.3

Time without fire coupled with season long grazing providing little rest and recovery for preferred grazed plants during critical growing periods coupled with high utilization can reduce the resilience of the perennial herbaceous vegetation resulting in a shrub dominated community.

Pathway 1.2a

Community 1.2 to 1.1

Time without disturbance and/or season long grazing providing little rest and recovery for preferred grazed plants

during critical growing periods coupled with high utilization results in a reduction of perennial grasses, and an increase in Wyoming big sagebrush.

Pathway 1.3a

Community 1.3 to 1.2

Fire and/or brush removal can reduce the Wyoming big sagebrush dominance of this site and result in a grass dominated community.

Pathway 1.3b

Community 1.3 to 1.4

Time without disturbance (Fire) results in a pinyon-juniper encroached shrubland.

State 2

Juniper Woodland State

This state dominated by an overstory of Utah Juniper and occurs when perennial grasses become too sparse to produce and bank sufficient seed to become dominant after fire or tree removal. Shrubs also decrease and may be unable to return following tree removal.

Community 2.1

Juniper Woodland

This community is dominated by an overstory of Utah Juniper, two-needle pinyon may also be present. There is minimal Wyoming big sagebrush and native perennial grasses. Invasive species may be present.

State 3

Annual Grassland - cheatgrass/broom snakeweed

This state is a result of intense fire, usually in a shrub or tree dominated community, and is characterized by cheatgrass and sprouting shrubs such as broom snakeweed.

Community 3.1

Annual grasses and sprouting shrubs

This community is dominated by cheatgrass and broom snakeweed. Prickly pear may also form a major component of the community. In sandier soils, sand dropseed may be a major part of the community.

Transition T1A

State 1 to 2

This transition occurs when fire suppression extends well beyond the natural fire return interval (over 100 years), resulting in dominance by Utah juniper.

Transition T1B

State 1 to 3

This transition occurs when intense fire burns a site that has been depleted of perennial herbaceous vegetation.

Transition T2A

State 2 to 3

This transition occurs when intense fire occurs on a juniper encroached site.

Citations