

Ecological site group DX035X02AESG09

North Slope of the Mogollon Rim - Ustic Aridic - Clayey Wash

Last updated: 09/01/2021
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Key Characteristics

- North Slope of the Mogollon Rim (A)
- Soil is basalt, shale, or clayey.
- Site soils are ustic aridic or within a 10-14" precipitation zone.
- Site is and/or located in a wash.

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 bottoms with slopes <3%. Aspects tend toward northeast.

Climate

Site soils are ustic aridic or within a 10-14" precipitation zone. Precipitation comes predominantly from monsoonal patterns during months of July, August, and September.

Soil features

Basalt, Shale or Clayey. Site consists of broad alluvial deposits in washes, streams or fans, often deep.

Vegetation dynamics

This plant community is about 70 to 80% grasses, 5 to 10% forbs, and 10 to 20% shrubs based on air dry weight. Alkali sacaton dominates the plant community, making up to 40% of the total annual production of the site. Western wheatgrass is the subdominant. blue grama, galleta grass, vine mesquite, sideoats grama grass, fourwing saltbush and winterfat are important indigenous components.

If retrogression is from unmanaged grazing, alkali sacaton, western wheat, vinemesquite, and sideoats grama decrease. Three awn, tumble grass, ring muhly, burrograss and inferior forbs and shrubs can increase. Plant species most likely to increase on a deteriorating condition are rabbitbrush, broom snakeweed, wooly groundsel, annuals and cacti.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

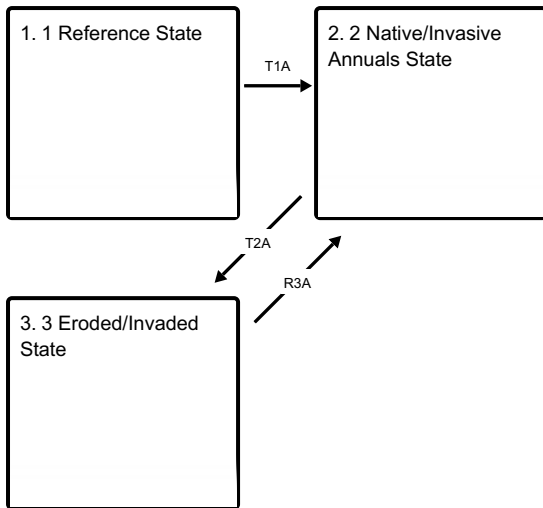
- DX035X011104—Clay Loam Wash 10-14" p.z.

Stage

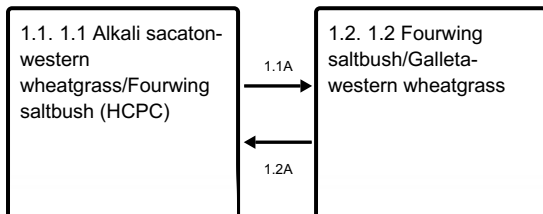
Provisional

State and transition model

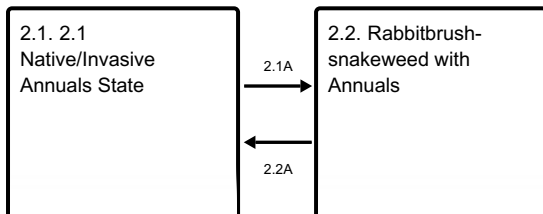
Ecosystem states



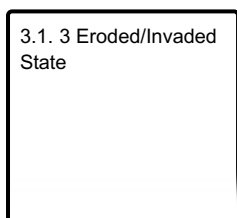
State 1 submodel, plant communities



State 2 submodel, plant communities



State 3 submodel, plant communities



State 1

1 Reference State

The reference state was described by the observation and study of plant communities that have evolved through a long-term interactions of natural disturbances processes, climate, soils and landforms. This reference state is characterized as a native mid and short grassland dominated by alkali sacaton and western wheatgrass.

Community 1.1

1.1 Alkali sacaton-western wheatgrass/Fourwing saltbush (HCPC)

This plant community is about 70 to 80% grasses, 5 to 10% forbs, and 10 to 20% shrubs based on air dry weight. Alkali sacaton dominates the plant community, making up to 40% of the total annual production of the site. Western wheatgrass is the subdominant. blue grama, galleta grass, vine mesquite, sideoats grama grass, fourwing saltbush and winterfat are important indigenous components. If retrogression is from unmanaged grazing, alkali sacaton, western wheat, vinemesquite, and sideoats grama decrease. Three awn, tumble grass, ring muhly, burrograss and

inferior forbs and shrubs can increase. Plant species most likely to increase on a deteriorating condition are rabbitbrush, broom snakeweed, wooly groundsel, annuals and cacti.

Community 1.2

1.2 Fourwing saltbush/Galleta-western wheatgrass

The aspect of this plant community is a shrubland. The plant community is dominated by fourwing saltbush with galleta, western wheatgrass and lesser amounts of alkali sacaton. Unmanaged grazing, run-in moisture/rare flooding, lack of fire and drought can maintain the shrub component.

Pathway 1.1A

Community 1.1 to 1.2

Over time due to herbivory of grass species shrubs gain a competitive advantage.

Pathway 1.2A

Community 1.2 to 1.1

Management to improve ecosystem health.

State 2

2 Native/Invasive Annuals State

This state is characterized by a dominance of warm season grasses and half shrubs with moderate amounts of native and non-native annuals. Common species in this state include galleta, blue grama, alkali sacaton, rabbitbrush and snakeweed.

Community 2.1

2.1 Native/Invasive Annuals State

This plant community is characterized by a dominance of warm season short and mid grasses with an increase of shrubs like rabbitbrush and snakeweed along with native and non-native annual forbs. Non-native annuals have become well established and can make up to 20% of the plant community by weight. Favorable species, such as western wheatgrass and fourwing saltbush may only be present in minor amounts. Occasional invasive shrubs/trees may occupy the site along drainages and channels in small isolated clumps. Disturbances such as unmanaged grazing, severe drought, past farming activities or other activities have alter the drainages and results in a reduction of beneficial run-in moisture. Grass cover is reduced along with increased bare ground which allows annuals to increase.

Community 2.2

Rabbitbrush-snakeweed with Annuals

This plant community is characterized by a dominance of shrubs like rabbitbrush and snakeweed along with native and non-native annual forbs. Non-native annuals have become well established and can make up to 30% of the plant community by weight. Favorable species, such as alkali sacaton, western wheatgrass and fourwing saltbush may only be present in minor amounts. Occasional invasive shrubs/trees may occupy the site along drainages and channels in small stands or clumps. Disturbances such as unmanaged grazing, severe drought, past farming activities or other activities have alter the drainages and results in a reduction of beneficial run-in moisture. Perennial grass cover is reduced along with increased bare ground which allows annuals to increase and co-dominate.

Pathway 2.1A

Community 2.1 to 2.2

Periodic disturbance will increase basal sprouting shrubs.

Pathway 2.2A
Community 2.2 to 2.1

Improved ecosystem health

State 3
3 Eroded/Invaded State

This state is characterized by the invasion of native and non-native shrubs and active erosion. The site has lost the ability to capture and store moisture due to entrenched channels and gullies.

Community 3.1
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Transition T1A
State 1 to 2

Ecosystem degradation and colonization of introduced invasive species. Once introduced species have invaded it is unlikely the site will be restored to reference.

Transition T2A
State 2 to 3

Excessive disturbance increases bare ground and erosion

Restoration pathway R3A
State 3 to 2

Management techniques that stabilize soil and bring about a more functional ecosystem.

Citations