

Ecological site group DX035X01JESG04

Paria and Kaibito Plateaus Limy (calcareous)

Last updated: 10/25/2022
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Key Characteristics

- Paria and Kaibito Plateaus
- Limy

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 occurs in an upland position on fans, plateaus and mesas and does not benefit from run-in moisture. The soil is deep, very to extremely gravelly, and strongly to violently effervescent throughout the soil profile. The soil surface is generally covered with gravels. Slopes range from 1 to 15 percent.

Climate

Winter summer moisture ratios range from 70:30 to 60:40. Late spring is usually the driest period, and early fall moisture can be sporadic. Summer rains fall from June through September; moisture originates in the Gulf of Mexico and creates convective, usually brief, intense thunderstorms. Cool season moisture from October through May tends to be frontal; it originates in the Pacific and the Gulf of California and falls in widespread storms with longer duration and lower intensity. Precipitation generally comes as snow from December through February. Accumulations above 12 inches are not common but can occur. Snow usually lasts for 3-4 days but can persist much longer. Summer daytime temperatures are commonly 95 - 100 F and on occasion exceed 105 F. Winter air temperatures can regularly go below 10 F and have been recorded below - 20 F.

Soil features

These soils are typically very shallow to shallow, but occasionally are moderately deep, to a plant root restricting layer. The surface texture ranges from gravelly loam to very gravelly loam. The subsurface texture ranges from gravelly loam to very gravelly clay loam. The soil is strongly to violently effervescent throughout the soil profile. The soil reaction is strongly to very strongly alkaline (pH 8.5-9.4). Water erosion hazard is slight to moderate.

Vegetation dynamics

An ecological site is not a precise assemblage of species for which the proportions are the same from place to place or from year to year. In all plant communities, variability is apparent in productivity and occurrence of individual species. Spatial boundaries of the communities; however, can be recognized by characteristic patterns of species composition, association, and community structure. The historic climax plant community for this ecological site has been described by sampling relict or relatively undisturbed sites and/or reviewing historic records. The historic climax plant community is the plant community that evolved over time with the soil forming process and long term changes in climatic conditions of the area. It is the plant community that was best adapted to the unique combination of environmental factors associated with the site.

Natural disturbances, such as drought, fire, grazing of native fauna, and insects, are inherent in the development and maintenance of these plant communities. The effects of these disturbances are part of the range of characteristics of the ecological site. Fluctuations in plant community structure and function caused by the effects of natural disturbances help establish the boundaries and characteristics of an ecological site. They are accounted for

as part of the range of characteristics of the ecological site. Recognizable plant community phases are identified in the reference state of the ecological site. Some sites may have a small range of variation, while others have a large range. Some plant community phases may exist for long periods of time, while others may only occur for a couple of years after a disturbance.

Deterioration of the plant community, hydrology, or soil site stability on an ecological site can result in crossing a threshold or potentially irreversible boundary to another state, or equilibrium. This can occur as a result of the loss of soil surface through erosion, the loss of the stability of the site due to disturbances that cause active erosion on the site, increases in the amounts and/or patterns or runoff from rainstorms, changes in availability of surface and subsurface water, significant changes in plant structural and functional types, or the introduction of non-native species. When these thresholds are crossed, the potential of the ecological site to return to the historic climax plant community can be lost, or restoration will require significant inputs. There may be multiple states possible for an ecological site, determined by the type and or severity of disturbance.

This plant community is primarily made up of mid and short grasses with a shrubs component. High limy soils make the site somewhat harsh for plant growth.

Species most likely to increase when the site is disturbed are big sagebrush and broom snakeweed. Invaders include cheat-grass and juniper.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- R035XC311AZ–Limy Upland 10-14" p.z.

Correlated Map Unit Components

22396665, 22396671

Stage

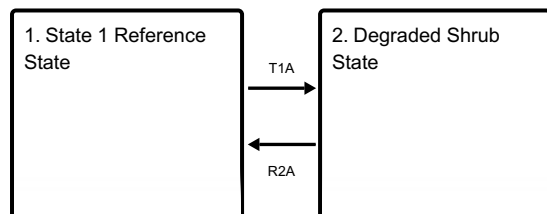
Provisional

Contributors

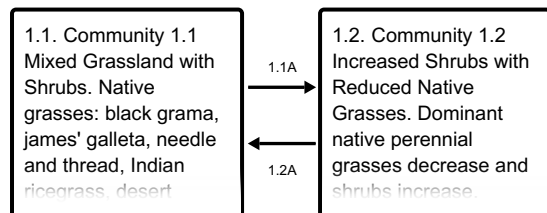
Curtis Talbot

State and transition model

Ecosystem states



State 1 submodel, plant communities



State 1

State 1 Reference State

State 1 Reference State This is grassland / shrubland. Mid and short grasses in conjunction with a significant shrub component. Relative percentage of total plant community by weight: Grasses 55-65% Forbs 1-5% Shrubs and trees 35-45% *Note: Non-native plant species may be present in minor amounts. Introduction of non-native annual species creates an irreversible change in the plant community

Community 1.1

Community 1.1 Mixed Grassland with Shrubs. Native grasses: black grama, james' galleta, needle and thread, Indian ricegrass, desert needlegrass. Native shrubs: big sagebrush Mormon tea, fourwing saltbush.

Community 1.1 Mixed Grassland with Shrubs This plant community is primarily made up of mid and short grasses with a shrubs component. High limy soils make the site somewhat harsh for plant growth. Species most likely to increase when the site is disturbed are big sagebrush and broom snakeweed. Invaders include cheatgrass and juniper.

Community 1.2

Community 1.2 Increased Shrubs with Reduced Native Grasses. Dominant native perennial grasses decrease and shrubs increase. Native grasses: blue grama, black grama, galleta, desert needlegrass. increased shrubs include broom snake weed and big sagebrush

Community 1.2 Increased Shrubs with Reduced Native Grasses 1.2 Shrubs have increased and have become co-dominant to dominant. Broom snakeweed and Greene rabbitbrush increase the most. Most of the grass species production is reduced, especially cool season grasses.

Pathway 1.1A

Community 1.1 to 1.2

Drought, extended periods of winter dominated moisture, reduction in the natural fire frequency and unmanaged grazing will reduce the perennial grasses on the site and allow the woody species to increase.

Pathway 1.2A

Community 1.2 to 1.1

Grazing management.

State 2

Degraded Shrub State

Species most likely to increase when the site is disturbed are big sagebrush and broom snakeweed. Invaders include cheat-grass and juniper.

Transition T1A

State 1 to 2

Repeated, excessive defoliation of preferred species eventually reduced understory, gives shrubs a competitive advantage, and increases erosion.

Restoration pathway R2A

State 2 to 1

Using management for slow restoration of understory species along with a set-back to the shrubs.

Citations