

Ecological site group DX035X01GESG03

Chinle Valley Sodic Uplands Structural Benches and Fan Terraces

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Key Characteristics

- Chinle Valley
- Sodic
- Uplands
- Structural benches, fan remnants

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 group occurs on toeslopes and footslopes below mesas, cuernas, knolls, and structural benches of undulating plateaus to gently sloping plateaus, structural benches and fans with slopes up to 15 percent. This group receives little, if any additional moisture from adjacent areas, but usually it runs off, giving little benefit. Slopes range from 0 to 5 percent. Elevations range from 4,700 to 6,100 feet.

Climate

Mean annual precipitation varies from 6 to 14 inches. About 60% of this moisture comes as rain during the months of April through October. May and June are the driest months. Most of the moisture from November through March comes as snow. Winds of high velocity during late winter and early spring are common.

Mean temperatures for the hottest month, July, are about 83 degrees F. The coldest month is January, when the mean temperature is about 27 degrees F. Extreme temperatures of 104 degrees F and -17 degrees F have been recorded. Frost-free period ranges from 140 to 160 days.

Windy conditions are common year round, but the winds are strongest and most frequent during the spring.

The cool-season plants start growth in March and end with plant maturity and seed dissemination about mid-June. During June, July, August, and September, the warm-season plants make optimum growth, taking advantage of the warm temperature and moisture from tropical air out of the Gulf of Mexico. About 40% of the total precipitation is received during these summer months. The other 60% received during the fall, winter, and spring months influences cool-season plants.

Soil features

The soils are shallow to very deep and are well drained. They were formed in alluvium and residuum derived from sandstone and shale. Soft sandstone or shale occurs between 18 and 60 inches. The hazard of soil blowing is moderate to severe. The soils are slightly to moderately saline (EC 4-16), moderately to strongly sodic (SAR 13-30+), or neutral to very strongly alkaline (pH 6.6 to 9.4).

Vegetation dynamics

This group has a plant community made up primarily of grasses, shrubs, and annual forbs. In the historic climax plant community, warm-season plants dominate, but there are also some cool-season plants. Mound saltbush and ribscale are abundant on the site because of the high sodium in the soil.

Plant species most likely to invade or increase on this site when it deteriorates are Russian thistle, Powell's saltweed, mound saltbush, and globemallow. Desirable species decrease if continuously grazed during their growing season, allowing an increase in sodium-tolerant annuals like Powell's saltweed and invasion by Russian thistle.

Major Land Resource Area

MLRA 035X
Colorado Plateau

Subclasses

- R035XB016NM–Clay Loam Terrace (Sodic) 7-10"
- R035XB022NM–Loamy Upland 6-10" p.z. sodic
- R035XB034NM–Sandy Terrace 6-10" sodic
- R035XB225AZ–Clay Loam Upland 6-10" p.z. Sodic
- R035XB227AZ–Sandy Loam Upland 6-10" p.z. Saline-Sodic
- R035XB228AZ–Sandstone Upland 6-10" p.z. Sodic
- R035XB237AZ–Clay Loam Terrace 6-10" p.z. Sodic
- R035XB238AZ–Sandy Terrace 6-10" p.z. Sodic
- R035XB271AZ–Loamy Upland 6-10" p.z. Saline-Sodic
- R035XB279AZ–Clay Loam Upland 6-10" p.z. Sodic, Gypsic
- R035XC309AZ–Clay Loam Terrace 10-14" p.z. Saline-Sodic
- R035XC327AZ–Clayey Upland 10-14" p.z. Sodic
- R035XY006UT–Alkali Fan (Valley Saltbush)

Correlated Map Unit Components

22397507, 22397506, 22397480, 22397371, 22397173, 22397202, 22397280, 22397305, 22397242, 22397240, 22397241, 22397310, 22397597, 22397303, 22397575, 22397300, 22397582, 22397578, 22397577, 22397245, 22397244, 22960382, 23000058, 22999416, 22999419, 22999433, 22999434, 22999465, 22999473, 23000008, 23000013, 23000012, 22999501, 22999506, 22999508, 22999518, 22999536, 22999557, 23000028, 22999558, 22999624, 22999637, 22999782, 23000033, 22999792, 22999796, 22999825, 22999855, 22999871, 22999874, 22999880, 22598045, 22601563

Stage

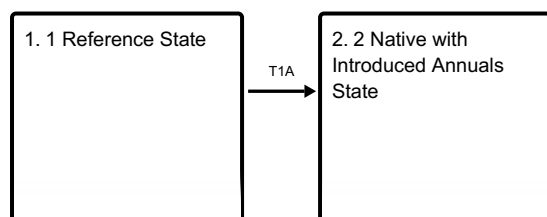
Provisional

Contributors

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State and transition model

Ecosystem states



State 1 submodel, plant communities

1.1. 1.1 Historic Climax
Plant Community

State 2 submodel, plant communities

2.1. Native Grasses &
Shrubs with Introduced
Annuals

State 1 1 Reference State

This plant community is a perennial grassland with a moderate amount of low shrubs and a small percentage of forbs. Natural climatic variation can result in changes in the amount of and ratio of both individual plants. Dominate plants are galleta, alkali sacaton, shadscale and mound saltbush.

Community 1.1 1.1 Historic Climax Plant Community

This site has a plant community made up primarily of mid and short grasses with a small percentage of forbs and low growing shrubs. In the original plant community there is a predominance of warm season grasses with shrubs, half shrubs, and cool season grasses. Plant species most likely to invade or increase on this site when it deteriorates are mound saltbush, shadscale, broom snakeweed, Greene's rabbitbrush, and annuals.

State 2 2 Native with Introduced Annuals State

This site is a grassland - shrubland with increased of native forbs along with the introduction of non-native invasive annuals.

Community 2.1 Native Grasses & Shrubs with Introduced Annuals

This plant community is a grassland with warm season grasses dominate with native shrubs along with the introduction of non-native invasive annuals species. Annuals, including non-natives, can make up to 15% of the total plant community composition. The amount of bare ground has increased on this site and sodic slickspots are present.

Transition T1A State 1 to 2

Unmanaged grazing, prolonged drought, introduction of non-native annuals.

Citations