

# Ecological site group DX035X01GESG20

## Chinle Valley Shale or Clayey Moderately Deep to Very Deep

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### Key Characteristics

- Chinle Valley
- Shale or clayey
- Upland
- Moderately deep to very deep

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 in an upland position as fans, plateaus, valley floors, stream terraces and fan terraces of flood plains. It is on very deep soils that are well drained. Slopes range from 0 to 15 percent but are mostly less than 10 percent. The soils are deep, and have a clay loam to clay surface texture.

### Climate

Area has a very dry and windy climate that is hot in the summer and cold in the winter. Average annual precipitation is from 6 to 10 inches. Soil moisture regime is typical aridic and the soil temperature regime is mesic. A slight majority of the precipitation arrives during the late fall, winter, and early spring. This winter season moisture originates in the Pacific Ocean and arrives as rain, or sometimes snow, during widespread frontal storms of generally low intensity. The majority of the snow falls from December through February, but rarely lasts more than a few days. The driest period is from late May to early July. Summer rains occur from July through September during brief intense local thunderstorms. The rain is sporadic in intensity and location. Windy conditions are common year round with the strongest most frequently in the spring.

### Soil features

Soils on this site are deep and well drained. The surface layer is about 9 inches thick and textures include fine sandy loam, clay loam, and sandy clay loam. The subsurface textures include sandy clay loam, clay loam, very fine sandy loam, clay, silt loam, sandy loam, silty clay, fine sandy loam, loamy sand. The soil will usually hold all the moisture the climate supplies. The soils grouped into this range site are moderately deep or deep to any plant root restriction layer. The surface textures range from sandy clay loam to clay. This ecological group does not include soils with cracking clay surfaces. The subsurface textures are clay loam to clay and can have rock fragments ranging from 10 to 35 percent. Permeability is slow or very slow. The soil reaction is slightly to moderately alkaline (pH 7.4 to 8.4). The water erosion hazard is moderate to high.

### Vegetation dynamics

The plant community changes that take place with site deterioration on this ecological site are decreased perennial grasses, shrubs increase (fourwing saltbush, Wyoming big sagebrush, snakeweed, rabbitbrush). Annual grasses and forbs increase and can dominate. Juniper trees can invade from the adjoining uplands. Non-native plants that are introduced on this site and can increase enough to have a significant impact are Russian thistle and cheatgrass.

The plant communities found on an ecological site are naturally variable. Composition and production will vary with yearly conditions, location, aspect, and the natural variability of the soils. The historical climax plant community

represents the natural potential plant communities found on relict or relatively undisturbed sites. Other plant communities described here represent plant communities that are known to occur when the site is disturbed by factors such as grazing, fire, or drought.

## Major Land Resource Area

MLRA 035X  
Colorado Plateau

## Subclasses

- R035XB239AZ–Clayey Fan 6-10" p.z.
- R035XC307AZ–Clay Loam Upland 10-14" p.z.

## Correlated Map Unit Components

22397580, 22999688, 22999892

## Stage

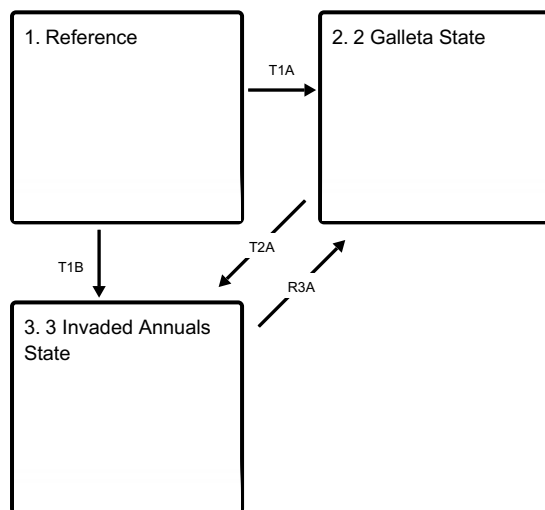
Provisional

## Contributors

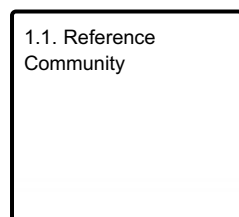
Curtis Talbot

## State and transition model

### Ecosystem states



### State 1 submodel, plant communities



## State 2 submodel, plant communities

2.1. 2.1 Galleta  
Grassland

## State 3 submodel, plant communities

3.1. 3.1 Native  
Grasses with Invasive  
Annuals

## State 1 Reference

### Community 1.1 Reference Community

This range site has a community of mid and short grasses with shrubs and a relatively small percentage of forbs. Species most likely to increase or invade are broom snakeweed, rabbitbrush, cacti and annuals. Alkali sacaton, galleta dominate plant community with scattered forbs and shrubs. Non-native annuals may be present in trace amounts.

## State 2 2 Galleta State

### Community 2.1 2.1 Galleta Grassland

Galleta dominates plant community with scattered forbs and shrubs. Alkali sacaton may or may not be present. Non-natives annuals present in minor amounts.

## State 3 3 Invaded Annuals State

### Community 3.1 3.1 Native Grasses with Invasive Annuals

Native grasses with Native and Non-native forbs dominate plant community. Annuals make up to 25% of plant composition. Invasive annuals in Halogeton, cheatgrass, Russian thistle, silverleaf nightshade, cocklebur and goosefoot.

## Transition T1A State 1 to 2

## Transition T1B State 1 to 3

Invasive annuals

## Transition T2A

## **State 2 to 3**

Invasive annuals.

## **Restoration pathway R3A State 3 to 2**

## **Citations**