

# Ecological site group R021XG906CA

## Shallow Clayey

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### Key Characteristics

- Upland sites
- 12-30" ppt
- < 20" depth
- Clayey texture

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 ESG is extensive. It covers a variety of landforms within MLRA 21 such as hills, mountains, escarpments, rock benches, terraces, tablelands, stream terraces, fan remnants, and lava plateaus. Slopes are 2 to 75 percent but are typically less than 15 percent.

### Climate

The average annual precipitation in this MLRA is typically 9 to 25 inches (241 to 635 millimeters). It is highest, up to 57 inches (1,450 millimeters), in small areas at high elevations on the western and southwestern edges of this MLRA. Other high precipitation zones are in the scattered mountain ranges throughout the rest of this area. Most of the rainfall occurs as low- or moderate-intensity Pacific frontal storms during the winter. At the higher elevations, rain generally turns to snow. Snow may fall at the lower elevations in winter but does not last. Summers are dry. The average annual temperature is 37 to 53 degrees F (3 to 12 degrees C). The frost-free period averages 130 days and ranges from 70 to 185 days.

### Soil features

This ESG is extensive within the 12-to-30-inch (305-to-760-millimeters) precipitation zone of MLRA 21. It is on soils that are well drained or moderately well drained, very shallow or shallow to a water-restricting horizon such as a duripan, hardpan, etc., and formed in alluvium derived from volcanic rocks.

Representative soils include the Yancy (clayey, smectitic, frigid, shallow Palexerollic Durixerolls), Lorella (clayey-skeletal, smectitic, mesic lithic Argixerolls), Jellycamp (clayey, smectitic, mesic, shallow Abruptic Argiduridic Durixerolls), Bieber (clayey, smectitic, mesic shallow Argiduridic Durixerolls), and Ninemile series (clayey, smectitic, frigid Aridic Lithic Argixerolls).

### Vegetation dynamics

This habitat is generally dominated by broad-leaved, evergreen shrubs ranging in height from about 4 to 19 inches (0.1 to 0.5 meters). Average shrub cover is typically 15 percent, but sometimes crowns touch. There may be deciduous shrubs and small trees sparsely scattered within this type. Grasses and forbs are typically sparse, providing 5 to 15 percent ground cover.

The habitat may be dominated by either low sagebrush or black sagebrush, often in association with yellow rabbitbrush, antelope bitterbrush, or big sagebrush. Western juniper may be sparsely scattered in stands dominated by low sagebrush, and Utah juniper and singleleaf pinyon are sometimes scattered in stands dominated by black

sagebrush. Common grass species include Sandberg bluegrass, bluebunch wheatgrass, bottlebrush squirreltail, Thurber's needlegrass, and Idaho fescue. A rich variety of forbs is usually present. The abundance and distribution of associated plants are highly influenced by soils and precipitation.

This type commonly forms ecotones with the Sagebrush, Pinyon-Juniper, and Juniper habitats in northeastern California. Indeed, it may be difficult to determine the correct classification of some sites: "On the Modoc Plateau, low sagebrush (*Artemisia arbuscular*) communities are common as openings within the coniferous forest". They may thus be found adjacent to Mixed Conifer, Jeffrey Pine, or Ponderosa Pine forests. Climatic changes result in periodic shifting of these ecotones, a relationship that is further complicated by invasion of coniferous woodlands into sagebrush habitats in response to fire suppression and grazing by domestic livestock.

Low sagebrush occurs in areas with cold, harsh winters and hot, dry summers. Precipitation generally ranges from 20 to 46 cm (8 to 18 in), falling mostly as snow from December through March. Mean summer maximum temperatures range from 28 to 35 C (83 to 95 F); mean winter minimum range from -13 to -3 C (8 to 27 F). Stands of low sagebrush are "usually found on shallow soils with impaired drainage in the transition zone between the wetter bottom and open timber on the mountainsides." The type also occurs on terraces with hardpan or heavy clay soils. In mosaics formed with bitterbrush, low sagebrush occurs on harsher sites with shallow, well-drained soils, and bitterbrush occupies areas with deeper soils. The clay-rich soils yield much of their snowmelt as runoff, making them very important watershed areas. Perched water tables in spring, which result in poor aeration in the rooting zone of low sagebrush, may be significant in the ecology of the LSG habitat.

## **Major Land Resource Area**

MLRA 021X

Klamath and Shasta Valleys and Basins

## **Stage**

Provisional

## **State and transition model**

## **Citations**