

Ecological site group R019XG910CA

Clayey Fan

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Key Characteristics

- located on alluvial fans
- 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 found primarily on alluvial fans that are gently sloping from 2 to 9% from 30 to 500 feet elevations.

Climate

The average annual precipitation of this MLRA covers a diverse landscape of valleys and mountains and can range anywhere from 8 to 53 inches (215 to 1,354 millimeters), increasing with elevation. Most of the rainfall occurs as low- or moderate-intensity, Pacific frontal storms during winter. Rain can turn to snow at the higher elevations. A little snow may fall in winter, but it does not last. Summers are dry, but fog provides some moisture along the coast. The average annual temperature is 38 to 67 degrees F (3 to 19 degrees C). The freeze-free period averages 310 days in the valleys, 245 days in the mountains, and ranges from 125 to 365 days along the coast. It decreases in length with elevation. The longest freeze-free period occurs at the lower elevations along the western edge of the area.

Soil features

This ESG is found on variable soils, but the common ones are Salinas soils and Cropley variants. They are typically thermic, fine-loamy Pachic Haploxerolls and are well drained.

Vegetation dynamics

Coastal oak woodlands are extremely variable. The overstory consists of deciduous and evergreen hardwoods (mostly oaks 15 to 70 ft) tall sometimes mixed with scattered conifers. In thermic sites, the trees are scattered and form an open, savanna-like canopy. The understory is equally variable. In some instances, it is composed of shrubs from adjacent chaparral or coastal scrub which forms a dense, almost impenetrable understory. More commonly, shrubs are scattered under and between trees. Where trees form a closed canopy, the understory varies from a lush cover of shade-tolerant shrubs, ferns, and herbs to sparse cover with a thick carpet of litter. The interrelationships of slope, soil, precipitation, moisture availability, and air temperature cause variations in structure of coastal oak woodlands. These factors vary along the latitudinal, longitudinal and elevational gradients over which coastal oak woodlands are found.

From Sonoma County south, the coastal oak woodlands are usually dominated by coast live oak. In many coastal regions, coast live oak is the only overstory species. On these drier, interior sites, the coast live oak may mix some with valley oak near streams and drainageways. Typical understory plants in these drier areas where oaks are more widely spaced, the understory may consist almost entirely of grassland species with few shrubs, although a diversity of shrubs can occur under and between the trees with a sparse herbaceous cover. Where coast live oak woodlands intergrade with chaparral, species such as greenleaf manzanita, chamise, gooseberries, currants, and ceanothus species form the understory. Where the habitat intergrades with coastal scrub, typical understory species

are bush monkeyflower, coyote brush, black sage, and California sagebrush.

Coastal oak woodlands are comprised of slow growing, long-lived trees, so succession requires a long time. The actual time is variable and depends on local environmental conditions. Development of mature, large trees requires 60 to 80 years, and most of the trees of the coastal oak woodlands are at least this old.

The best information available on succession in oak woodland, is historical. Since the Mission Period (1769-1824) and especially during the last century, marked changes have occurred in the coastal oak woodlands of California due to the introduction of domestic grazing animals and accompanying land management practices. The change in herbaceous understory from perennial species to aggressive, introduced annuals may have resulted in young oaks being out-competed for limited supplies of nutrients and moisture. These changes have resulted in retrogressive succession in which well-developed oak woodlands regress to open woodlands or savannas and eventually to disturbed grasslands. Even ubiquitous pioneer shrubs fail to become established as successfully in disturbed grassland. Woodcutting has also had an impact and in local areas has created "stump-prairies" because oaks have not successfully reinvaded after removal. Land clearing and urban expansion have also destroyed extensive stands of coastal oak woodland.

California Wildlife Habitat Relationships System
California Department of Fish and Game
California Interagency Wildlife Task Group
V. L. Holland

Major Land Resource Area

MLRA 019X
Southern California Coastal Plains and Mountains

Subclasses

- R019XD001CA–CLAYEY
- R019XD029CA–LOAMY
- R019XG910CA–Clayey Fan
- R019XI100CA–Loamy slopes 13-31" p.z.

Correlated Map Unit Components

23481726, 23482453, 23482457, 23477733, 23477739, 23477320, 23477384, 22665322, 22666261, 22666906, 22666772, 22666541, 22666547, 22666512, 22666704, 22643919, 22643923, 22643692, 22643201, 22643696, 22643994, 22668796, 22671547

Stage

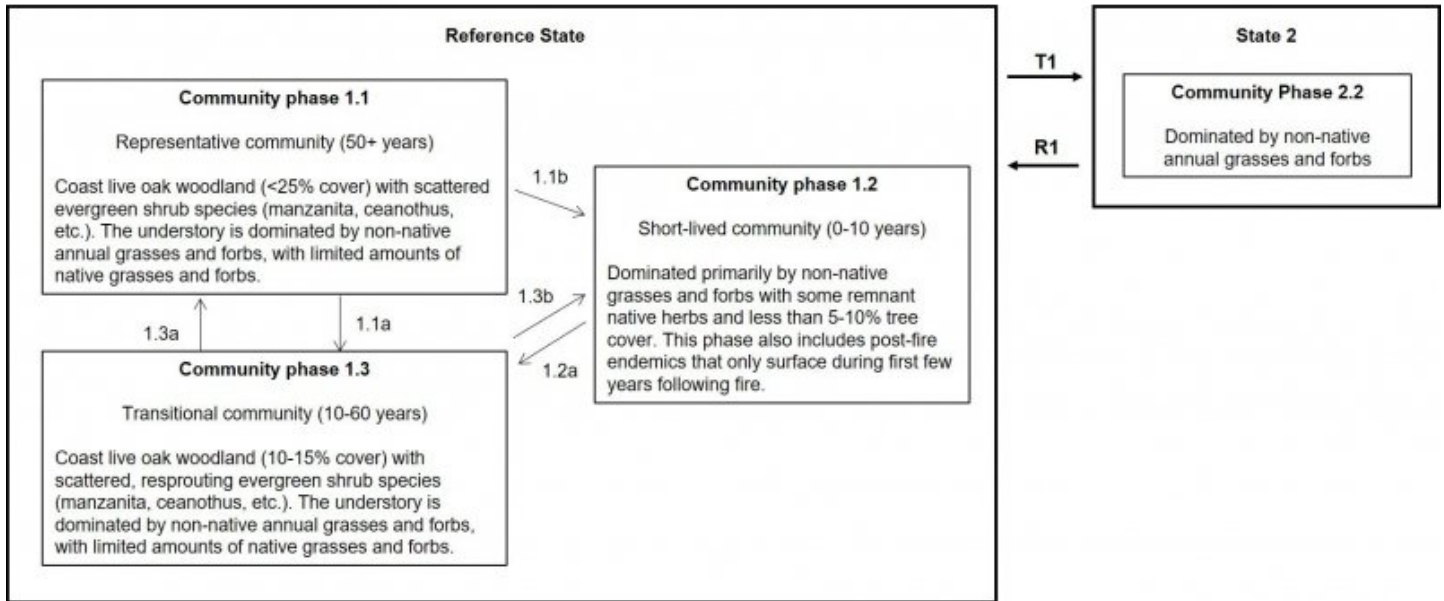
Provisional

Contributors

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State and transition model

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Reference State Community Pathways (Natural disturbance regime only – no management scenarios)

Community Phase 1.1 - Coast live oak woodland (<25% cover) with scattered evergreen shrub species (manzanita, ceanothus, etc.). The understory is dominated by non-native annual grasses and forbs, with limited amounts of native grasses and forbs.

Community Pathway 1.1a: The historical fire regime is approximately 70 to 200 years, with lightning being the primary ignition source. Low severity, surface fires are most typical with severity of the fire increasing with the density of shrubs in the understory. Fires result in a decrease in mostly small or young trees, most shrubs and all herbaceous cover.

Community Pathway 1.1b: Fires become more frequent (less than 10-year intervals).

Community Phase 1.2 - Dominated primarily by non-native grasses and forbs with some remnant native herbs and less than 5-10% tree cover. This phase also includes post-fire endemics that only surface during first few years following fire.

Community Pathway 1.2a: The shift occurs as the oaks and evergreen shrubs regenerate and begin to shade out the herbaceous species.

Community Phase 1.3 - Coast live oak woodland (10-15% cover) with scattered, re-sprouting evergreen shrub species (manzanita, ceanothus, etc.). The understory is dominated by non-native annual grasses and forbs, with limited amounts of native grasses and forbs.

Community Pathway 1.3a: This occurs as the coast live oak and other species becomes taller and older.

Community Pathway 1.3b: This occurs when a fire takes place before the coast live oak and other species have time to create a more dense, closed canopy.

State 2

Community Phase 2.1 - This community phase represents all the varied land uses that significantly alter this ecological site, typically removing the tree cover but not always. This is an extremely varied community phase that includes all types of alterations that so significantly alter the ecological site that it is permanently changed and no longer has typical or even representative ecological dynamics.

Transitions

T1 This transition is caused by repeated fires that have removed most to all of the oak and other hardwood and evergreen shrub seed sources and/or significant human alterations that force this ecological site over a threshold and change the function and structure of this site in extensive ways that serve mostly intensive agriculture or urban/housing developments.

R1 This restoration pathway occurs only when significant time and money inputs are focused on returning ecological function and native seed source to the site.

Citations