

Ecological site group R014XG909CA

Sandy Bottom

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Key Characteristics

None specified

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 on smooth, gently sloping, 0 to 10%, alluvial fans and flood plains subject to occasional overflow from local streams. They frequently occur in small or narrow valleys as long stringers.

Climate

The average annual precipitation in this area is 11 to 53 inches (272 to 1,353 millimeters). This ESG is influenced by coastal fog and averages over 30 inches a year in precipitation. The higher amounts of precipitation occur at the higher elevations in the area north of San Francisco. Most of the rainfall occurs as low- or moderate-intensity, Pacific frontal storms during winter. This area is very dry from midspring to midautumn. Snowfall is rare. The average annual temperature is 54 to 61 degrees F (12 to 16 degrees C). The freeze-free period averages 315 days and ranges from 265 to 365 days. It is longest near the coast, and it becomes shorter with elevation.

Soil features

The soils of this ESG are very deep, well drained and formed in alluvial materials derived from granitic rocks.

Representative soil is Farallone, a coarse-loamy, mixed, superactive, isomesic Cumulic Haplustoll.

Vegetation dynamics

This ESG attempts to describe the coastal scrub and coastal prairies near the coast of MLRA 14. They exist in a continuum of herbaceous to dense woody shrub cover wherever the cooling influence of the Pacific Ocean moderates the summer drought (high evapotranspiration rates). This concept lumps the unique scrub and prairie expressions into one large concept, due to limited remaining soils that are not cultivated, grazed, or urban land. Future work will need to be done to better understand the soil and site characteristics that drive the vegetation expression more specifically.

This ESG is generally found in the valley bottoms near the coast intermixed with redwood and Douglas-fir mountains in MLRA 4B. This site is generally found below 1000 ft in small or narrow valleys on alluvial plains or in valley bottoms as long stringers with slopes less than 10%. The primary factors that maintain these sites in either coastal scrub or coastal prairie are the occasional overflows from local streams, they are well drained but have occasional seeps following the strata seams in the parent materials. Coastal scrub and herbaceous species are more readily able to colonize and stabilize and adapt to these conditions, which explains why they dominate these narrow valley soils.

The primary disturbances to this ecological site concept are hydrologic alterations (climate changes--decreasing fog influence, decreased yearly rains, extended droughts, etc.), fire, and grazing. Historically, lightning-ignited fires are thought to have occurred in the adjacent and associated forested habitats every 30-135 years and with the winds,

would have burned significant acres across many soil types and landforms. Between soil and landform differences and frequencies and intensities of burning that would be interacting with yearly weather patterns that shifted between wet years to drier years, this would have created a patchwork of areas that returned over time to forest while others remained in coastal scrub and grassland. It is also believed that native grazers were common in these lower gradient coastal plains and may have contributed to the open nature and complex patchwork of coastal scrub and prairies. Native American use along these coastlines would also have included burning to maintain as much of the coastal prairies as possible, often times quite frequently to improve hunting and grass and forb production for plant harvesting.

Major Land Resource Area

MLRA 014X

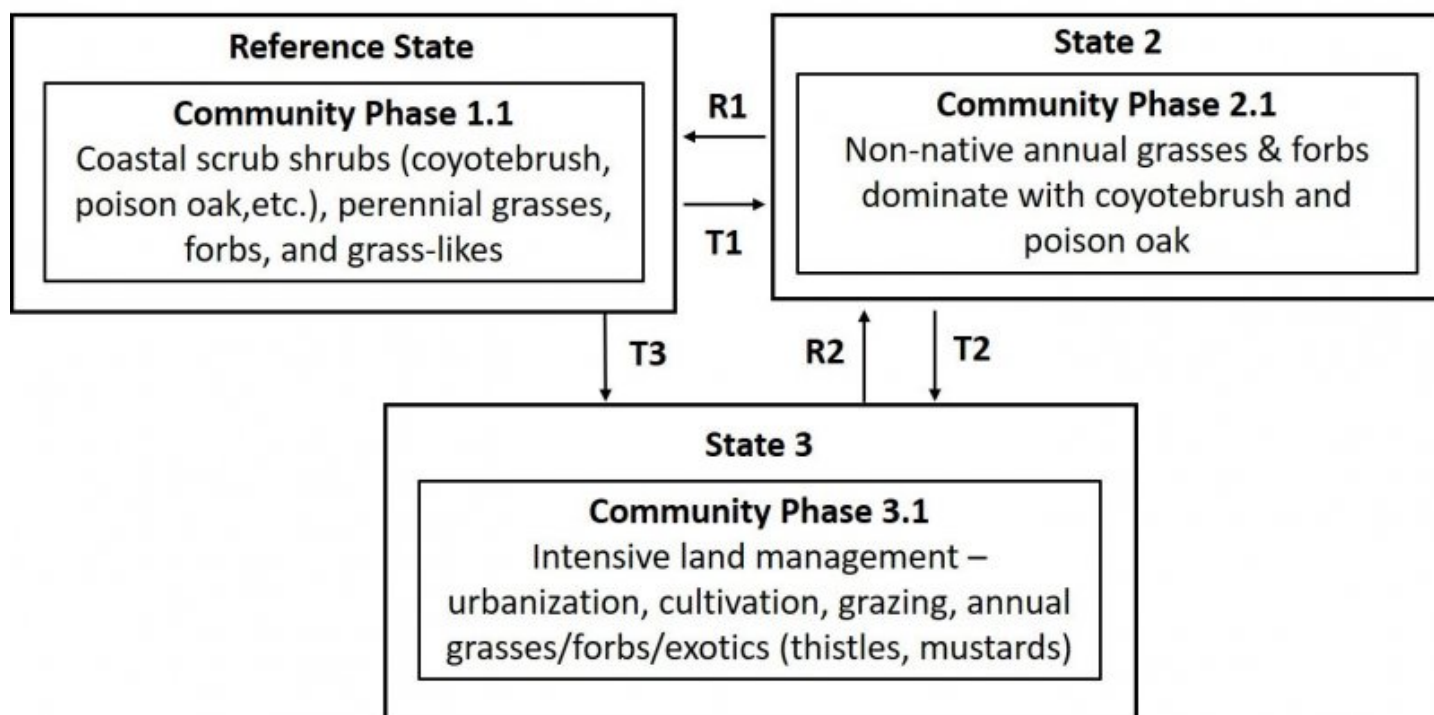
Central California Coastal Valleys

Stage

Provisional

State and transition model

Sandy Bottom



Reference State

This ESG represents the narrow valley bottoms and alluvial terraces and flood plains that are well drained and adjacent to streams and underground seeps, that support coastal scrub species such as coyotebrush, poison oak, and other species. The single most important characteristic of this ESG is its hydrology. Seasonality and reliability of yearly water inflows and outflows largely determine the vegetational stability. Therefore, these habitats exist indefinitely unless the hydrologic regimes are altered. Hydrologically, they occupy lotic stream and river lowlands and flood plains. This ESG gets its main input flow (other than precipitation) from upstream sources. Downstream runoff is the principal output flow however some evapotranspiration in the warmer months also plays a role. They are in topographic valley bottoms but have a slight slope, which permits drainage of surface water. Percolation is faster due to the permeable nature of soils.

Reference State Community Phase

Community 1.1 This reference community phase is dominated by a mixture of coyotebrush, poison oak, perennial grasses, forbs, and grass-like that vary depending on what the water source dominates and where the site is located across the landscape.

State 2 Community Phase

Community 2.1 This community represents the mix of mainly non-native annual invaders, scattered coyotebrush (*Baccharis spp.*) and poison oak (*Toxicodendron diversilobum*) and some native perennial grasses like *Leymus triticoides*, *Elymus glauca*, and numerous forbs that are able to withstand the drying out periods that occur during the warm summer months. There may be some *Carex spp.* intermixed, depending on the location on the landscape that allows for longer water inundation.

State 3 Community Phase

Community 3.1 - This community phase represents all the varied land uses that significantly alter this ecological site, in MLRA 14 this will primarily be urban lands and cultivation. 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 de-watering due to urbanization, cultivation, levees, channelized rivers, and irrigation needs that allowed for the invasion of non-native annual plants.

R1 This restoration pathway occurs when significant time and money inputs are focused on addressing the hydrologic functions that existed historically in order to return the water table that once supported perennial grasses and grass-like.

T2 This transition is caused by significant human alterations that remove essential topsoil horizons, alter hydrologic functions, and/or add significant inputs (such as fertilizers) that change soil chemistry and soil properties for the purposes of housing developments, urban infrastructures or intensive cropping systems and force this ecological site over a threshold and change the function and structure of this site in extensive ways.

R2 This restoration pathway occurs only when significant time and money inputs are focused on returning ecological function and hydrology.

T3 This transition is caused by significant human alterations that remove essential topsoil horizons, alter hydrologic functions, and/or add significant inputs (such as fertilizers) that change soil chemistry and soil properties for the purposes of housing developments, urban infrastructures or intensive cropping systems and force this ecological site over a threshold and change the function and structure of this site in extensive ways.

Citations