

**California Wildlife Habitat Relationships System
California Department of Fish and Game
California Interagency Wildlife Task Group**

Eucalyptus

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Vegetation

Structure-- Eucalyptus habitats range from single-species thickets with little or no shrubby understory to scattered trees over a well-developed herbaceous and shrubby understory. In most cases, eucalyptus forms a dense stand with a closed canopy. Stand structure for this habitat may vary considerably because most eucalyptus have been planted into either rows for wind protection or dense groves for hardwood production and harvesting (Cornell 1909, U.S. Forest Service 1933). Eucalyptus is often found in monotypic stands. The genus is composed of over 150 species with high morphological diversity (Cornell 1909). Thus, habitat structure may be affected if more than two or three species coexist. Tree size may vary considerably depending on spacing and species. Typically, trees may range in height from 26 to 40 m (87 to 133 ft) and have diameters (dbh) of 21.8 to 38.4 cm (8.6 to 15.1 in) (Walters 1980), with most growth occurring in the first 15 years. Trees in excess of 46 to 80 m (152 to 264 ft) are not uncommon (Munz 1974, Walters 1980).

Composition-- Overstory composition is typically limited to one species of the genus, or mixed stands composed of other species of the same genus; few native overstory species are present within eucalyptus planted areas, except in small cleared pockets (Fenwick 1980). The most common species is blue gum followed by red gum (Munz 1974, Smith 1976). Hybridization between species is known to occur (Smith 1976, Fenwick 1980). Typical understory species may vary depending on whether or not the trees were artificially established into groves or rows or have escaped and become independently established. In groves or rows, the understory is commonly composed of a host of annual grasses (mostly introduced Mediterranean and European species of the genus *Bromus*), and other weedy species including mustard, thistle, spurge, cheeseweed, and prickly pear cactus. The allelopathic nature of eucalyptus and litter deposition often prevents the establishment of any significant shrubby understory (McArthur 1962, Smith 1976). Where trees of this genus are established as small groves in native plant communities, understory species typically include coastal sage, chamise, manzanita, buckwheat, toyon, scrub oak, mountain mahogany, and assorted annuals. Eucalyptus is also known to become established along stream courses, encroaching upon existing riparian vegetation.

Other Classifications-- No other classifications are specified for this habitat. However, the habitat is often included in general habitat classifications of disturbed, agricultural, and urban sites.

Habitat Stages

Vegetation Changes-- 1;2-5:S-D. Most species of eucalyptus are characterized by adaptations that allow them to survive and recover quickly from disturbances like fire. Most eucalyptus produce epicormic shoots from any undamaged region of the cambium (McArthur 1967, Fenwick 1980, King and Krugman 1980). Even if totally killed by some disturbance, many eucalyptus produce subsurface ground shoots from lignotubers. For non-lignotuberous eucalyptus, the ability to seed heavily and produce heavy natural regeneration suggest that this genus has adapted to a constant environment of fire (McArthur 1967). These adaptations allow this habitat to recover quickly from disturbance, permitting limited succession or development to other habitats. At most, following a fire or some other disturbance, increased growth of the understory usually an annual grassland can be expected until the eucalyptus can regenerate through epicormic shoots and lignotuber sprouting.

Duration of Stages-- Eucalyptus are characterized as having rapid growth from shoots and seedlings, with trees attaining 70 to 90 percent of their height within 15 years after planting (Walters 1980). Annual height growth of trees in experimental plots has averaged 4.3 m (14 ft) for the first 5 years, 1.2 m (4 ft) for the second 5 years, and about 0.3 m (1 ft) for the third 5 years (Walters 1980). Ten-year-old trees can easily achieve heights of 30 to 33 m (90 to 100 ft) (Howell 1982). Canopy closure is achieved in a fairly short period.

Biological Setting

Vegetation-- Eucalyptus woodlands generally adjoin a number of other wildlife habitats and are found at low elevations, where freezing is not a problem. Most eucalyptus have been artificially established, usually in and around urban/rural areas. Other habitats found in proximity to eucalyptus include cropland, valley foothill riparian, Orchard-vineyard, Coastal Scrub, Chamise Redshank Chaparral, Annual Grass, Pasture and Residential Park.

Wildlife Considerations-- Characteristic species of this habitat include crow, raven, barn owl, and red-tailed and red-shouldered hawks. Eucalyptus are important as roosts, perches, and nest sites for a number of bird species, particularly raptors. Those eucalyptus with stringy bark or a tendency for rapid deposition of litter, create micro habitats for a number of small vertebrate species, including alligator lizard, gopher snake, and woodrat.

Physical Setting

Eucalyptus habitats have been extensively planted throughout the state since their introduction in 1856 with large-scale planting operations beginning in 1870 (Cornell 1909, Howell 1982). As such, they are found in locations with highly variable site characteristics. Generally, they are found on relatively flat or gently rolling terrain, occasionally in the foothills. Climatic conditions are typically referred to as Mediterranean, characterized by hot, dry summers and cool, mild winters. Precipitation ranges from approximately 30 cm (12 in) to 60 cm (24 in). Temperature regimes in areas of eucalyptus groves range from a mean monthly low of 6 C (43 F) in January to 23 C (73 F) in August, with low temperatures occasionally reaching 0 to 4 C (32 to 25 F) and high temperatures typically exceeding 38 C (100 F) (King and Krugman 1980). Eucalyptus demonstrates the ability to withstand many temperature conditions, with the exception of prolonged cold or freezing weather (U.S. Forest Service 1933, King and Krugman 1980). Eucalyptus should not be planted where temperatures are consistently lower than 5 C (24 F) (Cornell 1909).

Distribution

Eucalyptus occurs in California from San Diego and Imperial counties in the south, usually at elevations below 500 m (1500 ft), but it has been found up 700 m (2100 ft); and to Shasta in the north (Cornell 1909). Most eucalyptus, however, is found around populated areas of southern and central California.

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