

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

Juniper

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Vegetation

Structure-- Juniper habitats are characterized as woodlands of open to dense aggregations of junipers (western, mountain, California, or Utah) in the form of arborescent shrubs or small trees (Cheatham and Haller 1975, Küchler 1977, Vasek and Thorne 1977, Martin 1980, Paysen et al. 1980). Dispersion of junipers ranges from small clumps to widely scattered single plants (Dealy et al. 1978). Denser stands are commonly associated with a grassy understory; whereas, a shrub understory is found where junipers are more open (Vasek and Thorne 1977). Mature junipers range in height from 4.5 to 9 m (15 to 30 ft), rarely to 18 m (60 ft) and when fully crowned, usually have only a short (<2.4 m (8 ft)) length of clear bole (Fowells 1965). Juniper densities have increased in the last century owing to heavy grazing and reduced fire (Martin 1980).

Composition-- Soil depth and components (Hall 1978) and moisture (Dealy et al. 1978) influence composition of plants in Juniper habitats. Associated tree and shrub species, depending in part on species of juniper and its distribution, include white fir, Jeffrey and ponderosa pine, singleleaf pinyon, curl leaf mountain-mahogany, antelope bitterbrush, and big sagebrush (Cheatham and Haller 1975, Vasek and Thorne 1977, Parker and Matyas 1981, Sawyer et al. 2009).

Other Classifications-- Juniper is inclusive of Northern Juniper Woodland (Cheatham and Haller 1975); Western Juniper, California Juniper, and Utah Juniper (Parker and Matyas 1981, as updated in CALVEG 2009); Juniper-Oak Cismontane Woodland, Northern Juniper Woodland, Great Basin Juniper Woodland and Scrub, Mojavean Juniper Woodland and Scrub, Peninsular Juniper Woodland and Scrub, and Cismontane Juniper Woodland and Scrub (Holland 1986); and, California Juniper Woodland, Mountain Juniper Woodland, Western Juniper Woodland, and Utah Juniper Woodland (Sawyer et al. 2009).

Habitat Stages

Vegetation Changes-- 1;2-5:S-D. Following disturbance or invasion, Juniper habitats slowly proceed through succession. Juniper berries are produced by young to mature trees (i.e., trees greater than 2 m (6.5 ft) in height), though often erratically (Maser and Gashwiler 1978). As trees become decadent, tops break, trunks and limbs become hollow

(Maser and Gashwiler 1978). Young junipers are fire sensitive and find refuge from fire on rocky sites (Martin 1980).

Duration of Stages-- Junipers are relatively slow growing (Tueller and Clark 1975), and the successional sequence is relatively long. The time to proceed through stages probably varies, depending on determinants such as moisture and soils. Western and mountain juniper may reach 3000 years of age (Sawyer et al., 2009).

Biological Setting

Habitat-- Western juniper can occur with White Fir (WFR), Jeffrey Pine (JPN), Ponderosa Pine (PPN), Sierran Mixed Conifer (SMC), Montane Hardwood Conifer (MHC), and Sagebrush (SGB) habitats. At generally higher elevations, Mountain juniper can occur with White Fir (WFR), Red Fir (RFR), Jeffrey Pine (JPN), Lodgepole Pine (LPN) Sierran Mixed Conifer (SMC), Montane Hardwood Conifer (MHC), and Sagebrush (SGB) habitats. In California, Utah juniper woodland usually forms a band between lower Desert Scrub (DSC) and higher Sagebrush (SGB) and Pinyon-Juniper (PJN) woodlands (Sawyer et al. 2009).

Wildlife Considerations-- Juniper berries are an important food source for wintering birds. Maser and Gashwiler (1978) found that 17 birds use juniper berries in winter. Juniper foliage is also consumed by several mammals (Maser and Gashwiler 1978) and may be an important food source for some of these animals, especially during harsh winters.

Physical Setting

Per Sawyer et al. (2009), Western Juniper Woodland occurs on gentle slopes, alluvial fans canyon slopes and steep, rocky escarpments; Mountain Juniper Woodland on canyon slopes, steep and rocky escarpments, and glaciated bedrock; California Juniper Woodland on ridges, slopes, alluvial fans, and valley bottoms on soils that are porous, rocky, coarse, sandy, or silty, and often very shallow; and Utah Juniper Woodland on pediments, slopes, ridges, and ravines, on rocky or alluvial soils that are commonly well drained. Regarding western junipers, Dealy et al. (1978) noted that effective moisture is more important than soil type.

Distribution

The distribution of Juniper in California is described here by the ranges of all juniper woodland types. (References are as cited in Sawyer et al. 2009.) Elevational range of juniper is 100 to 3100 m (330 to 10170 ft). Western juniper occurs primarily on the Modoc Plateau and Great Basin of northeastern California (Thorne et al. 2007) and in portions of the Cascades (Griffin and Critchfield 1972, Thorne et al. 2007). Mountain juniper is found in the higher elevations of the Sierra Nevada (Potter 1998). Stands also

exist in the Yolla Bolly Mountains of northern California (Keeler-Wolf and Keeler-Wolf 1974), the Bodie Hills of Mono County (Thorne et al. 2007), the Inyo and Panamint mountains (Griffin and Critchfield 1972), and the San Bernardino and San Gabriel mountains (Minnich 2007, Minnich and Everett 2001, Wangler and Minnich 1996). California juniper has both cismontane and transmontane associations, with stands occurring in the interior coast ranges of northern and central California, the Sierra Nevada foothills, the Mojave Desert and bordering portions of the Sierra Nevada, and the desert edges of southern California mountain ranges (Sawyer et al. 2009). The range of Utah juniper includes the Mojave Desert, the Great Basin in southeastern California (Thomas et al. 2004), the eastern fringe of the Sierra Nevada (Sawyer et al. 2009) and the San Gabriel and San Bernardino mountains, where Griffin and Critchfield (1972) report it is largely above the range of California juniper.

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