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

Montane Riparian

William E. Grenfell Jr.

Vegetation

Structure-- The vegetation of montane riparian (MRI) zones is quite variable and often structurally diverse (Marcot 1979). Usually, the montane riparian zone occurs as a narrow, often dense grove of broad-leaved, winter deciduous trees up to 30 m (98 ft) tall with a sparse understory. At high mountain elevations, MRI is usually less than 15 m (49 ft) high with more shrubs in the understory. At high elevations, MRI may not be well developed or may occur in the shrub stage only.

Composition-- In northwest California along streams west of the Klamath Mountains, black cottonwood is a dominant hardwood. In some areas, it is codominant with bigleaf maple. In either case, black cottonwood can occur in association with dogwood and boxelder. At high elevations black cottonwood occurs with quaking aspen and white alder (Parker and Matyas 1979). In northeastern California, black cottonwood, white alder and thinleaf alder dominate the montane riparian zone. Oregon ash, willow and a high diversity of forbs are common associates. In the Sierra Nevada, characteristic species include thinleaf alder, aspen, black cottonwood, dogwood, wild azalea, willow and water birch (southern Sierra east of the crest), white alder and dogwood (north Sierra). In the southern Coast Range as well as Transverse and Peninsular ranges, bigleaf maple and California bay are typical dominants of montane riparian habitat. Fremont cottonwood is the most important cottonwood in the Sierra below 1524 m (5000 ft), much of the Coast Ranges and the Transverse and Peninsular ranges.

MRI habitats can occur as alder or willow stringers along streams of seeps. In other situations an overstory of Fremont cottonwood, black cottonwood and/or white alder may be present.

Other Classifications-- Montane riparian habitats are also described as riparian (Laudenslayer 1982), riparian deciduous (Verner and Boss 1980, Marcot 1979), bigleaf maple, alder, maple-alder-dogwood, white alder, willow and alder-willow series (Parker and Matyas 1979), mixed riparian woodland -6.21, willow thickets - 6.24 and red alder groves - 6.22 (Cheatham and Haller 1975)

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Habitat Stages

Vegetation Changes-- 1;2-5:S-D;6. Definite successional stages are not described in

the literature. Many montane riparian stages may prevail indefinitely, climax or subclimax. Shrub-type stages should be evaluated as size/age class 1 or 2. Overstory trees such as cottonwood, maple and alder may range up to size/age class 6.

Duration of Stages-- Montane riparian habitats within given watersheds tend to maintain the same mosaic of stages. However, the location of these stages may vary as a result of periodic torrential flows. Riparian Systems can be damaged by debris, sedimentation, or uprooting of entire plants which are redeposited further downstream (Campbell and Green 1968).

Biological Setting

Habitat-- The transition between MRI and adjacent non-riparian vegetation is often abrupt, especially where the topography is steep. This habitat intergrades with montane chaparral, montane hardwood, montane hardwood/conifer, lodgepole pine, red fir and wet meadow habitats.

Wildlife Considerations-- All riparian habitats have an exceptionally high value for many wildlife species (Thomas 1979, Marcot 1979, Sands 1977). Such areas provide water, thermal cover, migration corridors and diverse nesting and feeding opportunities. The shape of many riparian zones, particularly the linear nature of streams, maximizes the development of edge which is so highly productive for wildlife (Thomas 1979).

The range of wildlife that uses the MRI habitat for food, cover and reproduction include amphibians, reptiles, birds and mammals. The southern rubber boa and Sierra Nevada red fox are among the rare, threatened or endangered wildlife that use MRI habitats during their life cycles.

Physical Setting

Riparian areas are found associated with montane lakes, ponds, seeps, bogs and meadows as well as rivers, streams and springs. Water may be permanent or ephemeral (Marcot 1979). The growing season extends from spring until late fall, becoming shorter at higher elevations. Most tree species flower in early spring before leafing out.

Distribution

Montane riparian habitats are found in the Klamath, Coast and Cascade ranges and in the Sierra Nevada south to about Kern and northern Santa Barbara Counties, usually below 2440 m (8000 ft). The Peninsular and transverse ranges of southern California from about southern Santa Barbara to San Diego Counties also include MRI habitat. MRI subtype, consisting mostly of red alder, is found from northern San Luis Obispo to Del Norte Counties along the immediate coast (Cheatham and Haller 1975).

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