

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

Eastside Pine

E. Lee Fitzhugh

Vegetation

Structure-- The eastside pine habitat is characterized by short to moderate height, 20-35 m (65-115 ft tall) pine trees at maturity. Without disturbance, except for naturally occurring fire, a mosaic of even-aged patches develops, with open spaces and dense sapling stands. Oaks or junipers may form an understory, but pure stands of pine also are found. An open stand of low shrubs, less than 2 m (6.5 ft) and a grassy herb layer are typical. Crowns of pines are open, allowing light, wind and rain to penetrate, whereas other associated trees provide more dense foliage.

Composition-- Ponderosa pine is the dominant tree with less representation by Jeffrey pine, lodgepole pine, white fir, incense-cedar, Douglas-fir, California black oak and western juniper. Stands of Washoe pine mixed with white fir, white pine and lodgepole pine at higher elevations in the Warner Mountains are included in this habitat. Undergrowth varies depending on site conditions, but typically may include one or more of the following shrubs: big sagebrush, antelope bitterbrush, manzanita, ceanothus, rubber rabbitbrush, mountain mahogany, creambush oceanspray and mountain snowberry. Prominent herbaceous plants include mule ears, arrowleaf balsamroot, Idaho fescue, pinegrass, bluebunch wheatgrass and bottlebrush squirreltail.

Other Classifications-- The eastside pine habitat is equivalent to interior ponderosa pine (Eyre 1980), the yellow pine-shrub forest (*Pinus-Purshia*) (Küchler 1977) and "eastside" ponderosa pine forest (Cheatham and Haller 1975). It is a subdivision of the ponderosa/Jeffrey pine series (Paysen et al. 1980), ponderosa pine (Rundel et al. 1977, Parker and Matyas 1979) and yellow pine forest (Munz and Keck 1959, Thorne 1977).

Habitat Stages

Vegetation Changes-- 1;2-5:S-D. Logging, bark beetles, root diseases and fire are the major disturbances in the eastside pine type. The understory typical of the specific site increases following disturbance, depending on the nature of the disturbance, season in which it occurred and weather patterns. In general, disturbance favors brush, particularly manzanita and ceanothus. But some kinds of disturbance may eliminate antelope bitterbrush, a desirable deer forage plant that may not be as robust a competitor with trees as are some other shrubs. Open tree stands generally support more vigorous brush or grass understories which may prevent additional tree regeneration for many years. Fire

tends to maintain pine stands on sites that will support other conifers. The following understory dominants may be used to identify different eastside pine communities: western juniper, manzanita, several species of ceanothus, big sagebrush, antelope bitterbrush, grass dominance and forb dominance.

Duration of Stages-- Eastside pine is moderately slow growing and long-lived. The time required for succession varies greatly depending on site, competition and seed source. The more severe sites within the type impose problems of reproduction and competition, so that stands may not necessarily reproduce themselves after disturbance, being replaced instead by forbs, grasses, brush or junipers.

Biological Setting

Habitat-- Eastside pine is bounded at the lower edge by low and big sagebrush, bitterbrush, perennial grassland or pinyon-juniper woodland habitat which often are found on finer textured soils and at the upper edge by mixed conifer, lodgepole pine, and red fir. Eastside pine occupies an intermediate, less harsh environment than Jeffrey pine, which occurs above and intermingled with eastside pine.

Wildlife Considerations-- Pine types with shrubby understories have a high degree of vertical diversity, especially when other conifers are present. Large pine branches form good nesting substrates for large raptors. Sites supporting the larger shrub species manzanita and some ceanothus species may become so densely vegetated in the absence of fire that livestock and big game cannot use the areas. Eastside pine stands often form important migratory and winter range for deer. Higher elevation stands with grassy understories near water may be extremely important deer fawning areas and migratory holding areas. Important wildlife species in the eastside pine habitat include the bald eagle and American peregrine falcon (both on federal and state endangered species lists) and the Sierra Nevada red fox and the California bighorn sheep.

Physical Setting

Eastside pine habitat is found on coarse, well-drained basaltic soils, in a drier, colder setting than the Ponderosa pine (PPN) habitat. All exposures are represented depending on elevation. Fine-textured soils favor pinyon-juniper habitats.

Distribution

Eastside pine habitat occurs from about 1200-1980 m (4000-6500 ft) elevation, approximately east of a line drawn from Lake Tahoe to Hilt, a small town on Interstate 5 where it crosses the California-Oregon border (McDonald 1983). Eastside pine habitat extends into Oregon. Small scattered stands occur south of Lake Tahoe through the northern half of Inyo County.

Literature Cited

- Cheatham, N. H., and J. R. Haller. 1975. An annotated list of California habitat types. Univ. of California Natural Land and Water Reserve System, unpubl. manuscript
- Eyre, F. H., ed. 1980. Forest cover types of the United States and Canada. Soc. Amer. Foresters, Washington D.C.
- Kuchler, A. W. 1977. Appendix: the map of the natural vegetation of California. Pages 909-938 In M. G. Barbour and J. Major, eds, Terrestrial vegetation of California. John Wiley and Sons, New York.
- McDonald, P. M. 1983. Climate, history, and vegetation of the eastside pine type in California. Pages 1-16 In T. F. Robson and R. B. Standiford, eds. Management of the eastside pine type in northeastern California. Northern Calif. Soc. Amer. Foresters (Arcata, Calif.), SAF 83-06.
- Munz, P. A., and D. D. Keck. 1959. A California flora. Univ of California Press, Berkeley.
- Parker, I., and W. J. Matyas. 1979. CALVEG: A classification of Californian vegetation. U.S. Dep. Agric., For. Serv., Reg. Ecol. Group. San Francisco.
- Paysen, T. E., J. A. Derby, H. Black, Jr., V. C. Bleich, and J.W. Mincks. 1980. A vegetation classification system applied to southern California. U.S. Dep. Agric., For. Serv., (Berkeley, Calif.) Gen. Tech. Rep. PSW-45.
- Rundel, P. W., D. T. Gordon, and D. J. Parsons. 1977. Montane and subalpine vegetation of the Sierra Nevada and Cascade Ranges. Pages 559-599 In M. G. Barbour and J. Major, eds. Terrestrial vegetation of California. John Wiley and Sons, New York.
- Thorne, R.F. 1977. Montane and subalpine forests of the Transverse and Peninsular Ranges. Pages 537-557 In M. G. Barbour and J. Major, eds. Terrestrial vegetation of California. John Wiley and Sons, New York.