

Wet (Infrequent Fire) Mixed Conifer Forest Desired Conditions

Operational Draft: This document is prepared to provide guidance to Forest Plan revision teams. As this guidance is implemented, we expect to learn improved ways to do this work. As we learn, this document will be updated. This document was reviewed and revised as appropriate in September 2009 to conform to the requirements of the 1982 Planning Rule provisions.

General Description

The Wet Mixed Conifer forest vegetation community generally occurs at elevations ranging from approximately 5,500 to 10,000 feet. Tree species composition varies depending on seral stage, elevation, and moisture availability. It can be composed of early and mid-seral species such as aspen, Douglas fir, New Mexico locust, southwestern white pine and limber pine, and late seral species such as maple, white fir and blue spruce. Ponderosa pine may be present in minor proportions. The absence of Engelmann spruce and/or corkbark fir distinguishes wet mixed conifer from the spruce-fir forest. Disturbances typically occur at two temporal and spatial scales; large scale infrequent disturbances (mostly fire) and small scale frequent disturbances (fire, insect, disease, wind). This forest has an understory of a wide variety of shrubs, grasses, and forbs depending on soil type, aspect, elevation, disturbance, and other factors.

Landscape Scale Desired Conditions

The Wet Mixed Conifer forest vegetation community is a mosaic of structural and seral stages ranging from young trees through old. The landscape arrangement is an assemblage of variably-sized and aged groups and patches of trees and other vegetation associations similar to historic patterns. Tree groups and patches are comprised of variable species composition depending on forest seral stages. An approximate balance of seral stages is present across the landscape, each seral stage characterized by distinct dominant species composition and biophysical conditions. “Old growth” is well-distributed in the landscape. Canopies are generally more closed than in dry mixed conifer. An understory consisting of native grass, forbs, and/or shrubs is present.

The Wet Mixed Conifer forest vegetation community is composed predominantly of vigorous trees, but older declining trees are a component and provide for snags, top-killed, lightning- and fire-scarred trees, and coarse woody debris, all well-distributed throughout the landscape. Number of snags and the amount of downed logs (>12 inch diameter at mid-point, >8 feet long) and coarse woody debris (>3 inch diameter) vary by seral stage.

The composition, structure, and function of vegetative conditions are resilient to the frequency, extent and severity of disturbances and climate variability. The forest landscape is a functioning ecosystem that contains all its components, processes, and conditions that result from endemic levels of disturbances (e.g. insects, diseases, wind, and fire), including snags, downed logs, and old trees. Organic ground cover and herbaceous vegetation provide protection of soil, moisture infiltration, and contribute to plant and animal diversity and to ecosystem function. Mixed severity fire (Fire Regime III) is characteristic. High severity fires (Fire Regime IV & V) rarely occur. Natural and anthropogenic disturbances are sufficient to maintain desired overall tree density, structure, species composition, coarse woody debris, and nutrient cycling.

Mid-Scale Desired Conditions

At the mid-scale, the size and number of groups and patches vary depending on disturbance, elevation, soil type, aspect, and site productivity. Patch sizes vary but are frequently in the hundreds of acres, with rare disturbances in the thousands of acres. Groups and patches of tens of acres or less are relatively common. A mosaic of groups and patches of trees, primarily even-aged, and variable in size, species composition, and age is present. Grass, forb, shrub openings created by disturbance, may comprise 10 to 100 percent of the mid-scale area depending on the disturbances and on time since disturbance. Aspen is occasionally present in large patches.

Density ranges from 20 to 180 square foot basal area per acre depending upon time since disturbance and seral stages of groups and patches. Snags 18 inches or greater at DBH range from 1 to 5 snags per acre, with the lower range of snags of this size associated with early seral stages and the upper range associated with late seral stages. Snag density in general (>8 inches DBH) averages 20 per acre. Coarse woody debris, including downed logs, vary by seral stage, with averages ranging from 5 to 20 tons per acre for early-seral stages; 20 to 40 tons per acre for mid-seral stages; and 80 tons per acre or greater for late-seral stages.

Mixed (Fire Regime III) and high (Fire Regime IV) severity fires and other disturbances maintain desired overall tree density, structure, species composition, coarse woody debris, and nutrient cycling. High severity fires generally do not exceed 1000 acre patches of mortality. Other smaller disturbances occur more frequently.

Forests in the wildland urban interface (WUI)¹ are dominated by early-seral fire-adapted species growing in an overall more open condition than the general forest. These conditions result in fires that burn primarily on the forest floor and rarely spread as crown fire.

Forest conditions in goshawk post-fledging family areas (PFAs) are similar to general forest conditions except these forests contain 10 to 20 percent higher tree density (basal area) than goshawk foraging areas and the general forest. Nest areas have forest conditions that are multi-aged but are dominated by large trees with relatively dense canopies.

Forest conditions for Mexican spotted owl (MSO) nest and roost habitat are consistent with the restricted habitat requirements specified in the MSO Recovery Plan.

Fine Scale Desired Conditions

In mid-aged and older forests trees are typically variably-spaced with crowns interlocking (grouped and clumped trees) or nearly interlocking. Trees within groups can be of similar or variable species and ages. Small openings (gaps) are present as a result of disturbances.

¹ Note – each Forest needs to provide here the definition for WUI that they are using.