

Hazard Factor 3: Natural Vegetative Fuel

The natural vegetative fuel hazard factor involves determining the main fuel type found within a geographic area. These fuel types are based on the "Aids to Determining Fuel Models for Estimating Fire behavior" produced by the Forest Service. There are 10 fuel models given and each of these is described in detail in OAR 629-044-0250. They can be generally described as three main types: grass, shrubs and timber. Each of these fuel models has a hazard value assigned from 0 to 3 points. The schedule of fuel models are as follows: Little or no natural vegetative fuels are present. – 0 points

Fuel Model 1 – Grass – 3 points. Very little shrub or timber is present, generally less than one-third of the area. Main fuel is generally less than two feet in height. Fires are surface fires that move rapidly through cured grass and associated material.

Fuel Model 2 – Grass – 3 points. Open shrub lands and pine stands or scrub oak stands that cover one-third to two-thirds of the area. Main fuel is generally less than two feet in height. Fires are surface fires that spread primarily through the fine herbaceous fuels, either curing or dead.

Fuel Model 3 – Grass – 3 points. Beach grasses, prairie grasses, marshland grasses and wild or cultivated grains that have not been harvested. Main fuel is generally less than four feet in height, but considerable variation may occur. Fires are the most intense of the grass group and display high rates of spread under the influence of wind.

Fuel Model 4 – Shrubs – 3 points. Stands of mature shrubs have foliage known for its flammability, such as gorse, manzanita and snowberry. Main fuel is generally six feet or more tall. Fires burn with high intensity and spread very rapidly.

Fuel Model 5 – Shrubs – 1 point. Young shrubs with little dead material and having foliage not known for its flammability, such as laurel, vine maple and alders. Main fuel is generally three feet tall or less. Fires are generally carried in the surface fuels and are generally not very intense.

Fuel Model 6 – Shrubs – 2 points. Older shrubs with foliage having flammability less than fuel model 4, but more than fuel model 5. Widely spaced juniper and sagebrush are represented by this group. Main fuel is generally less than six feet in height. Fires will drop to the ground at low wind speeds and in stand openings.

Fuel Model 8 – Timber – 1 point. Areas of timber with little undergrowth and small amounts of litter buildup. Healthy stands of lodge pole pine, spruce, fir and larch are represented by this group. Fires will burn only under severe weather conditions involving high temperatures, low humidity and high winds.

Fuel Model 9 – Timber – 2 points. Areas of timber with more surface litter than fuel model 8. Closed stands of healthy ponderosa pine and white oak are in this fuel model. Spread of fires will be aided by rolling or blowing leaves.

Fuel Model 10 – Timber – 3 points. Areas of timber with heavy buildups of ground litter caused by overmaturity or natural events of wind throw or insect infestations. Fires are difficult to control due to large extent of ground fuel. (Fuel model 10) -- 3

Since each geographic area has more than just one fuel model, hazard value was averaged based on which fuel model was most prominent. For example, if an area has a large stretch of grass field near residential area, it may not be accurate to give a blanket value of 3 for the entire area if there was a more prevalent fuel model. Residential areas commonly have a large amount of fuel model 5 and 6 (shrubbery) that need to be weighed against other fuel models such as grass. In some cases the grass area (hazard value 3) and the shrub area (hazard value 1) were averaged and a final hazard value of 2 was given to the area.