

Tri-County Fire Working Group
Guidelines for Fuel Hazard Map Rating

Fuel Hazard Classes.

Fuel Hazard Rating Maps prepared by Tri-County Fire Working Group for Broadwater, Jefferson, and Lewis & Clark Counties. Field work by Montana Prescribed Fire Services, Inc.

Vegetation as it relates to wild land fire has been classified into four primary "Fuel Hazard" groups considering steepness of slope as well as vegetation. Slope steepness simulates wind in its effect on fire spread. Changing from level ground to a 30% slope approximately doubles rate-of-spread in surface fires.

Group A: Low fuel hazard with potential for fast spreading fires when grass is cured. (Early Spring before green-up and late summer and fall). These are areas of grass, weeds, and brush less than 2 feet high. The fire hazard can easily be mitigated in these fuels.

These areas are generally not a problem for development from a fire protection standpoint. Humans can usually avoid burning areas with ease and firefighters can work easily and efficiently under normal weather conditions. Heavy damages are still possible when items are within the burning area with adequate fuel treatments, clearances, or protection. This fuel type will accommodate the heaviest and widest range of developments with respect to wildfire hazards.

Group B: These areas represent a medium fuel hazard. They are medium density Conifer stands with primarily a grass and brush under story. The conifer Over story tends to reduce the density of the grass and brush. Minimal fuel Reduction is needed to reduce this Group to a less severe state.

Inexperienced people are usually afraid and can panic when these areas burn. Property, real and personal, can sustain heavy losses due to the greater burning intensities. Due to the burning characteristics and resultant dangers for "B" rated fuels, it will be advantageous to coordinate and regulate development in these areas. Development can only exist if fuel modifications and treatments are completed prior to completion of the development.

Group C: This Group represents a high fuel hazard with potential for high intensity crown fires. These are dense conifer stands. Fuel can be reduced to a less severe state on slopes less than 30% but usually require some form of commercial harvest.

Experienced firefighters are most cautious in these fuels and are ever fearful of the crown fire potential. Rescue of persons entrapped by hot wildfires these

fuels are nearly impossible. Property, real and personal, can face complete destruction. Injuries can be serious and deaths may easily occur. The burning characteristics and resultant dangers in "C" fuels make it one in which close, coordinated and regulated development is advantageous to all interests, both public and private. At best development in these areas will only be marginal in safety and then only after modifications and treatments are completed prior to completion of the development itself.

Group X: This Group represents a high to severe fuel hazard with potential for high Intensity fire and extreme rates-of-spread. These are dense, flammable vegetation over two feet high including tall sagebrush and conifer reproduction (regeneration). Fuels can be readily reduced to a less severe state on slopes less than 30%.

Although very similar to "C" fuels when subjected to wildfire, the "X" type is delineated separately from "C" fuels because of its higher intensity burning characteristics, rapid rates of spread and its different requirements for mitigation. The dangers of intense, destructive wildfires are greatest in "X" fuels. Property, real and personal, will face heavy damage and possibly complete destruction during wildfires. Injuries can be serious and deaths may easily occur due to entrapment. The burning characteristics and resultant dangers make it one in which close, coordinated, and regulated development is imperative to all interests, both public and private. Fuel Hazard "X" lends itself to modification and can usually be readily reduced to a type "B" classification.

Numerical comparison of fuel hazard classes is not possible because many different considerations are involved. Classes "A" and "X" are most likely to have fires that spread rapidly because of the abundance of grass and small diameter surface fuels (fine fuels) that dry rapidly and are exposed to the wind. In Class "A" fuels the threat to life is negligible but fire fighters have sustained severe and debilitating burns without proper personal protective gear. Property damage occurs only where fuels are tolerated right up to structures.

Fires that occur in Class "X" during dry, windy, conditions can burn with sufficient intensity to endanger life and ignite structures at some distance. Quite troublesome destructive fires have occurred in Class "X" fuels. The usual fire in Class "B" fuels is a moderately spreading surface fire depending upon the amount of fine fuels present. The medium density over story tends to reduce the mid-flame wind speed at the surface reducing the rate-of-spread from that exhibited by Class "A" and "X" fuels. Fires in Class "B" fuels are usually easily controlled.

Fires in Class "C" fuels are normally slow spreading, of low intensity, and rather easily controlled. However, dry conditions coupled with wind or steep slopes over 30% can produce the type of inferno typified by the fires of 1988, 1990, and 2000 in our area. All of these fires contained large areas of "X" fuels intermingled with Class "C" fuels.