

Fire Danger Fact Sheet

The most commonly accepted definition of fire danger is **“the resultant descriptor of the combination of both constant and variable factors which affect the initiation, spread and difficulty of control of wildfires on an area.”** The various factors of fuels, weather, topography and risk are combined to assess the daily fire potential on an area. Fire danger is usually expressed in numeric or adjective terms. Most of us are familiar with the adjective terms low, moderate, high, very high and extreme. The fire danger rating of an area gives the fire manager a tool to help with the day-to-day “fire business” decisions.

Fire danger ratings are typically reflective of the general conditions over an extended area, often hundreds of thousands of acres. Fire danger ratings are generated from data collected daily at remote automated weather stations (RAWS) located across the state. The collected data is then entered into the national fire danger rating system (NFDRS) processor. The NFDRS processor will then generate a number of outputs including the adjective fire danger rating. Other outputs, several that we display in some of our other map products, include the burning index (BI), the energy release component (ERC), and 1000-hr fuel moisture. This is a simplified explanation of the process of calculating the adjective fire danger but it does provide a sense of the flow of information within the NFDRS.

The adjective fire danger rating has been used and sometimes misused in attempts to communicate periods of elevated fire risk. How many of us have seen the fire danger displays indicating high to extreme fire danger at the same time as it is raining. Fine dead (1-hr) fuel moisture and windspeed are major components in the fire danger rating calculation. These components change daily. The fire danger rating will also change daily.

There are three fire danger products on this site. We display a 5-day average fire danger map, an observed fire danger map and a forecast fire danger map. The 5-day average map reflects fire danger trends over the past 5 days by calculating a weighted average with the highest weighting given to the most recent day. The observed fire danger map displays the fire danger rating calculated from the 1300-hour observations the previous day. The National Weather Service provides forecast observations that are used to calculate the forecast fire danger rating. Fire managers will most likely find more use for the forecast map as it provides a tool for planning the upcoming day.

Most of this information has been gleaned from the NWCG publication “Gaining a Basic Understanding of the National Fire Danger Rating System”. The complete publication can be found at:

http://www.nwcg.gov/teams/fdwt/fdwt_adm/Master%20Gaining.pdf

Following are the terms and definitions for adjective fire danger as defined by the National Wildfire Coordinating Group (NWCG) Fire Danger Working Team in 2000.

Fire Danger Rating and Color Code	Description
Low (L) (Green)	Fuels do not ignite readily from small firebrands although a more intense heat source, such as lightning, may start fires in duff or punky wood. Fires in open cured grasslands may burn freely a few hours after rain, but woods fires spread slowly by creeping or smoldering, and burn in irregular fingers. There is little danger of spotting.
Moderate (M) (Blue)	Fires can start from most causes but, with the exception of lightning fires in some areas, the number of starts is generally low. Fires in open cured grasslands will burn briskly and spread rapidly on windy days. Timber fires spread slowly to moderately fast. The average fire is of moderate intensity, although heavy concentrations of fuel, especially draped fuel, may burn hot. Short distance spotting may occur, but is not persistent. Fires are not likely to become serious and control is relatively easy.
High (H) Yellow	All fine dead fuels ignite readily and fires start easily from most causes. Unattended brush and campfires are likely to escape. Fires spread rapidly and short distance spotting is common. High intensity burning may develop on slopes or in concentrations of fine fuels. Fires may become serious and their control difficult unless they are attacked successfully while small.
Very High (VH) (Orange)	Fires start easily from all causes and, immediately after ignition, spread rapidly and increase quickly in intensity. Spot fires are a constant danger. Fires burning in light fuels may quickly develop high intensity characteristics such as long range spotting and fire whirlwinds when they burn in heavier fuels.
Extreme (E) (Red)	Fires start quickly, spread furiously, and burn intensely. All fires are potentially serious. Development into high intensity burning will usually be faster and occur from smaller fires than in the very high fire danger class. Direct attack is rarely possible and may be dangerous except immediately after ignition. Fires that develop headway in heavy slash or conifer stands may be unmanageable while the extreme burning conditions last. Under these circumstances the only effective and safe control actions are on the flanks until the weather changes or the fuel loading decreases.