

7-Day Significant Fire Potential Product Explanation Page

The 7-Day Significant Fire Potential Product (7-Day product) is a projection of significant fire activity (that which requires additional resources from outside the fire origin) over the next seven days. First developed in the Pacific Northwest area of the United States, it is now done nationwide and has become the Predictive Services' signature product. The product is based on a statistical approach correlating historical fire occurrence data with National Fire Danger Rating System (NFDRS) indices and meteorological data to determine probabilistic forecasts of fire potential. Significant Fire Potential is defined as "The likelihood that a wildland fire event will require mobilization of additional resources from outside the area in which the fire situation originates". It is important to keep in mind that this product is not a weather forecast, it is a projection of significant fire potential based on weather, fuel conditions, and resource availability (**Figure 1**).

Fire Potential Model

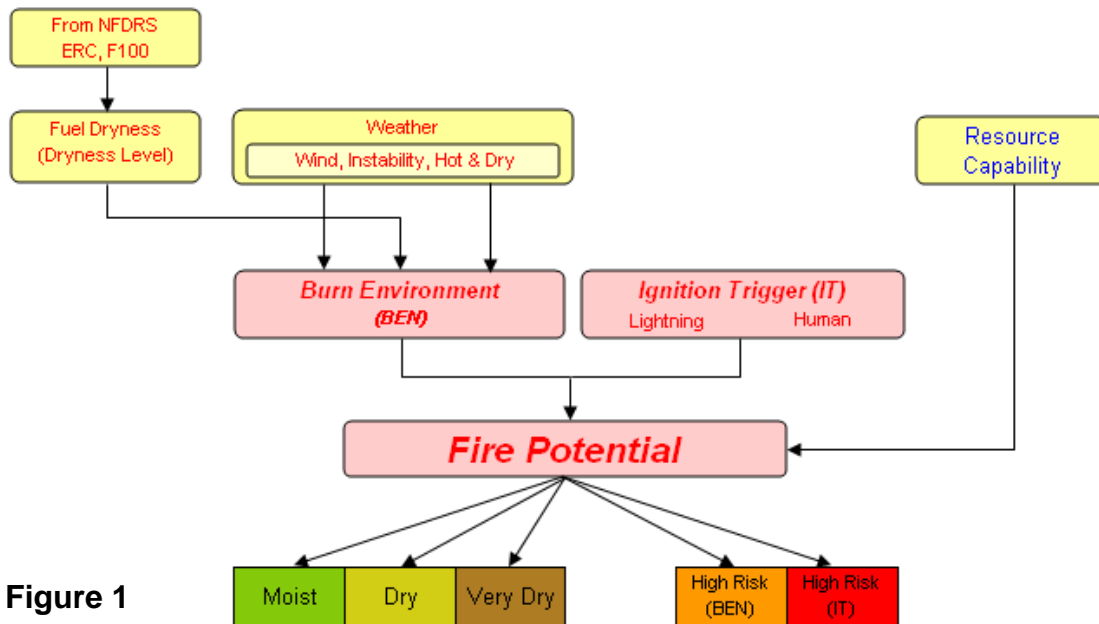


Figure 1

Wildland Fire Event

A wildland fire event occurs over a relatively short period of time, often measured in days, and is *evaluated by either fire size, number of ignitions, or by the complexity of the situation*. For the southern California Geographical Coordination Center (GACC), **a wildland fire event is defined by fire size**. Therefore the 7-Day product is a projection of **large fire activity** during the next 7 days across the GACC.

Fire size is determined by taking the top 5% of all the daily largest fires during the past 15 years for each Predictive Service Area (PSA) and the end result is a large fire size expressed in acres. Listed below are the large fire sizes for each PSA:

SC01 – Eastern Sierra (100 Acres)
SC02 – Central Sierra (50 Acres)
SC03 – Southern Sierra (250 Acres)
SC04 – Sierra Foothills (300 Acres)
SC05 – Central Valley (500 Acres)
SC06 – Central Coast Interior (500 Acres)
SC07 – Central Coast (250 Acres)
SC08 – South Coast (250 Acres)
SC09 – Western Mountains (150 Acres)
SC10 – Eastern Mountains (50 Acres)
SC11 – Southern Mountains (300 Acres)
SC12 – Lower Deserts (50 Acres)
SC13 – Eastern Deserts (50 Acres)
SC14 – Central Mojave (300 Acres)
SC15 – Upper Deserts (250 Acres)
SC16 – Northern Deserts (250 Acres)

Fuel Dryness Levels

Dryness Level (DL) is a combination of the Energy Release Component (ERC) with either the ten or one hundred hour dead fuel moisture which has historically related to large fires. Three categories of fuel dryness have been developed for each PSA and are defined as followed:

- Moist (**Green**) – A Fuel Dryness which has historically resulted in a zero or very low probability for having a new large fire or for significant growth on existing fires.
- Dry (**Yellow**) – A Fuel Dryness which will not typically result in a new large fire or significant growth on existing fires, but could *if* accompanied by a critical burn environment or an ignition trigger.
- Very Dry (**Brown**) – A Fuel Dryness which results in a higher than normal probability of significant fire growth or new large fires, especially when accompanied by a critical burn environment or an ignition trigger.

High Risk Days

High Risk Days are rare occasions when conditions exist that historically have yielded in a significantly higher than normal chance for a new large fire or for significant growth to occur on existing fires. On average, days in this category have about a 20% or better chance of having either one of these two situations occur. There are two conditions that would lead to the issuance of a High Risk Day: A Critical Burn Environment or Ignition Trigger combined with a Fuel Dryness either in the “Dry” or “Very Dry” category.

Critical Burn Environment (Orange) – A Critical Burn Environment results when a combination of sufficiently dry fuels and critical weather conditions are expected. Examples of critical weather conditions are high winds and low humidity or very unstable atmospheric conditions. An Orange color will be used along with a symbol representing the weather condition responsible for the Critical Burn Environment.

Ignition Triggers (Red) – Ignition Triggers are those causative agents that start fires such as lightning or high recreation activity such as the Forth of July.

Resource Availability – When enough fires occur within a GACC, Initial Attack resources can be overwhelmed, leading to an elevated chance of a large fire. Sending resources to fires outside the local GACC also increases the probability of large fire occurrence within the local GACC.

