

# Western Hill Country PSA Critical Thresholds and Fire Data

April 2018

## Fire Weather Stations:

**RAWS** – Barnhart, Coleman, Merrill, Kickapoo Caverns

**ASOS** – Mathis Field, Kimble County Airport, Del Rio International



**Data Years:** 2001-2017

## Critical Fire Weather Thresholds:

Relative Humidity     25% or less  
20' Wind speed        15 mph or greater  
Temperature            90° or greater



**Fuels:** Mixed Live Oak with Juniper brush, Juniper/Mesquite brush, Native and Improved grasslands, Mixed Grassland with Oak/Juniper



## Peak Fire Season:

July through September with summer drying  
January through April with cured grasses and wind events

## Normal TFS Wildfire Response and Acres Burned by Month

*Based on 2005-2017 Fire Occurrence Data*

|              | Jan | Feb   | Mar | Apr | May | Jun | Jul | Aug   | Sep | Oct | Nov | Dec | Total |
|--------------|-----|-------|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-------|
| <i>Fires</i> | 1   | 1     | 1   | 0   | 1   | 1   | 2   | 1     | 1   | 0   | 0   | 1   | 9     |
| <i>Acres</i> | 350 | 1,500 | 500 | 0   | 100 | 400 | 700 | 1,000 | 500 | 0   | 0   | 50  | 5,100 |

## Dead Fuel Moisture Thresholds

|                | Percentiles |      |       |       |        |
|----------------|-------------|------|-------|-------|--------|
|                | 3           | 4-10 | 11-25 | 26-50 | 51-100 |
| <b>1000-hr</b> | 10          | 11   | 12-13 | 14    | 15     |
| <b>100-hr</b>  | 8           | 9    | 10-11 | 12-13 | 14     |
| <b>10-hr</b>   | 4           | 5    | 6     | 7-8   | 9      |

### NFDRS Thresholds (Fuel Model G)

|      | Percentiles |         |         |         |       |
|------|-------------|---------|---------|---------|-------|
|      | 97          | 90-96   | 75-89   | 50-74   | 0-49  |
| ERC  | 73          | 63-72   | 54-62   | 44-53   | 0-43  |
| BI   | 88          | 74-87   | 62-73   | 48-61   | 0-47  |
| KBDI | 697         | 619-696 | 546-618 | 446-545 | 0-445 |

### Live Fuel Moisture

|          | Percentiles |       |         |         |        |
|----------|-------------|-------|---------|---------|--------|
|          | 3           | 4-10  | 11-25   | 26-50   | 51-100 |
| Juniper  | 62          | 63-71 | 72-81   | 82-90   | 91+    |
| Mesquite | 89          | 90-99 | 100-110 | 111-121 | 122+   |
| Post Oak | 78          | 79-80 | 81-86   | 87-90   | 91+    |
| Live Oak | 72          | 73-77 | 78-81   | 82-86   | 87+    |

### Significant Fire Potential Matrix

The Significant Fire Potential (SFP) Matrix is a **daily** situational awareness and decision making tool at the local level based on a fire weather station's observed and forecast ERC and forecast BI. A significant fire is defined as a wildland fire that will require the mobilization of additional resources from outside the area of the fires origin (Extended attack, ICT3+).

| Merrill<br>RAWS<br>2017                |            | Local Preparedness Level<br>Energy Release Component G (ERC) |                        |                       |                        |
|--|------------|--|------------------------|-----------------------|------------------------|
|  |            | 1<br>0-47  | 2<br>48-61             | 3<br>62-70            | 4<br>71+               |
| Dispatch Level<br>Burning Index G (BI) | 1<br>0-51  | Low  | Low<br>To<br>Moderate  | Moderate<br>To<br>Low | Moderate               |
|  | 2<br>52-72 | Low<br>To<br>Moderate  | Moderate<br>To<br>Low  | Moderate              | Moderate<br>To<br>High |
|  | 3<br>73-86 | Moderate<br>To<br>Low  | Moderate               | High                  | High                   |
|  | 4<br>87+   | Moderate   | Moderate<br>To<br>High | High                  | Very High              |

**To Use:** Find nearest [Fire Weather Station](#) to open Matrix. Open [SFP Indices](#) page for forecast ERC and BI of chosen fire weather station. Plot ERC and BI for intersection and SFP forecast.

*Example: 4/27/14 Merrill RAWS Forecast*

*ERC: 58 BI: 97*

*SFP Forecast: Moderate to High*

*Malone Fire, 14,987 Acres in Val Verde County*