

**West Piedmont  
FUEL MODEL G  
SHORT NEEDLE (HEAVY DEAD)**

**FIRE DANGER  
POCKET CARD**

**NWS Forecasting Offices**

Raleigh, NC (RAH)  
Blacksburg, VA (RNK)  
Greenville/Spartanburg, SC (GSP)

**RAWS**

Duke Forest 312501  
Lexington 314602  
Mountain Island Lake 316602

Cleveland Person  
Mecklenburg Forsyth  
Rowan Orange  
Caswell Davidson  
Stanly Gaston  
Chatham Iredell  
Guilford Rockingham  
Montgomery Davie  
Lincoln Randolph  
Union Yadkin  
Cabarrus Durham  
Alamance Catawba



**May-December**

**MAXIMUM:** Highest ERC by day for 2000-2016.  
**AVERAGE:** Shows mean daily ERC value through the period.  
**97th PERCENTILE:** Only 3% of the days from 2000-2016 had an ERC above 37.33.  
**60th PERCENTILE:** Represents an ERC level of 25.33 where large/multiple fire occurrences increase.

Fuel Model G Short Needle (Heavy Dead)	ENERGY RELEASE COMPONENT		
	Average Seasonal Value	Average Highest Value	Highest Value Observed
May	24	31	41
June	25	37	45
July	26	34	41
August	23	38	44
September	21	37	42
October	19	31	43
November	21	33	45
December	18	28	40

**Local Thresholds-- Watch out !**

Combinations of any of these 3 factors can greatly increase fire behavior.

**Wind speed** over 15 MPH, **RH** less than 35%, **Temperature** over 60°

**Remember what Fire Danger tells you:**

ERC gives general seasonal trends calculated from precipitation, temperature, and RH. Wind speed is not part of the ERC calculation. Watch local conditions and variations across the landscape--Fuel, Weather, Topography. Listen to weather forecasts--especially WIND.

**Energy Release Component (ERC)** is a number relating to the available energy released from forest fuels (BTU/ft<sup>2</sup>) at the head of a fire's flaming front. ERC is a composite of all live & dead fuel moistures. It is a very good reflection of drought conditions. It is a "build up" type index. Given a fire start in a fuel with a high ERC, fire containment can be expected to be difficult. ERC is valuable in assessing the depth of a burn, consumption of the various fuel sizes, residual burning, and mop-up requirements.

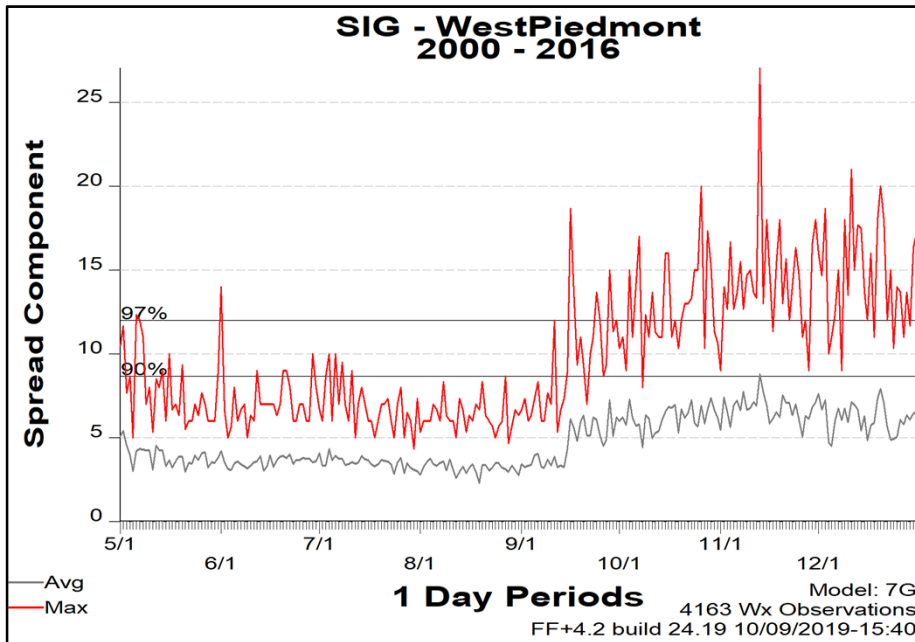
**Past Experience:**

- ◆ **Surprise:** 6/18/14, Rowan Co.- 80 ac – ERC 28
- ▲ **Hebron:** 9/11/07, Orange Co.- 289 ac - ERC 42
- **Bald Mountain:** 11/25/12, Davidson Co.- 115 ac - ERC 31



October 9<sup>th</sup>, 2019

This card is based on 17 years of data



**Spread Component (SC)** - A rating of the forward rate of spread of a head fire. It integrates the effect of wind, slope, fuel bed and fuel particle properties. The daily variations are caused by the changes in the wind and moisture contents of the live fuels and the dead fuel moisture time lag classes of 1, 10, and 100 hour. **SC Values of 6+ are critical**, as 75% of all large fires occur at or above this level.

**Ignition Component (IC)** - the probability a firebrand will cause an “actionable” fire, and requires suppression action. **IC** is more than just a probability of a fire starting. The fire has to have the potential to spread. **IC** can be an aid in assessing spotting potential. An **IC value of 20+ is a critical threshold value**. Values at this level are critical especially during September, October and November as forest floor litter is highly receptive to firebrands.

**Burning Index (BI)** - relates to the contribution of fire's behavior in containing the fire. The difficulty of containment is directly proportional to the fireline intensity. **BI** is derived from the combination of the SC & ERC. **BI** can be a cross reference to fireline intensity & flame length. It assists in assessing spotting & crown fire potential as well as suppression resource needs & tactical considerations. In pine plantations, **BI's of 39+**, are known to support crown fires & spotting with erratic behavior starting at **30+**. The doubling of the **BI**, 20 to 40 can increase flame length from 2 to 4 ft. yet, increases fireline intensity 5 times.

