Central Mountains

FUEL MODEL X

FIRE DANGER CARD

January - December

Madison, Buncombe, Henderson, Transylvania, Polk Counties – NCFS, Appalachian RD, Pisgah RD - USFS

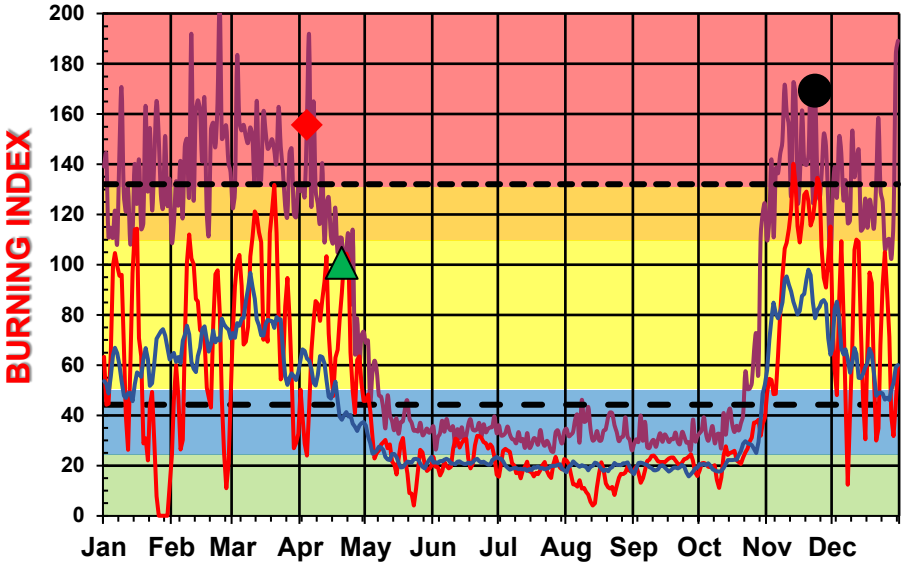
NWS Forecasting Offices

Greenville/Spartanburg, SC (GSO)

RAWS

Seven Mile Ridge – 313302
Mtn Horticulture – 316141
Davidson River – 316001

All stations meet NWCG Weather Station standards



MAXIMUM: Highest BI by day for 2006-2020.
AVERAGE: Shows mean daily BI value through the period.
2016: Representative fire season BI.
97th PERCENTILE: Only 3% of the days from 2006-2020 had a BI above **132**.
67th PERCENTILE: Represents a BI level of **44** where large/multiple fire occurrences increase.

BURNING INDEX

Fuel Model X	Average Seasonal Value	Average Highest Value	Highest Observed Value
January	59.2	85.2	170.6
February	68.9	109.7	204.4
March	73	103.4	183
April	49.4	75.3	197.5
May	23.7	32.3	156.5
June	21.5	27.4	142.7
July	19.4	24.2	133.9
August	19.8	28.4	161.6
September	18.9	24.1	155.9
October	25.1	35.8	153.2
November	83.1	104.6	174.5
December	60	88	189.2

Updated – 10/2021

This card is based on 15 years of data

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 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. Doubling the burning index indicates that twice the effort will be required to contain a fire, providing all other parameters are held constant.

Remember what Fire Danger tells you:

Fire danger gives general conditions across the entire FDRA. Watch for localized conditions and variations across the landscape--Fuel, Weather, Topography. Listen to weather forecasts--especially RH and wind.

Local Weather and Fuel Thresholds That Shout WATCHOUT:

Combinations of any of these 4 factors can greatly increase fire behavior. **Wind speed** over 10 MPH, **RH** less than 30%, **Temperature** over 60°, **FFM** less than 10%.

Local Watch Outs

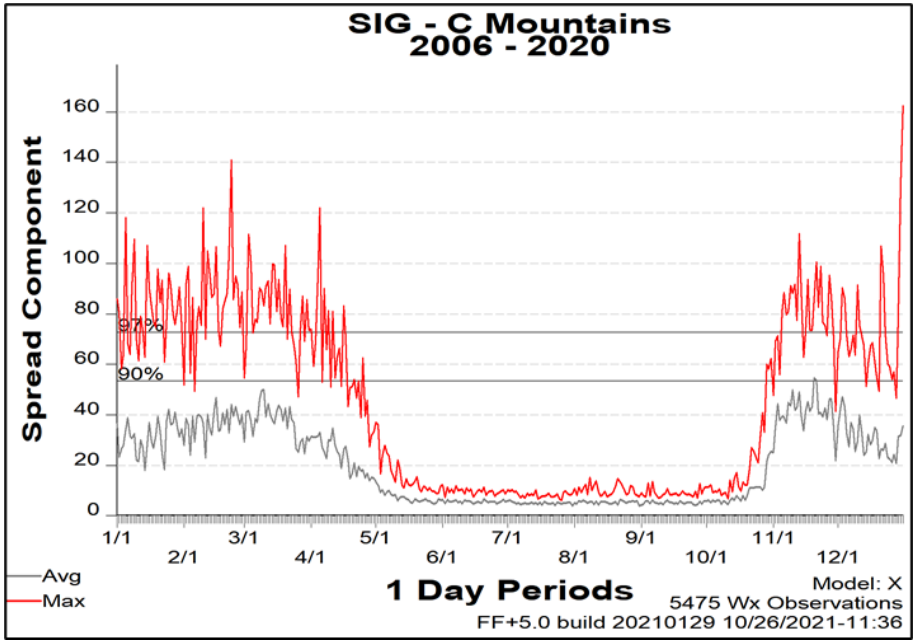
- When wind and topography are in alignment – Rapid uphill fire spread
- Post passage of a dry cold front – Gusty winds and low Relative Humidity
- 1000-hour FMC below 18% - Greatly contributes to fire behavior, intense mop-up

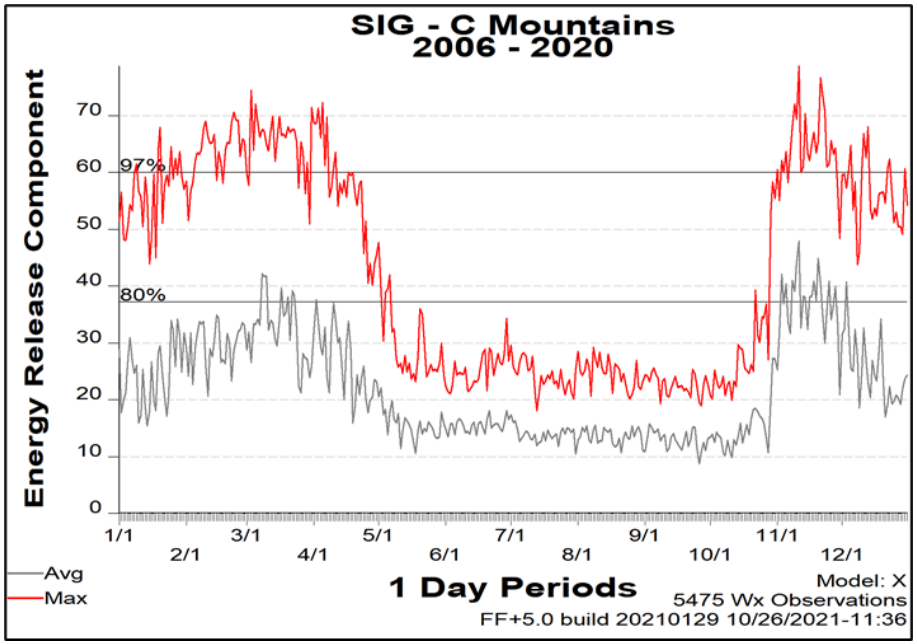
Memorable Fires

Huntley Road: 4/4/2019, Henderson Co, 130 ac. BI – 148, IC – 26, ERC – 66, 1000-hr FMC - 16. Rapid surface spread, Short range spotting, Multiple air and ground resources

Silvermine: 4/20/2016, Madison Co / Appalachian RD, 5964 ac. BI – 138, IC – 24, ERC – 68, 1000-hr FMC – 16. Rapid fire spread, Intense burning, Crown fire

Hwy 151: 11/24/2016, Buncombe Co / Pisgah RD, 245 ac. BI – 138, IC – 16, ERC – 70, 1000-hr FMC – 15, Intense burning, Rapid uphill fire spread, Crown Fire





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. ***The higher the SC, the less likely that direct attack at the head of the fire will succeed.***

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 must have the potential to spread. IC can be an aid in assessing spotting potential. ***An IC value of greater than 10 (88th Percentile) is a critical threshold value.*** Expect short range spotting to occur above this value

Energy Release Component (ERC) - is a number related to the available energy (BTU) per unit area (square foot) within the flaming front at the head of a fire. The ERC reflects the contribution of all live and dead fuels to potential fire intensity. As live fuels cure and dead fuels dry, the ERC will increase. Each daily calculation considers the past 7 days in calculating the new number. Daily variations of the ERC are relatively small as wind is not part of the calculation. ***An ERC value of 37 (80th Percentile) is a critical threshold value.*** At this value, large (>5 ac.) and multiple (>5) fire begin to occur within the FDRA.