Southern Area

Fuels and Fire Behavior Advisory

Subject: Continuing since early March, Energy Release Component (ERC) values have trended towards historic levels. In early April record Energy Release Component and severe drought conditions indicated by extremely low 100 and 1000 hour fuel moistures, are persisting across most of Appalachian Mountain regions of Virginia, Kentucky, Tennessee, North and South Carolina, and Northern Georgia and Alabama. Fuels conditions and fire behavior potential have trended to critical levels over the past month.

Discussion: The Energy Release Component(s) at many Remote Automated Weather Station (RAWS) sites in the advisory area are above 97th percentile conditions. Several stations continue to set record levels for this time of year and some are setting new all-time maximum values.

The mountainous regions of Kentucky, Virginia, Tennessee, North Carolina, and South Carolina indicate that current dry conditions are severe. 100-Hour Fuel Moistures are in the single digits at the many sites and trending with or below historic low levels. The US Drought Monitor Climate Prediction Center is showing much of these mountain areas as being abnormally dry (D.0 Classification). Shrub species such as rhododendron and mountain laurel are contributing to fire spread in the portions of the mountains. The availability of these shrubs to burn is an indicator of extreme fire behavior potential. Coupled with current state of fuels, several cold fronts have moved through the mountains of the Southern Area in the past month and cold temperatures with several freezes have prolonged normal green-up.

Areas that are experiencing green-up could additionally experience increased control difficulties. Live fuel moistures, although elevated and in the green stages, are not inhibiting fire spread and are in fact acting as a heat sink at times. Expect fires to burn longer in duration and burn more freely without the assistance of wind. All fuel size classes and types will continue to be available to support fire spread.

Historically high Energy Release Component values in conjunction with critically low dead fuel moisture alone are creating conditions conducive to rapid fire spread and extreme fire behavior potential. As other fire weather indices, such as winds and relative humidity, reach critical thresholds, an already critical situation will be compounded. Fuels are readily available to burn, wind and/or a drop in relative humidity will change fire behavior dramatically.

Concerns to Firefighters and the Public:

- Monitor fire danger indices as some values are reaching record levels, maintain situational awareness, both rates of spread and intensities could compromise firefighter safety.
- Dead fuel moisture values in all size classes are critically low. These fuels are very receptive to spotting and will spread rapidly and with high intensity. Personnel should be cognizant of low dead fuel moisture levels and be aware of the time lag required to respond to atmospheric moisture.
- Anticipate any ignition in light flashy fuels to grow rapidly and intensely even without the presence of wind.
- Watch out for re-burn situations, where species such as rhododendron or mountain laurel are underburned.
- Anticipate the initiation of torching and crown fire development more frequently.
- Recently constructed handlines are proving ineffective and are not holding.

Mitigation Measures:

- Maintain situational awareness by basing all actions on current and expected fire behavior.
- Ensure firefighters have good anchor points - keeping one foot in the black.
- Have adequate numbers of Field Observers who understand the effects of weather changes, fuel transition, and topography and can see the main fire.
- Direct attack may not be a valid tactical option unless supported by mechanized equipment or aerial resources.
- Obtain daily fire behavior and weather briefings and understand the relationship to current fuels conditions.

Area of Concern: Map attached to explain in detail geographic extent of area of concern.

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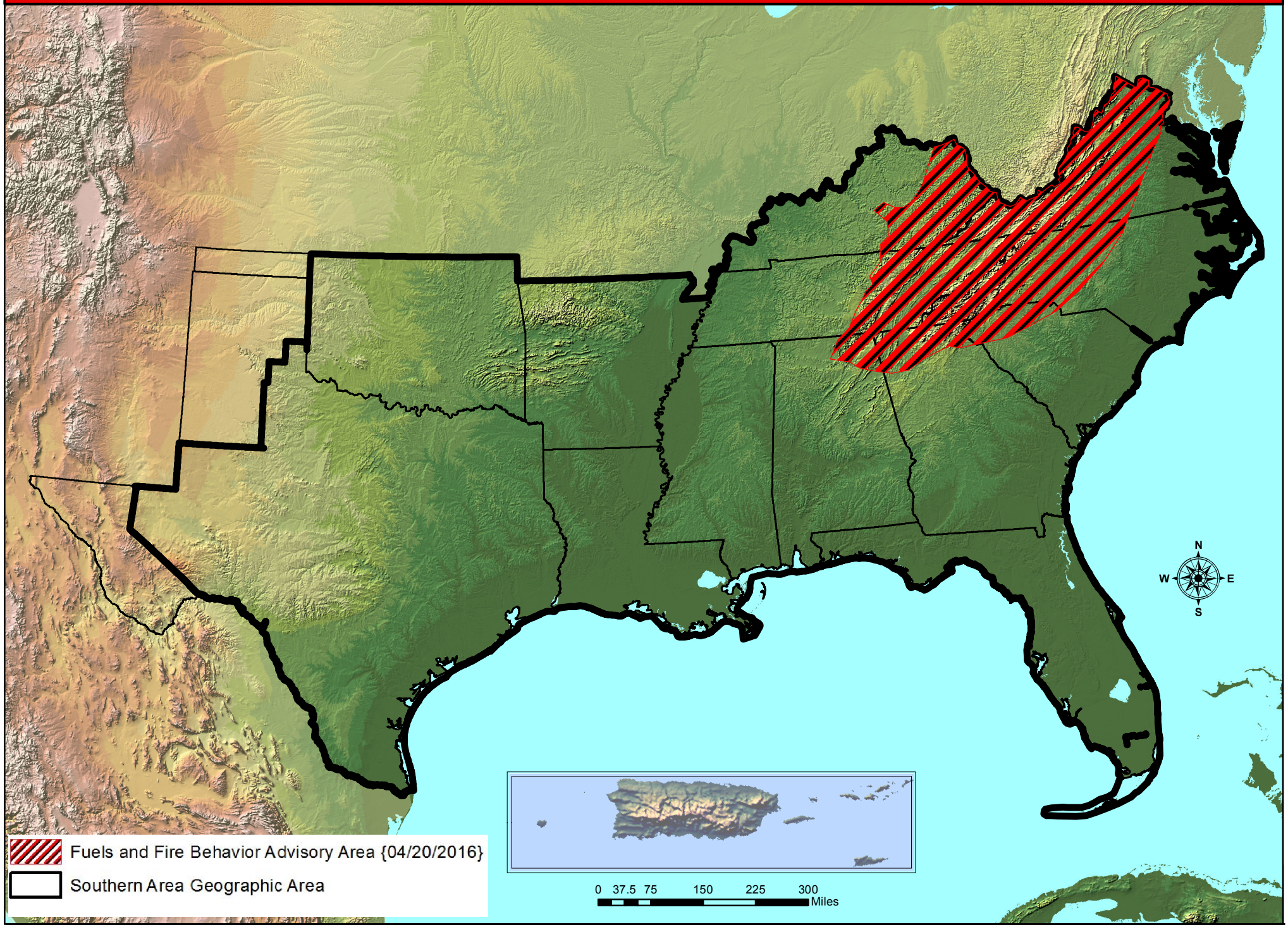
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