

# Fuels and Fire Behavior Advisory

## Southern Appalachian Mountains and Foothills

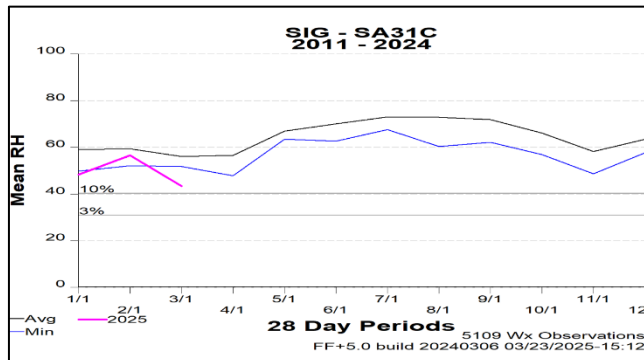
Effective March 25, 2025



**Subject: Fine fuel receptivity:** Extraordinarily low humidity has persisted throughout March in the Southern Appalachians, foothills and Piedmont, resulting in accelerated drying of leaf litter and fine fuels left in the wake of Helene's destruction.

**Discussion:** Hurricane Helene brought catastrophic damage to forests across the advisory area in late September of 2024. Lighter fuels cured rapidly through a winter with below average rainfall, but extreme rates of drying have been observed in recent weeks. Despite well-timed wetting rain, 30-day precipitation has fallen well below average for most of the region. Marked increases in initial attack have been associated with repeating patterns of dry frontal passages. These dry and windy cold fronts look to continue impacting the area during the week ahead, before Gulf moisture and increasing thunderstorm chances potentially return by early April. Much warmer temperatures and increased evaporative demand in April may offset any improvement in the fire environment, especially if sufficient rainfall fails to materialize.

**Difference from normal conditions:** Mean relatively humidity so far this March is the [lowest ever observed](#)



across the advisory area. Consistently poor moisture recovery at night followed by sunny and arid afternoons has tanked 1-hour dead fuel moisture to the lowest levels observed since at least 2011 across the South Carolina Mountains Predictive Service Area (PSA SA31C) and regionally, with all other classes of dead fuel moisture and ERC-Y also setting early season records in the region. Several fires across the Carolinas have exhibited long-range spotting, along with burn periods that have extended over the course of multiple 24-hour periods.

Chart depicting mean RH over 13-year period

### Concerns to Firefighters and the Public:

- Extreme receptivity of fine dead fuels resulting in significantly increased amounts of spotting are overwhelming control efforts
- Increased spotting distances—often football field length to several hundred yards - when slope, wind align
- Fire spread and intensity are exceeding model predictions – in some cases significantly.
- Green fuels such as mountain laurel, rhododendron and eastern red cedar are currently volatile and torch easily when surface fire becomes established underneath. This exacerbates spotting problems.
- Poor overnight RH recovery has led to a nearly 24-hour burn period. Significant nighttime intensity and growth have been occurring regularly. Do not assume control efforts will be more successful at night.
- Downed heavy fuels from Helene may scorch but are not yet consuming, however any fine fuels from Helene's impacts are adding significantly to fire intensity -especially if suspended.
- Any pre-Helene dead and down fuels are igniting easily and proving difficult to extinguish.



Photo of nighttime fire activity (credit: Wilkes Co. EMS)

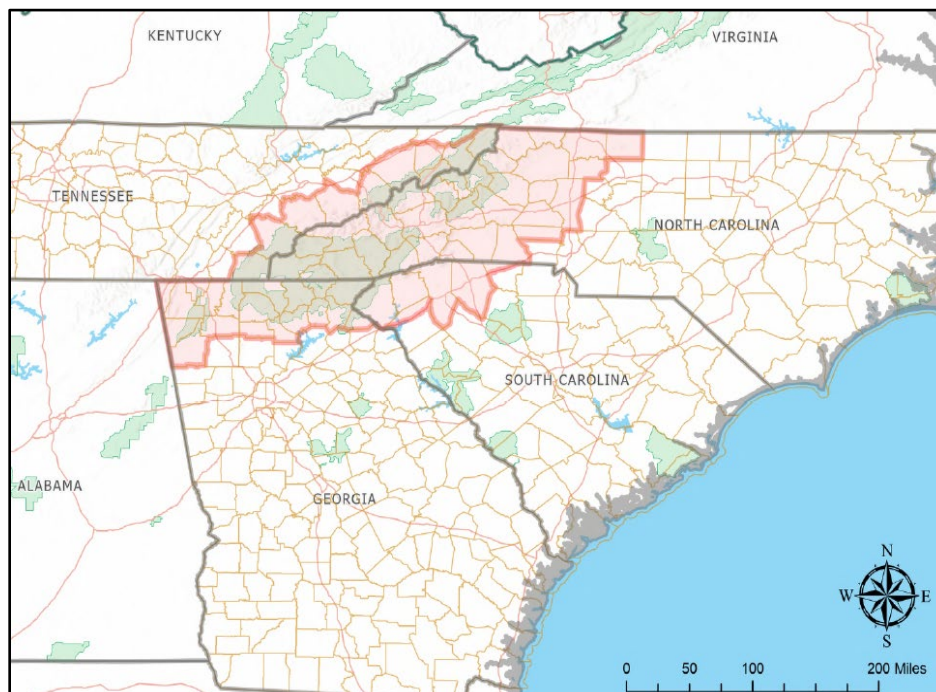


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- Indirect attack strategies should be considered when direct attack is unsuccessful, due to access issues on the ground created by storm debris and landslides
- Tree canopy loss and exposure to direct sunlight will lead to accelerated rates of drying where Helene's winds were most catastrophic, even after leaf out occurs
- Duff may increasingly contribute to extended mop-up if underlying dryness increases due to below normal rainfall and the onset of green-up.
- Resistance to control has been exceedingly high and, in many cases, efforts have not been successful.
- Fires are frequently crossing natural barriers and containment lines that in other years are considered solid
- Structures and homes have been impacted by these fires. Members of the public should stay informed of *any* fire activity near their location and should heed evacuation notices. Do not wait until it is too late! And – do not fly drones near areas of fire suppression activity.

**The Fuels and Fire Behavior Advisory Area Includes east Tennessee, northern Georgia, northwest South Carolina and western North Carolina.**



*Map with counties shaded in red depicting the area included in this fuels advisory*