

Gridded Fire Danger Estimates for Spatially Continuous Fire Risk Monitoring

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The North Carolina Forest Service and other groups that routinely conduct prescribed burns or respond to wildfires typically use National Fire Danger Rating System (NFDRS) parameters to assess local fire risk conditions. Historically, these parameters have only been calculated for RAWS—standard weather stations, so points in between stations have either had no data available or were subject to crude interpolations. To provide spatially continuous and consistent fire risk estimates, gridded versions of parameters such as the Keetch–Byram Drought Index, time–lagged fuel moisture content, and Energy Release Component were calculated using high–resolution precipitation, temperature, and relative humidity datasets. The resulting data captures small–scale variations in fire risk that are useful for monitoring and planning, particularly in the fire–vulnerable Coastal Plain of North Carolina. This presentation will provide an overview of the tools as well as share the story of the engagement process with NC Forest Service to develop scientific data and visualization to meet their needs.