

OK-FIRE: A WEATHER-BASED DECISION-SUPPORT SYSTEM FOR PRESCRIBED BURNING IN OKLAHOMA

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ABSTRACT

Funded by a 3-year grant from the federal Joint Fire Science Program in 2005, "OK-FIRE" is a weather-based decision-support system which is being developed for wildland fire managers throughout Oklahoma. Applications include prescribed burning, wildfire anticipation/suppression, and smoke management. Current project participants include federal land management agencies within Oklahoma, the National Weather Service, Oklahoma Forestry Services, The Nature Conservancy, fire departments, and private landowners. Using the Oklahoma Mesonet of 120 automated weather monitoring stations as a basis for current and past conditions and 84-hour forecast output from the National Weather Service's NAM model for future conditions, OK-FIRE has a three-fold emphasis: 1) an expanded suite of real-time products for fire weather, fire danger, and smoke dispersion; 2) a dedicated OK-FIRE wildland fire management Web site to act as the delivery mechanism for the above products (<http://okfire.mesonet.org>); and 3) regional training and customer support activities for the user groups involved. With respect to prescribed fire, benefits include better pre-burn planning and management during the burn. With respect to wildfire, benefits include better anticipation of high fire danger conditions, the ability to better determine future near-term staffing levels, and better suppression strategies during the wildfire itself. Until OK-FIRE there had never been a dedicated Web site focused solely on wildland fire management in Oklahoma. The Web site features major sections devoted to weather, fire, smoke, satellite, radar, air quality, and burn site maps and imagery. The Oklahoma Fire Danger Model provides output related to fire danger, and the Oklahoma Dispersion Model, output relevant to smoke dispersal. Products utilize a browser plug-in and consist of site-specific data boxes, charts, tables, and maps capable of animation, zooming, and overlays. OK-FIRE allows the user to examine past conditions over the last 5 days as well as view forecast conditions through the end of the latest 84-hour NAM forecast. The presentation will describe the OK-FIRE project including its products, Web site, and training. An assessment of its impacts thus far across Oklahoma will also be provided.

Keywords: fire danger, fire weather, forecasting, modeling, operational systems for fire management, prescribed fire, smoke management, weather station networks, wildfire.

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