

Oklahoma Springtime Dangers: Tornadoes, Floods, and Smoke?

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NORMAN, OK - The hazards of spring in Oklahoma are well known: tornadoes, lightning, large hail, floods, and smoke. Smoke? Although not as frightening as a tornado, the smoke from agricultural and forest fires can be hazardous to certain segments of the population, and often affect more people. Adding insult to injury, most of this smoke does not originate in the United States, but from fires blazing in Mexico and Central America. Texas residents have been faced with smoky skies this week, and those same conditions could possibly plague Oklahoma during the next several days.

When thinking of the dangers of pollution, ozone normally comes to mind. Ozone is such a concern that the Federal Government will threaten to withhold highway funds from states whose air pollution exceeds federally mandated limits. Smoke can also be a significant pollutant, however, especially in early May, when weather patterns and raging fires from south of the border combine to reduce air quality readings to unhealthy levels. Mexico and the northern sections of Central America have been exceedingly dry during 2003, and many fires in those areas are burning out of control. Those fires provide ample smoke to be carried upon the prevailing southerly winds into the Southern Plains of the United States. The smoke is made up of soot, ash and other fine Particulate Matter (PM), generally less than 2.5 micrometers in diameter. As those particulates are breathed in, they can rob the lungs of oxygen and exacerbate respiratory problems, especially in the elderly and children. Texas has borne the brunt of the smoke thus far, and their air quality reflects that. The Air Quality Index (AQI) for much of central and southern Texas has remained within the "unhealthy for sensitive groups" category throughout the week. At that level, people with respiratory disease, the elderly and children, should avoid prolonged exertion, while everybody else should limit any prolonged exertion.

A cold front traversed Oklahoma on Tuesday, ushering in northerly and easterly winds that helped push back the invading pollutant. A warm front lifted north from Texas Wednesday, however, with strong southerly winds in tow, allowing the smoke to waft into central and eastern Oklahoma. By Thursday morning, the concentrations of the 2.5 micrometer PM had risen above 50 micrograms per cubic meter at the Oklahoma Department of Environmental Quality's monitoring site in Moore. If that level is maintained for 24 hours, it will be indicative of an AQI of approximately 120, well into the "unhealthy for sensitive groups" range.

The Texas Commission on Environmental Quality, currently tracking the smoke, has forecast smoke levels in central and eastern Oklahoma to remain elevated through Saturday. The passage of an upper level storm late in the weekend should swing winds around from the north, once again pushing the smoke to the south and east. The smoke generally dies down in late May as seasonal rains help curb the uncontrolled fires in Central America.

