Kansas Flint Hills Smoke Management Plan: How smoke impacts air quality

The Kansas Flint Hills Smoke Management Plan is entering its second year in 2012. This comprehensive plan is designed to minimize the movement of concentrated smoke plumes into large metropolitan areas through voluntary participation. All Flint Hills landowners and managers who conduct prescribed burns should know what is in this plan.

To help educate all those affected, a series of radio interviews is being broadcast weekly each Monday on K-State's *Agriculture Today* talk show. These programs will explain the many aspects of the new plan. *Agriculture Today* is part of the K-State Radio Network. The broadcast interviews are podcast online at www.ksre.ksu.edu/news/DesktopDefault.aspx?tabid=66.

The following is a slightly edited transcript of the eighth and last in the 2012 series of *Agriculture Today* radio broadcasts on the Kansas Flint Hills Smoke Management Plan. This is an interview with Doug Watson, Kansas Department of Health and Environment air quality data supervisor, conducted by Eric Atkinson of the K-State Radio Network.

Q: What exactly does smoke from prescribed burns do to air quality? Your office monitors this very closely, right?

A: Yes. We have a monitoring network spread out across the state. We're able to monitor various pollutants and see how they are affecting air quality in those mainly metropolitan areas.

Q: What are the specific smoke-related pollutants?

A: The pollutants coming off a prescribed burn are precursors for the formation of ozone, organic compounds and nitrous oxide. The other pollutants of concern are particulate matters, both PM2.5 (which is a smaller particle) and PM10 (which is a larger particle).

Q: And there are established restrictions on both of those pollutants?

A: The federal government sets national air quality standards for both ozone and particulate matter. We follow those standards and look at the monitoring data to see how it compares to those standards.

Q: What affects the concentration of these pollutants in relation to smoke emissions?

A: Mainly we've had problems with the precursors of ozone and the production of ozone in the downwind metropolitan areas – mainly Kansas City and Wichita, although we also saw an exceedance in Topeka last year from smoke. So ozone has been the major problem from the burning. We see high values of particulate matter, but those are short-term spikes in the monitoring data. The way the standards are set up, as a 24-hour standard, we haven't seen exceedances of particulate matter in the state.

Q: So it's the ozone that is of greatest interest?

A: Right. We've concentrates on ozone because that's where we've seen the exceedances the past few years, and then going back to 2003.

Q: Do these exceedances typically have a certain duration?

A: The problems we've seen have been in years when we've seen a lot of burning going on in a very short timeframe, and a lot of smoke going into the metropolitan areas.

Q: There were some spikes last year, weren't there.

A: Yes. There were three or four days in April where we saw exceedances of the ozone standard in Topeka, Wichita, and a monitor site south of the Kansas City metropolitan area.

Q: How does the smoke management plan address the concerns about these two pollutants?

A: The plan is voluntary. What we tried to do is provide tools to the folks in the Flint Hills who do the burning to help them look at the effects that burning has on air quality, and ways they can mitigate those effects if they use those tools. And we've developed a web site where we can consolidate all those tools into one site so that folks can find all that information in one place: ksfire.org.

Q: Did the plan help in reducing the ozone or particulates spikes last year?

A: There were several things that came into play last year. The plan did not get approved by KDHE until late 2010. So we had just a few months to get the information and educational materials out before burn season started. Also, there was a lot of fuel out there in the Flint Hills last spring, which caused a lot of smoke to be produced in April.

Q: Do you think we'll see different results this year?

A: Taking a look at what's out there, with the drought we had last year, especially in the southern part of the Flint Hills, hopefully there will be significantly less smoke this year.

Q: Do you think this plan, with its mechanisms, will be able to meet its intent and get the job done?

A: Over time it will. We just need to have time to get folks to recognize the effects that smoke has on downwind areas, not just in Kansas but in other states. We need to allow folks to have all the information they need about the impact their burning on a particular will have on areas downwind, and hope they make good decisions about which days to burn.

Q: The KDHE web site has lots of good information on a wide variety of things, including air quality.

A: Yes it does. And we've just recently improved the web site, so I invite everyone to take a look at it. It's at: kdheks.gov.

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