

Kansas Flint Hills Smoke Management Plan: The smoke modeling tool

The following is a slightly edited transcript of the seventh in a series of K-State's Agriculture Today radio broadcasts on the Kansas Flint Hills Smoke Management Plan. This is an interview with Tom Gross, Bureau of Air, Kansas Department of Health and Environment, conducted by Eric Atkinson of the K-State Radio Network. Podcasts of all Agriculture Today interviews can be found at:

<http://www.ksre.k-state.edu/DesktopDefault.aspx?tabid=197>

For complete information on the Kansas Flint Hills Smoke Management Plan, see the new website: www.ksfire.org/

Q: The cornerstone of the Smoke Management Plan is the online smoke modeling tool that producers can reference to help with burning decisions. This modeling tool is up and running now. Can you briefly describe this tool for us?

A: The purpose of the tool is to provide a landowner with a look at where the smoke from his or her prescribed burn might travel and the relative concentration of the smoke. It also has information about the cumulative impact of smoke if a large amount of grassland acreage in the county was burned on that same. The model uses information from the days last year when Kansas City and Wichita got impacted by smoke, then predicts what the impact would be this year if the same number of acres were burned with the predicted meteorological conditions.

People can access the website at: www.ksfire.org

On the website, once people click on the Modeling tab, they'll be taken to a page that has three tabs. The first of those is "About," which is a section that explains what the modeling tools are, how they work, and how to use the outputs. The second tab leads to a page called "Cumulative Fire Impacts." This one looks at what would happen if all the people in a county were burning that day or the following day. It shows a map of the Flint Hills area. Each county is highlighted either in red, yellow, or green. If a county is in red, it means that burning in that county that day would contribute to greater impacts from smoke in the cities that have the ozone and particulate matter monitors. If a county is in yellow, it's a moderate impact. If a county is in green, then it's a better day to burn from an air quality standpoint. There are two maps. On the left side is a map of impacts from burning the next day (or if you check the website early in the morning, it will be for the same day), and the map on the right is for the following day. The date for each map is labeled at the top.

The third tab is "Your Fire Impacts." On that page, you fill in information regarding your planned burn and the model will project the impacts of smoke from your particular burn. It'll ask you which county you're in and the approximate size of the area that you plan to burn -- a small, medium, or large fire. And it'll ask you for the size of your fuel load -- light, average, or heavy -- which will depend upon whether you've got a good cover of grass, how much it's been grazed, whether it was burned last year or not.

Once you put in this information and click the “View Your Fire’s Impacts” tab, then you’ll see the smoke plume from your fire moving across the map. You can see whether it is impacting one of those metropolitan areas.

Q: It’s a real-time site, constantly updated with weather information. Then the grassland managers plug in their own field information. It’s easy to use, but you would urge those planning to use this tool to read the instructions first, correct?

A: Yes. The very first page you get to talks a little bit about how to use the tool. We hope it’s fairly intuitive. We’ve had a lot of training sessions with those in the Flint Hills counties to explain how to use the tool. But if anyone has any questions or glitches, they can contact us or their county Extension agent. We want feedback from the users.

Q: This smoke modeling tool is not intended to be a “thumbs up” or “thumbs down” for an individual planning to make a burn on any given day, correct?

A: That’s a very good point. There might be days when it’s unsafe to burn because of high winds or another factor that would cause the local fire officials to say that it is not a safe day to burn. Conditions for a prescribed burn on a given day might be an okay from an air quality emissions standpoint, because it might be the kind of day where the emissions from that fire might disperse, but conditions might not be suitable for actually conducting the burn safely.

People can’t use this model as their only source to judge whether conditions are right for conducting a prescribed burn. It is a secondary decision-making tool so that if conditions for burning are good from a safety standpoint, then people can check this modeling tool to see if conditions are also okay from an air quality standpoint. There is information other than the smoke modeling tool on the web site with links to factors such as mixing heights, wind speeds, wind directions, these kinds of things – the kind of information that people utilize in making that safety decision. The model itself is geared toward air quality impacts, not safety.

Q: In other words, people planning to do a prescribed burn still need to utilize good sound judgment.

A: Yes. And grassland managers in the Flint Hills are experienced in doing that. They’ve done that for a number of years. This website can provide them with information to continue to do that. But the smoke modeling tool is an entirely new set of decision criteria.

Q: A lot of work has gone into this.

A: Yes, we’ve done a lot in a short period of time. We’ve had a lot of cooperation from K-State and the agricultural community, and I want to thank all of them for their participation in this.

-- Steve Watson, Agronomy e-Update Editor
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