

Flint Hills Wildland Fire Update

April 16, 2021

The following information on the Flint Hills wildland fires will be sent weekly to keep stakeholders up to date on fires and related smoke.

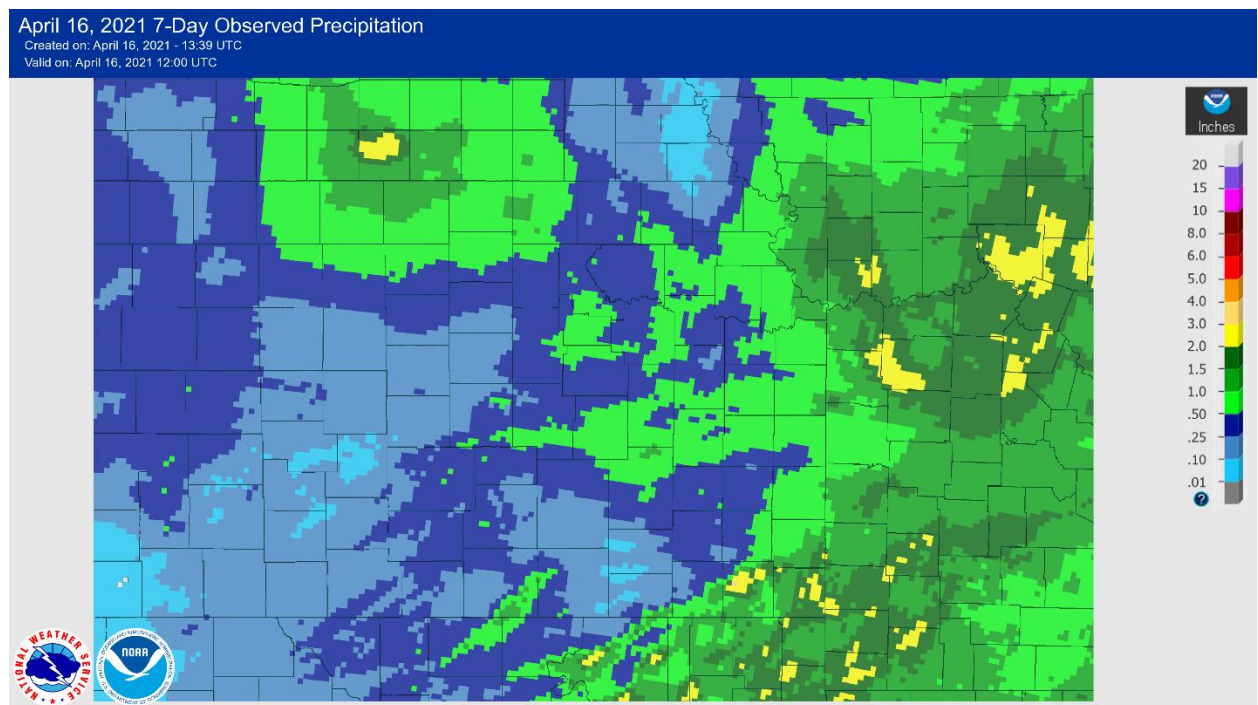




Meteorology

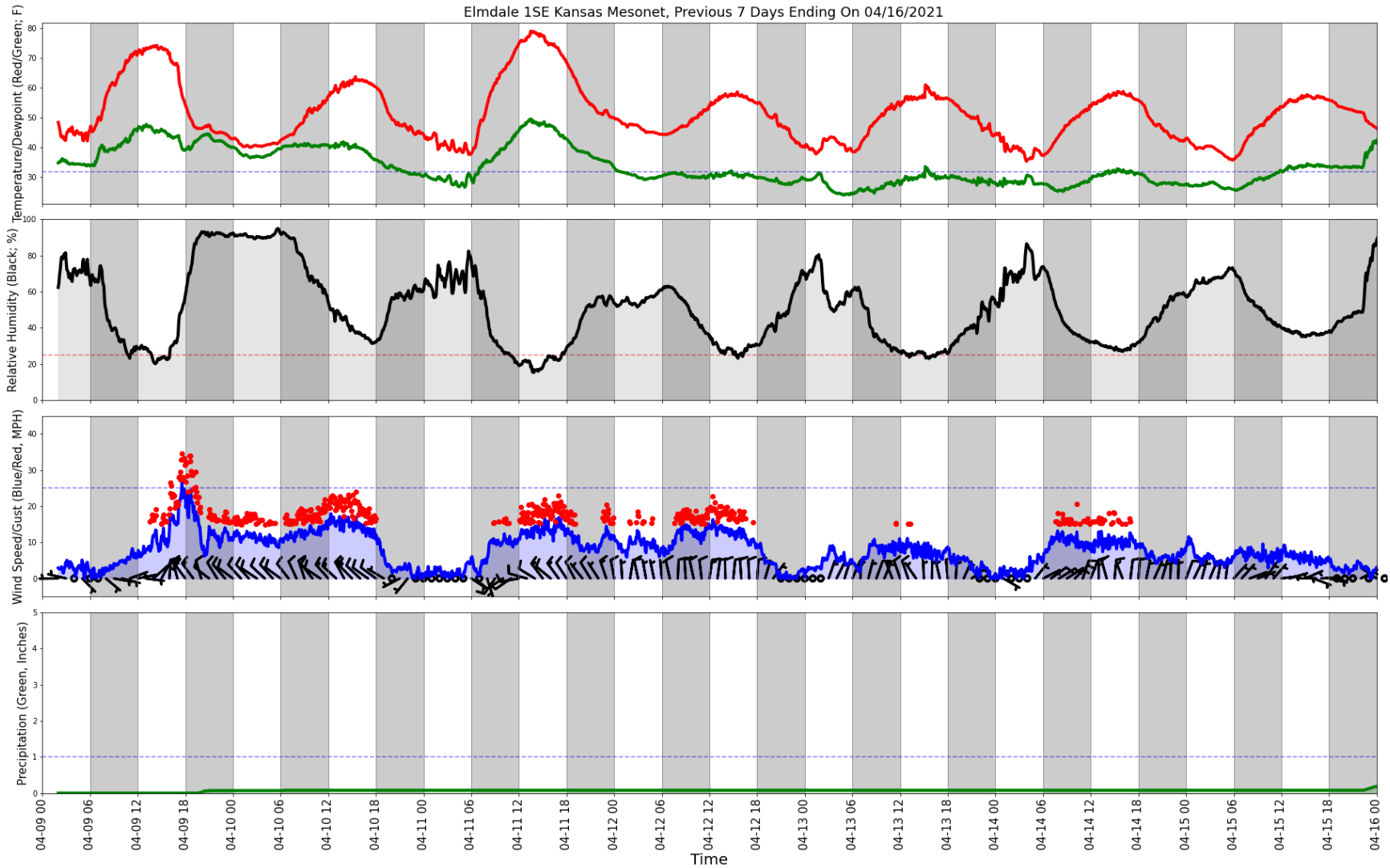
A seasonable day on Friday (April 9) precluded a round of precipitation for parts of the Flint Hills Friday night into Saturday (April 10) with precipitation amounts ranging from near-zero to upwards of a half-inch in some locations within the Flint Hills. It was a bit cooler on Saturday behind this storm system with a somewhat brisk northwest wind, but temperatures rebounded well under sunny skies and light south winds on Sunday (April 11) ahead of yet another cold front, this one passing without any precipitation. The remainder of the week featured northerly winds of 5-20 mph and below normal temperatures with afternoon highs near 60 and even frost/freeze conditions overnight.

Precipitation



NOAA/NWS Observed Total Precipitation for April 9-15, 2021.

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7-day (April 9-15, 2021) Observed Weather from Kansas Mesonet station near Elmdale, Kansas
<https://mesonet.k-state.edu/>



Air Quality Data

Air quality data for the period of April 9-15, 2021:

Ozone: Preliminary data indicates **no** exceedances of the NAAQS daily 8-hour average maximum of 70 ppb.

PM_{2.5}: Preliminary data indicates **three** exceedances of the NAAQS daily 24-hour average maximum of 35 $\mu\text{g}/\text{m}^3$.

On April 9, 2021 the monitor in/near Ponca City, OK measured a 24-hour average value of 37.5 $\mu\text{g}/\text{m}^3$.

On April 13, 2021 the monitor in/near Ponca City, OK measured a 24-hour average value of 51.3 $\mu\text{g}/\text{m}^3$.

On April 14, 2021 the monitor in/near Ponca City, OK measured a 24-hour average value of 45.6 $\mu\text{g}/\text{m}^3$.

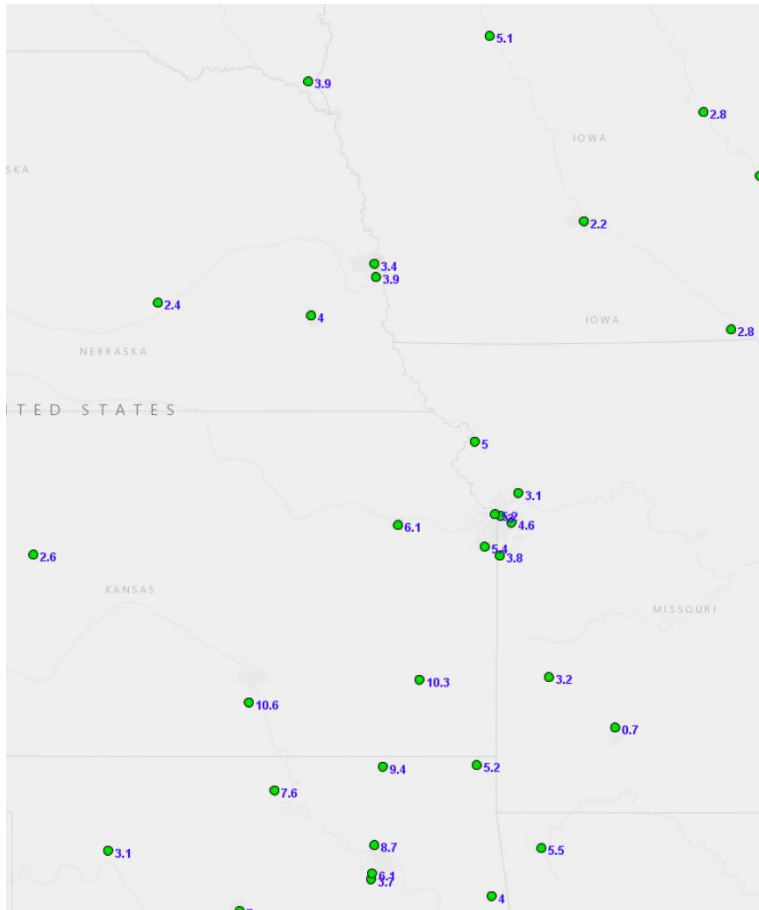
Air quality images on the following pages for each day show preliminary data, courtesy Air Now Tech.

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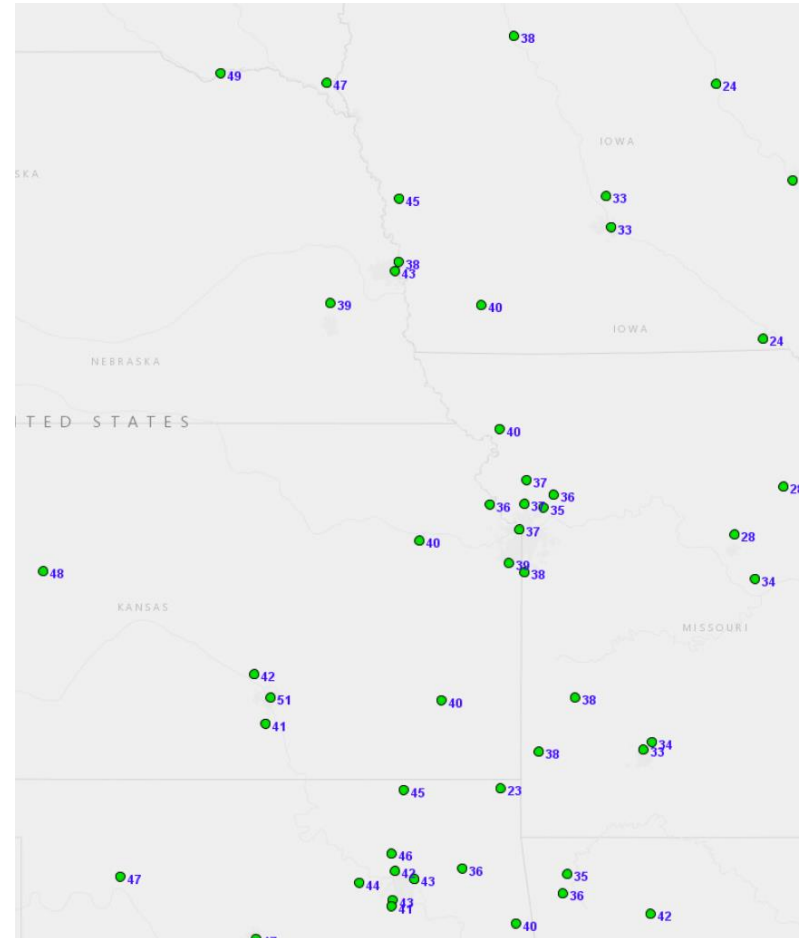


Saturday, April 10, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

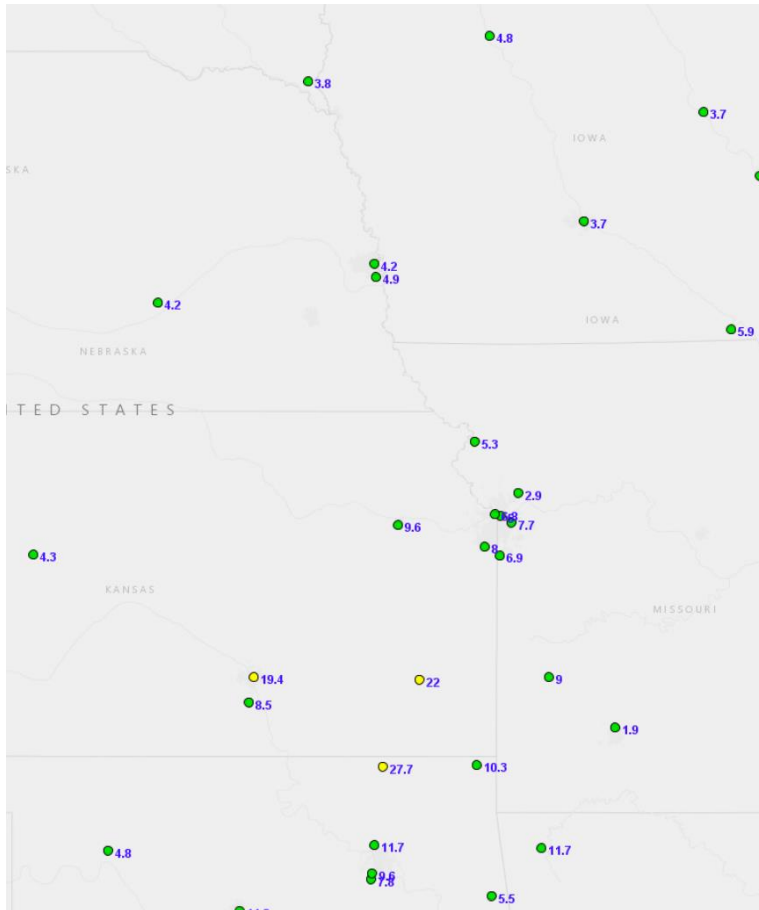


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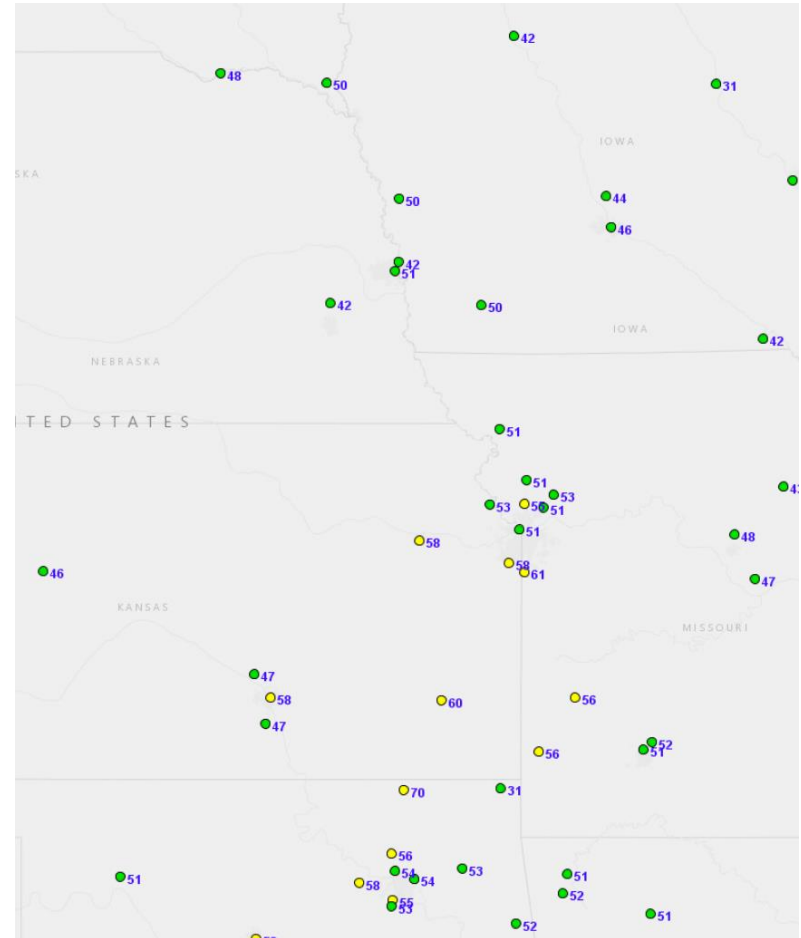


Sunday, April 11, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)



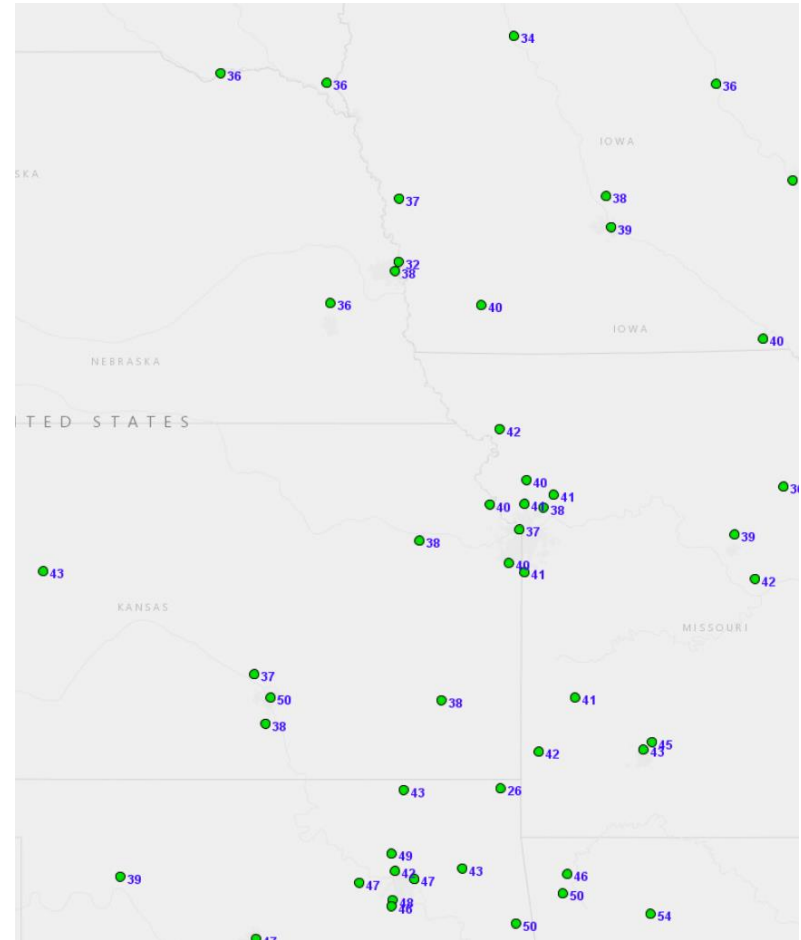
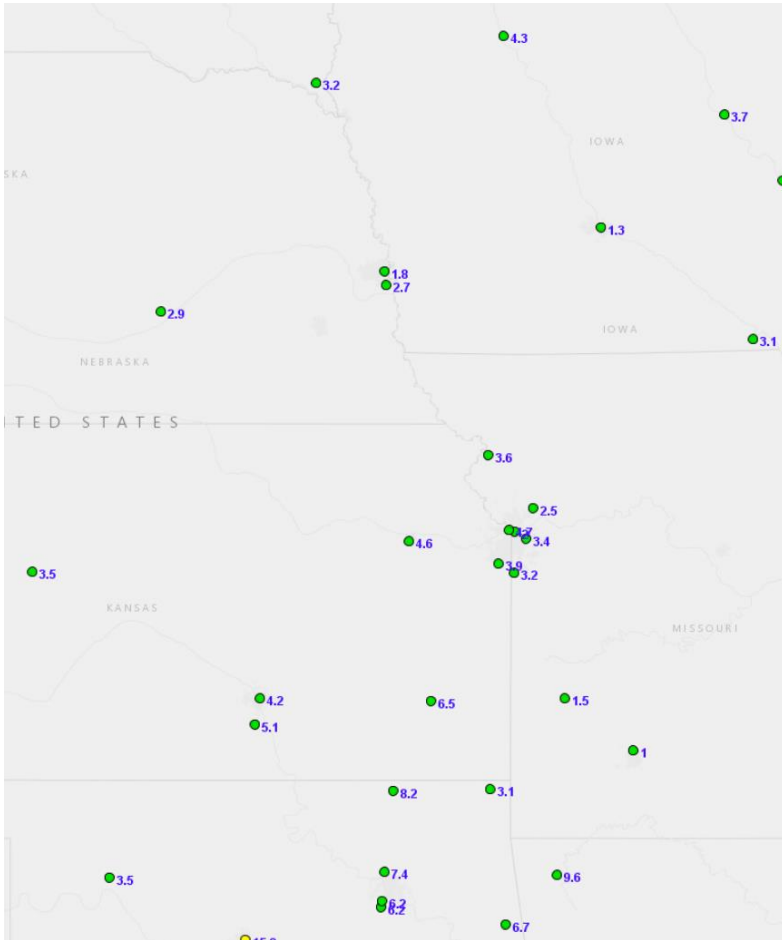
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Monday, April 12, 2021

PM2.5 (24-hour average)

Ozone (8-hour average maximum)



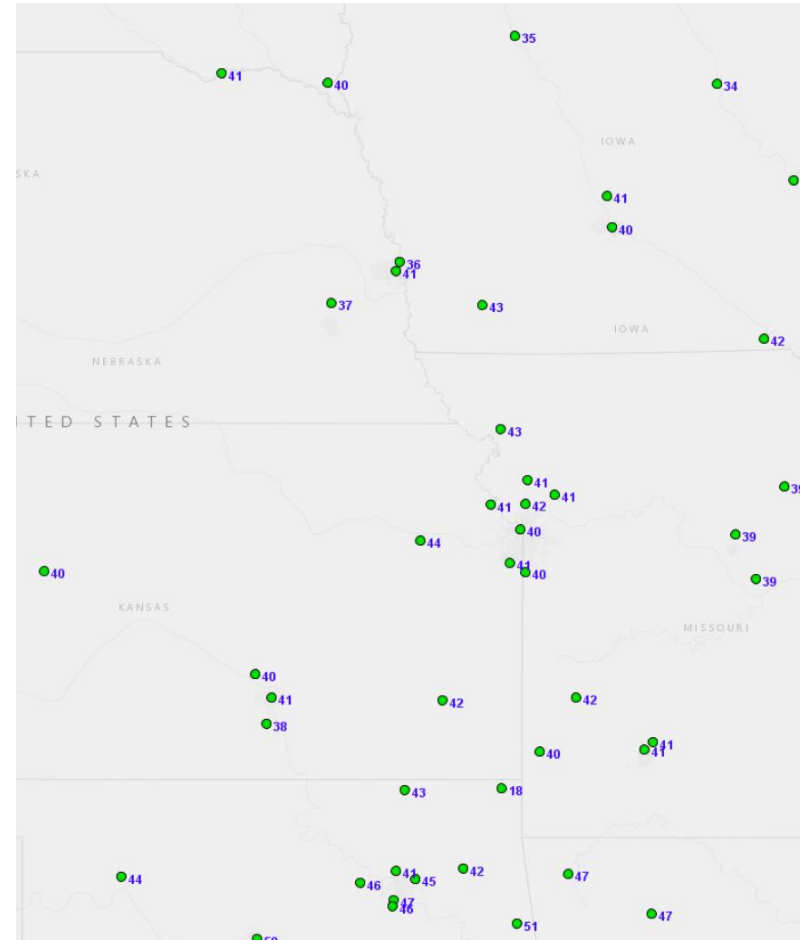
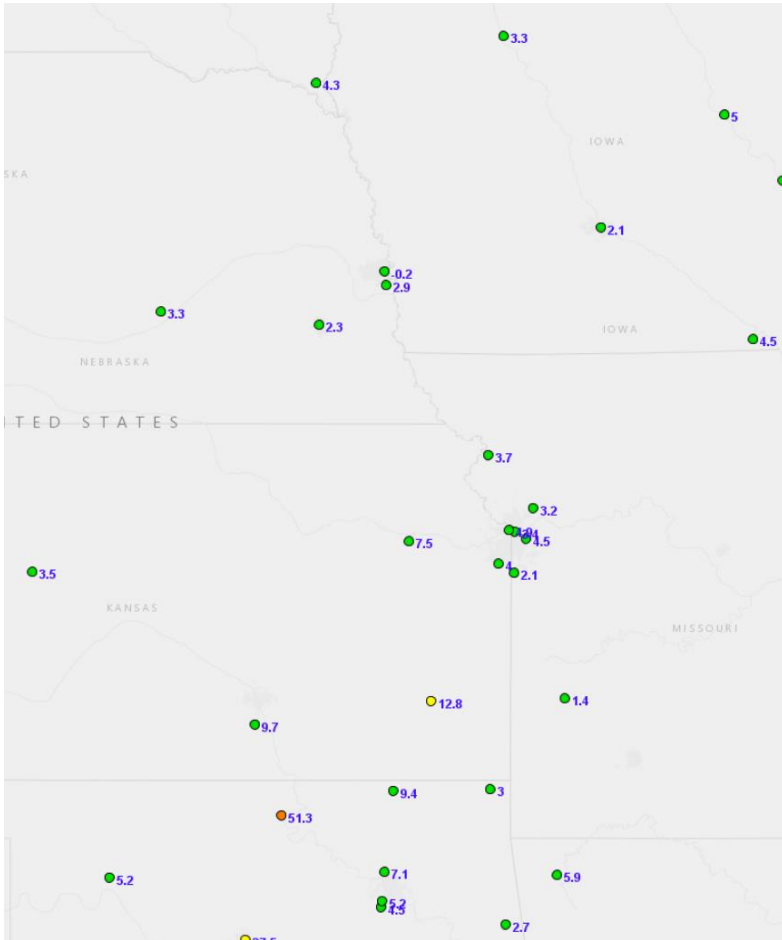
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Tuesday, April 13, 2021

PM2.5 (24-hour average)

Ozone (8-hour average maximum)



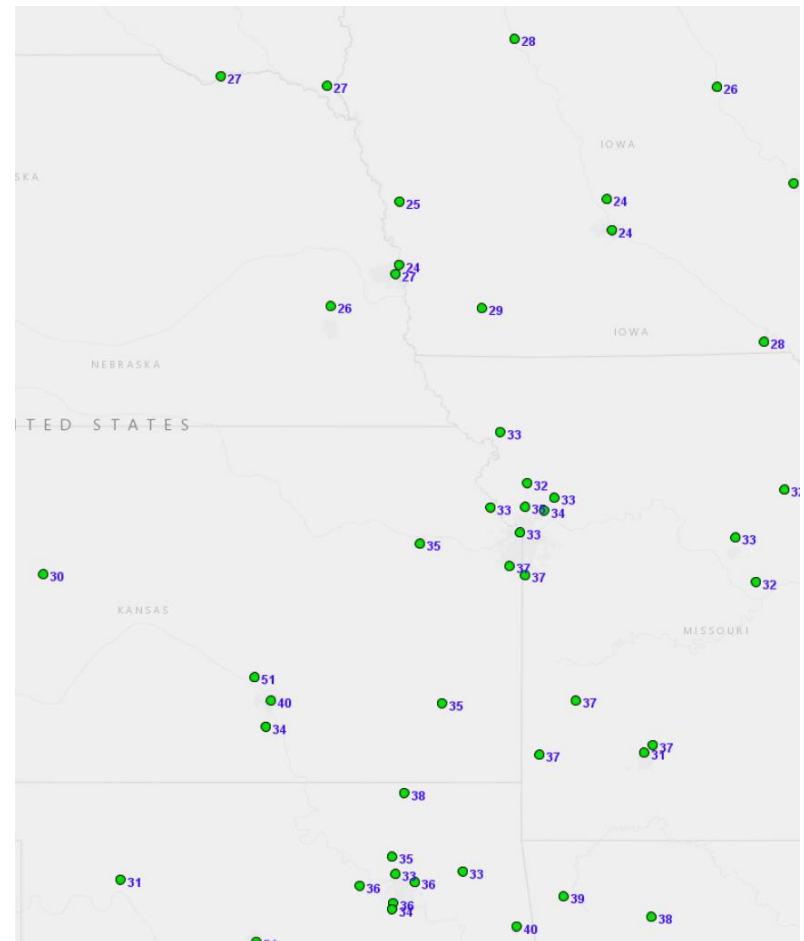
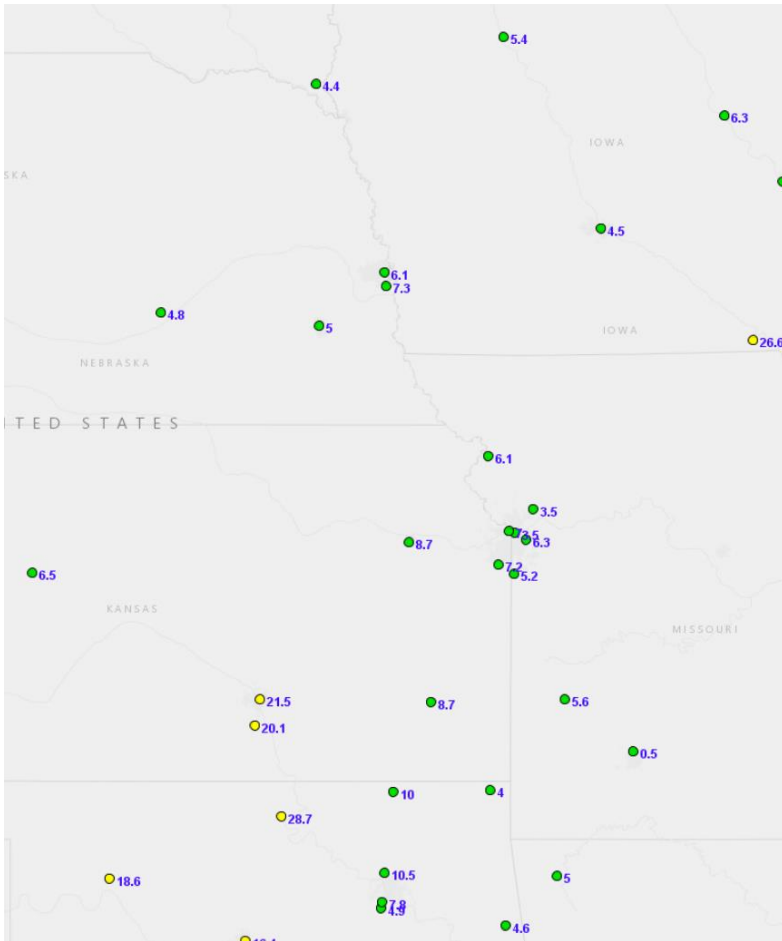
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Thursday, April 15, 2021

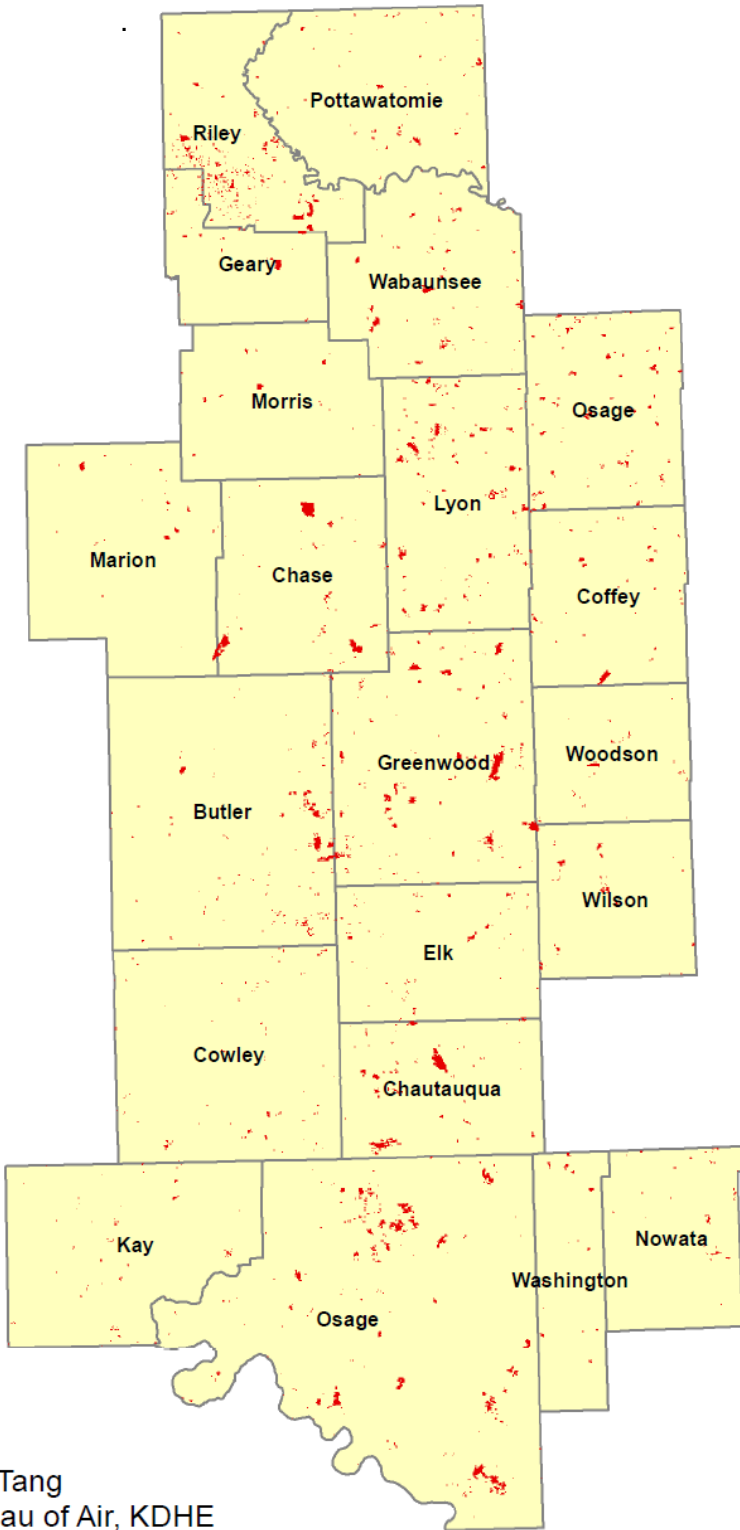
PM2.5 (24-hour average)

Ozone (8-hour average maximum)





Flint Hills Acreage Burned (February 23 – March 21, 2021)



<u>Counties</u>	<u>Acres Burned</u>	
Butler	8,386	*
Chase	7,815	*
Chautauqua	7,815	
Coffey	3,243	
Cowley	2,548	*
Elk	2,564	
Geary	2,471	*
Greenwood	14,533	*
Lyon	10,842	
Marion	2,193	*
Morris	1,390	*
Osage (KS)	6,471	
Pottawatomie	3,336	*
Riley	10,410	*
Wabaunsee	5,515	*
Wilson	2,687	
Woodson	1,313	
Nowata (OK)	1,452	
Osage (OK)	20,340	*
Washington (OK)	1,282	
Kay (OK)	1,869	
Total	118,474	
* Denotes county was partly or completely covered by clouds during latest analysis.		

Yao Tang
Bureau of Air, KDHE



Fires and Smoke

The combination of remnant smoke from April 8 and additional fire activity last Friday (April 9) led to smoke and air quality impacts in the southern Flint Hills and northern Oklahoma as light northerly winds transported smoke primarily to the south. Despite some rainfall a good amount of fire activity was observed on Saturday (April 10) under northwest winds, however good mixing kept air quality primarily good for most locations. Light winds, clear skies, and warm temperatures provided conditions for widespread burning on Sunday (April 11) which impacted both particulate matter and ozone air quality monitors throughout eastern Kansas, eastern Oklahoma, and western Missouri. A cold front moving across the region late Sunday into Monday though cleared the air for the start of the work week.

Prescribed fire activity was noted on Monday (April 12) under cooler temperatures and somewhat breezy winds, but any smoke impacts were localized for the daytime hours. A persistent northerly wind and cooler temperatures combined to cause air quality issues for the southern Flint Hills, parts of southern Kansas, and parts of Oklahoma Tuesday into Thursday (April 13-15). As burning took place each day the smoke was transported south and westward, and settled during the nighttime hours under a strong inversion. This combination led to an Unhealthy Air Quality Index at times and two air quality exceedances in northern Oklahoma. The next storm system moving into the region increased the mixing heights and dispersion by late Thursday (April 15) and helped preclude a third straight day of air quality exceedances.

KSFIRE.ORG



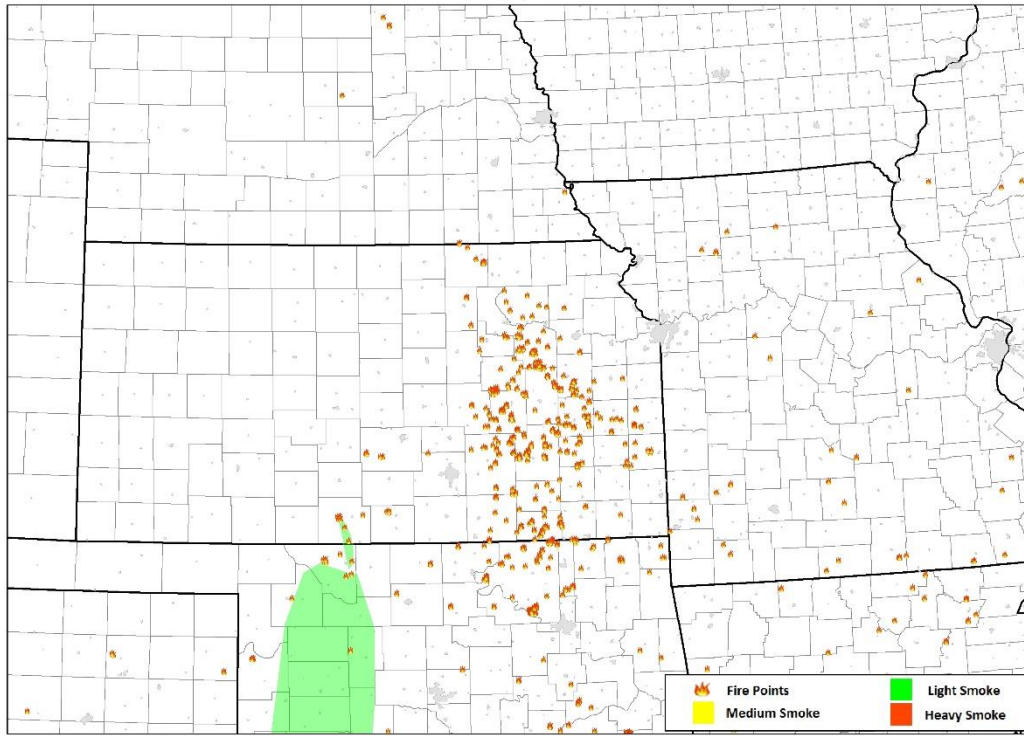
This website was developed as part of the development of the Kansas Flint Hills Smoke Management Plan. Kansas State University hosts the webpage and it includes important information for ranchers and others who might be interested in the Flint Hills. It provides training, regulations, policies, publications, a modeling tool and other links to guide people looking for information on smoke management. The development of the Flint Hills Smoke Management Plan is an attempt to balance the need for prescribed fire in the Flint Hills with the need for clean air in downwind areas.

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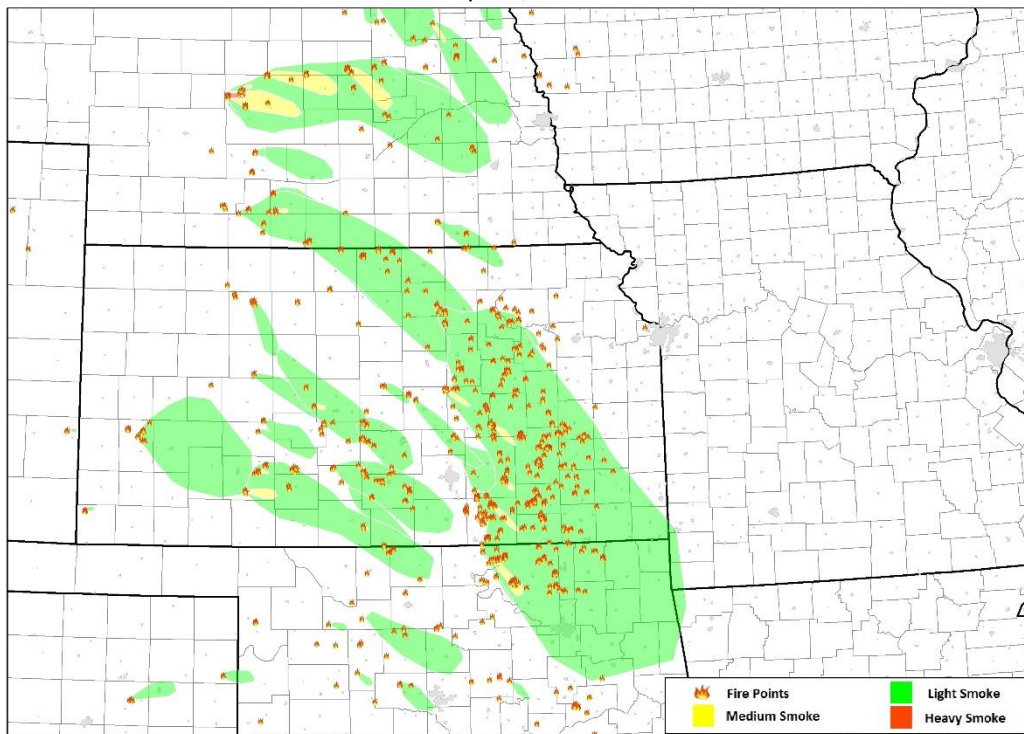
Satellite Fire & Smoke Analysis

April 09, 2021



Satellite Fire & Smoke Analysis

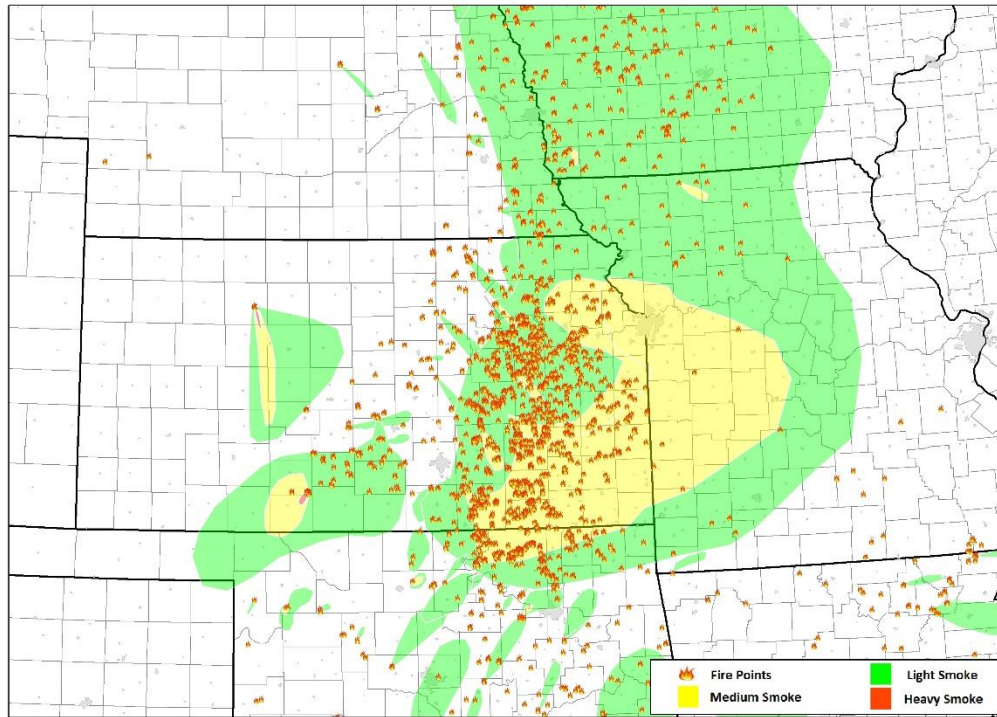
April 10, 2021



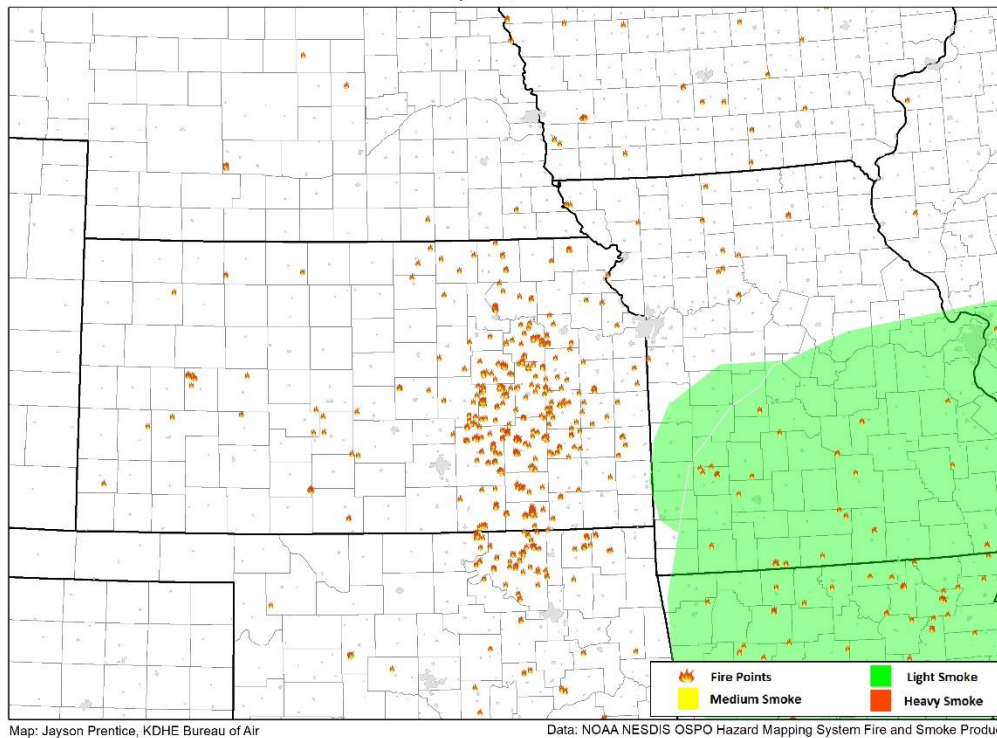
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Satellite Fire & Smoke Analysis April 11, 2021



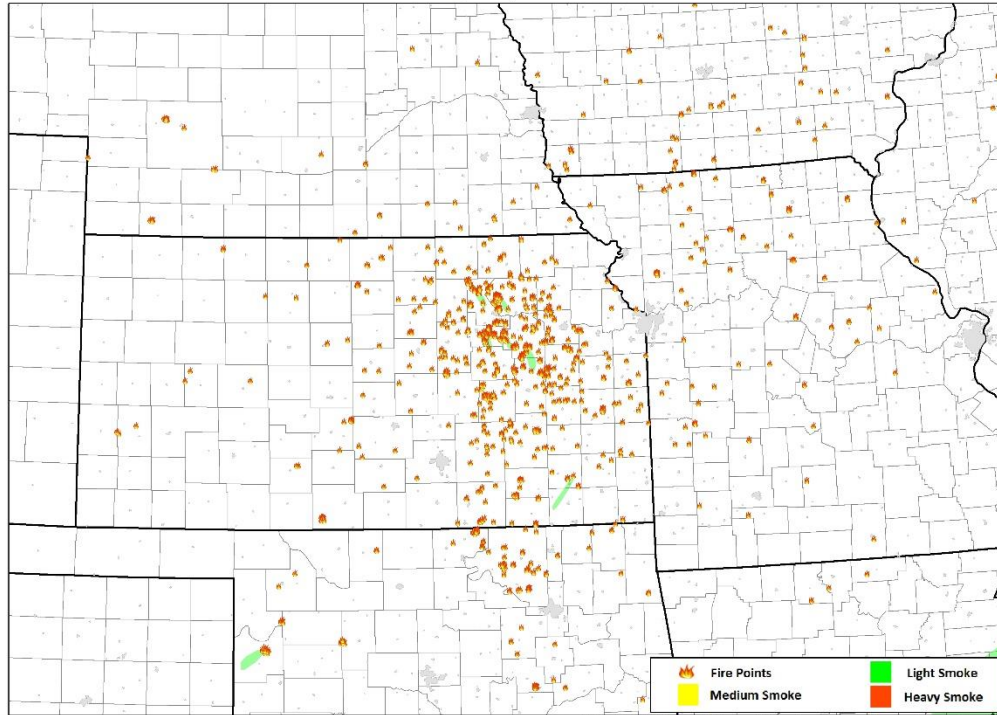
Satellite Fire & Smoke Analysis April 12, 2021



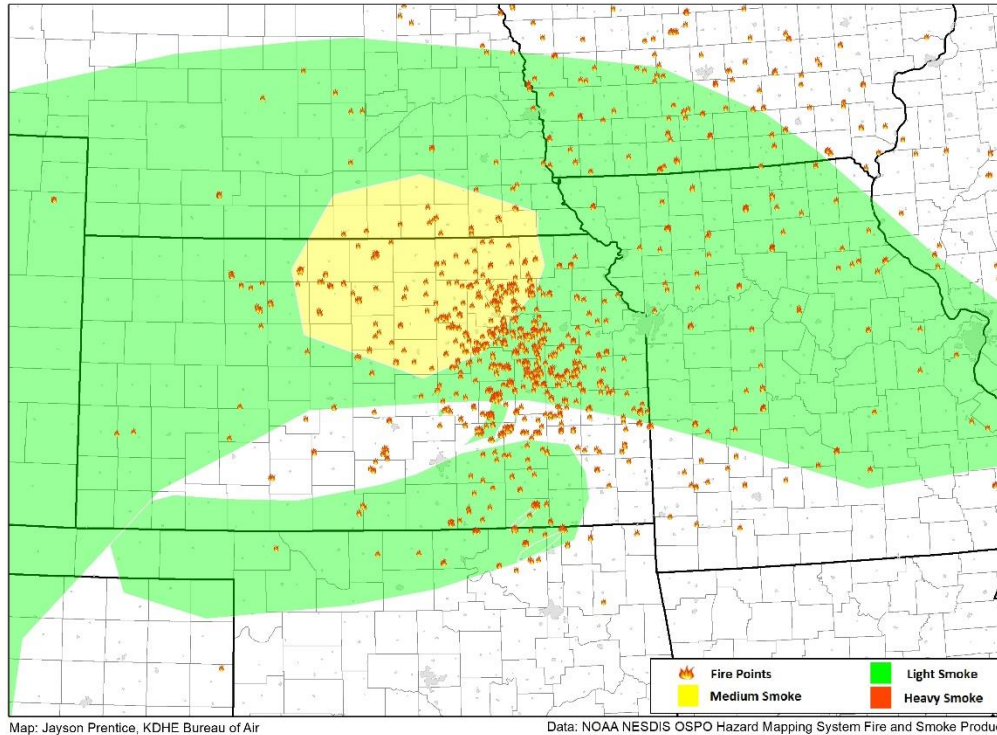
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Satellite Fire & Smoke Analysis April 13, 2021



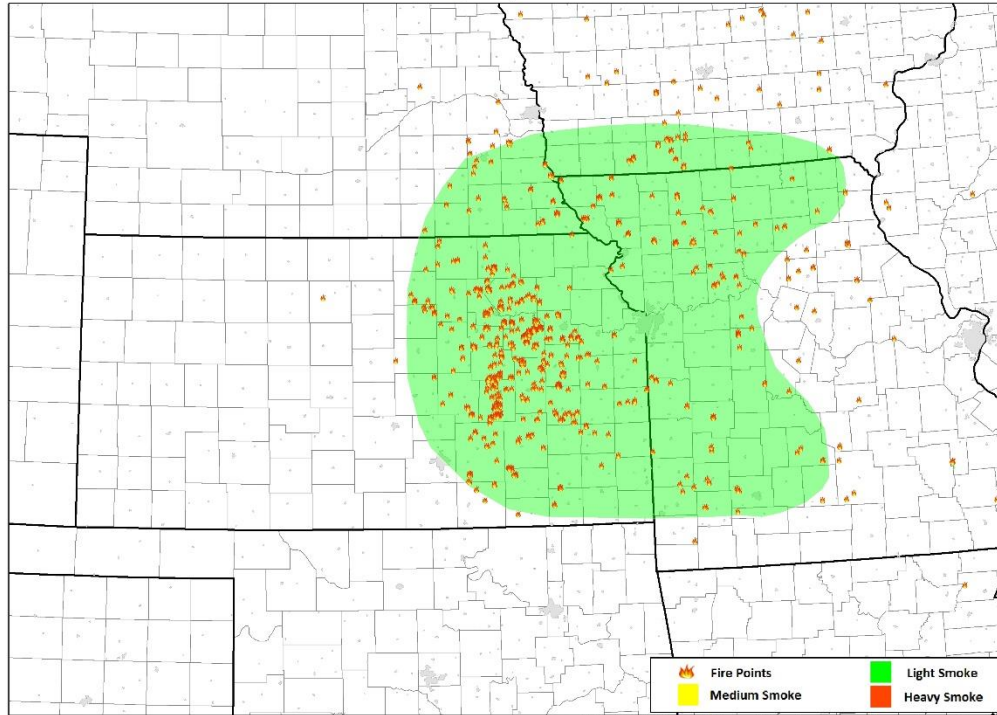
Satellite Fire & Smoke Analysis April 14, 2021



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Satellite Fire & Smoke Analysis April 15, 2021



Map: Jayson Prentice, KDHE Bureau of Air

Data: NOAA NESDIS OSPO Hazard Mapping System Fire and Smoke Product

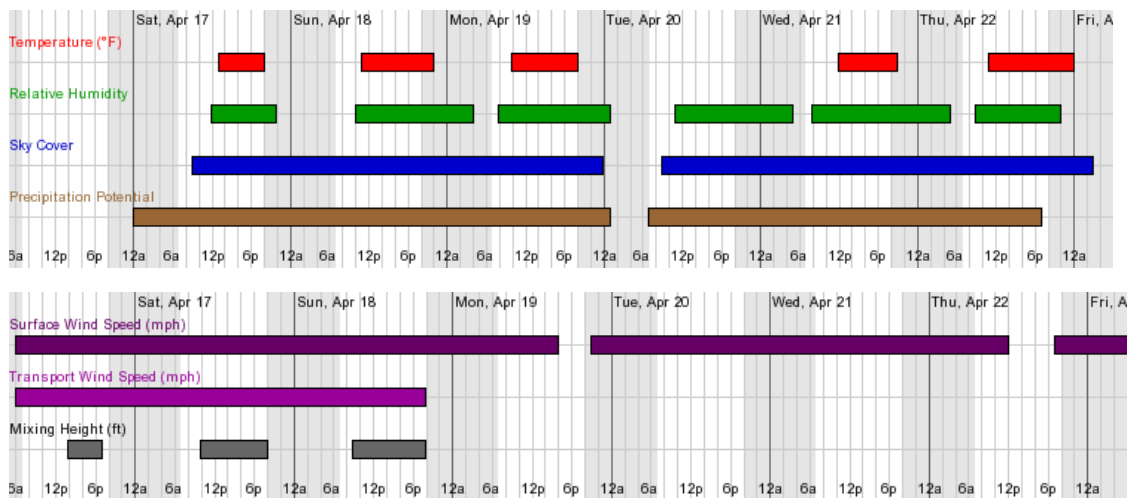


Upcoming Look at Fires and Smoke

Widespread rain is falling throughout the Flint Hills region today (April 16) which will inhibit any fire activity. Dry conditions are expected for Saturday-Monday (April 17-19) which should allow prescribed fire activity to increase steadily although breezy conditions make a return by late Monday (April 19). Another round of cold rain, even the word snow or wintry mix has been tossed around, is expected early Tuesday (April 20). Another dry day is expected on Wednesday (April 21) with temperatures slowly warming as we head into the next weekend. Breezy conditions on Thursday (April 22) will help bring in warmer air but may inhibit some burning.

Many locations are seeing green vegetation, but the cooler temperatures are helping resist a rapid increase in the new grasses. Temperatures will return to near normal by the end of next week though (April 23 and beyond) and with recent precipitation expect a rapid green-up for all locations as we head into the final week of April.

Ideal Weather Conditions for Prescribed Burning



Current National Weather Service forecast for the approximate center of the Flint Hills showing when conditions may be most favorable for wildland burning as described at KSFire.org. Conditions are most favorable when each parameter has a colored boxplot displayed.

Note: Forecast for mixing height and transport winds are only out to 2 days.

Forecast valid: 7am April 16, 2021.

For more information, contact:

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