

Flint Hills Wildland Fire Update

April 12, 2024

The following information on the Flint Hills wildland fires is provided weekly to keep stakeholders up to date on fires, smoke, and air quality.



<https://www.KSFire.org/>

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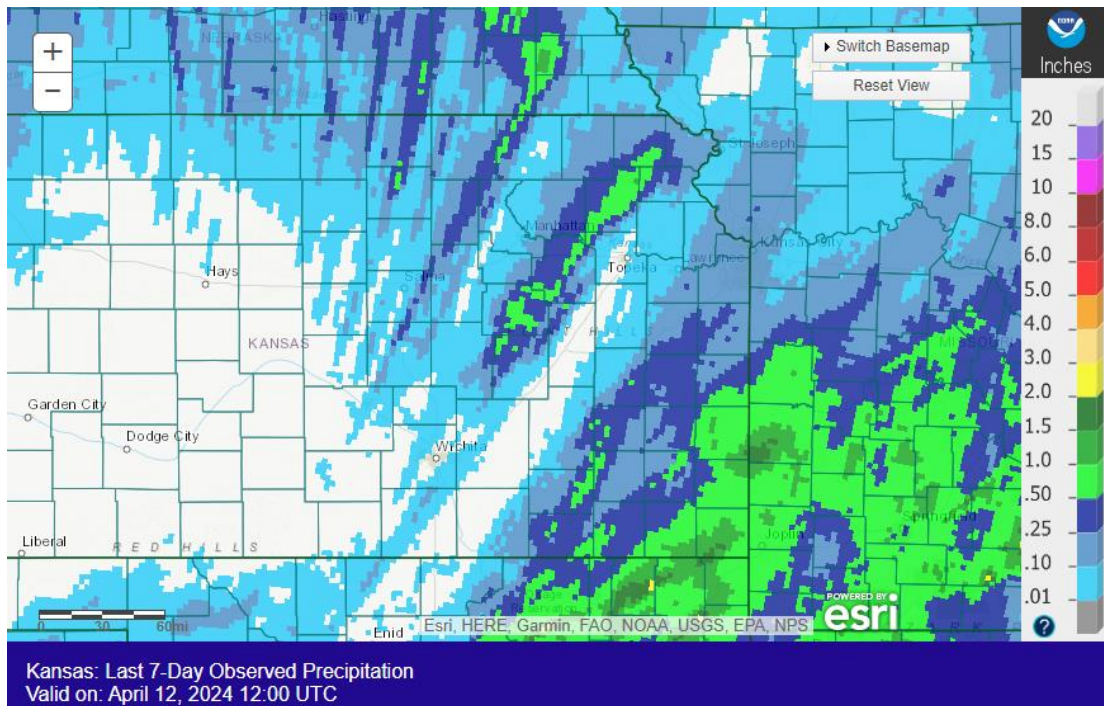
This website was developed as part of the development of the Kansas Flint Hills Smoke Management Plan. Kansas State University hosts the webpage, and it includes important information for ranchers and others who might be interested in the Flint Hills. It provides training, regulations, policies, publications, 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.



Meteorology

Temperatures were near to above normal for much of the prior week across the Flint Hills with afternoon highs in the 60s and 70s for most. A steady southeast wind was observed last Friday (Apr 5) prior to strong south winds on Saturday (Apr 6) with gusts upwards of 40 mph for most. A front pushing through led to precipitation for some areas of the Flint Hills, followed by strong west winds on Sunday (Apr 7) with gusts again greater than 35 mph common. The winds subsided for Monday-Wednesday (Apr 8-10) with variable wind direction and partly cloudy skies alongside afternoon minimum relative humidity values in the 20-30% range. A few additional rain showers occurred in the far southeast portions of the Flint Hills during these days as well with total rainfall amounts ranging from zero, to upwards of an inch in isolated locations for the prior week. Winds returned on Thursday (Apr 11) out of the northwest with gusts near 30 mph and perhaps the coolest day of the last week.

Precipitation

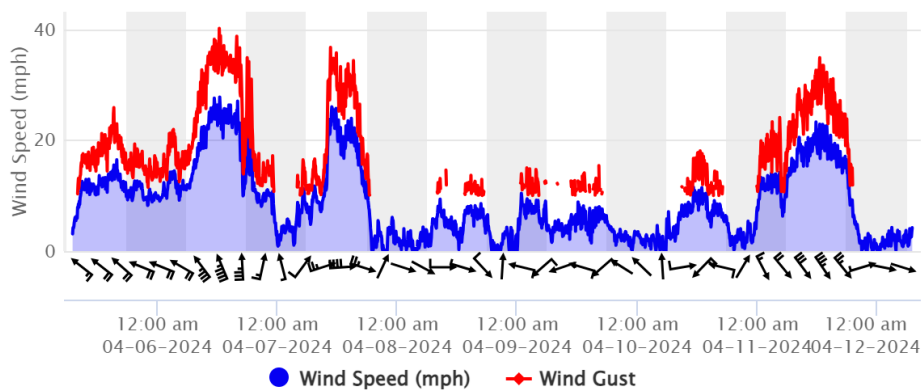
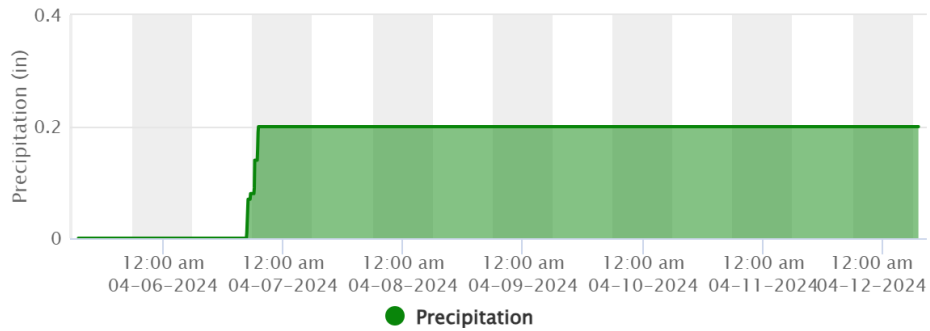
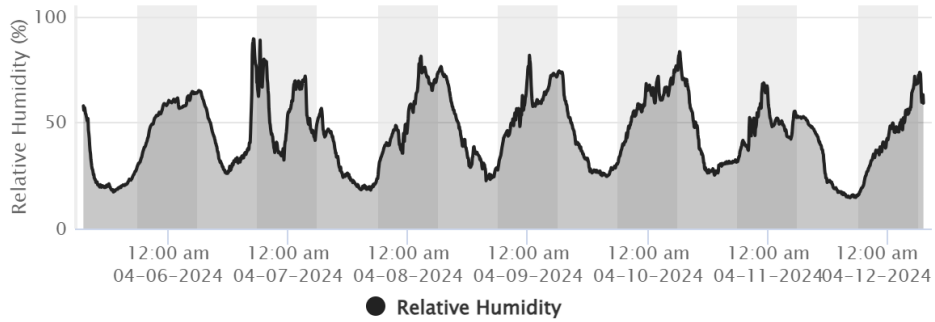
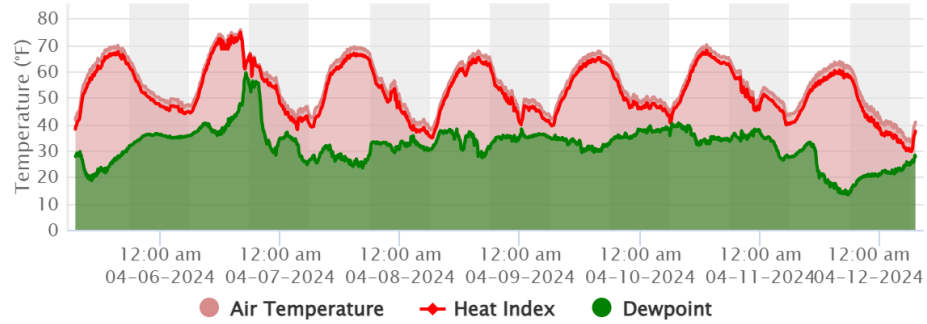


NOAA/NWS Observed Total Precipitation for April 5-12, 2024.

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Meteogram for Elmdale 1SE



7-day (April 5-12, 2024) Observed Weather from the Kansas Mesonet station near Elmdale, Kansas (<https://mesonet.k-state.edu/>)



Fire, Smoke, and Air Quality

For the period of April 5-11, 2024, there were thirteen preliminary air quality exceedances that were potentially influenced by prescribed fire within the Flint Hills.

Ozone: Preliminary data indicates three exceedances of the NAAQS daily 8-hour average maximum of 70 ppb. On Friday, April 5 all three monitors located within the Wichita metropolitan area exceeded the standard with preliminary values of 95 ppb (Sedgwick), 93 ppb (Wichita – Downtown), and 91 ppb (Peck).

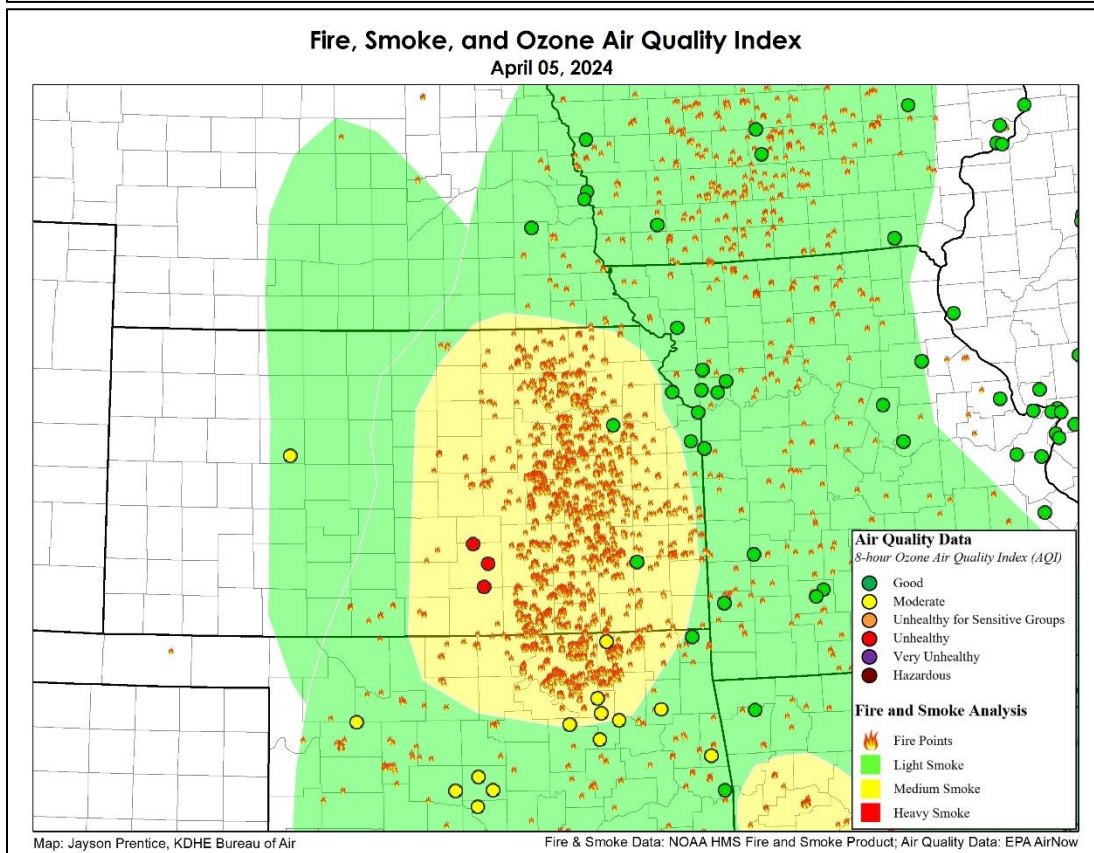
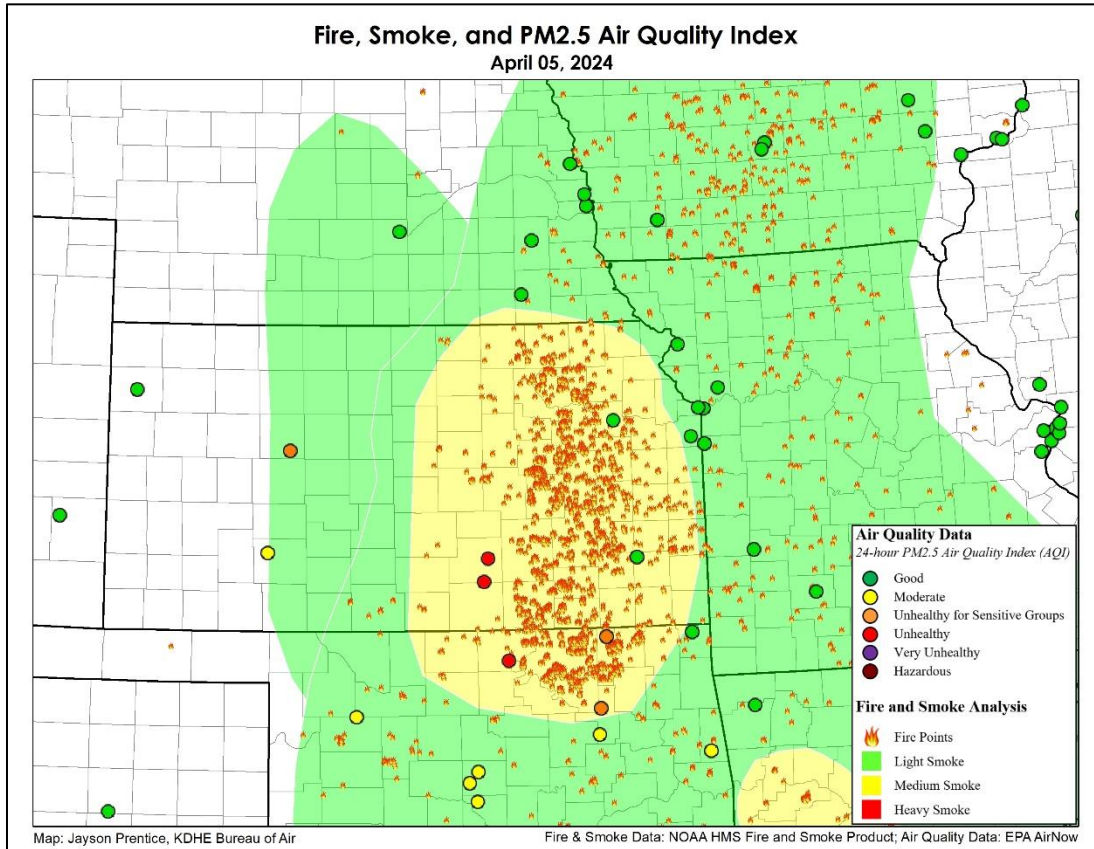
PM_{2.5}: Preliminary data indicates ten exceedances of the NAAQS daily 24-hour average maximum of 35 $\mu\text{g}/\text{m}^3$. Six exceedances were measured on Friday, April 5 with preliminary values of 116 $\mu\text{g}/\text{m}^3$ (Ponca City, OK), 113 $\mu\text{g}/\text{m}^3$ (Peck, KS), 97 $\mu\text{g}/\text{m}^3$ (Wichita, KS), 43 $\mu\text{g}/\text{m}^3$ (Copan, OK), 38 $\mu\text{g}/\text{m}^3$ (Cedar Bluff, KS), and 37 $\mu\text{g}/\text{m}^3$ (Tulsa, OK). An exceedance was measured at Peck, KS (37 $\mu\text{g}/\text{m}^3$) on Saturday, April 6; Ponca City, OK (41 $\mu\text{g}/\text{m}^3$) on Monday, April 8; Exceedances were measured at Ponca City, OK (47 $\mu\text{g}/\text{m}^3$) and Peck, KS (38 $\mu\text{g}/\text{m}^3$) on Tuesday, April 9. *Note the map does not depict the exceedance at Peck, KS on Tuesday due to calculation differences.*

Significant prescribed fire activity occurred on Friday (Apr 5) under steady southeast winds which combined with prior day(s) smoke to cause numerous air quality exceedances across Oklahoma and Kansas. Impacts from smoke lingered into Saturday (Apr 6) within and west of the Flint Hills. Both days saw air quality impacts that were intensified due to a strong morning inversion. Prescribed fire activity decreased for Saturday and Sunday (Apr 7) with strong winds however several wildfires were noted across the region.

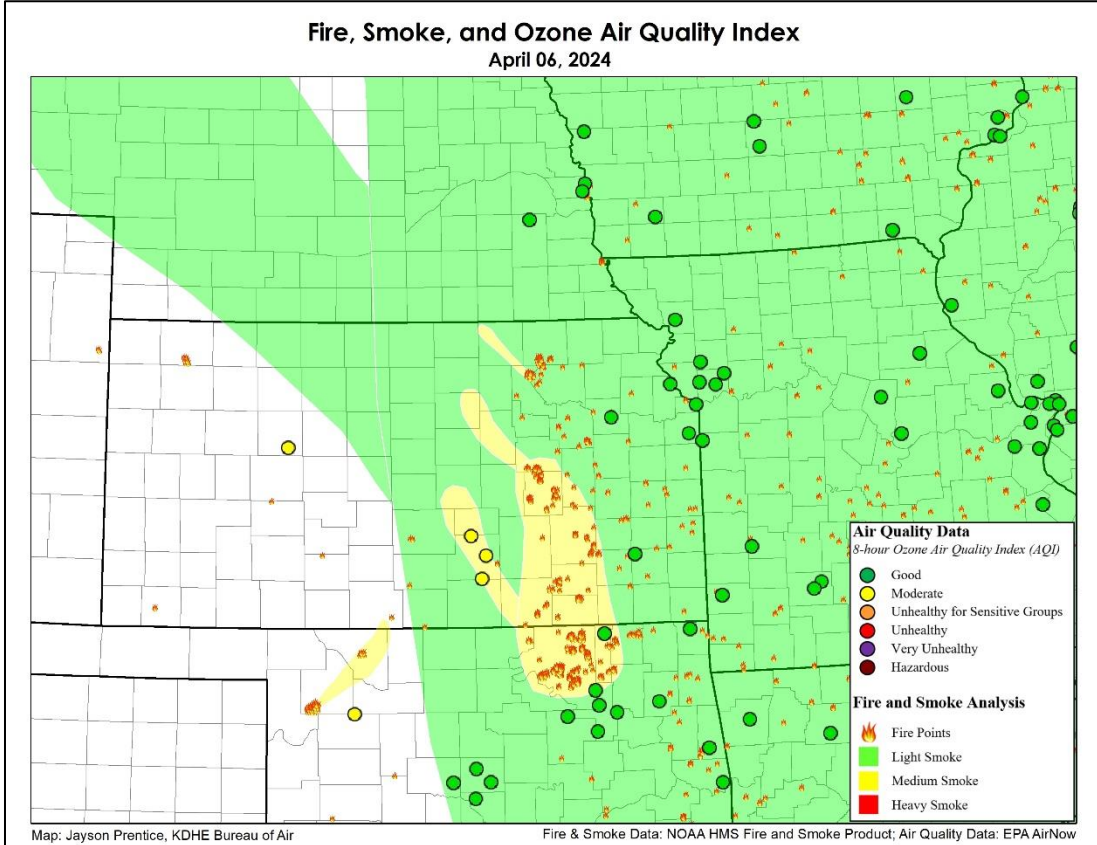
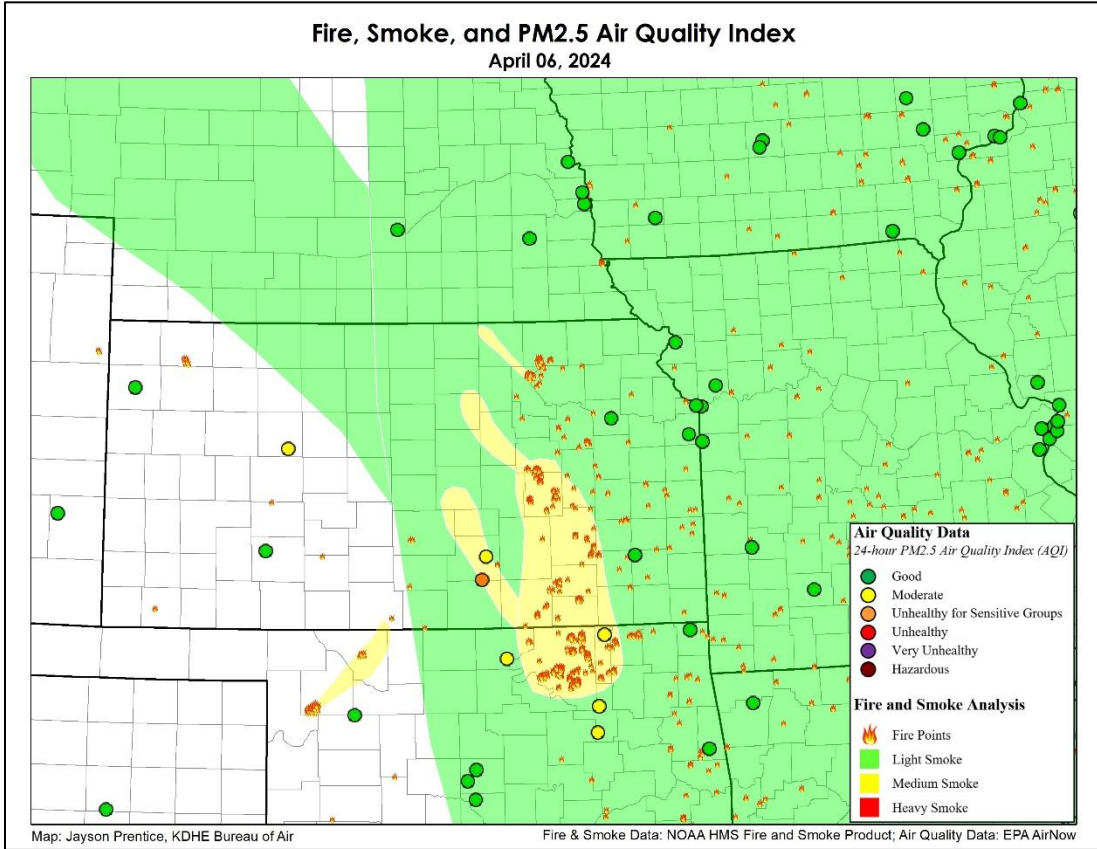
Prescribed fire activity returned for Monday (Apr 8) under west-southwest winds and continued Tuesday (Apr 9) with variable wind directions. There was a lack of transport winds and variable surface winds within the Flint Hills which led to most air quality impacts being confined to the Flint Hills. Additional air quality exceedances during this time were likely due to the proximity of fires and these light winds Prescribed fire activity decreased on Wednesday (Apr 10) with varying wind directions, although cloud cover likely limited the number of fires detected. Prescribed fire activity was limited on Thursday (Apr 11) to the southern Flint Hills where winds were lighter; Also noted that wildfires flared back up within the northern Flint Hills – remnants from last weekend.

The following pages have two maps for each day; One showing the 24-hour average Air Quality Index category for PM_{2.5} and the other showing the 8-hour average maximum Air Quality Index category for Ozone from regulatory air quality monitors in the region. Both maps show fires and smoke as analyzed by NOAA Hazard Mapping Services.

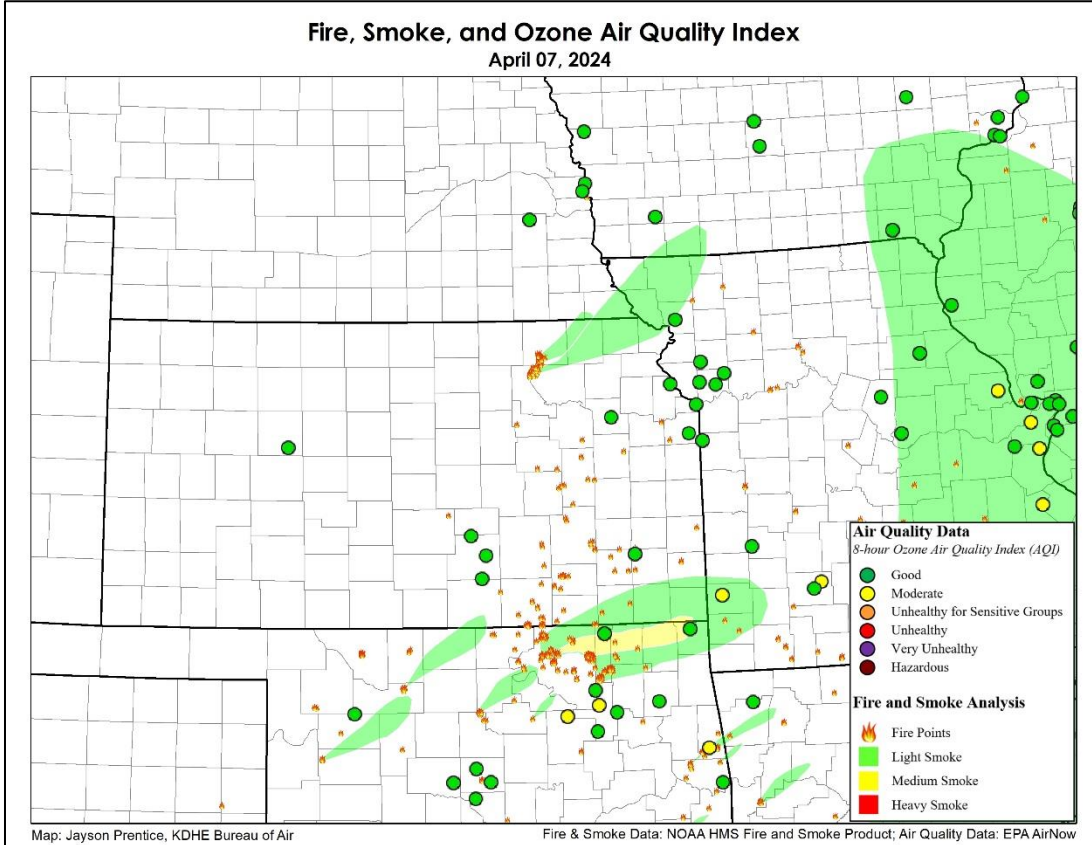
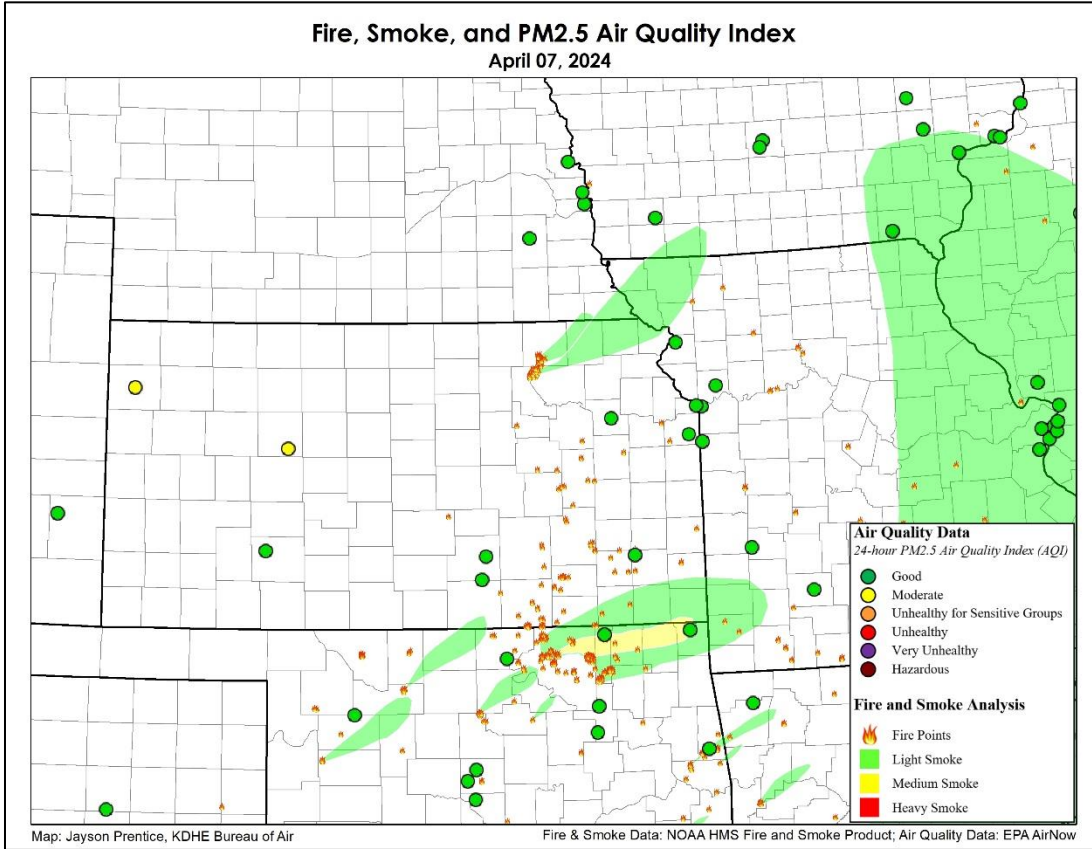
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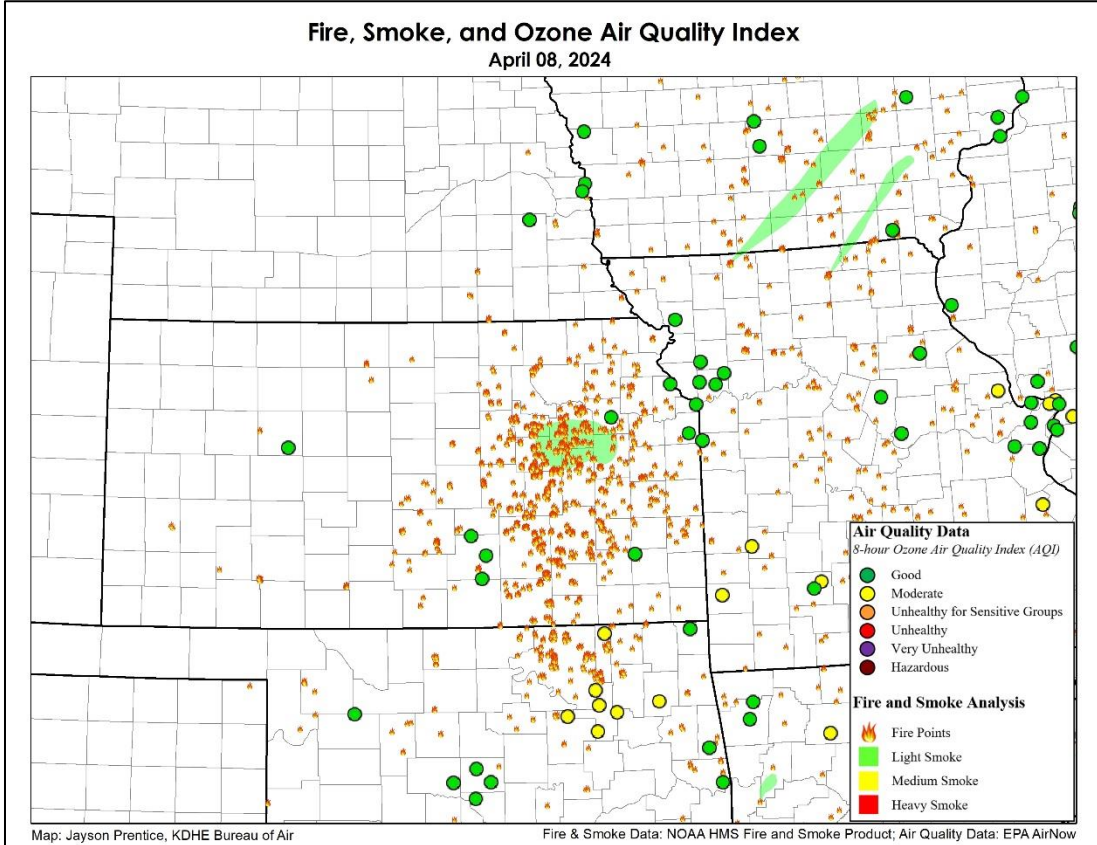
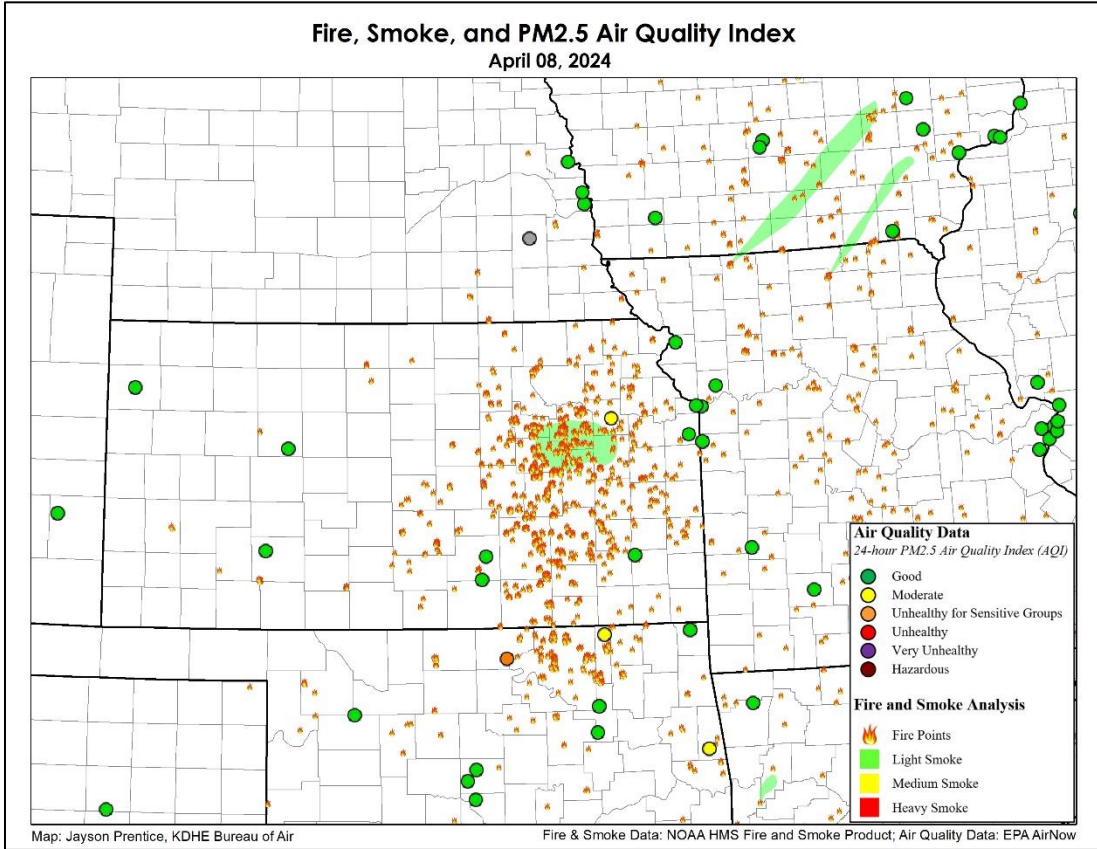
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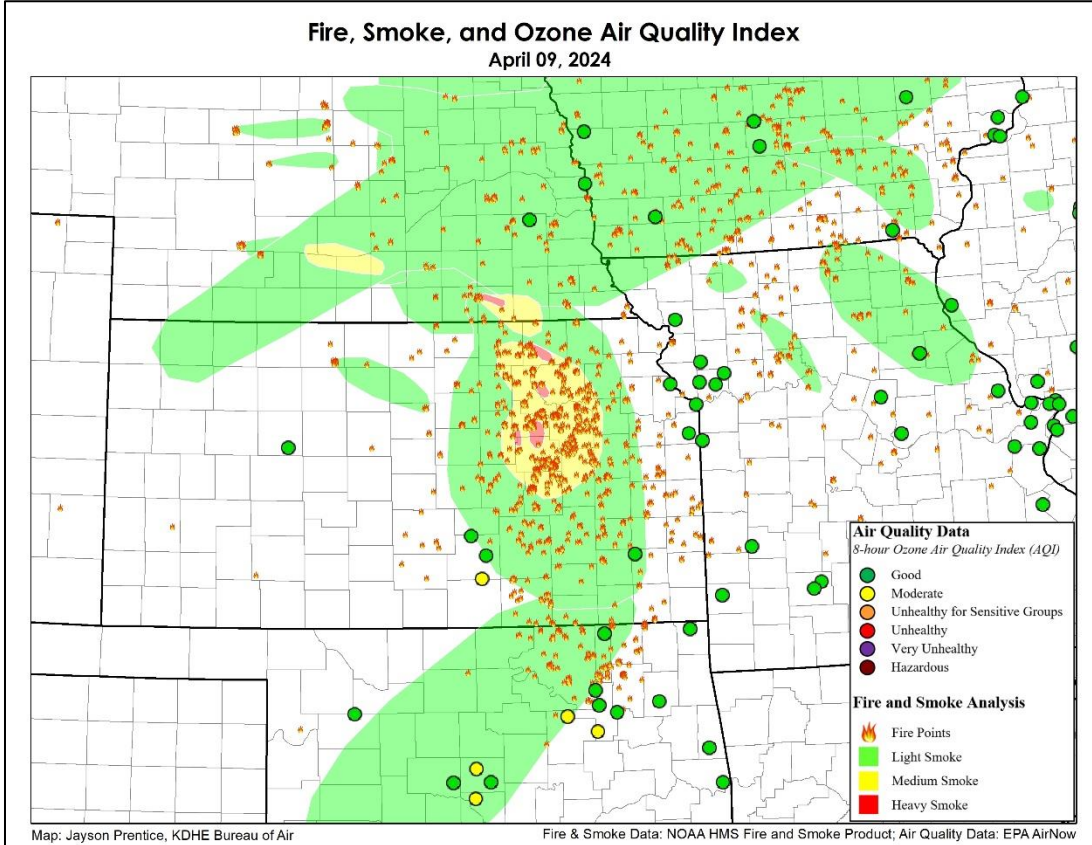
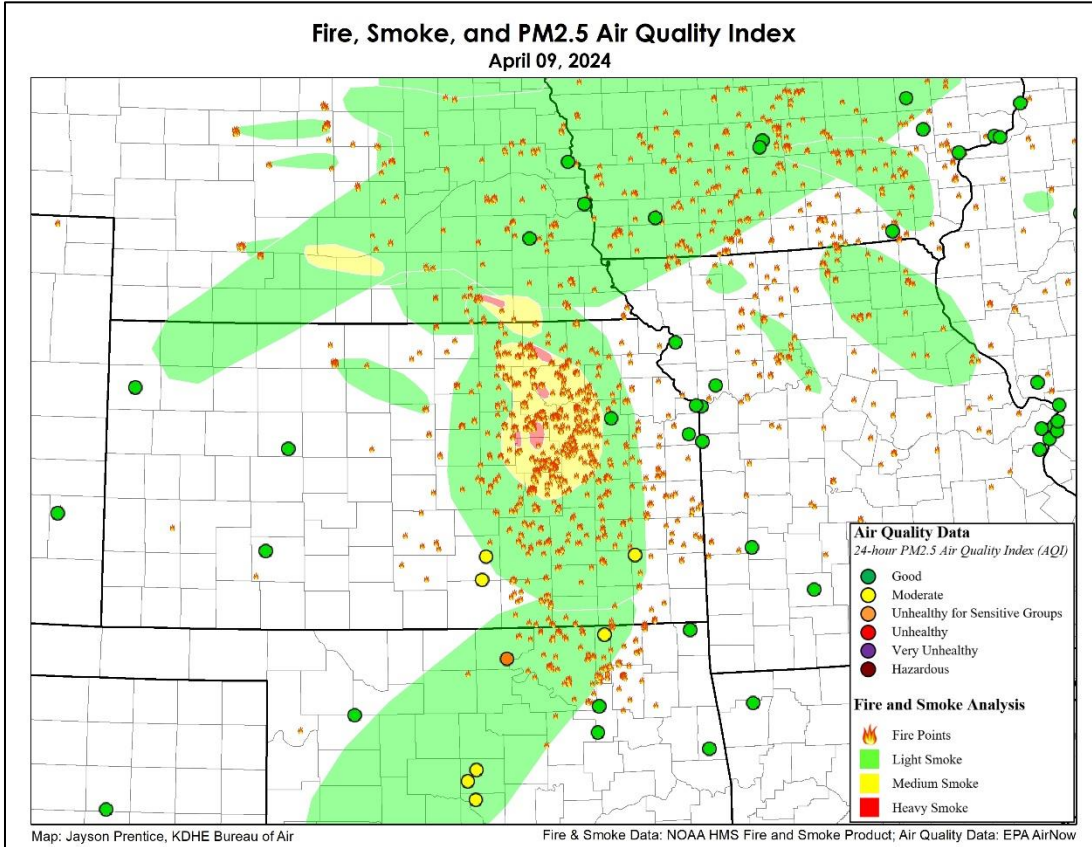
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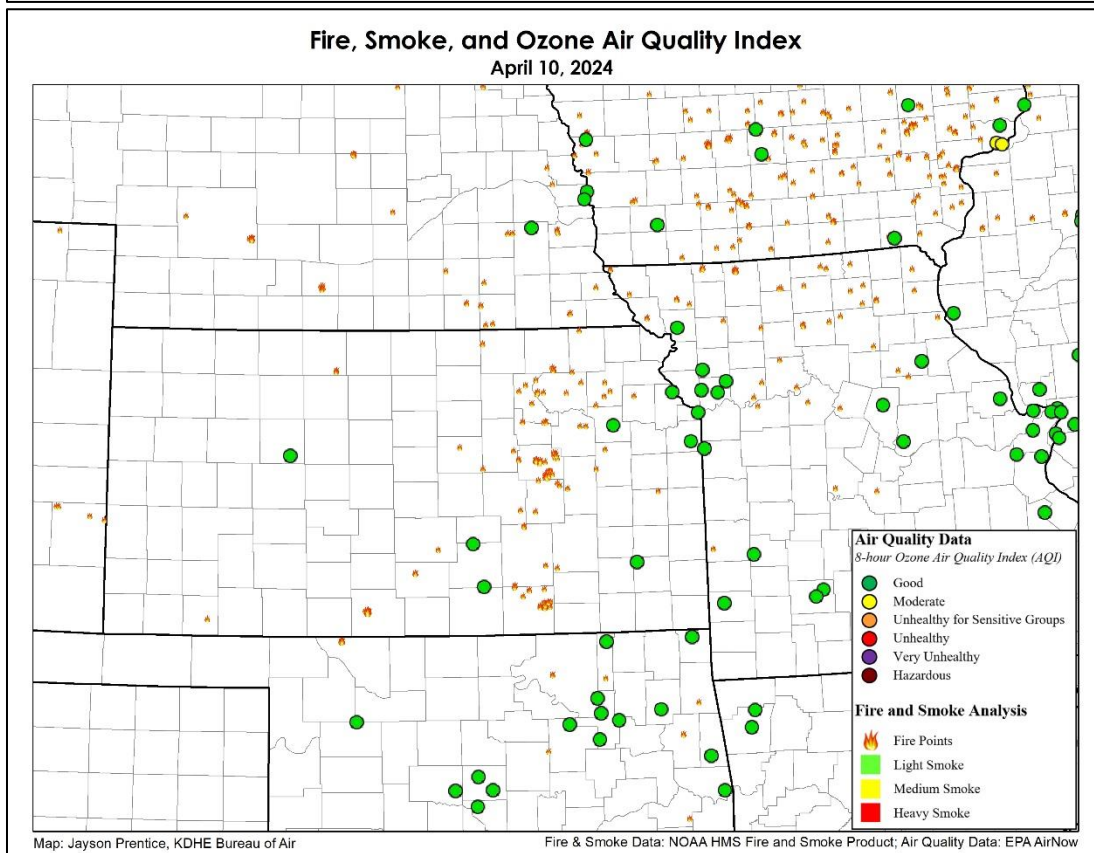
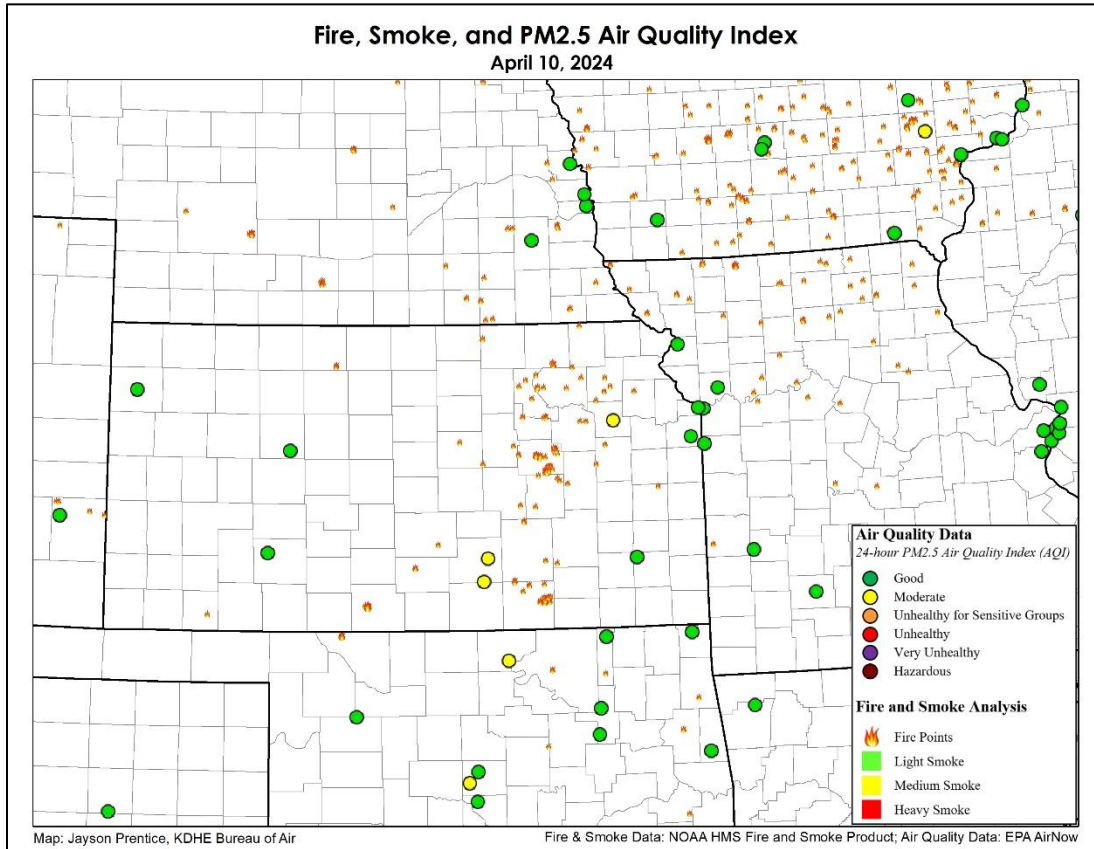
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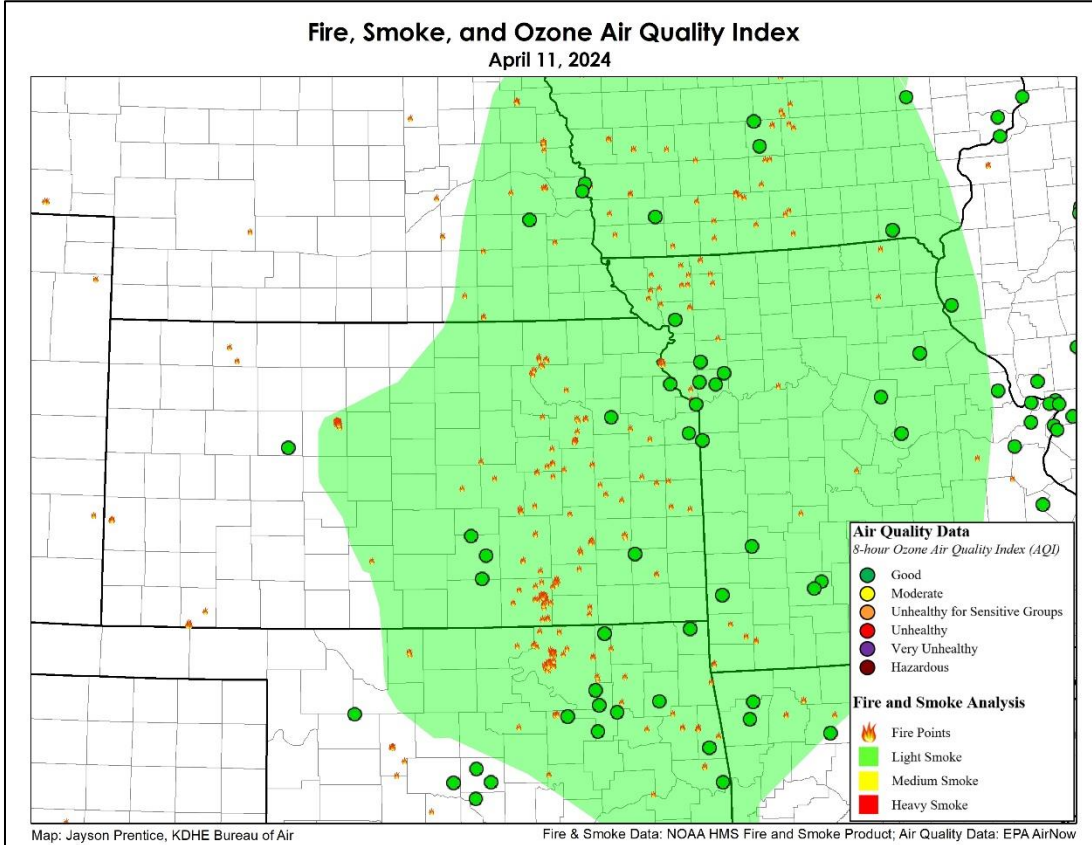
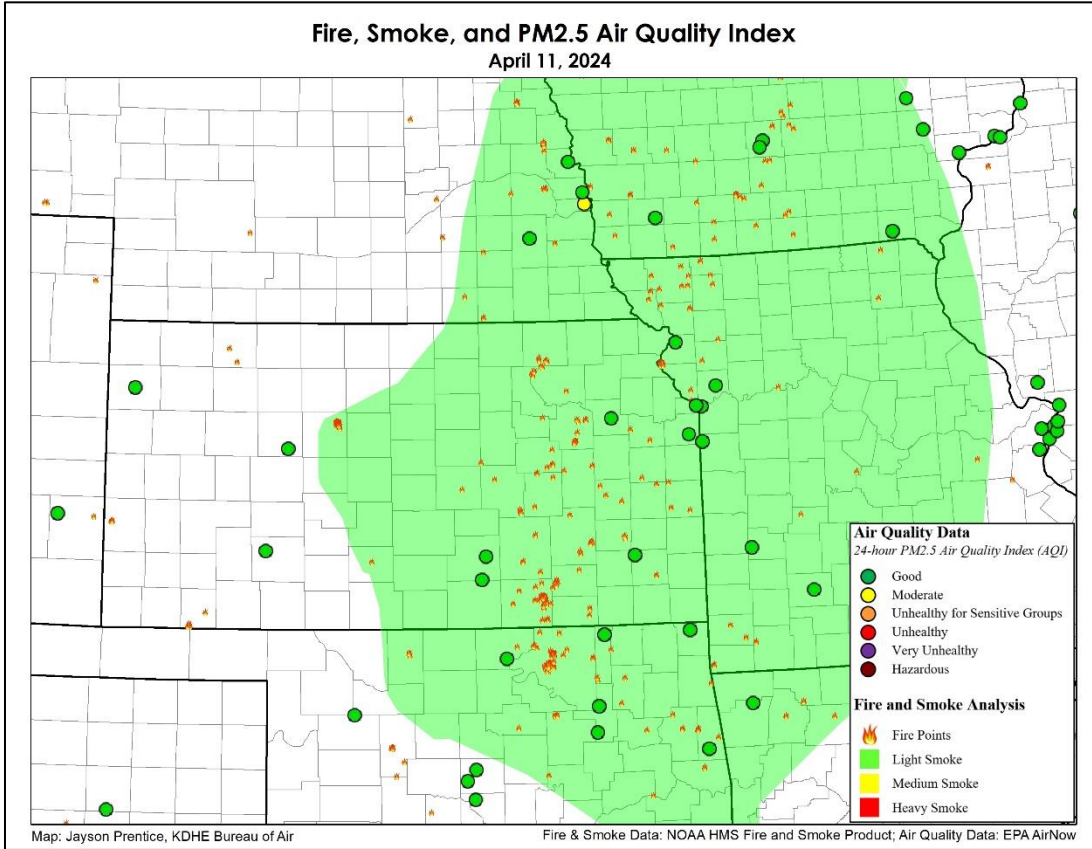
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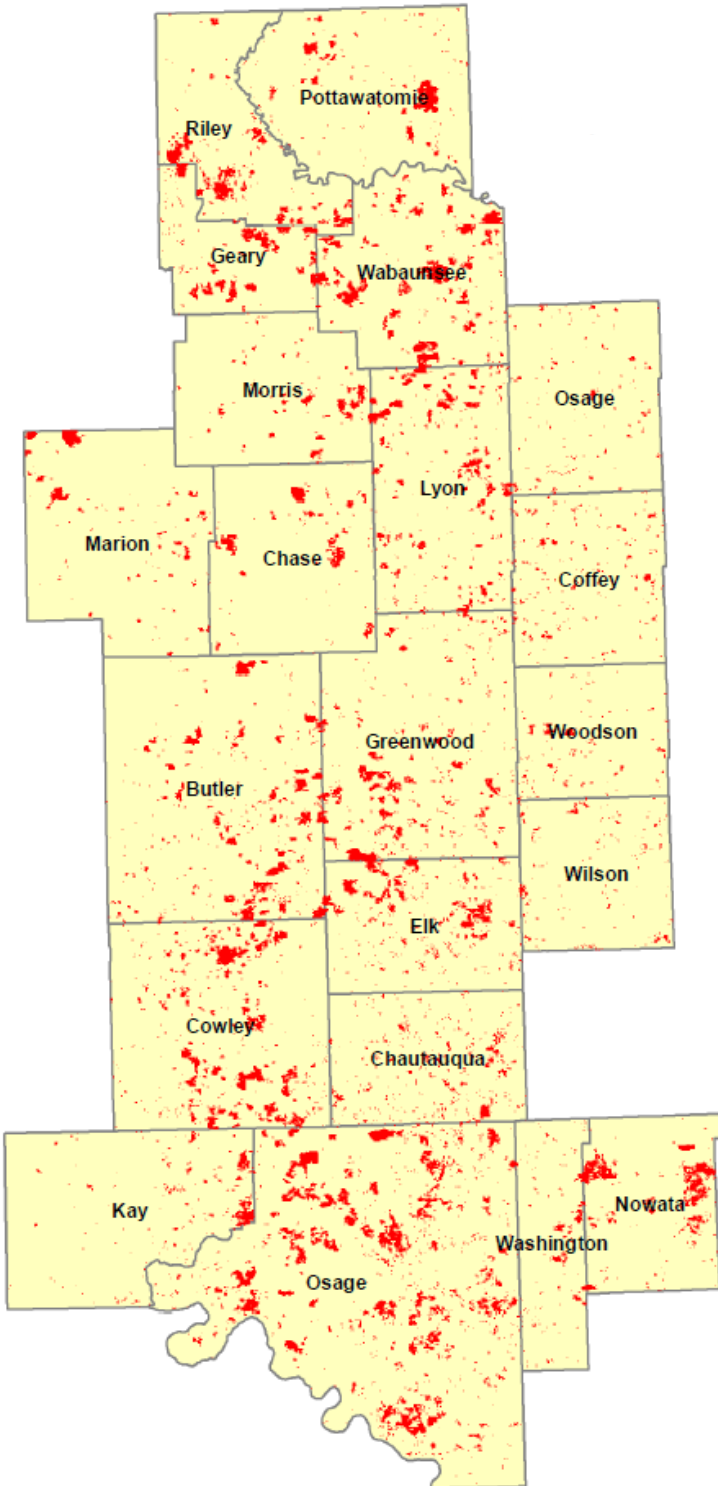


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Flint Hills Acreage Burned (February 14 – April 4, 2024)



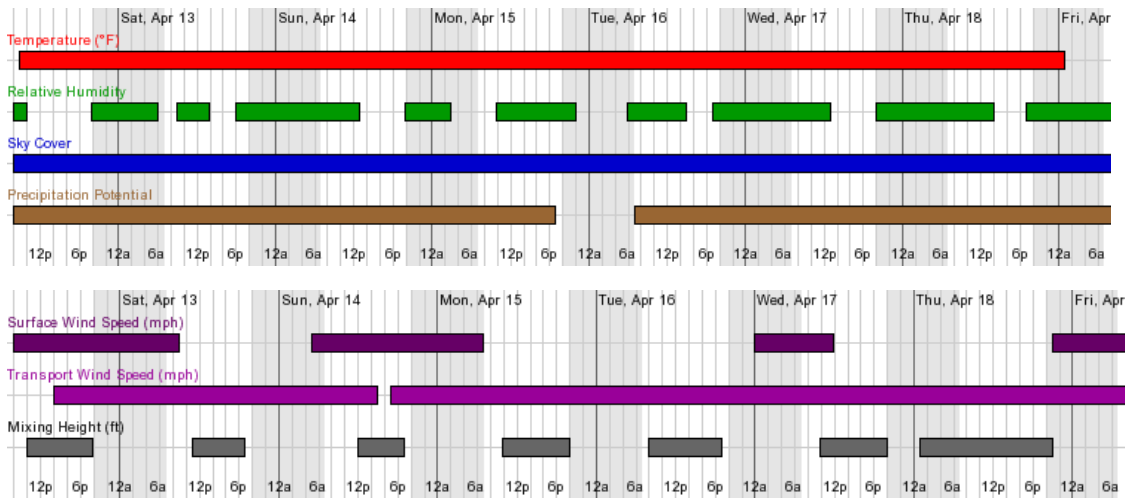
<u>Counties</u>	<u>Acres Burned</u>
Butler	46,827
Chase	15,552
Chautauqua	17,236
Coffey	11,135
Cowley	52,279
Elk	30,163
Geary	22,224
Greenwood	37,592
Lyon	35,893
Marion	15,877
Morris	13,004
Osage (KS)	7,182
Pottawatomie	19,321
Riley	26,039
Wabaunsee	48,140
Wilson	7,135
Woodson	6,471
Nowata (OK)	26,626
Osage (OK)	124,760
Washington (OK)	8,170
Kay (OK)	13,375
Total	585,001
<i>* Denotes county was partly or completely covered by clouds during latest analysis.</i>	



Upcoming Look at Fires and Smoke

Unseasonably warm temperatures are expected for much of the next week with the temperature not dropping below 50 degrees – even overnight – until next Friday morning (Apr 18). Conditions are favorable for prescribed fire today (Friday, Apr 12) except for relative humidity values which may drop into the 15-25% range this afternoon. Breezy conditions are expected Saturday (Apr 13) with strong wind. Sunday (Apr 14) becomes more favorable for prescribed fire again, although winds may be somewhat variable and relative humidity values again will be in the 20-30% range. Breezy to windy conditions are expected Monday (Apr 15) and Tuesday (Apr 16) with potential for (severe) storms late Monday. Much of Wednesday (Apr 17) and Thursday (Apr 18) may have breezy conditions as well with fairly dry conditions in the afternoon leading to increase fire danger concerns.

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](https://ksfire.org). Conditions are most favorable when each parameter has a colored boxplot displayed. Forecast valid: 8am April 12, 2024.

For more information, contact:

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