

Flint Hills Wildland Fire Update

March 29, 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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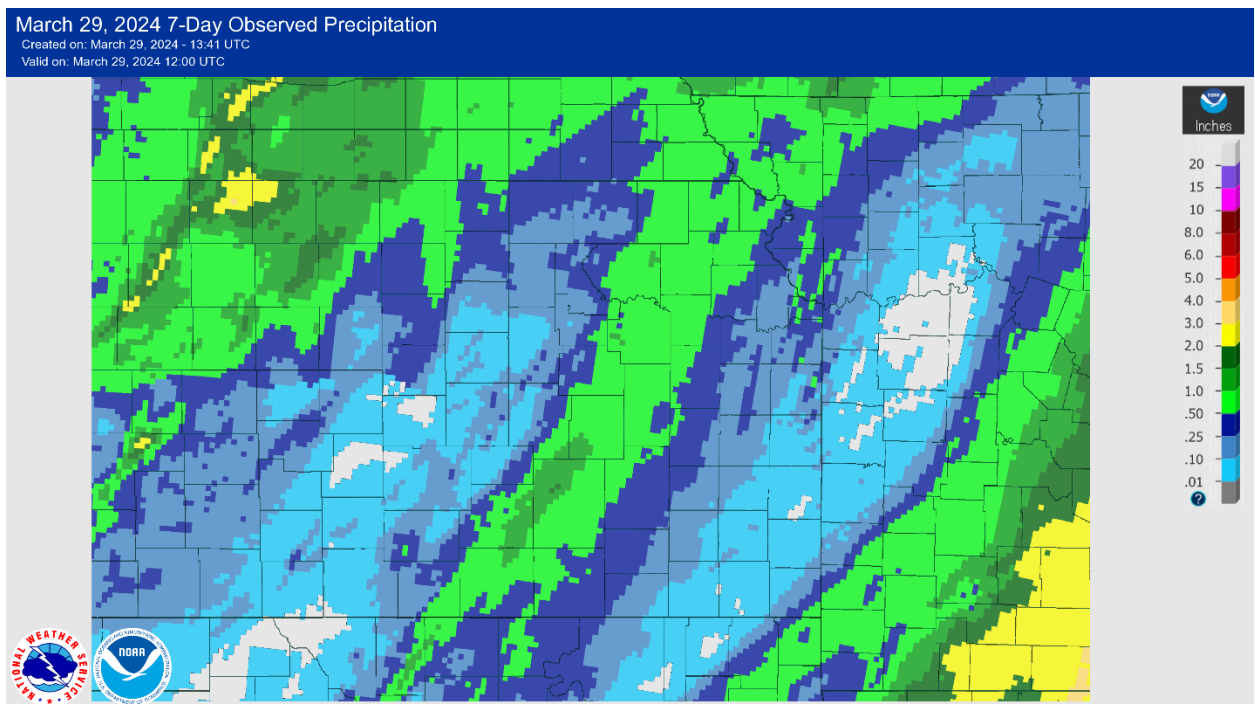
This website was developed as part of the development of the Kansas Flint Hills Smoke Management Plan. Kansas State University hosts the webpage, and it includes important information for ranchers and others who might be interested in the Flint Hills. It provides training, regulations, policies, publications, 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

Gusty west to northwest winds were observed last Friday (March 22) across the region with wind gusts up to 40 mph. Lighter easterly winds alongside below normal temperatures and cloud cover existed for Saturday (March 23). A storm system moving across the region brought breezy conditions for Sunday (March 24) alongside widespread precipitation with much of the Flint Hills seeing a quarter inch to inch of rainfall. A cold front moved through on Monday (March 25) and brought falling temperatures and additional cloud cover along with northwest winds. Below normal temperatures and the northwest wind continued Tuesday (March 26) before winds slowly turned light and southerly on Wednesday (March 27) with sunny skies and slowly warming temperatures. South winds 10-20 mph and above normal temperatures under sunny skies occurred on Thursday (March 28).

Precipitation

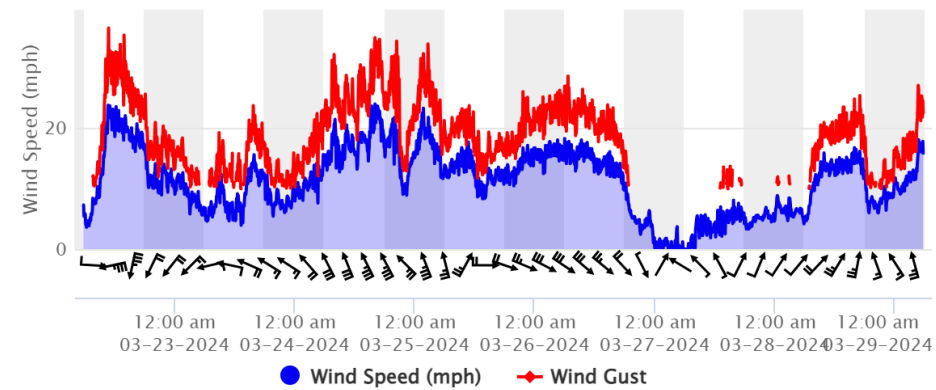
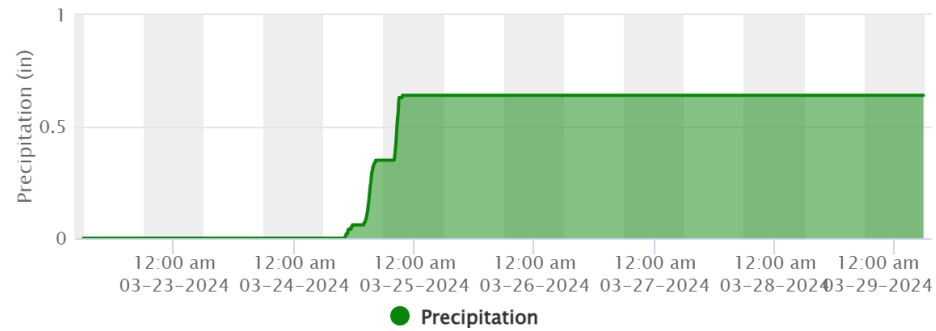
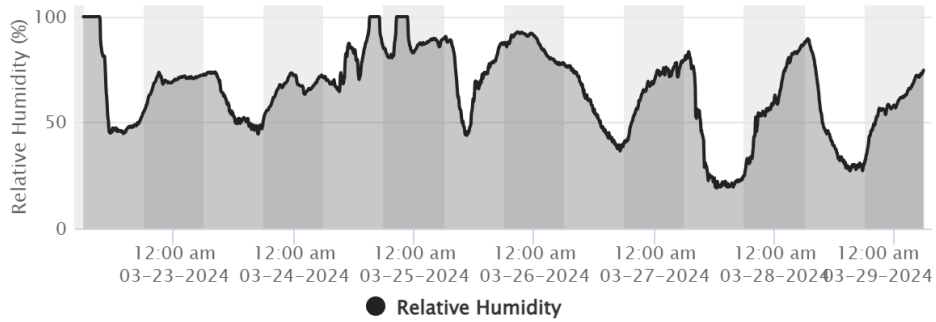
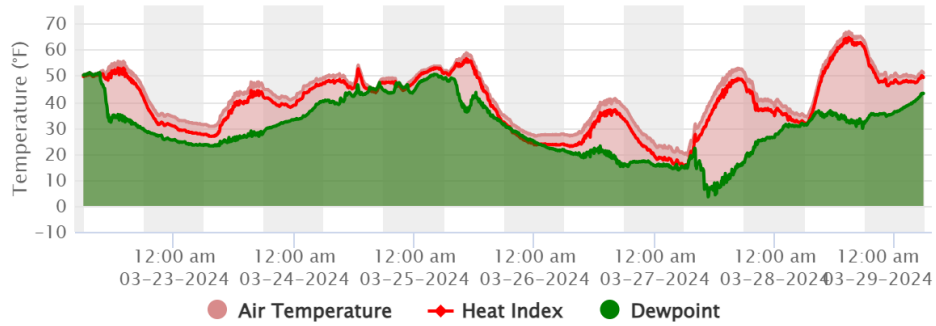


NOAA/NWS Observed Total Precipitation for March 22-29, 2024.

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Meteogram for Elmdale 1SE



7-day (March 22-29, 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 March 22-28, 2024, there were three preliminary air quality exceedances that were potentially influenced by prescribed fire within the Flint Hills.

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

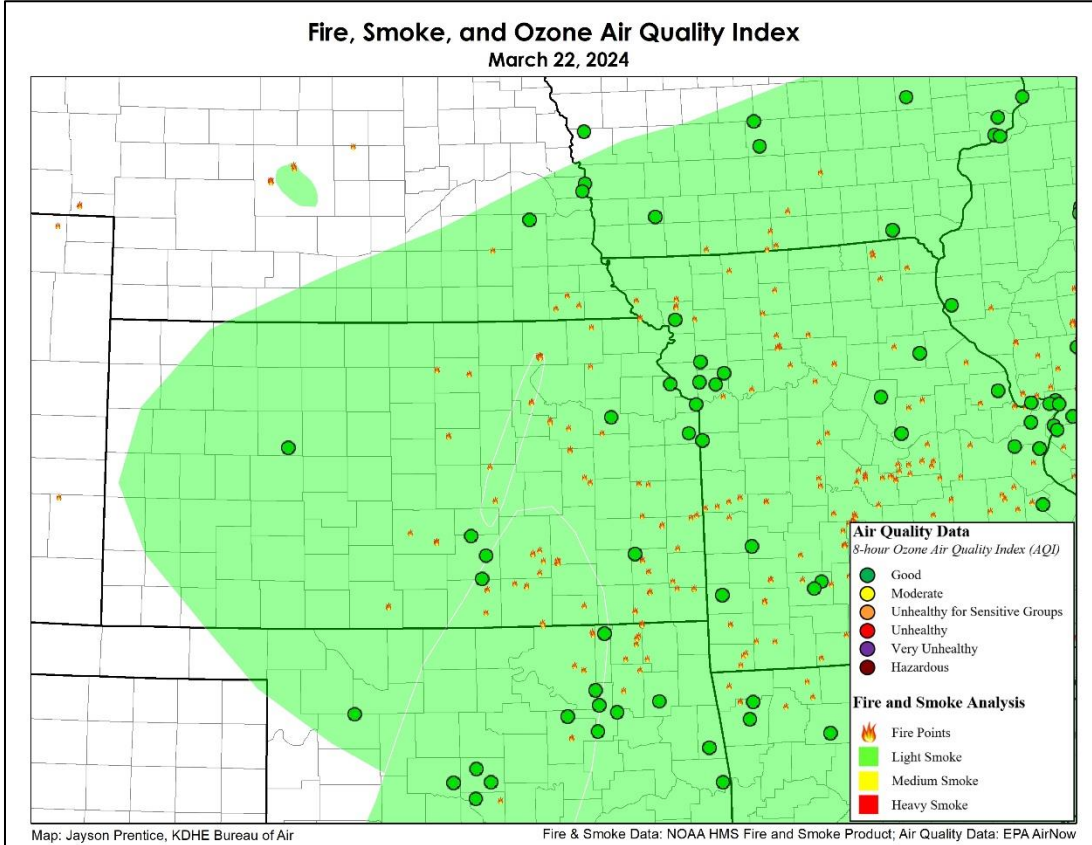
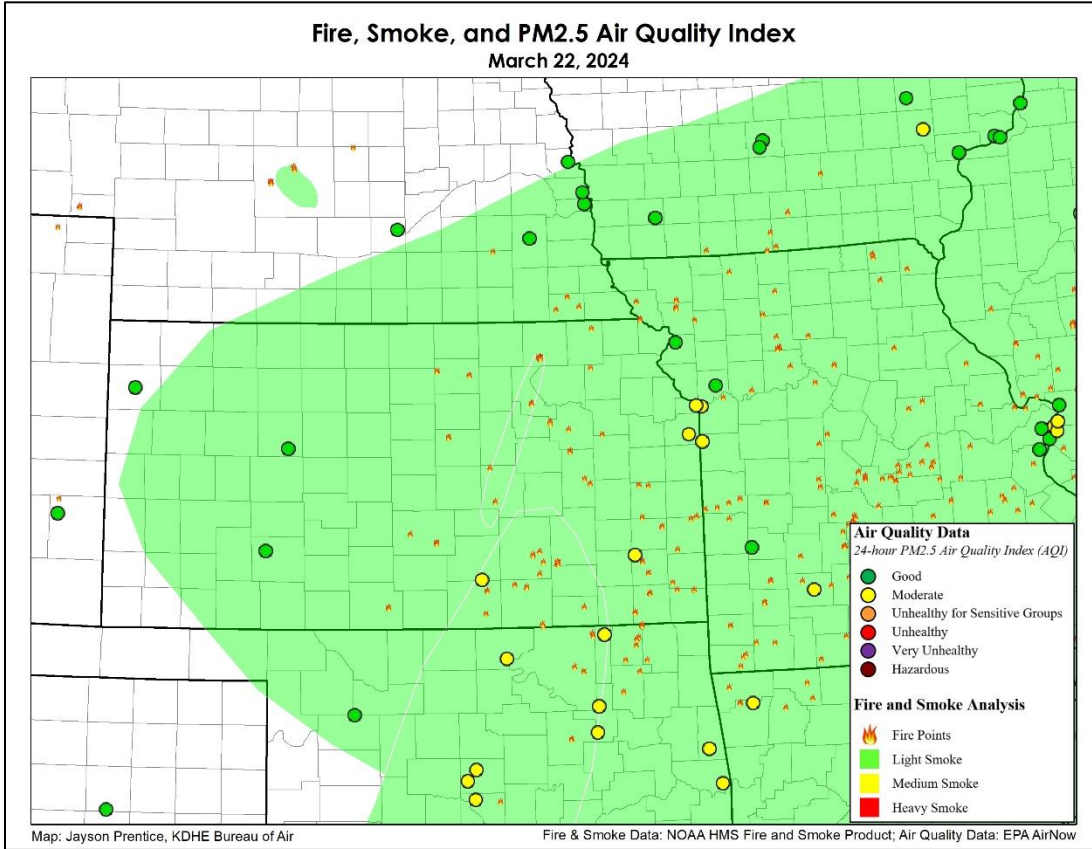
PM_{2.5}: Preliminary data indicates three exceedances of the NAAQS daily 24-hour average maximum of 35 µg/m³. On March 27, 2024, the air quality monitor in Copan, OK recorded a 24-hour average of 41.2 µg/m³. On March 28, 2024, the air quality monitor in Copan, OK recorded a 24-hour average of 62.0 µg/m³ and the monitor in Chanute, KS recorded a 24-hour average of 39.6 µg/m³.

Prescribed fire activity was limited on Friday (March 22) with breezy conditions existing during the afternoon however lingering regional smoke led to Moderate air quality for many areas. Moderate fire activity was observed on Saturday (March 23) across the southern Flint Hills where temperatures remained warmer and lighter, which led to Moderate air quality continuing in parts of the region. Fire activity was limited on Sunday (March 24) and Monday (March 25) as a storm system moved across the region and brought cloud cover, variable winds, and precipitation for most.

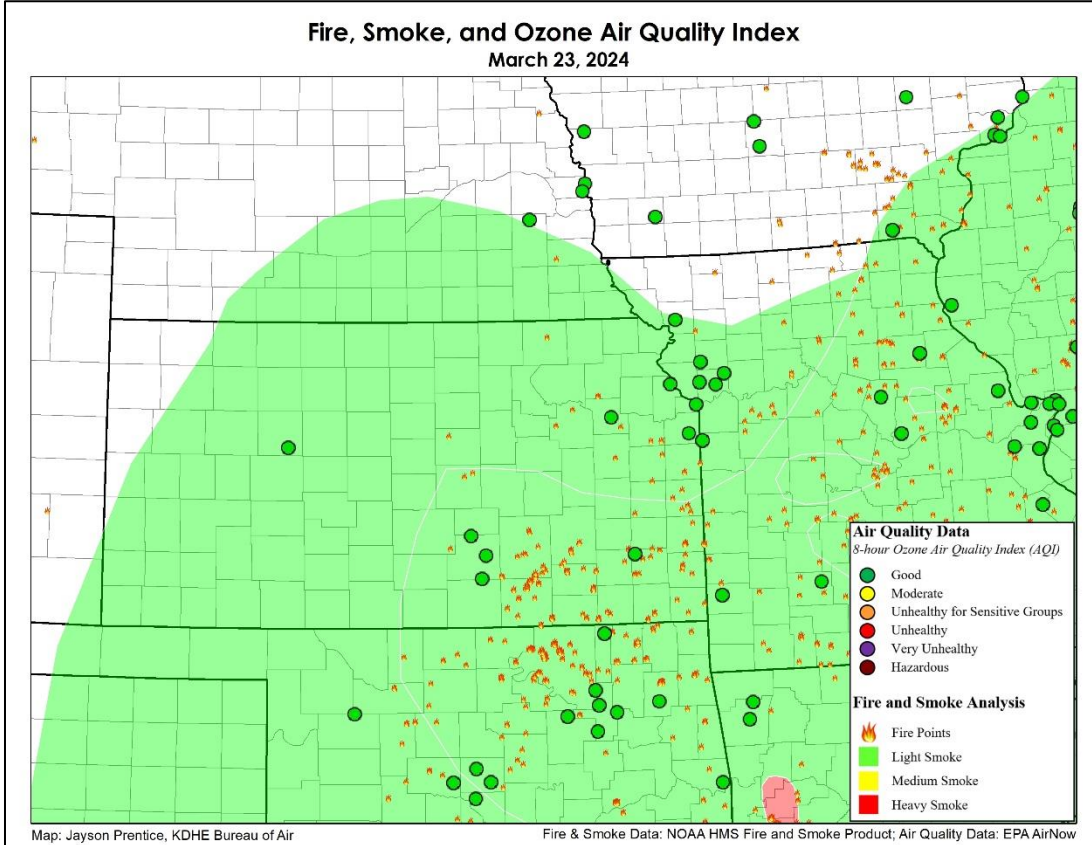
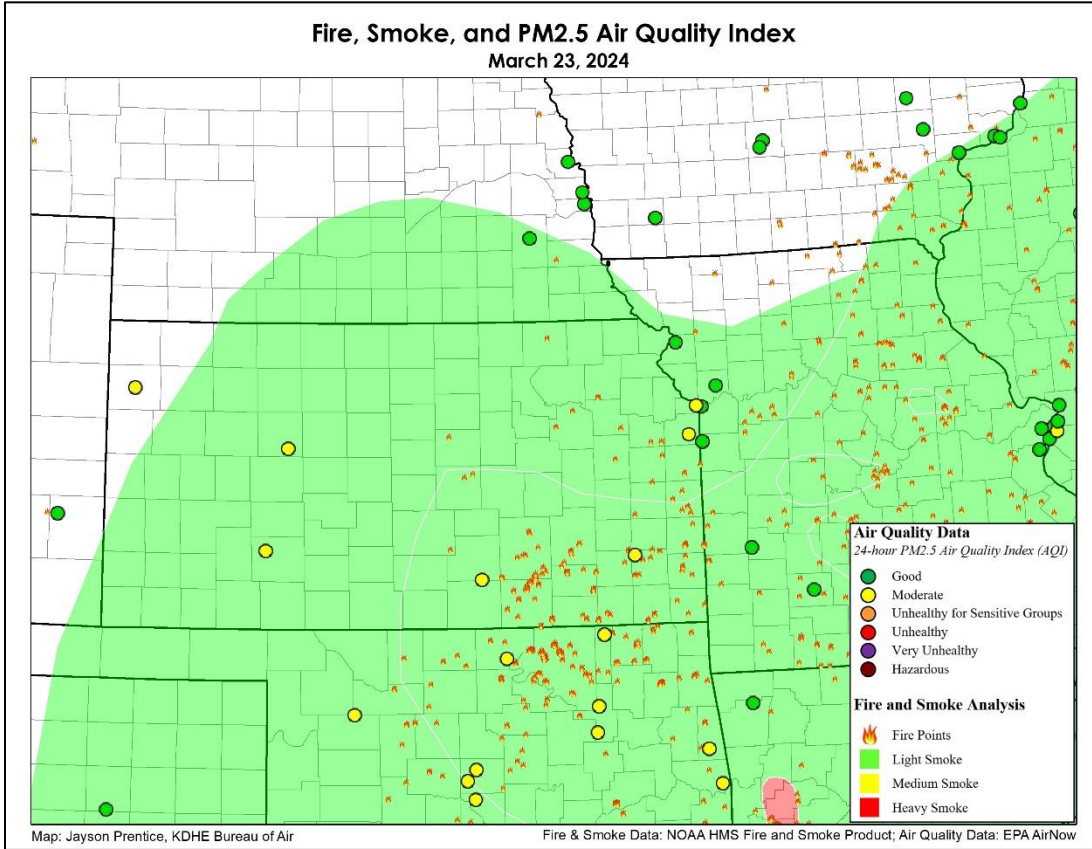
As temperatures recovered with clearing skies a few prescribed fires occurred in the southern Flint Hills on Tuesday (March 26) under northwest winds. Fire activity increased drastically on Wednesday (March 27) as winds slowly shifted to the south, remained light, and clear skies provided ample opportunity. The light winds and cooler overnight temperatures resulted in significant localized air quality impacts with up to Unhealthy conditions within the Flint Hills. As south-southwest winds increased the smoke eventually impacted parts of Nebraska, Iowa, and Missouri with primarily Moderate air quality on Thursday (March 28). Fire activity continued Thursday with increased southwest winds, especially across the southern Flint Hills where several large fires were observed. Other fires, some large, were also observed across the region which aided in contributing to regional smoke impacts late Thursday into Friday morning (March 29) with primarily Moderate conditions.

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.

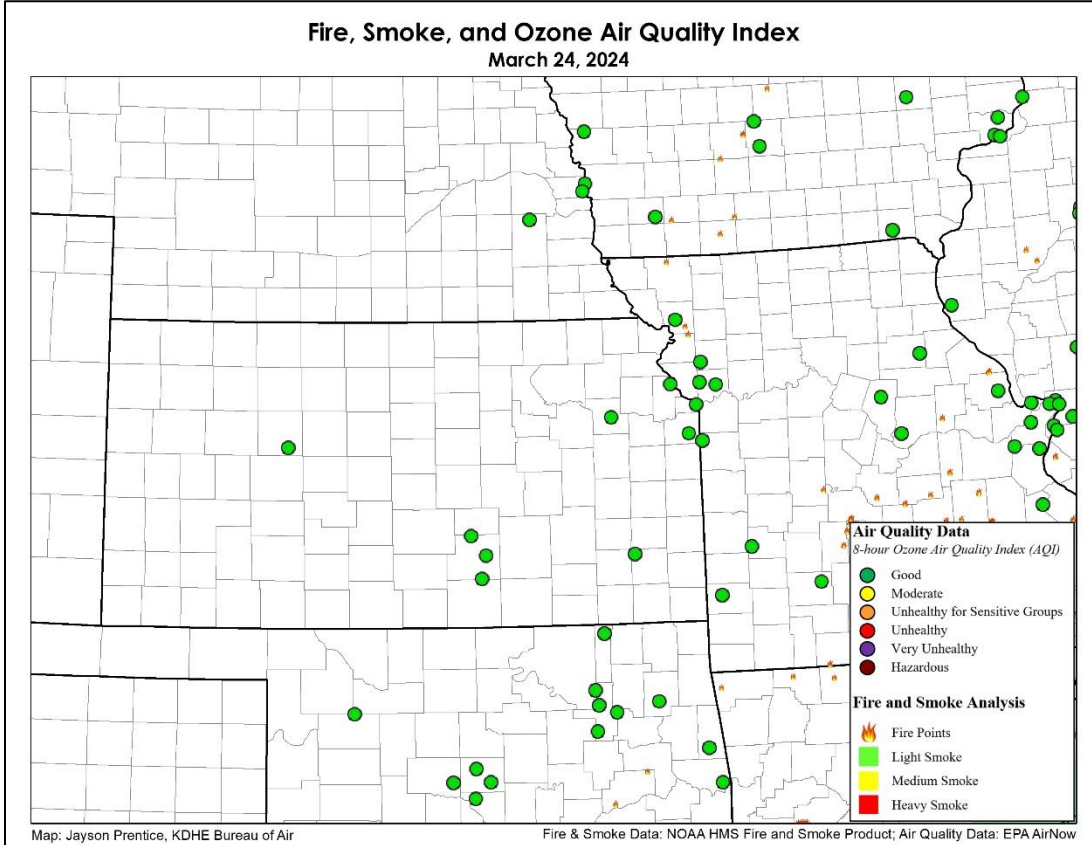
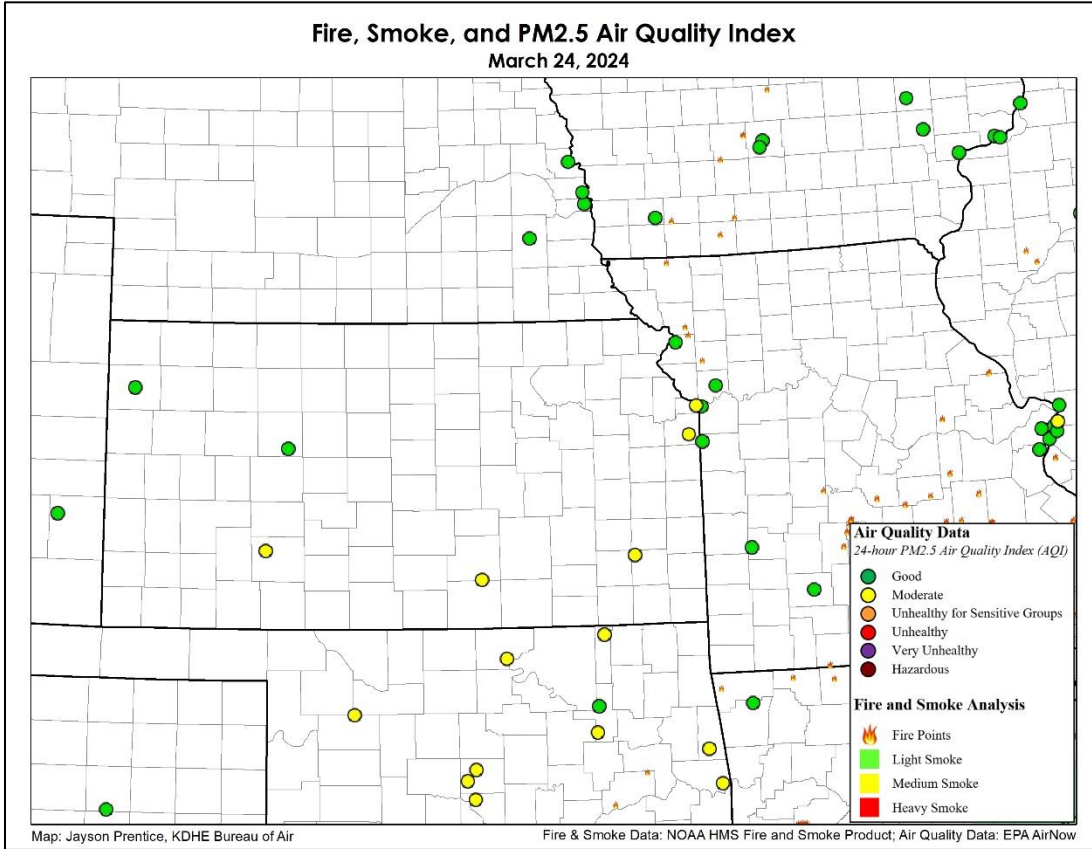
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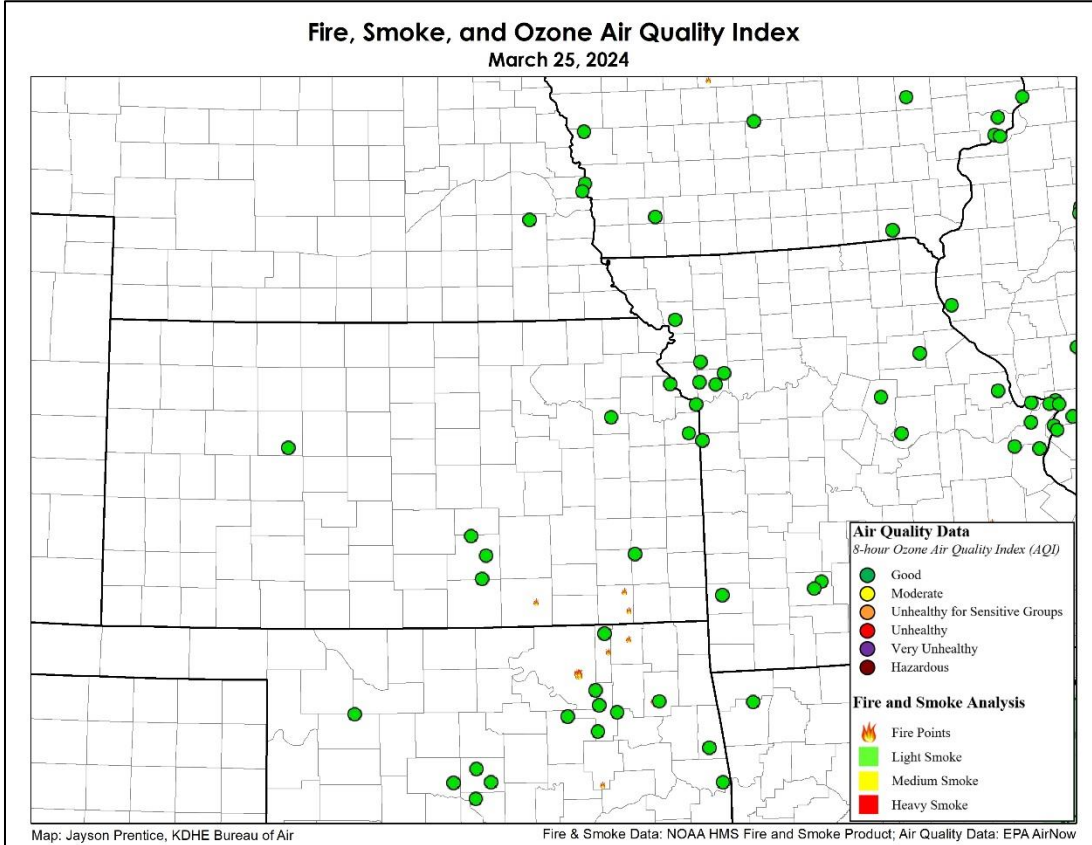
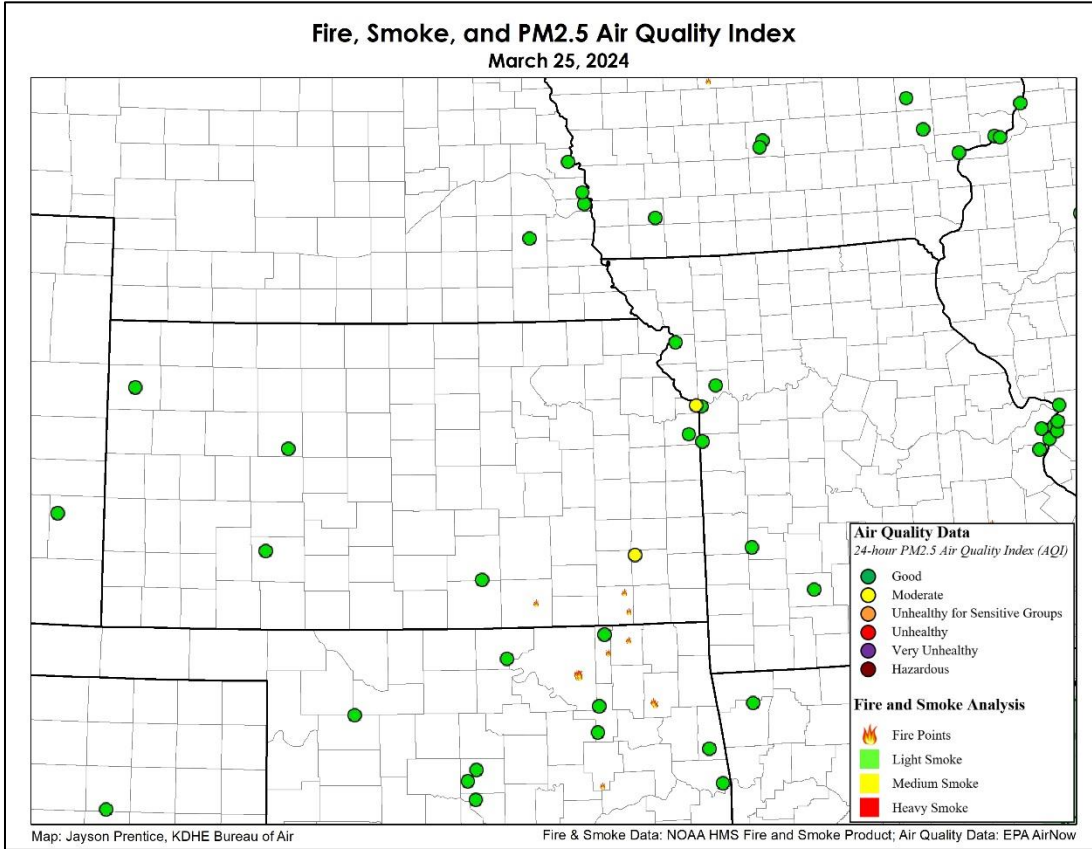
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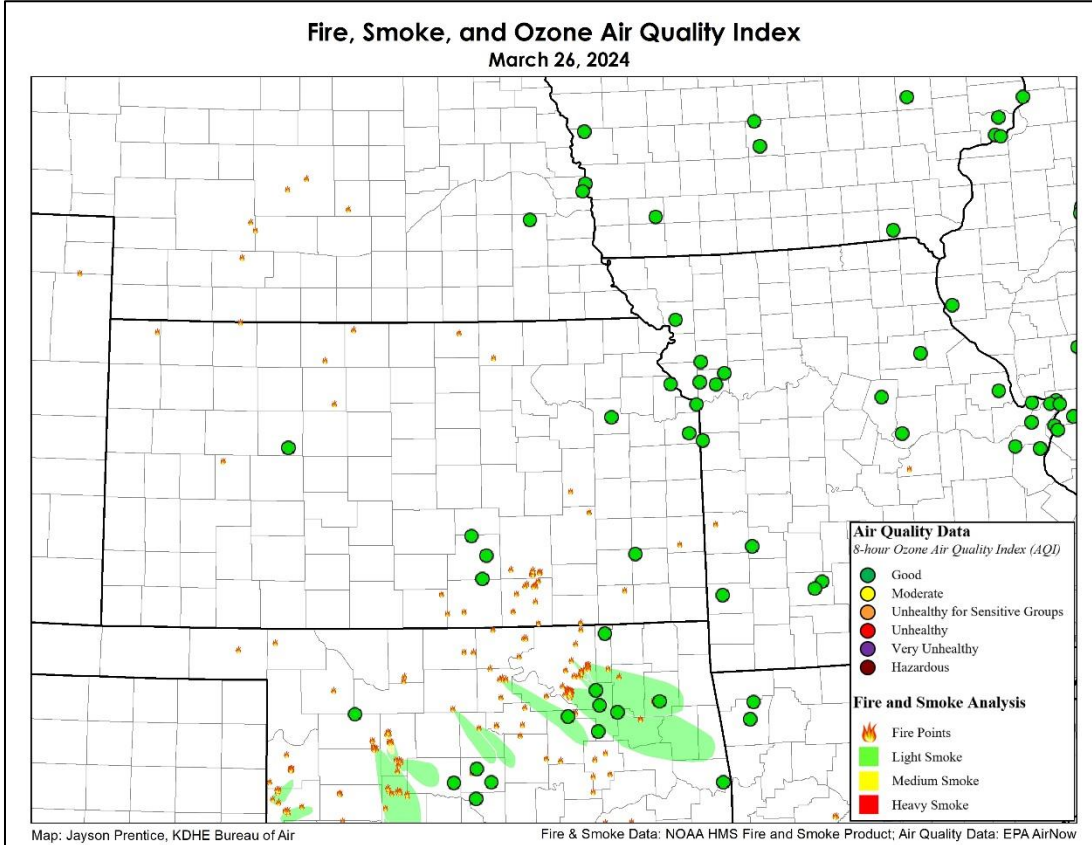
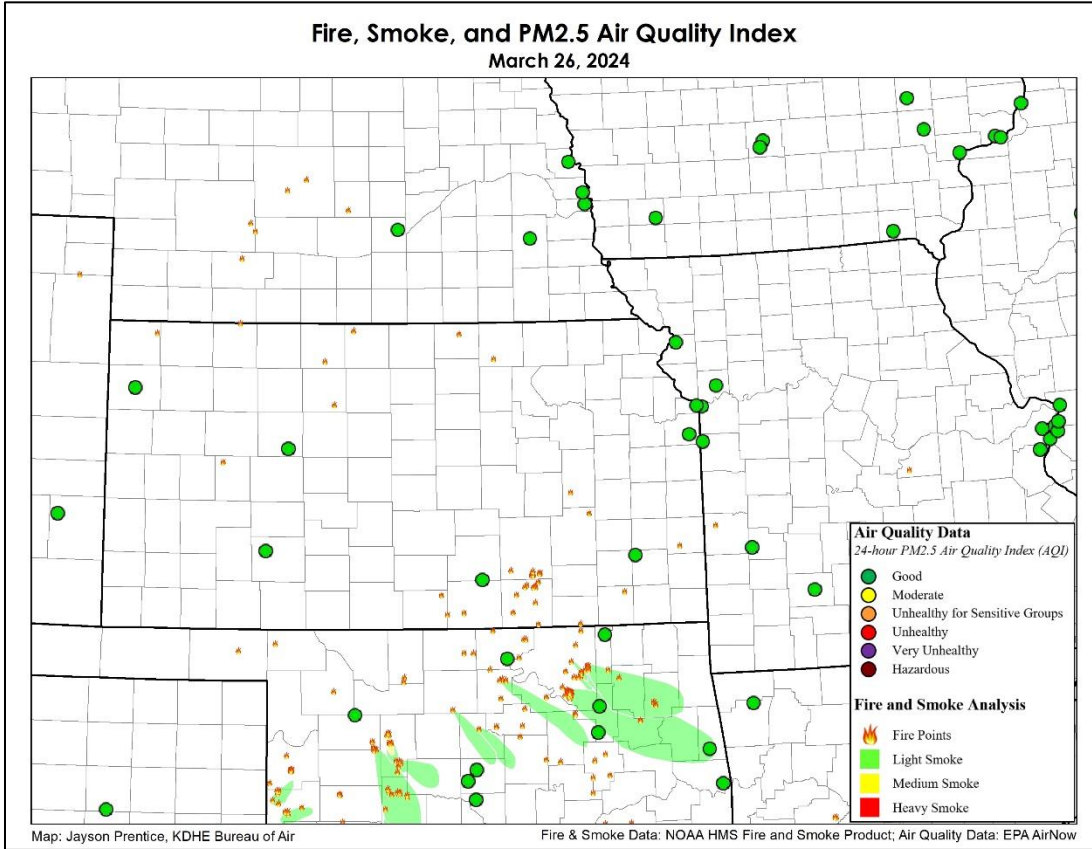
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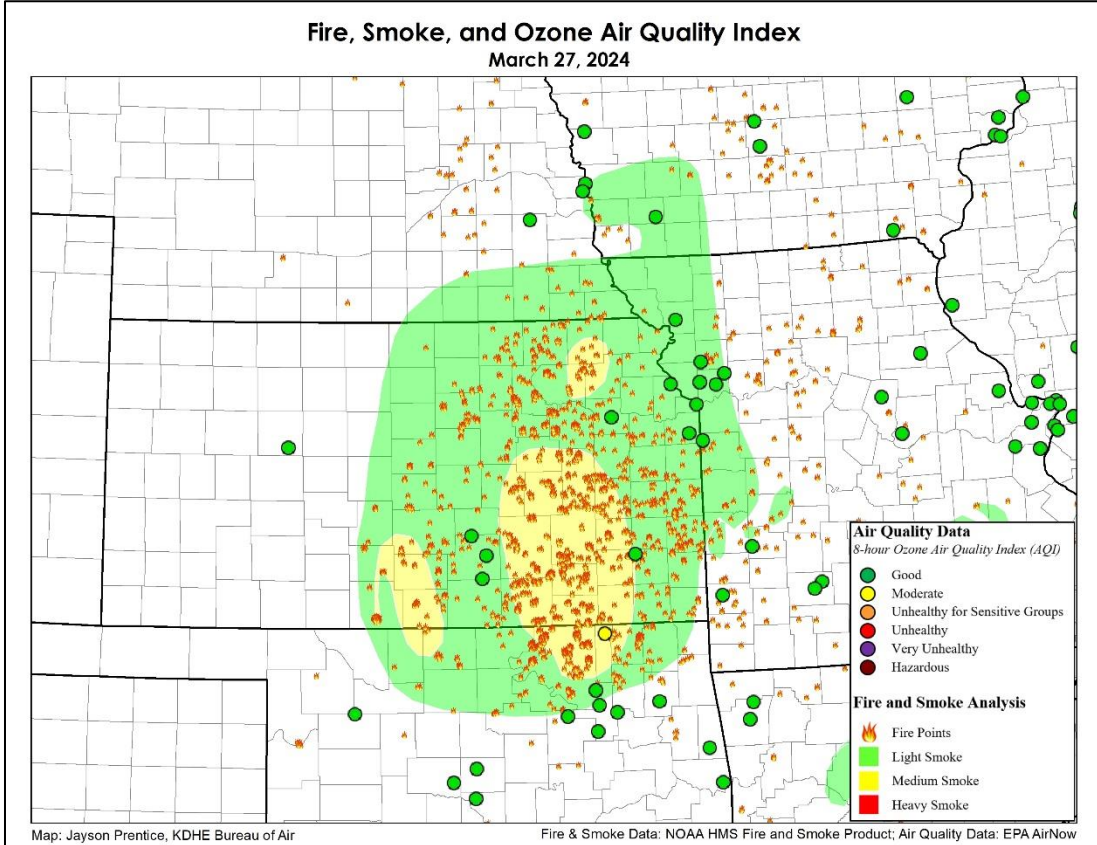
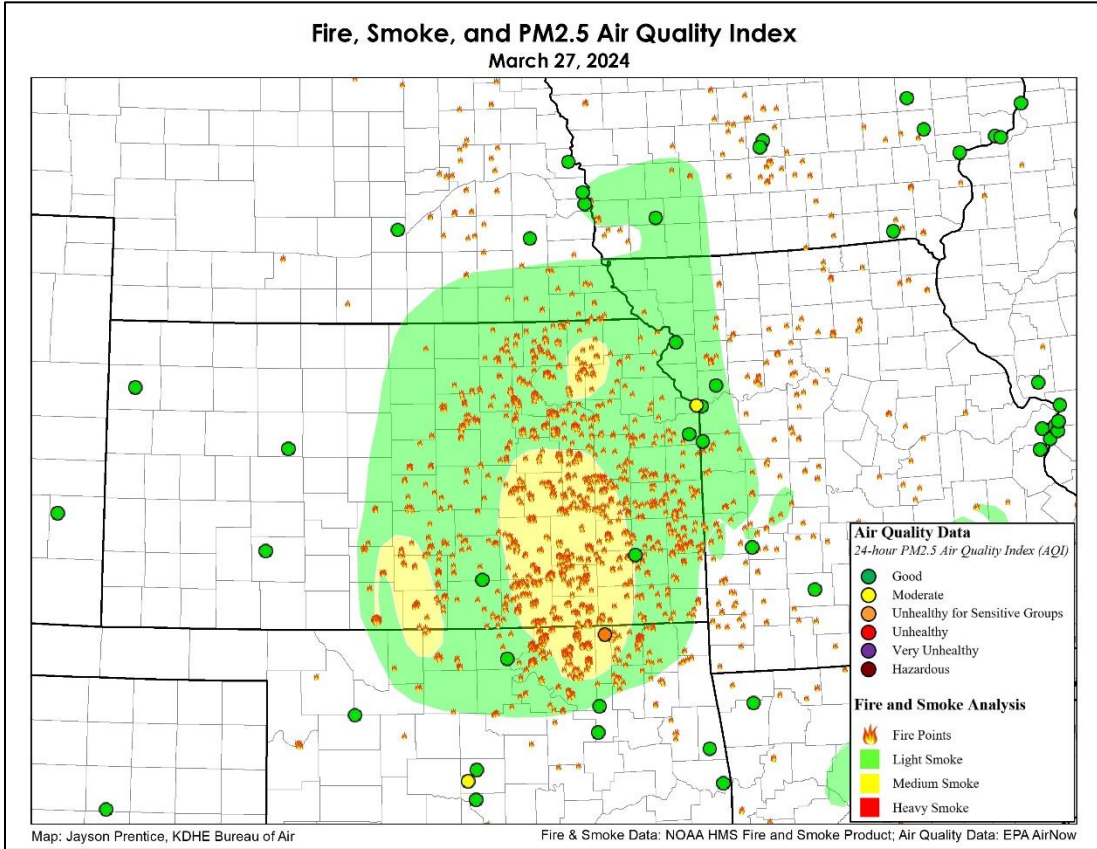
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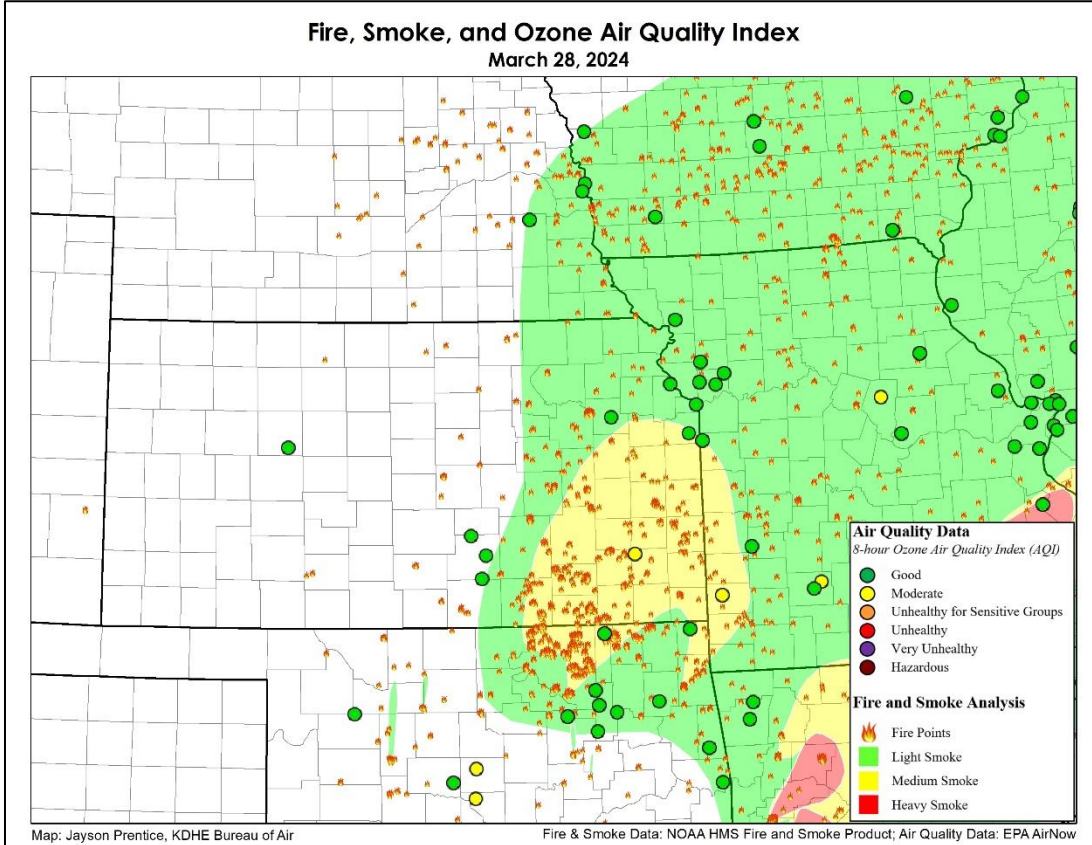
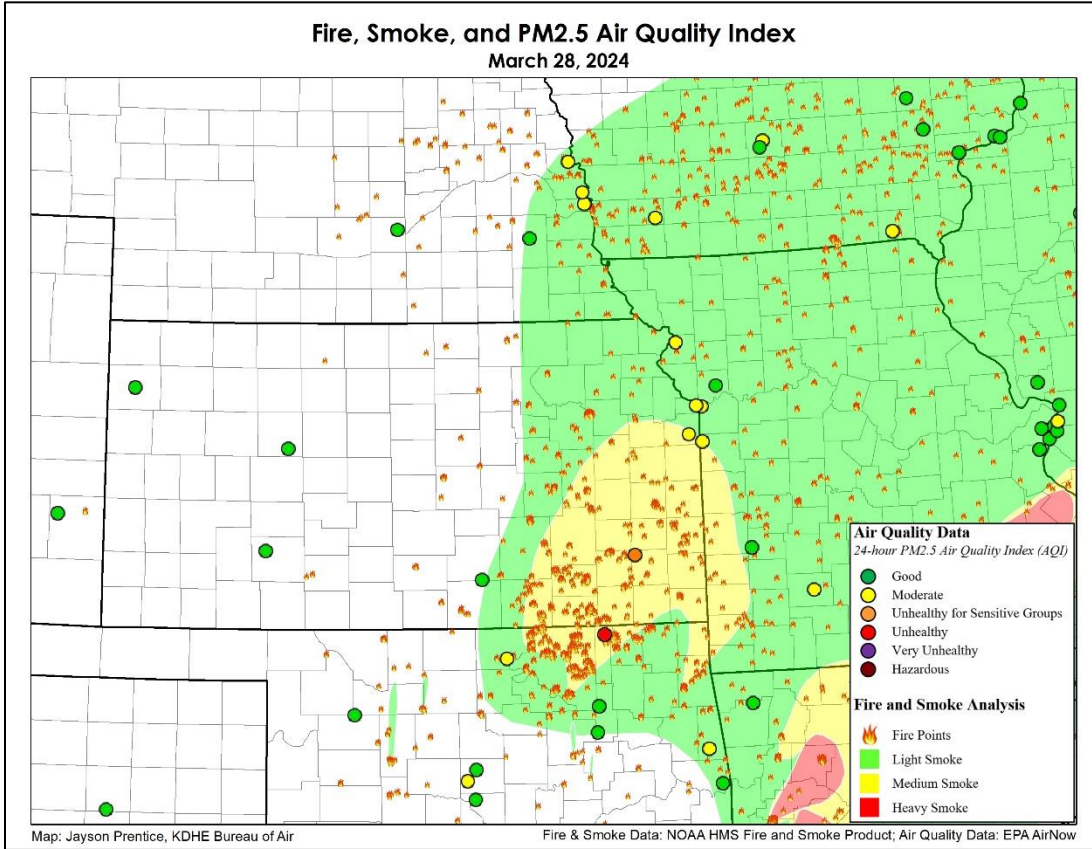
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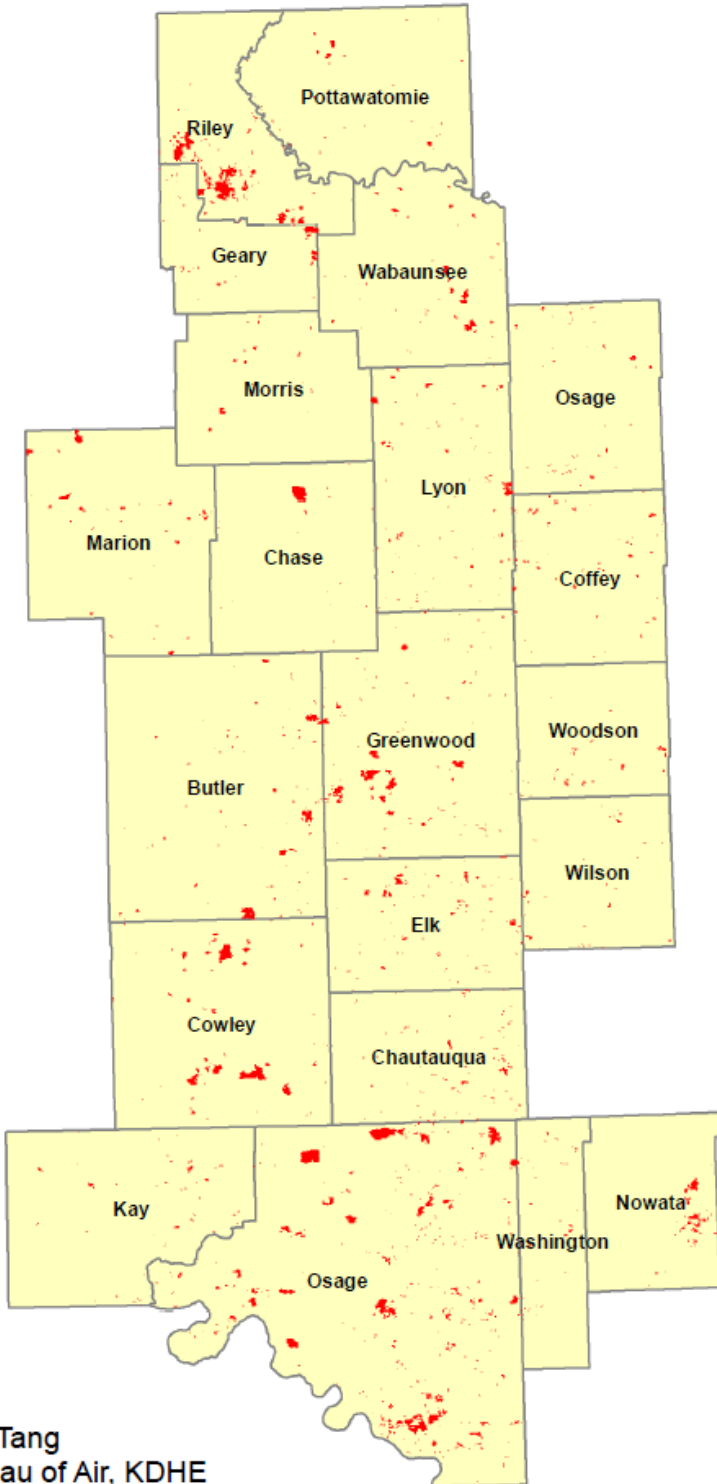


Flint Hills Wildland Fire Update





Flint Hills Acreage Burned (February 14 – March 20, 2024)



Yao Tang
Bureau of Air, KDHE

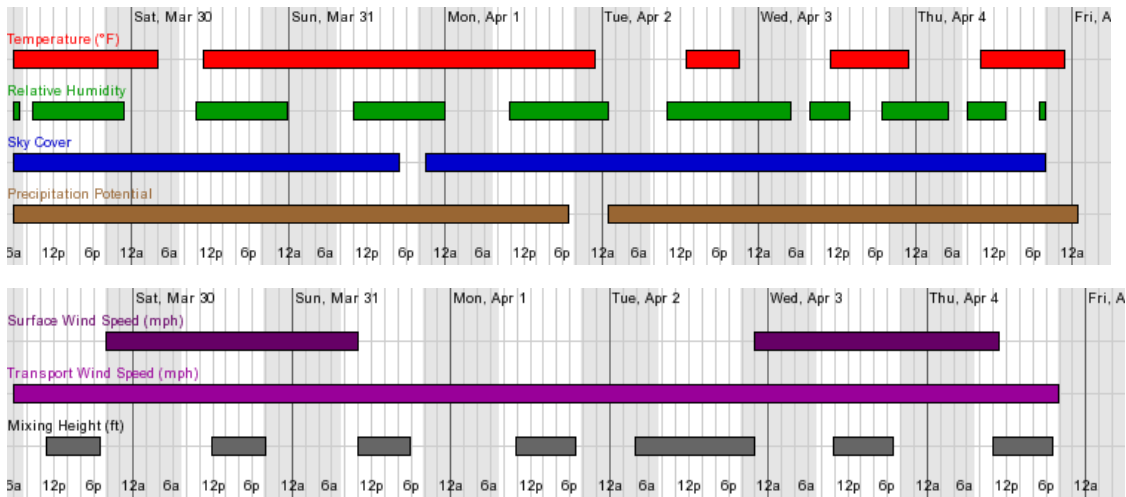
<u>Counties</u>	<u>Acres Burned</u>	
Butler	7,444	
Chase	2,934	
Chautauqua	3,228	
Coffey	3,104	
Cowley	12,201	
Elk	4,850	
Geary	2,842	
Greenwood	10,796	
Lyon	5,158	
Marion	4,232	
Morris	1,637	
Osage (KS)	1,946	
Pottawatomie	1,884	
Riley	15,630	
Wabaunsee	4,741	
Wilson	1,328	
Woodson	1,622	
Nowata (OK)	3,861	*
Osage (OK)	39,584	*
Washington (OK)	1,390	*
Kay (OK)	1,931	*
Total	132,343	
* Denotes county was partly or completely covered by clouds during latest analysis.		



Upcoming Look at Fires and Smoke

An area of low pressure and a weak cold front will push across most of the Flint Hills today (Friday) with breezy to windy conditions ahead of the front. This front looks to stall and become stationary near the Kansas/Oklahoma border on Saturday, then begin to lift back northward as a warm front on Sunday. Opportunities for prescribed fire may exist through the weekend dependent upon specific location of these fronts. A stronger storm system by Monday will bring breezy conditions and variable wind directions with a small chance of precipitation late Monday. Breezy northwest winds are expected on Tuesday but with seasonable temperatures continuing. Lighter northwest winds are expected on Wednesday, but very dry conditions are expected with relative humidity values in the 20s. Stronger south winds return on Thursday ahead of another storm system moves off the Rockies with dry relative humidity values continuing as temperatures warm above normal.

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. Forecast valid: 8am March 29, 2024.

For more information, contact:

Jayson Prentice

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 Kansas Department of Health & Environment
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