Flint Hills Wildland Fire Update

March 28, 2025

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

Kansas Department of Health and Environment

https://www.KSFire.org/

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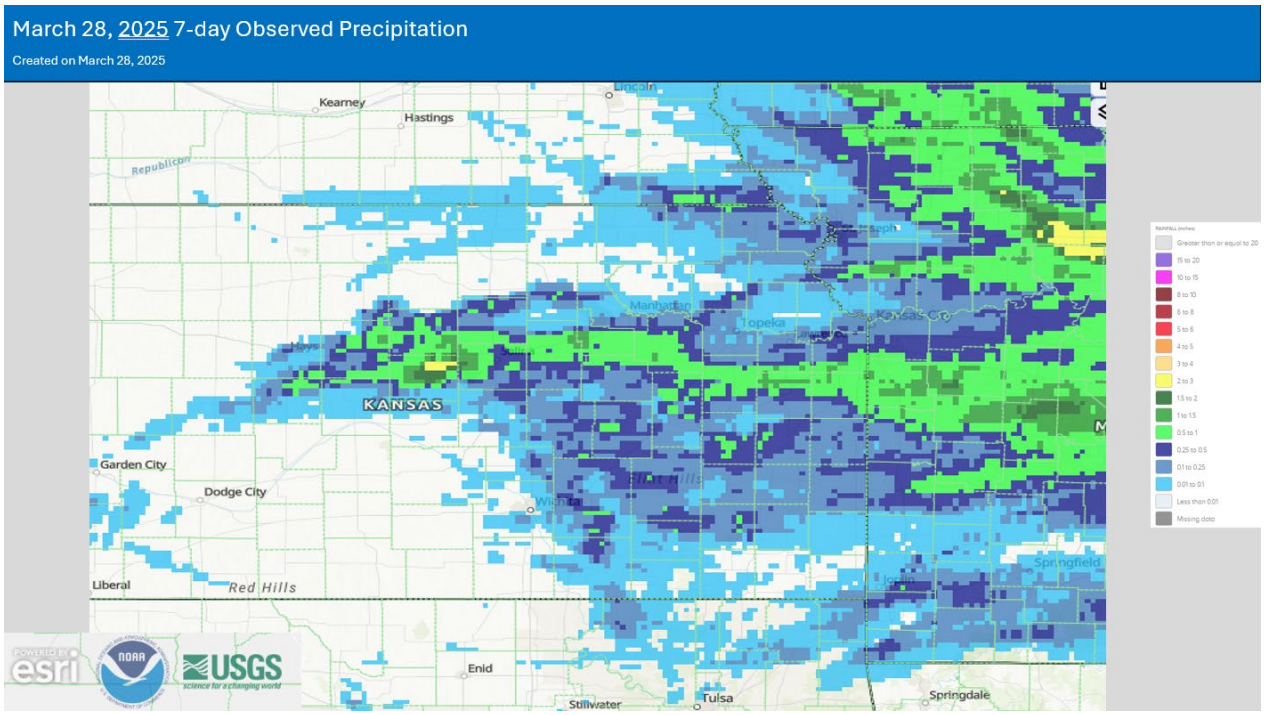
This website was developed as part of the development of the Kansas Flint Hills Smoke Management Plan. Kansas State University hosts the webpage, and it includes important information for ranchers and others who might be interested in the Flint Hills. It provides training, regulations, policies, publications,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

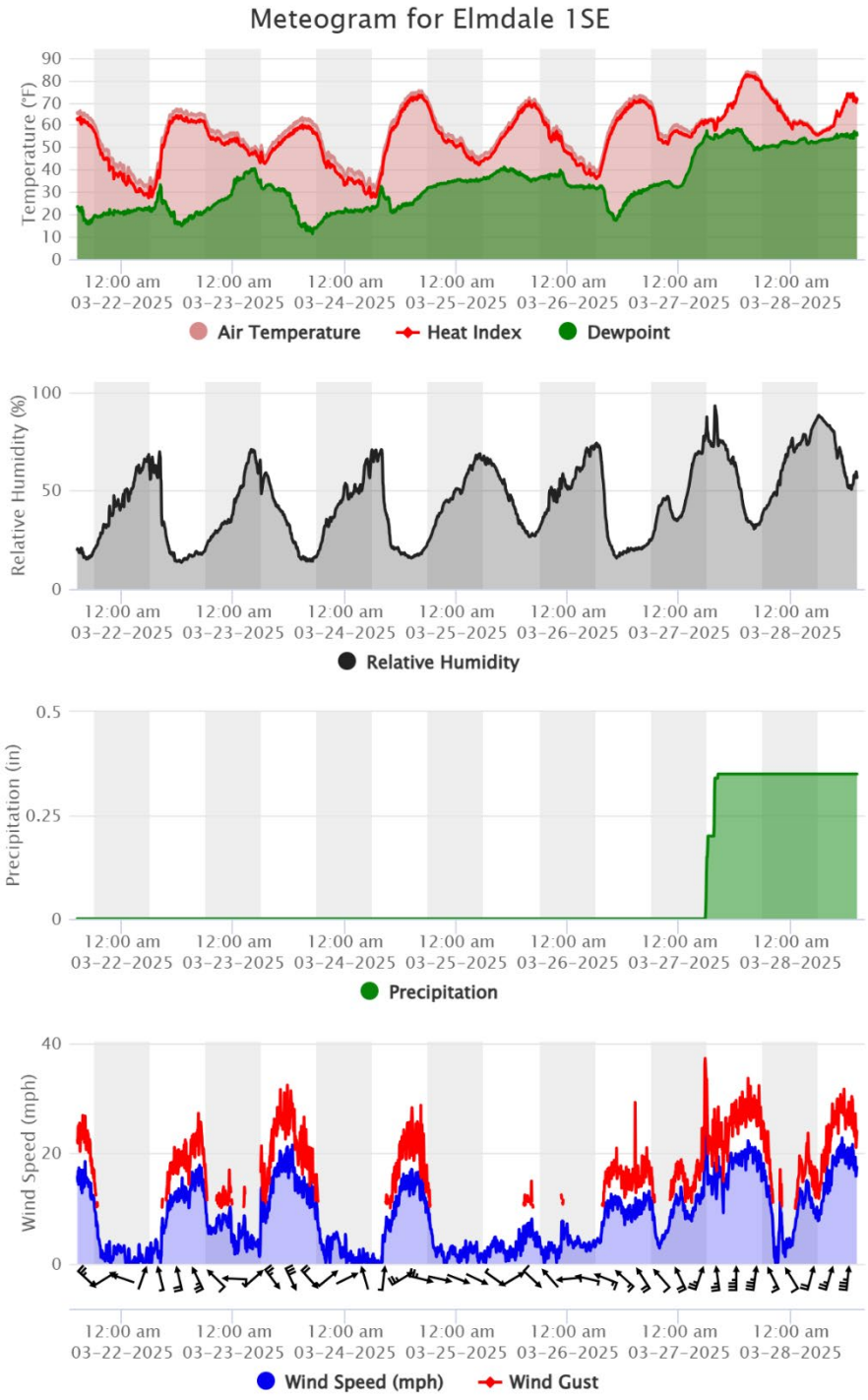
Meteorology

Temperatures in the mid-60s and very strong south to south-southwest winds early, then west to northwest winds after noon were observed last Friday (March 21) across the region with wind gusts up to 40 mph. After a cold start below freezing in many areas and light north winds, windy conditions again developed by afternoon with temperatures rebounding into the mid-60s on Saturday (March 22). Early morning light winds from the SE and light precipitation proceeded another frontal boundary that brought strong NW winds of 15-30 mph by 11am and temperatures in the low 60s on Sunday (March 23). Variable cloudiness was the rule on Monday (March 24) with temperatures climbing again into the lower 70s with south, then northwesterly winds (10-20 mph). Tuesday (March 25) saw much lighter winds from the north below 10 mph and temperatures reaching the lower 70s. Under an exiting high-pressure system, Wednesday (March 26) began with light and variable winds in the morning, then gave way to easterly, then southeasterly winds (5-15 mph) by afternoon with temperatures mainly in the upper 60s to around 70°. Above normal temperatures under partly sunny skies returned on Thursday (March 27) with highs once again in the upper 70s and lower 80s. Winds were strong and gusty by early afternoon from the south at 10-20 mph, with gusts near 40 mph. Most areas of Eastern Kansas only received very light precipitation (less than .25 inch) over the last week.

Precipitation



NOAA/NWS Observed Total Precip. for March 21-March 28, 2025.



7-day (March 21-March 28, 2025) 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 21 - March 27, 2025, there were two 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.

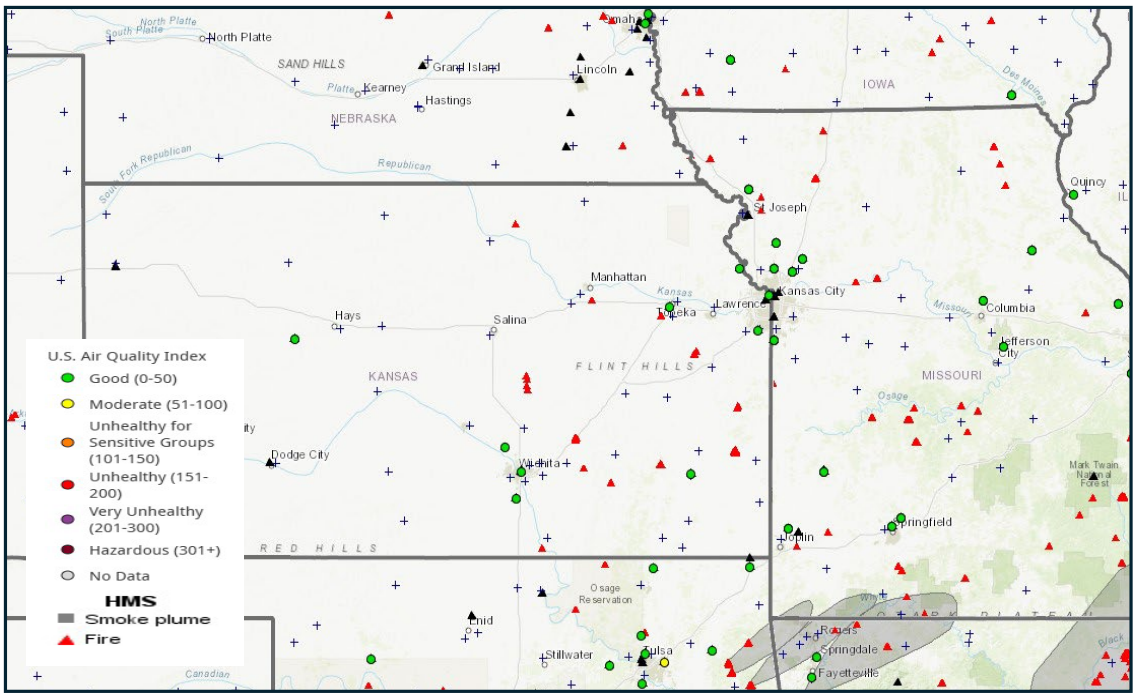
$PM_{2.5}$: Preliminary data indicates 2 exceedances of the NAAQS daily 24-hour average maximum of 35 µg/m^3 occurred on Wednesday, March 26, 2025. In Kansas, the Peck monitoring site in Sumner County recorded a 39 µg/m^3. In Oklahoma, the Ponca City site had a value of 38.5 µg/m^3.

Prescribed fire activity was limited on Friday (March 21) across Kansas with most of the fires scattered over far Eastern Oklahoma, with several large smoke plumes visible over far Eastern Oklahoma moving northeast into Northwest Arkansas and far Southwest Missouri. One large smoke plume was visible on Saturday (March 22) across Central and Eastern Oklahoma, with scattered fires in Oklahoma and far Southern Kansas. Many smaller fires can be seen in Northeastern Missouri into Southern Iowa. Prescribed fire activity was very limited across the area on Sunday (March 23), with no smoke plumes observed. On Monday (March 24), prescribed fire activity began to increase as winds began to lighten up. Some elevated ozone AQI values were noted in Oklahoma. On Tuesday (March 25), light wind conditions continued and many prescribed fires were seen across the area, including the Flint Hills. A large smoke plume was visible over the Flint Hills into Southeast Kansas. Prescribed fire activity was again observed on Wednesday (March 26) as light easterly, then southeasterly winds prevailed. Preliminarily, three exceedance of the 24-hour $PM_{2.5}$ air quality standard occurred on March 26. With clear skies and light southeast winds, prescribed fire activity continued again across all states in the Midwest on Thursday (March 27). A large plume of light smoke covered much of the area and PM AQI values remained elevated for much of the morning across the area.

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.

Fire, Smoke and Ozone Air Quality Index

March 21, 2025

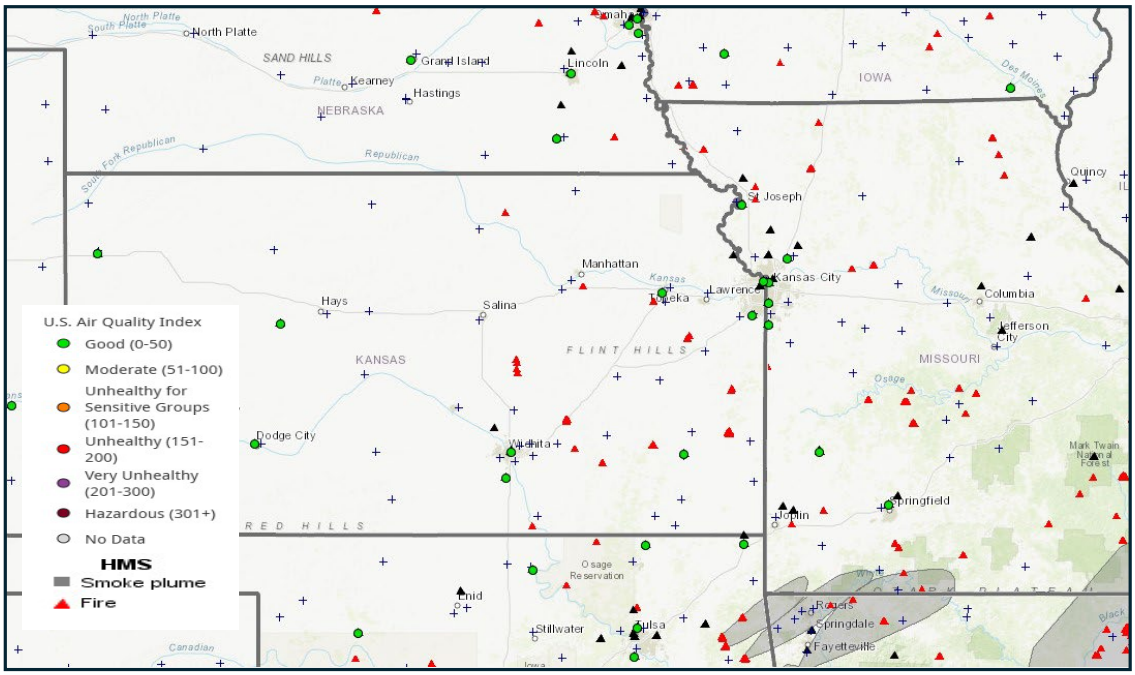


Map: Douglas Watson, KDHE Bureau of Air

Fire and Smoke Data: NOAA HMS Fire and Smoke Product; Air Quality Data; EPA AirNow

Fire, Smoke and $PM_{2.5}$ Air Quality Index

March 21, 2025



Map: Douglas Watson, KDHE Bureau of Air

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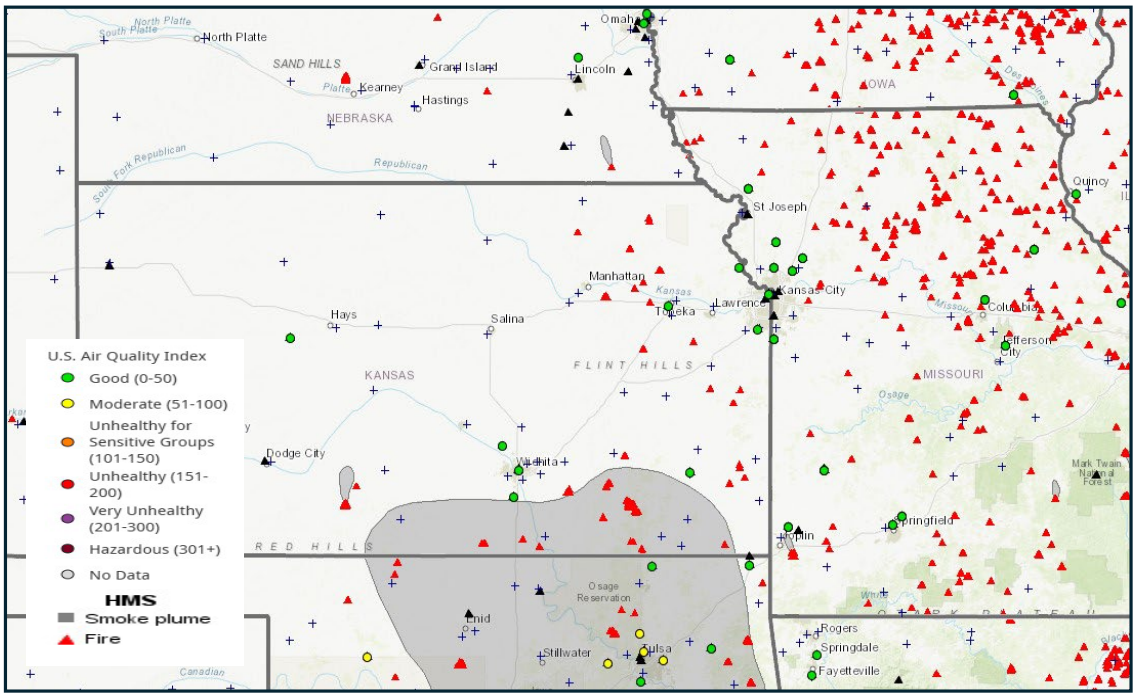
Fire, Smoke and Ozone Air Quality Index

March 22, 2025



Map: Douglas Watson, KDHE Bureau of Air

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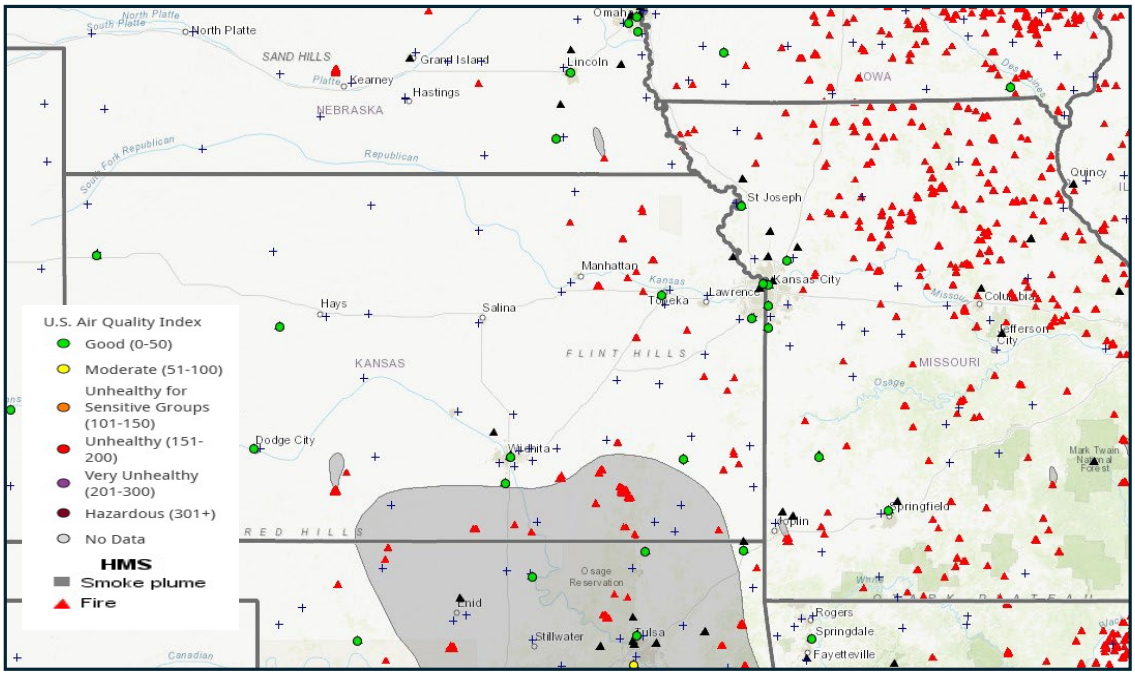
Fire, Smoke and $PM_{2.5}$ Air Quality Index

March 22, 2025



Map: Douglas Watson, KDHE Bureau of Air

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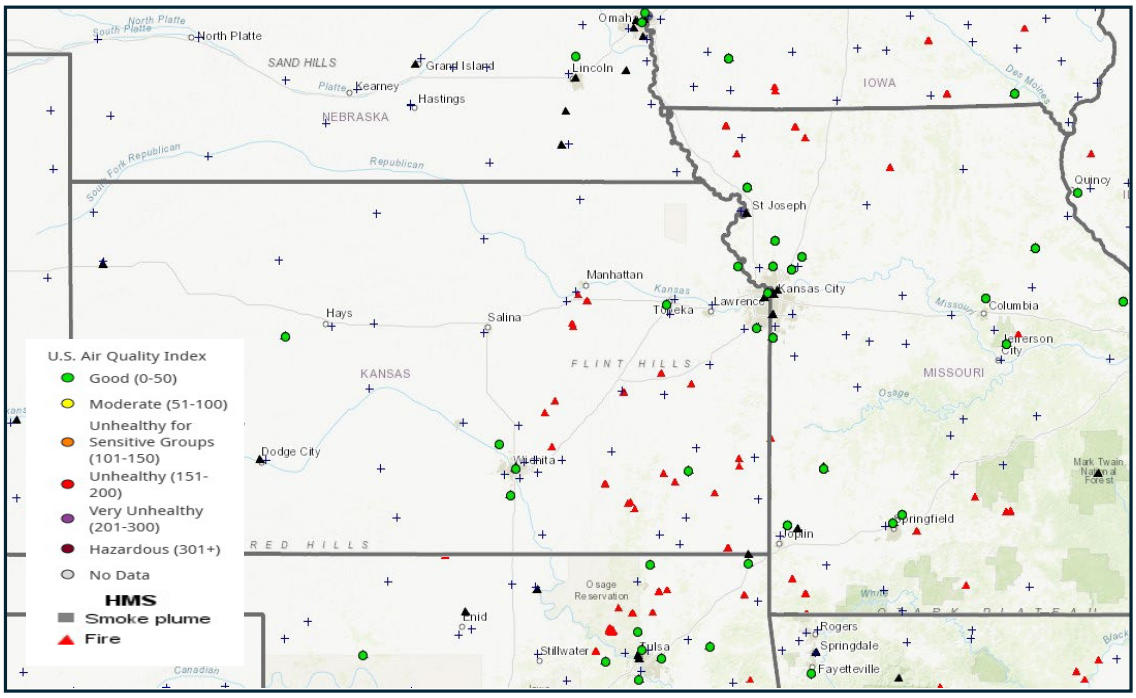
Fire, Smoke and Ozone Air Quality Index

March 23, 2025



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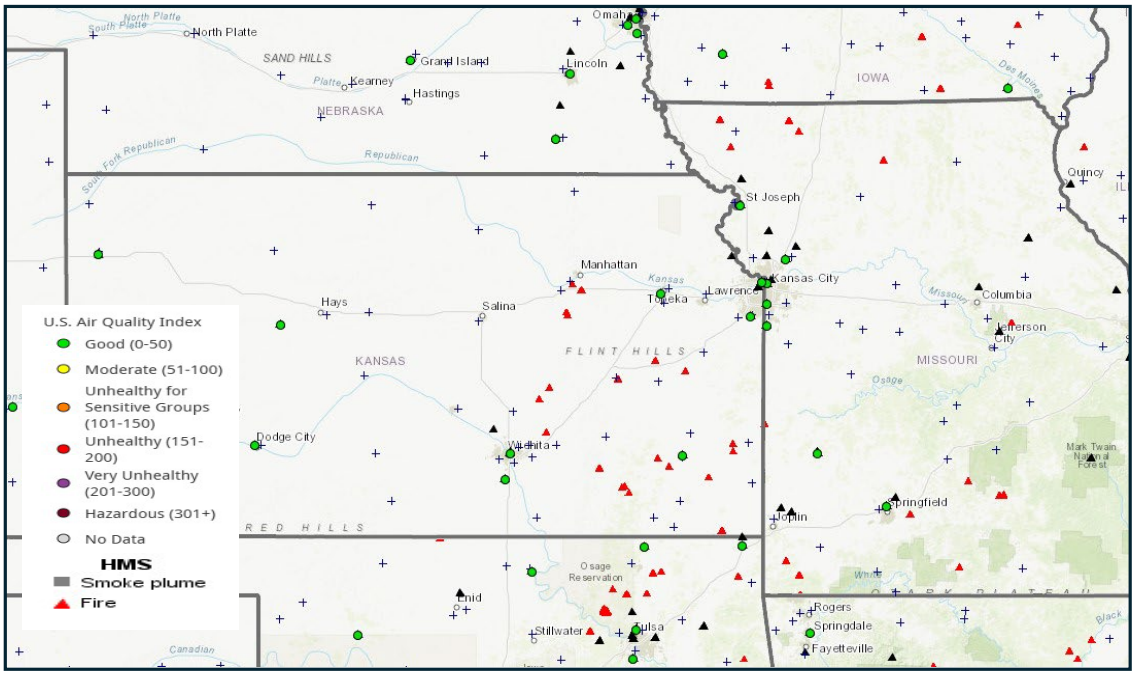
Fire, Smoke and $PM_{2.5}$ Air Quality Index

March 23, 2025



Map: Douglas Watson, KDHE Bureau of Air

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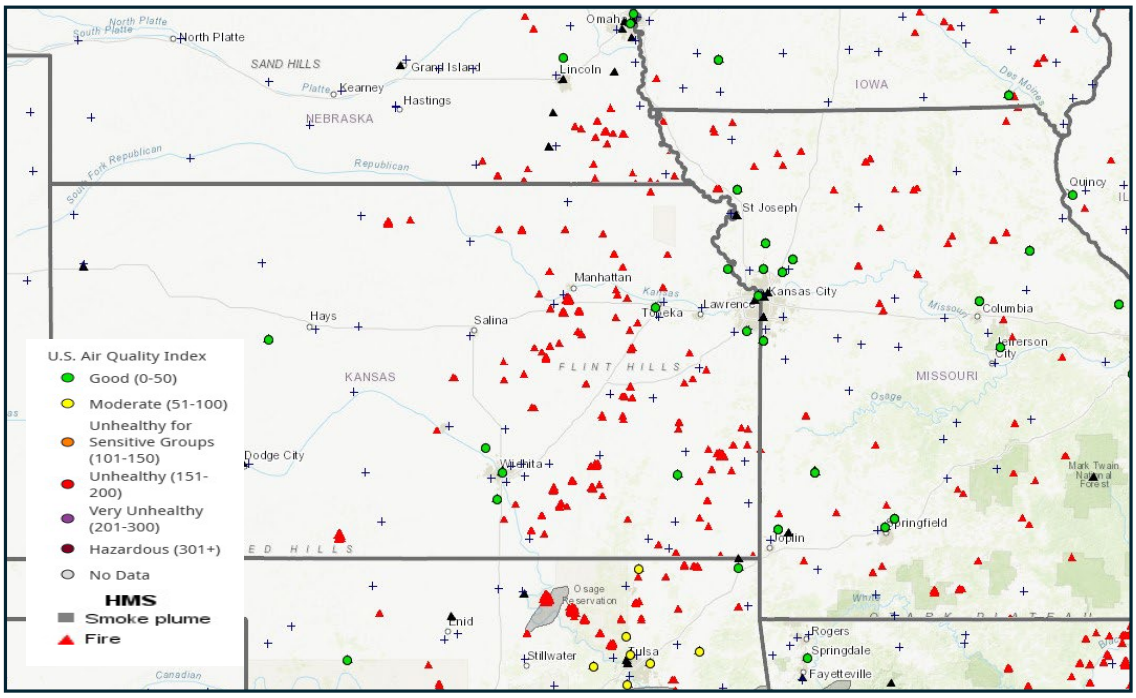
Fire, Smoke and Ozone Air Quality Index

March 24, 2025



Map: Douglas Watson, KDHE Bureau of Air

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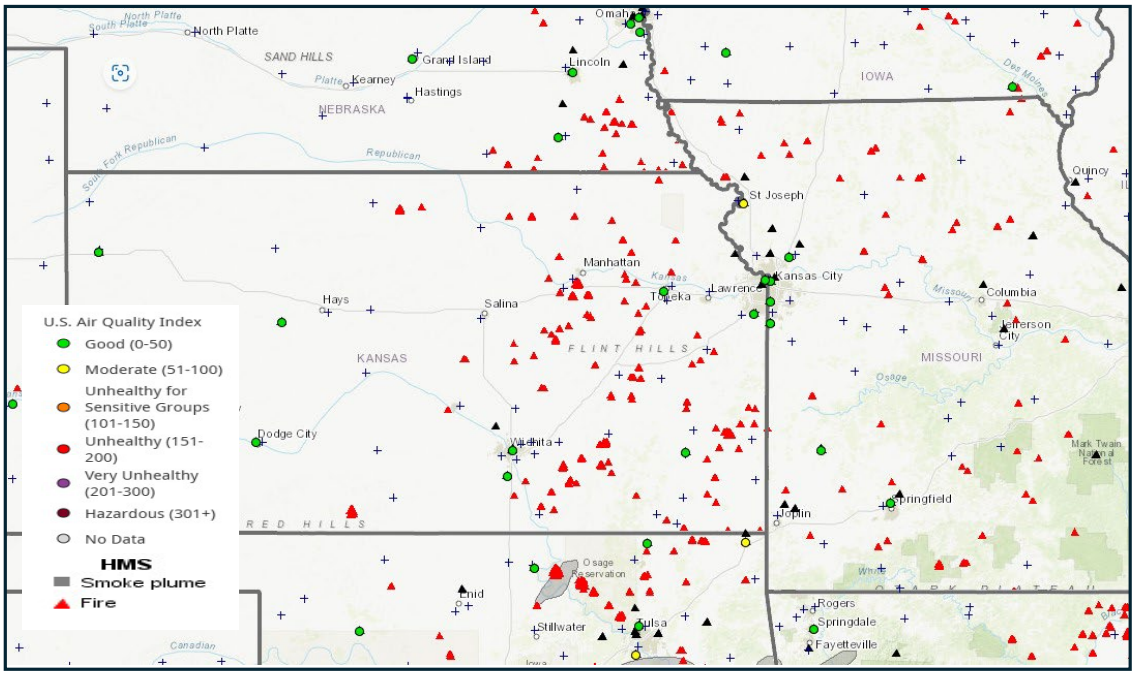
Fire, Smoke and $PM_{2.5}$ Air Quality Index

March 24, 2025



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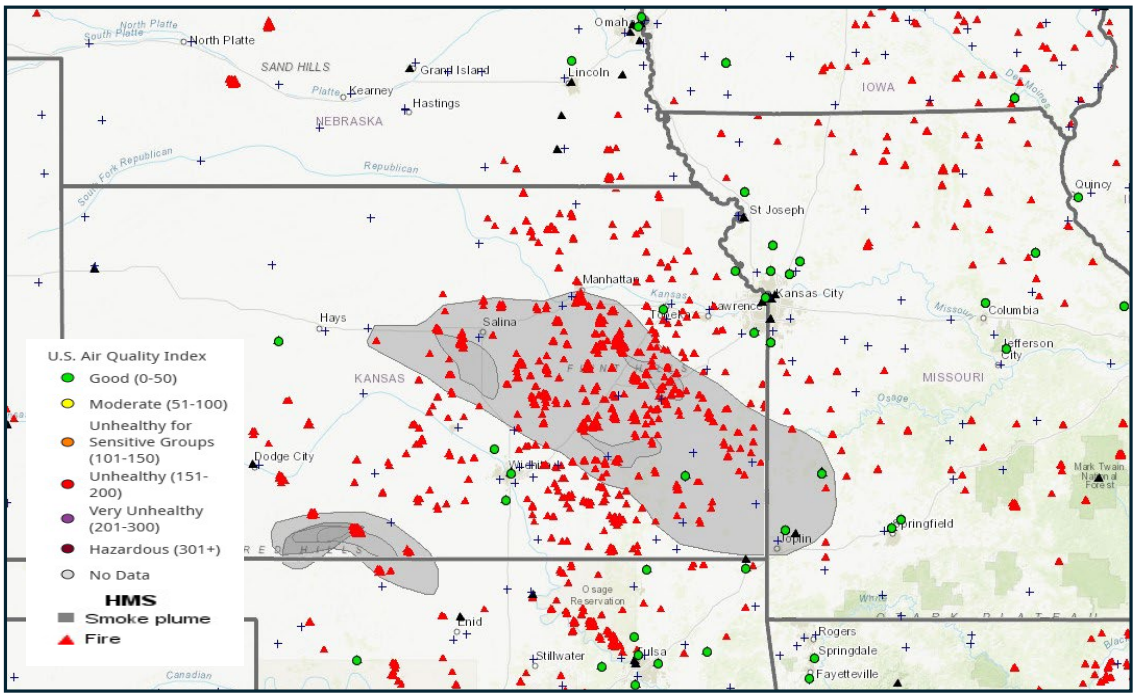
Fire, Smoke and Ozone Air Quality Index

March 25, 2025



Map: Douglas Watson, KDHE Bureau of Air

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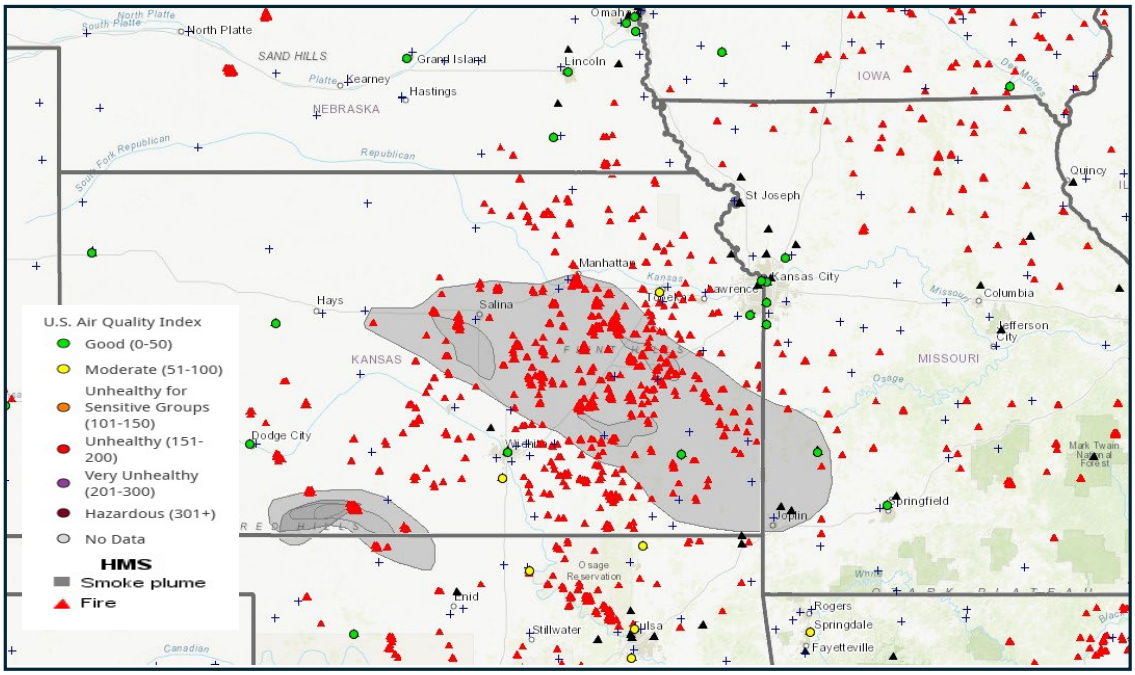
Fire, Smoke and $PM_{2.5}$ Air Quality Index

March 25, 2025



Map: Douglas Watson, KDHE Bureau of Air

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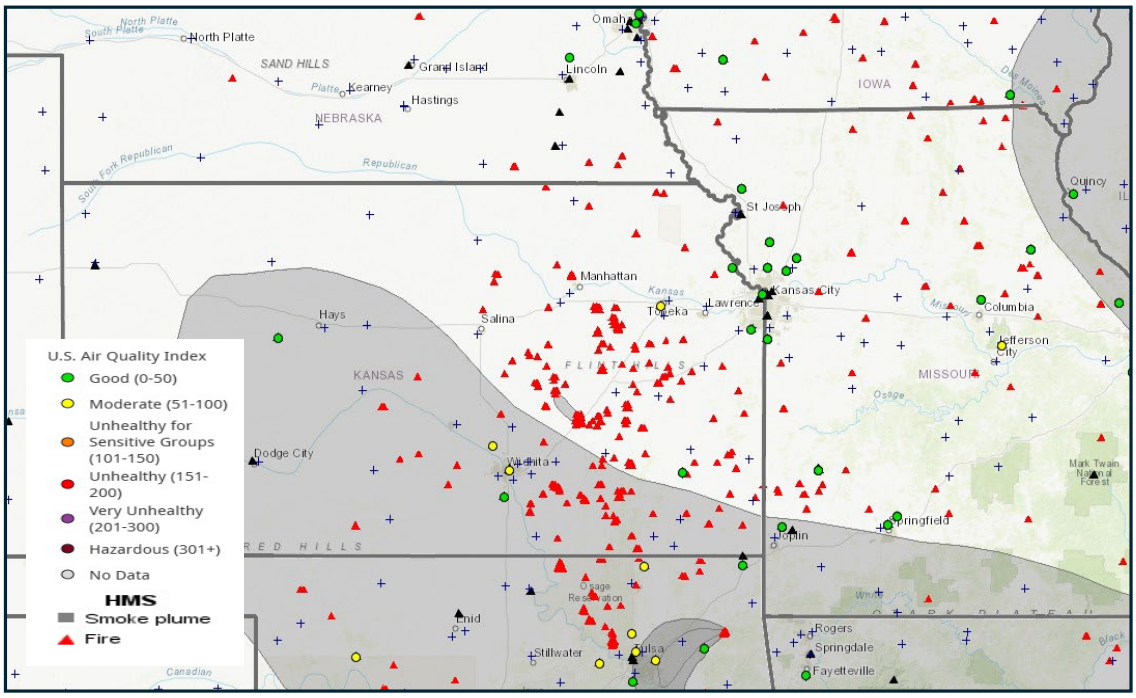
Fire, Smoke and Ozone Air Quality Index

March 26, 2025



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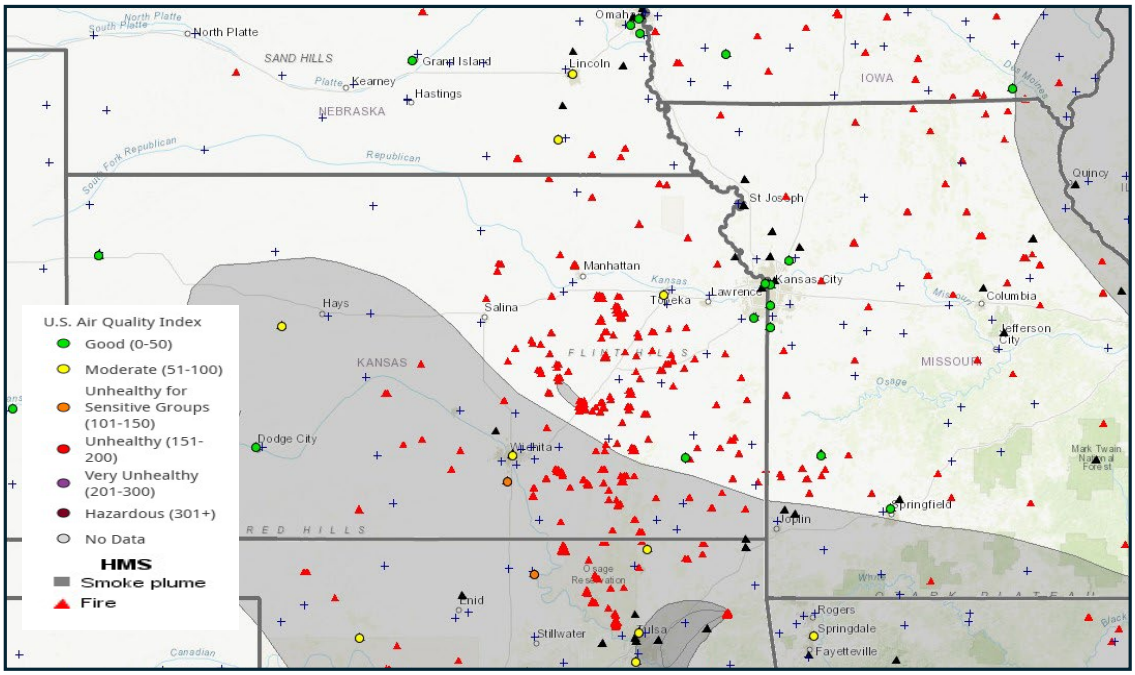
Fire, Smoke and $PM_{2.5}$ Air Quality Index

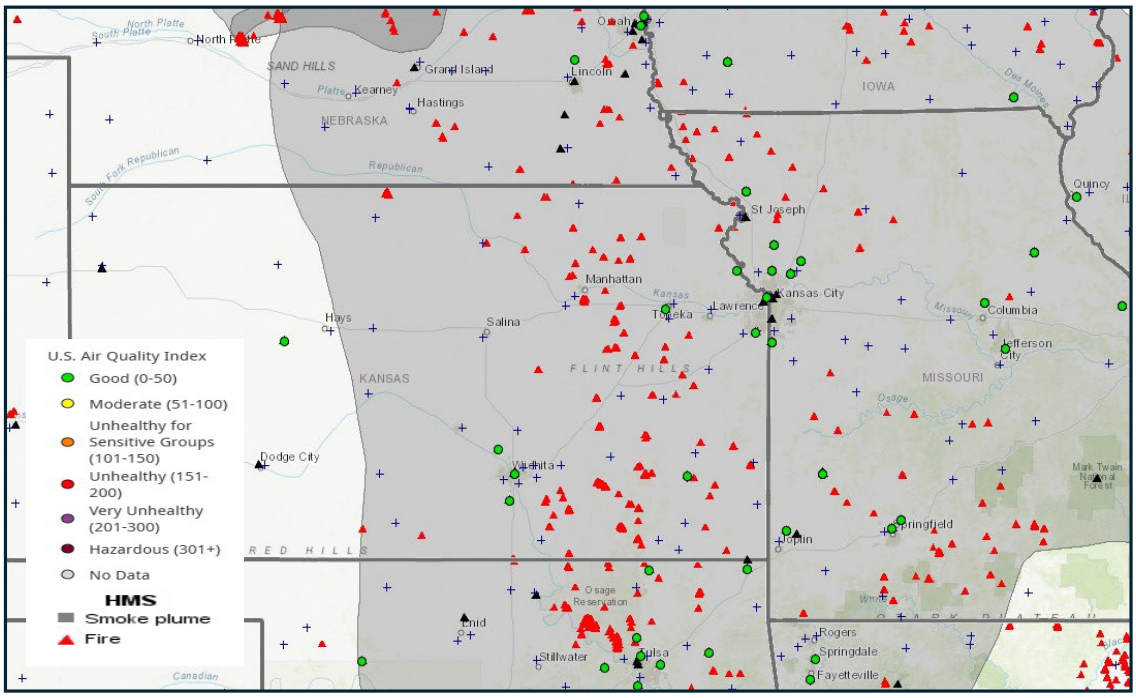
March 26, 2025



Map: Douglas Watson, KDHE Bureau of Air

Fire and Smoke Data: NOAA HMS Fire and Smoke Product; Air Quality Data; EPA AirNow

Fire, Smoke and Ozone Air Quality Index
March 27, 2025



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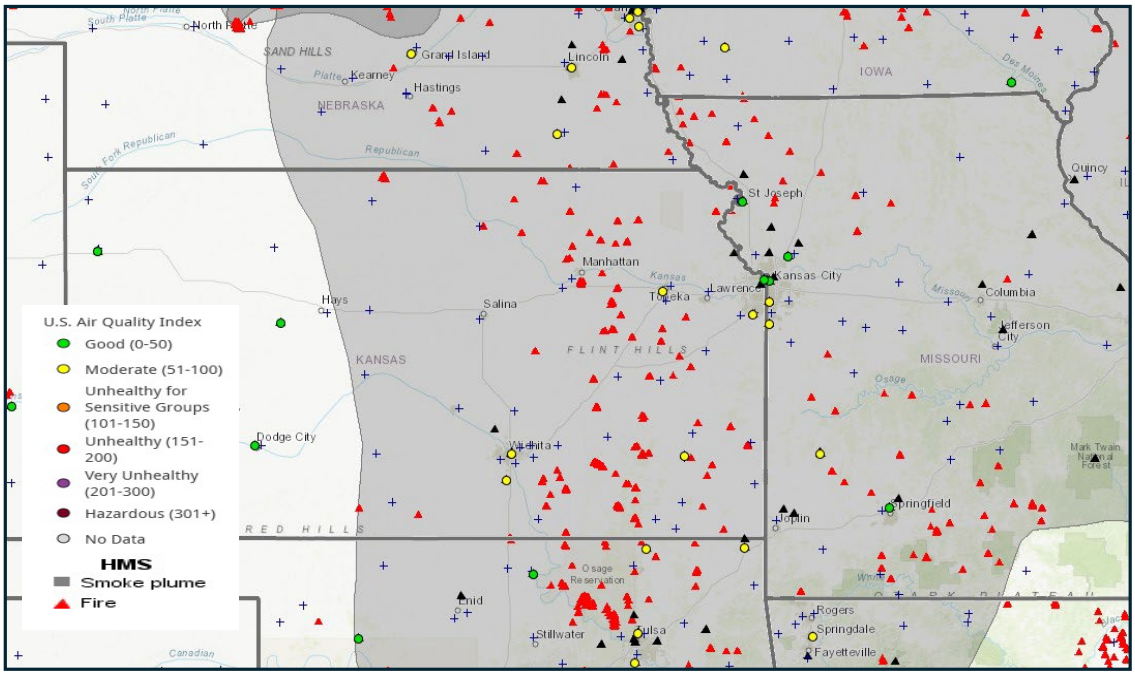
Fire, Smoke and $PM_{2.5}$ Air Quality Index
March 27, 2025



Map: Douglas Watson, KDHE Bureau of Air

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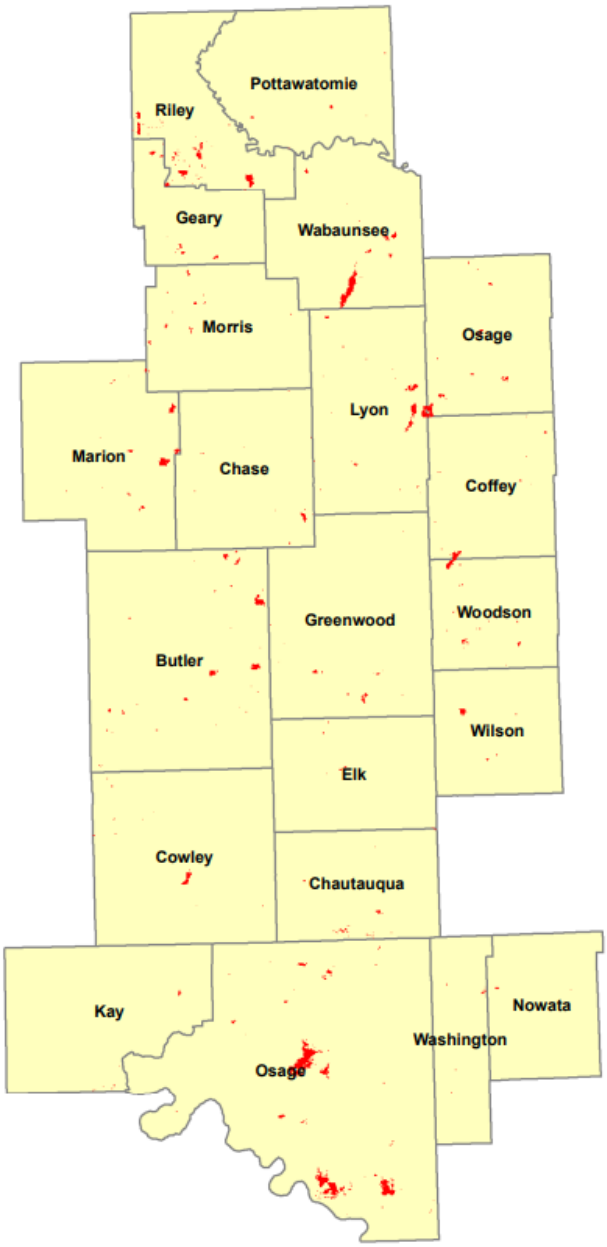
Flint Hills Acreage Burned (March 5 – March 20, 2025)



Counties	Acres Burned	
Butler	4,850	
Chase	819	
Chautauqua	1,004	
Coffey	1,375	
Cowley	1,421	
Elk	340	
Geary	1,235	
Greenwood	1,174	
Lyon	4,401	
Marion	3,429	
Morris	1,081	
Osage (KS)	2,656	
Pottawatomie	340	
Riley	5,992	
Wabaunsee	5,992	
Wilson	880	
Woodson	1,884	
Nowata (OK)	170	
Osage (OK)	21,112	
Washington (OK)	247	
Kay (OK)	371	
Total	**60,773**	

* *Denotes county was partly or completely covered by clouds during latest analysis.*

Upcoming Look at Fires and Smoke

The pressure gradient remains strong across the area today with sustained south-southwest winds of 20-25 MPH and gusts of 30-40 MPH. Relative humidity values fall to 30-40% across portions of northcentral Kansas and along the KS/NE border. This combination of lower relative humidity and gusty winds will lead to a few hours of very high fire danger this afternoon. Winds will remain elevated tonight into Saturday.

South winds gusting at 20-30 MPH are expected through the day Saturday ahead of an approaching cold front. Timing of this cold front remains uncertain, but it is likely to push across the area from west to east during the late afternoon into the evening. Showers and thunderstorms can be expected.

Mostly cloudy skies and rain is likely on Sunday with much cooler temperatures in the 50s which will limit any prescribed fire activity.

Monday may see an increase in fire activity with partly cloudy skies and lighter northerly winds. Amount of activity will depend on rainfall amounts across the Flint Hills and how quickly the grasses dry out.

Windy and warmer temperatures begin to return on Tuesday and Wednesday which could limit the number prescribed fires across the area. High will be in the mid 60s, with winds in the 20-25 mph range on Tuesday and 15-20 mph on Wednesday.

Ideal Weather Conditions for Prescribed Burning

******This Graphic is Currently Unavailable from the NWS******

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.

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For more information, contact:

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