

Flint Hills Prescribed Fire Update

March 5, 2021

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



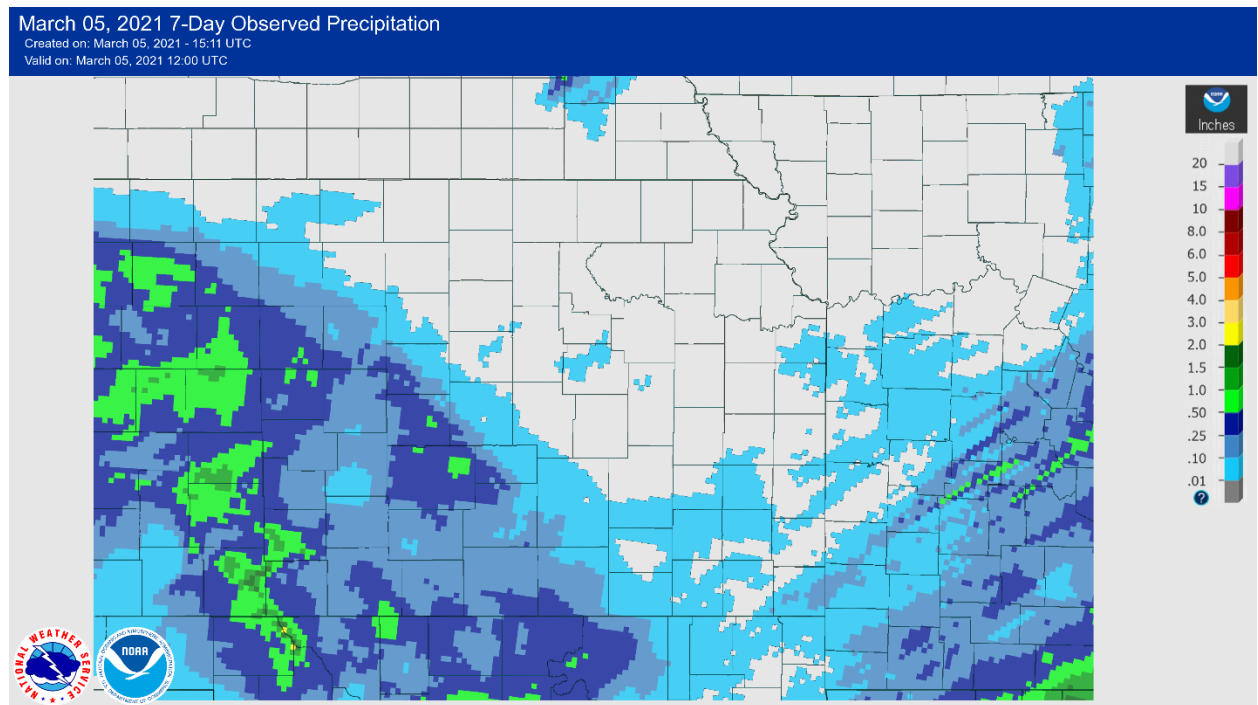


Meteorology

Temperatures have been near to above normal throughout the past week with highs in the 50s-70s across the region each afternoon. Skies have been primarily clear and precipitation continues to be hard to come by for much of the Flint Hills region with minimal precipitation, if any, over the prior week.

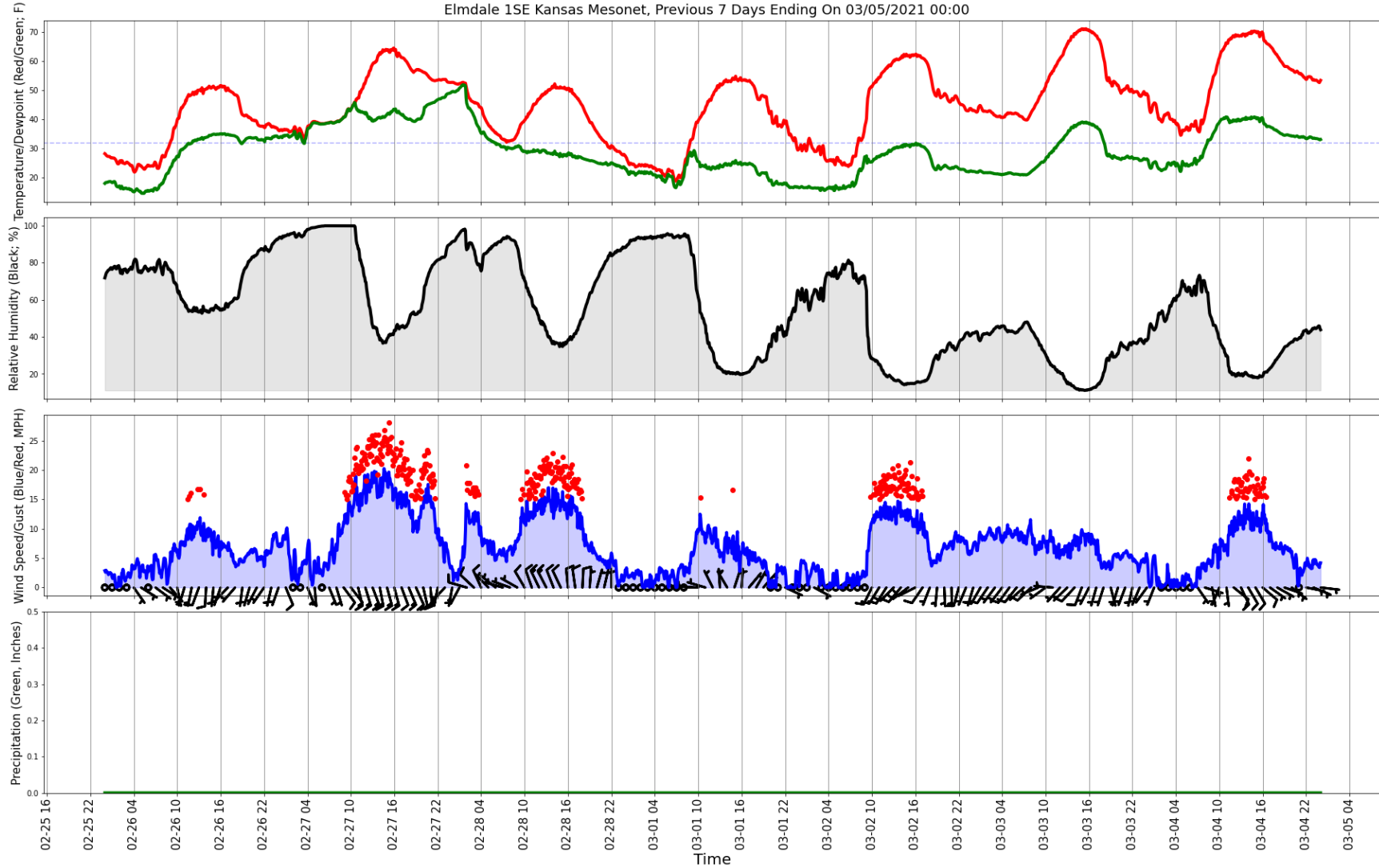
Wind speeds and relative humidity have been the primary story of the past week with multiples days having gusts in the 20-30 mph or higher range in the afternoon and relative humidity values dropping below 30%, and as low as 10%, during the past Monday-Thursday (March 1-4) period which led to Red Flag or near Red Flag conditions for very high fire danger.

Precipitation



NOAA/NWS Observed Total Precipitation for February 26 – March 4, 2021.

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7-day (February 26 – March 4, 2021) Observed Weather from Kansas Mesonet station near Elmdale, Kansas
[\(https://mesonet.k-state.edu/\)](https://mesonet.k-state.edu/)



Air Quality Data

Air quality data for the period of February 26 – March 4, 2021:

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

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

On March 4, 2021 the monitor at Kansas City (Kansas) measured a 24-hour average value of 36.1 $\mu\text{g}/\text{m}^3$.

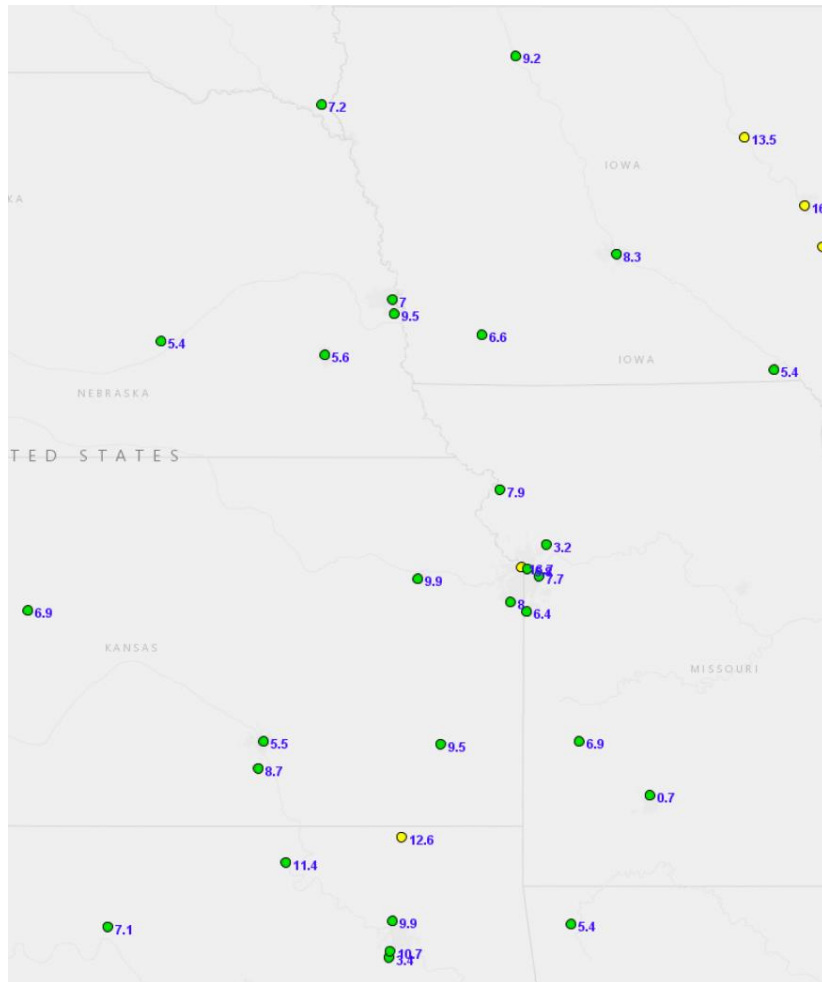
Air quality images on the following pages for each day show preliminary data, courtesy Air Now Tech.

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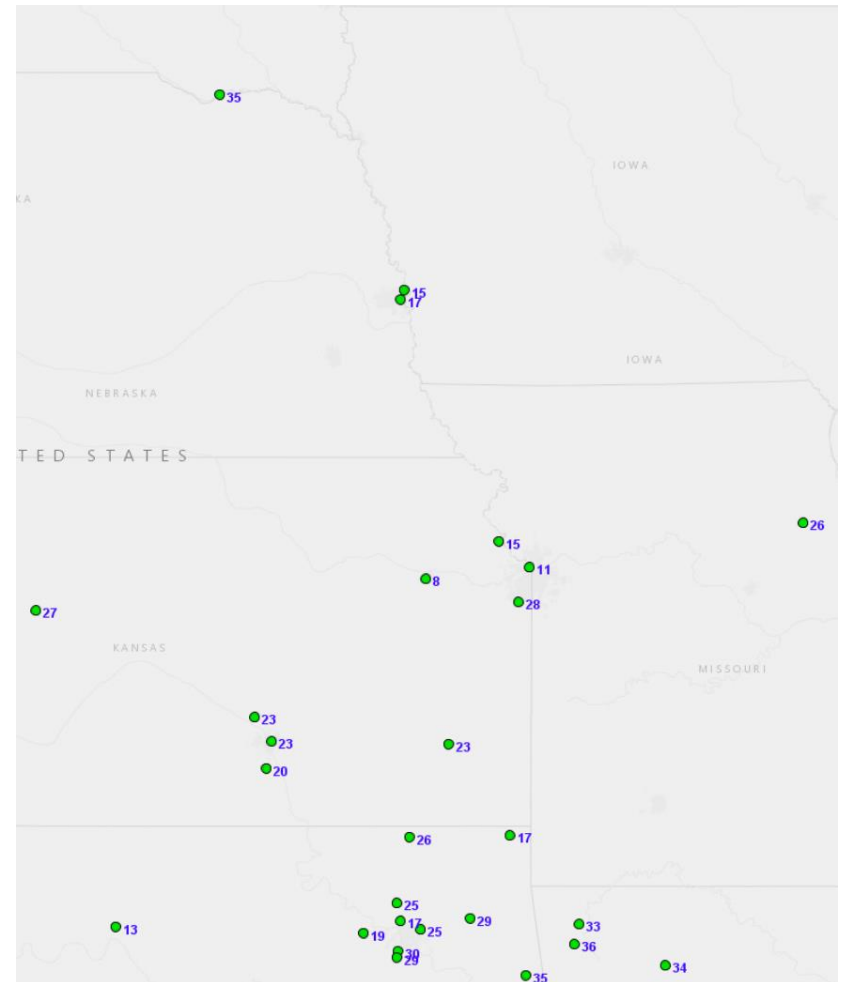


Friday, February 26, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

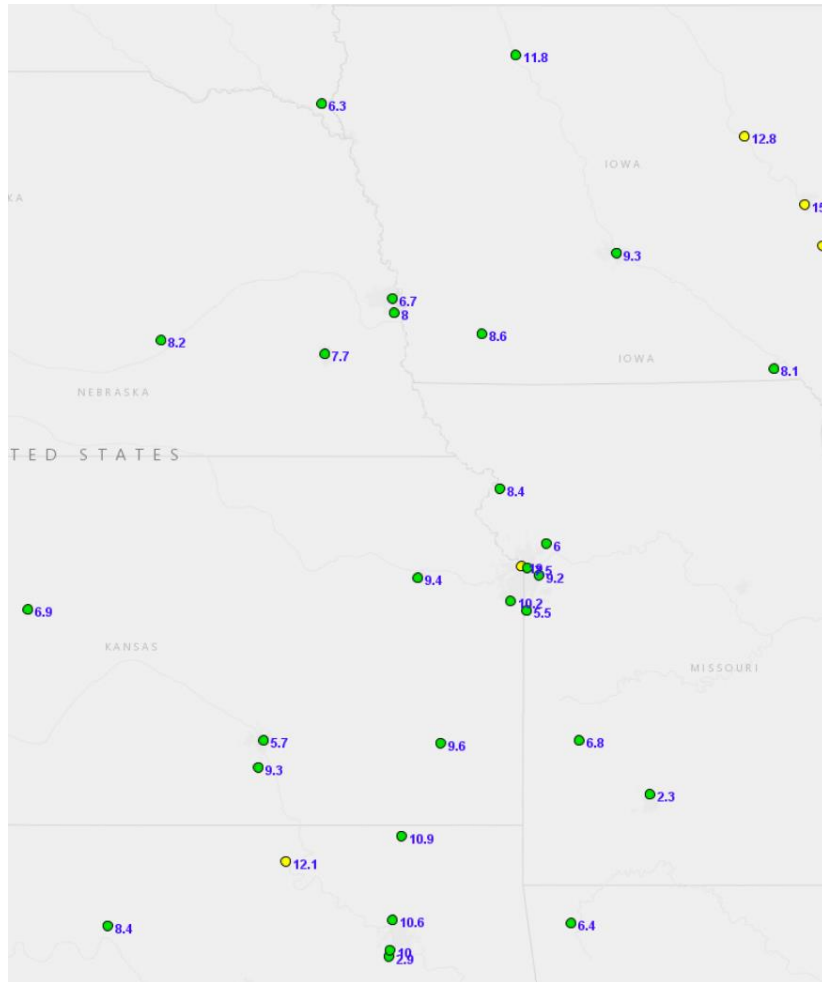


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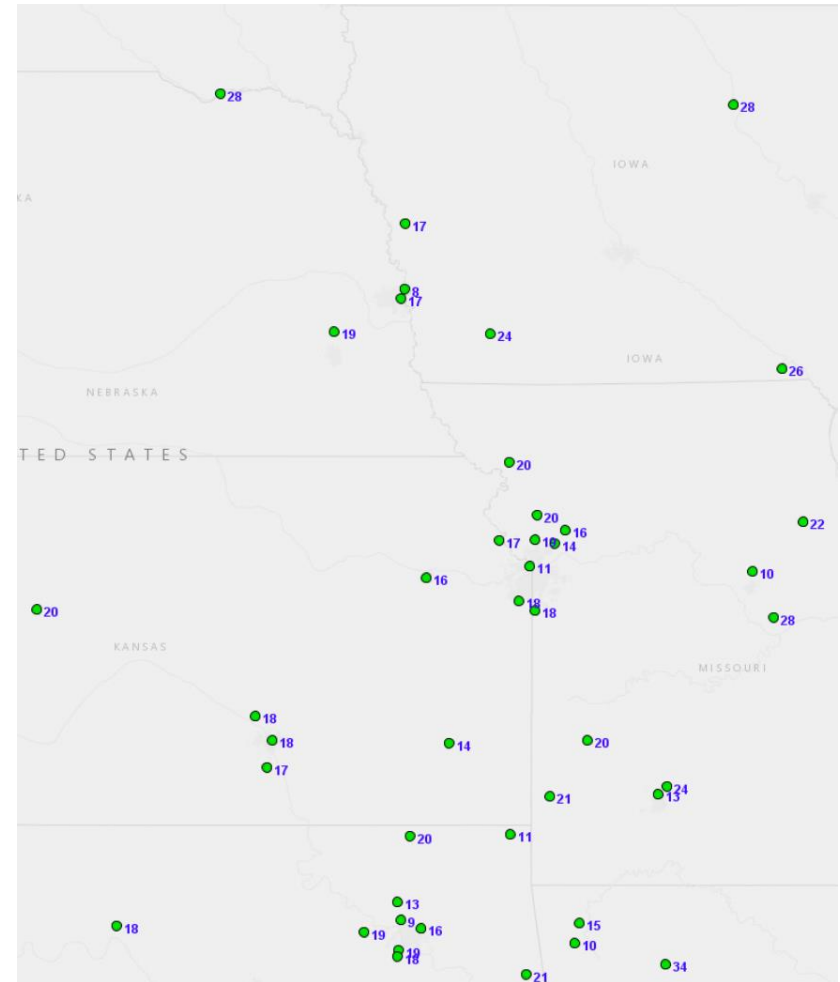


Saturday, February 27, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

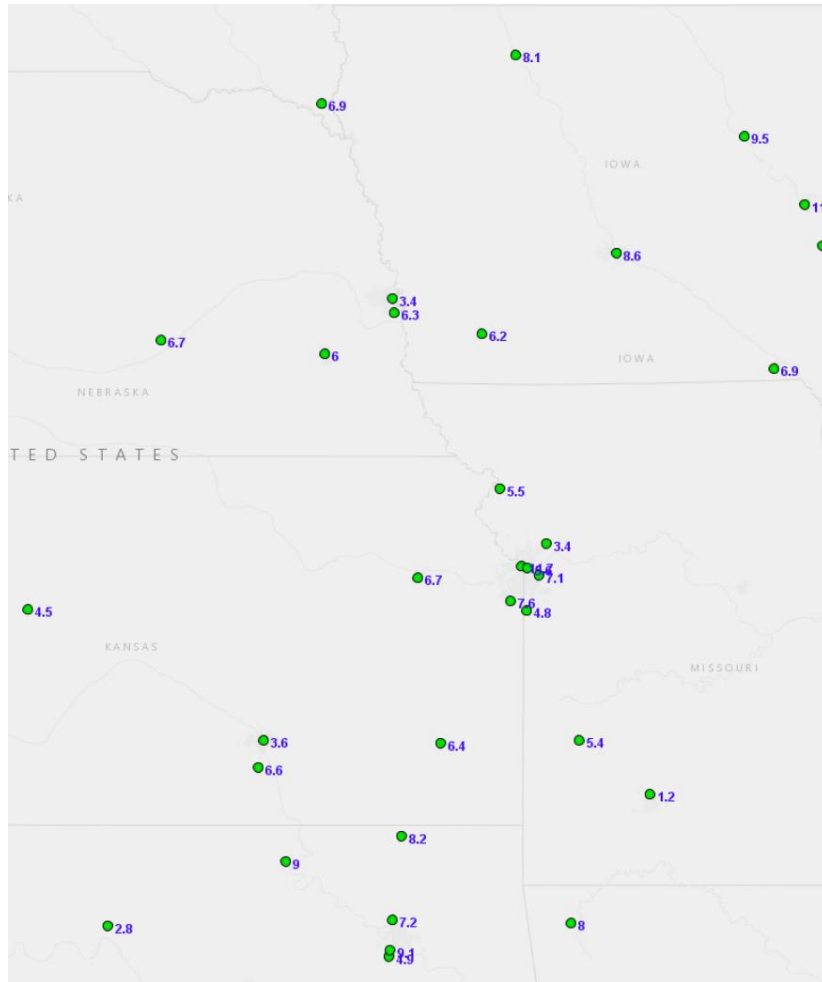


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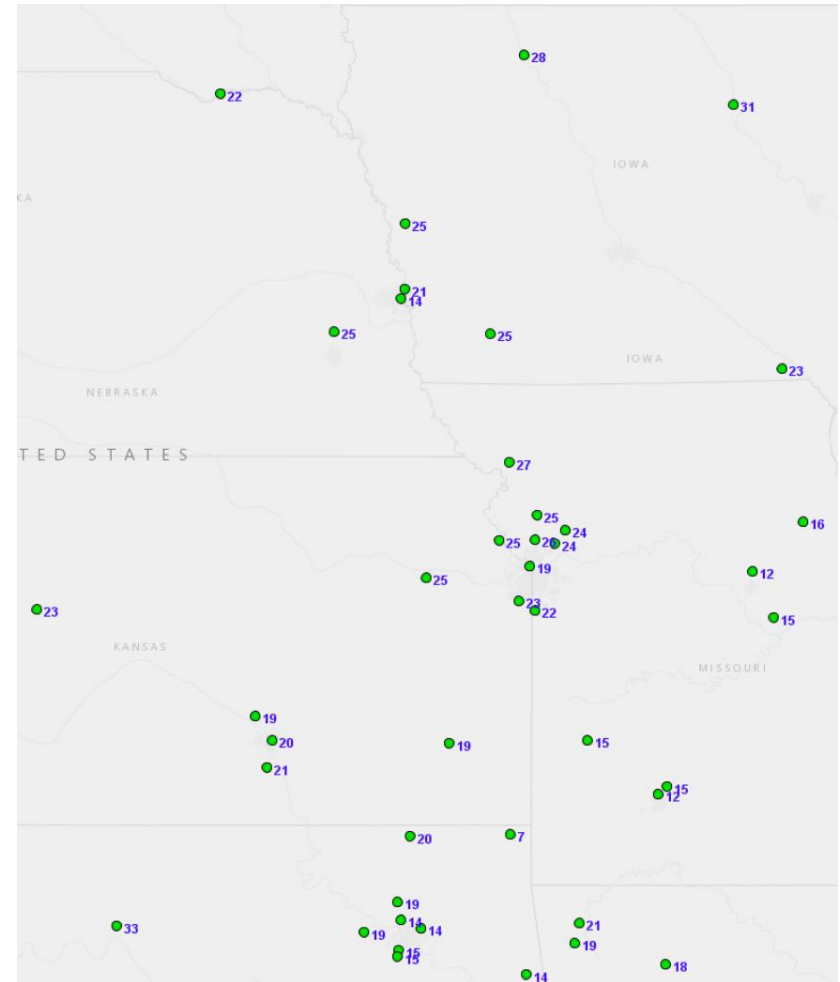


Sunday, February 28, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

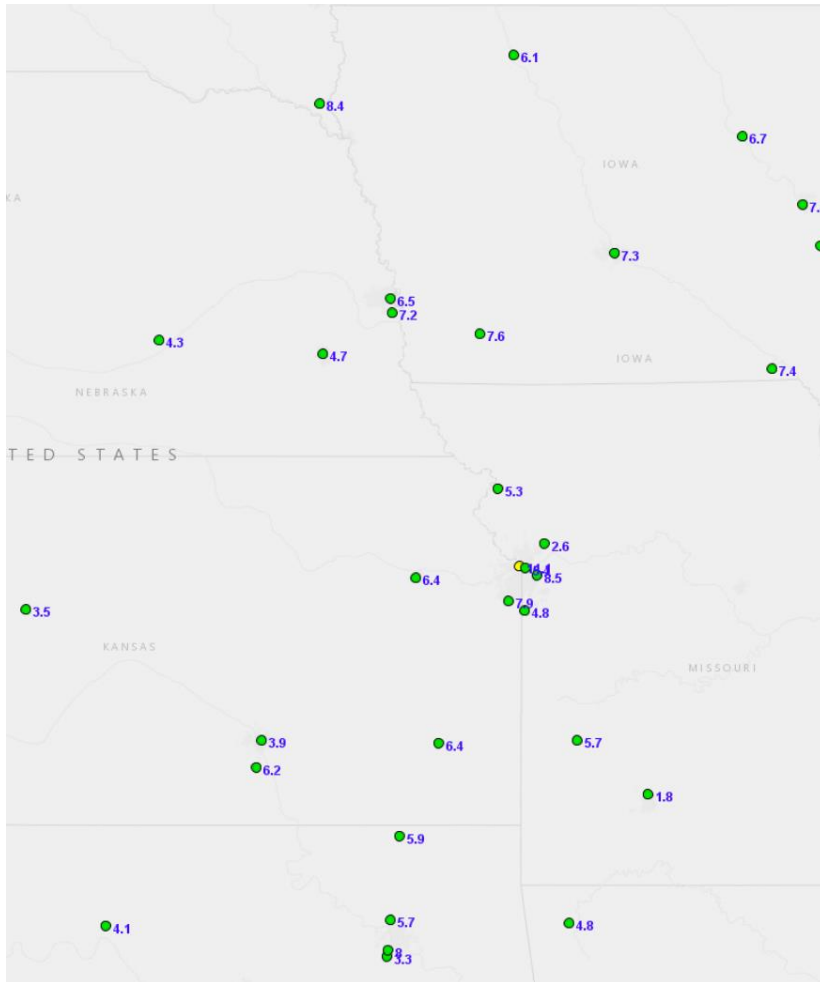


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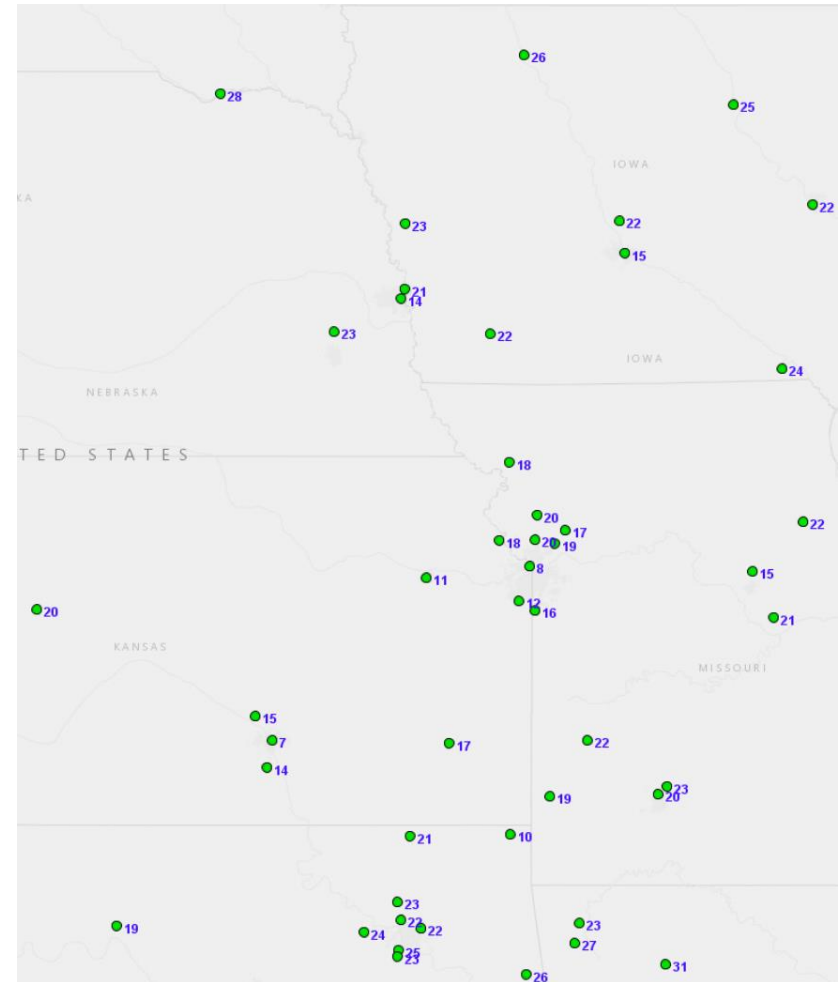


Monday, March 1, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

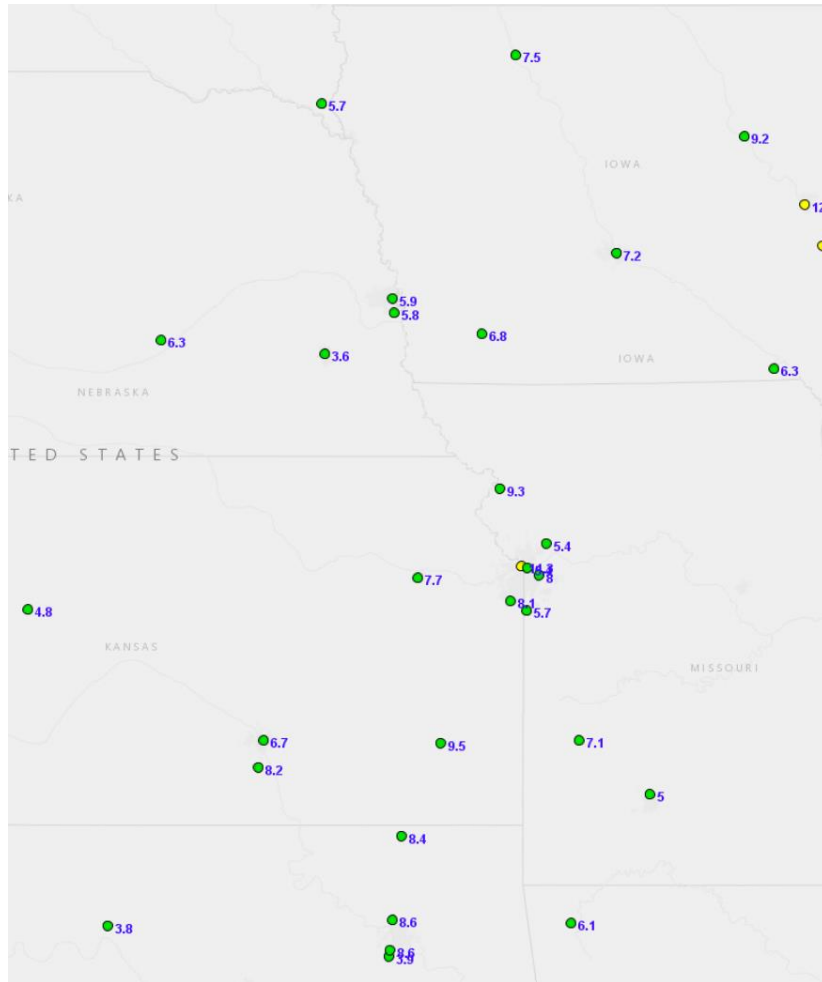


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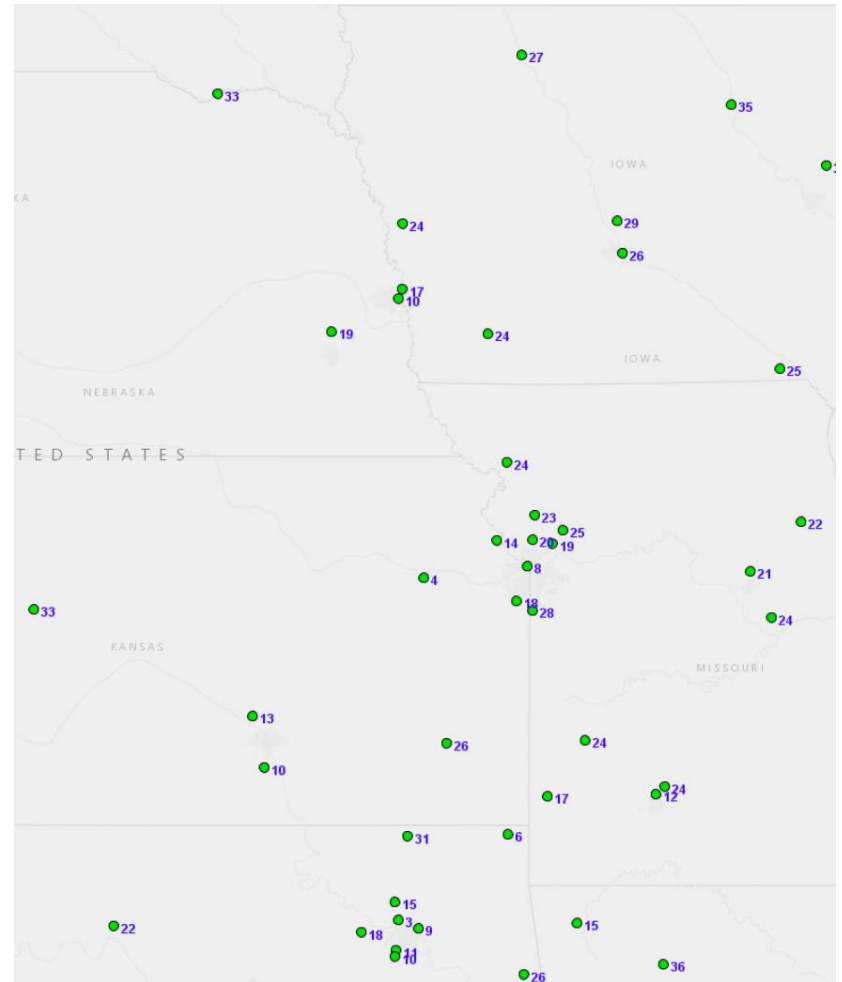


Tuesday, March 2, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

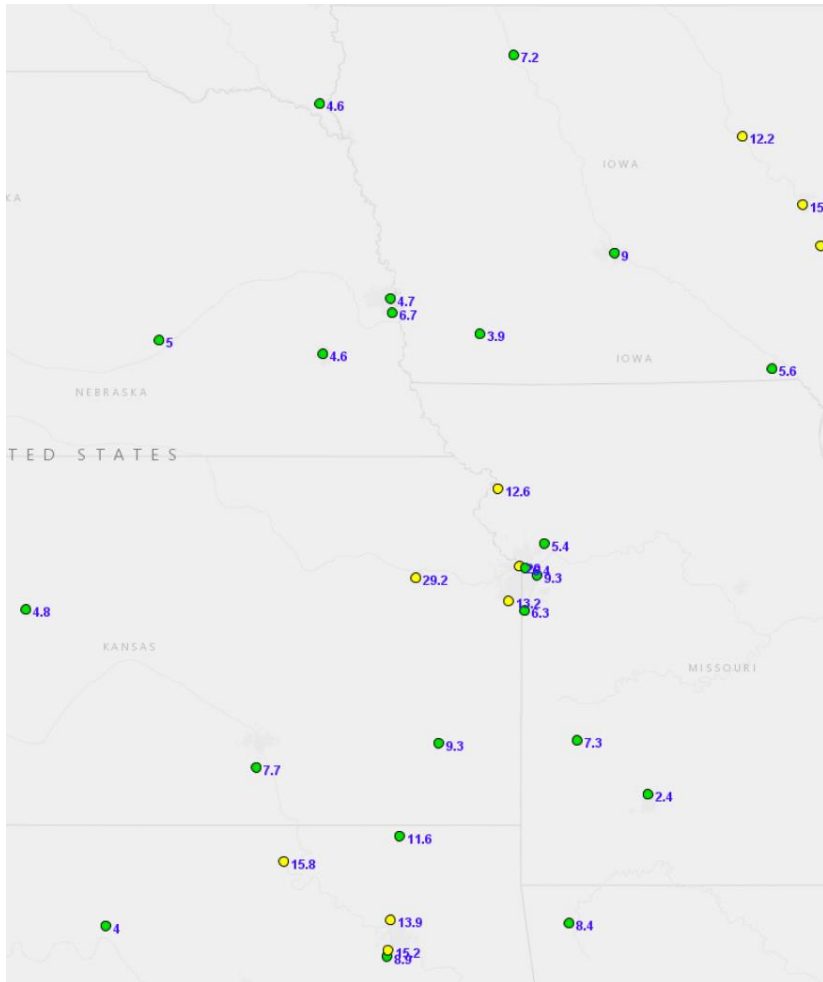


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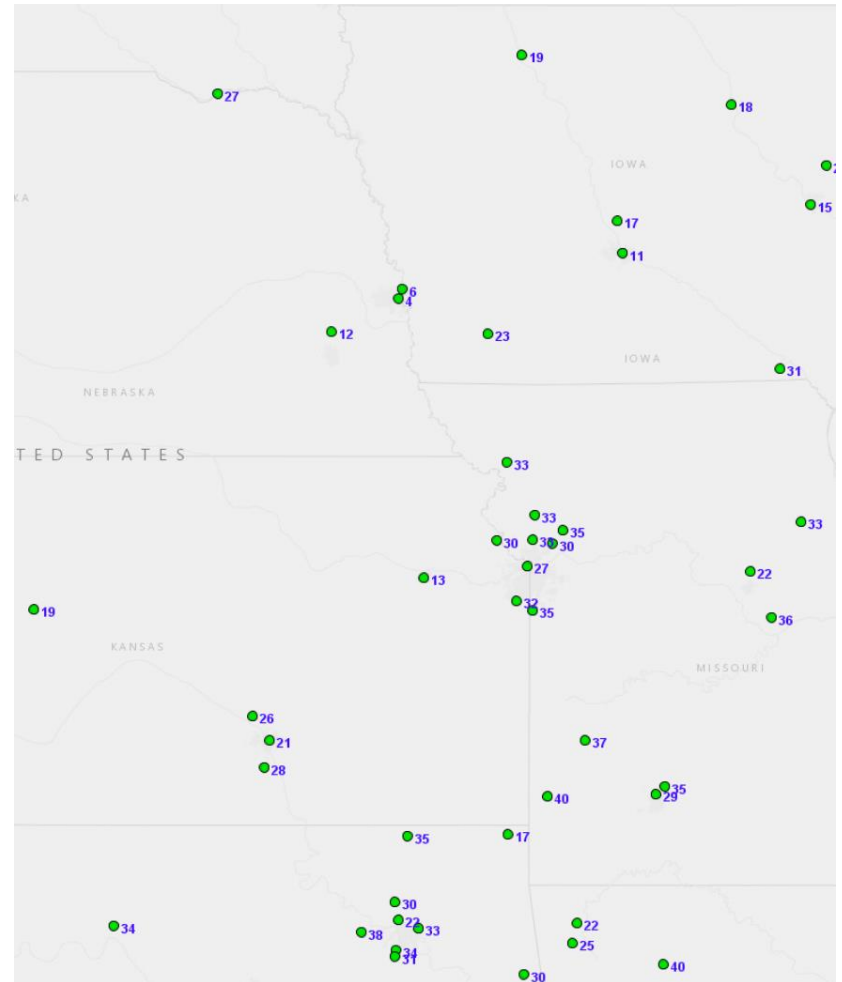


Wednesday, March 3, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

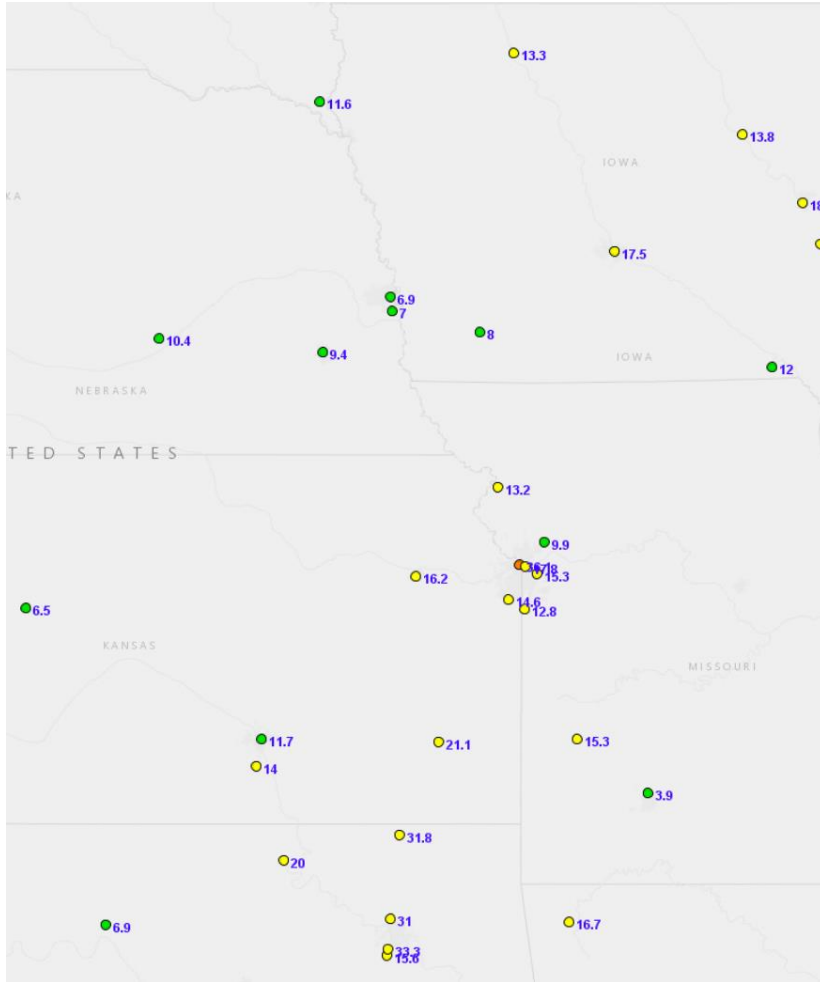


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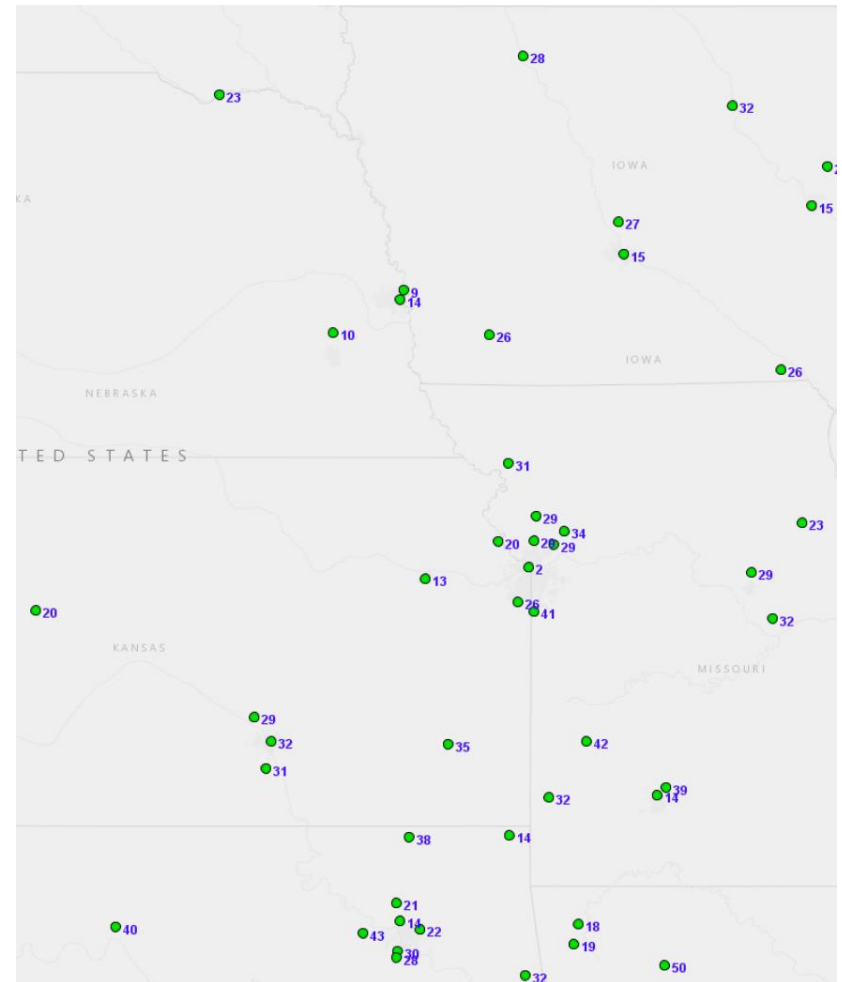


Thursday, March 4, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)





Fires and Smoke

A handful of fires were observed each day during the February 26-28 period as temperatures remained cool on Friday (Feb 26) and strong winds precluded fire activity for Saturday (Feb 27) and Sunday (Feb 28). Winds subsided for Monday (Mar 1) and the first day of more widespread fire activity was observed under north to northwest winds and reasonable dispersion. Air quality impacts were likely limited to local areas near any fires.

Winds turned to the Southwest on Tuesday (Mar 2) with gusts upwards of 30 mph. Prescribed fire activity was likely limited to early morning hours with many reports of wildfires received across the region during the afternoon under dry and breezy conditions. Another day of lighter winds on Wednesday (Mar 3) led a busy day of fire activity across the region with fires within the Flint Hills and the surrounding areas. While afternoon surface smoke dispersion was good the winds above the surface remained light, which kept smoke confined to the region – this shows up on Thursday’s satellite analysis below as the broad area of light smoke spanning several states. Further, the cool temperatures and light winds return quickly in the evening and overnight hours, which leads to a strong inversion and trapped smoke near the surface. This led to elevated air quality concerns for the region Wednesday night into Thursday.

Winds increased again on Thursday (Mar 4) from west to east under very dry conditions which once again led to copious amounts of burn bans for counties in Kansas. While several wildfires were reported within the Flint Hills area the winds remained light enough for some prescribed fire activity. More prescribed fire activity occurred east of the Flint Hills region where the winds remained lighter. Once again, cool temperatures and calm evening and overnight winds led to an inversion and air quality concerns Thursday night into today (Friday, Mar 5) across the region.

KSFIRE.ORG

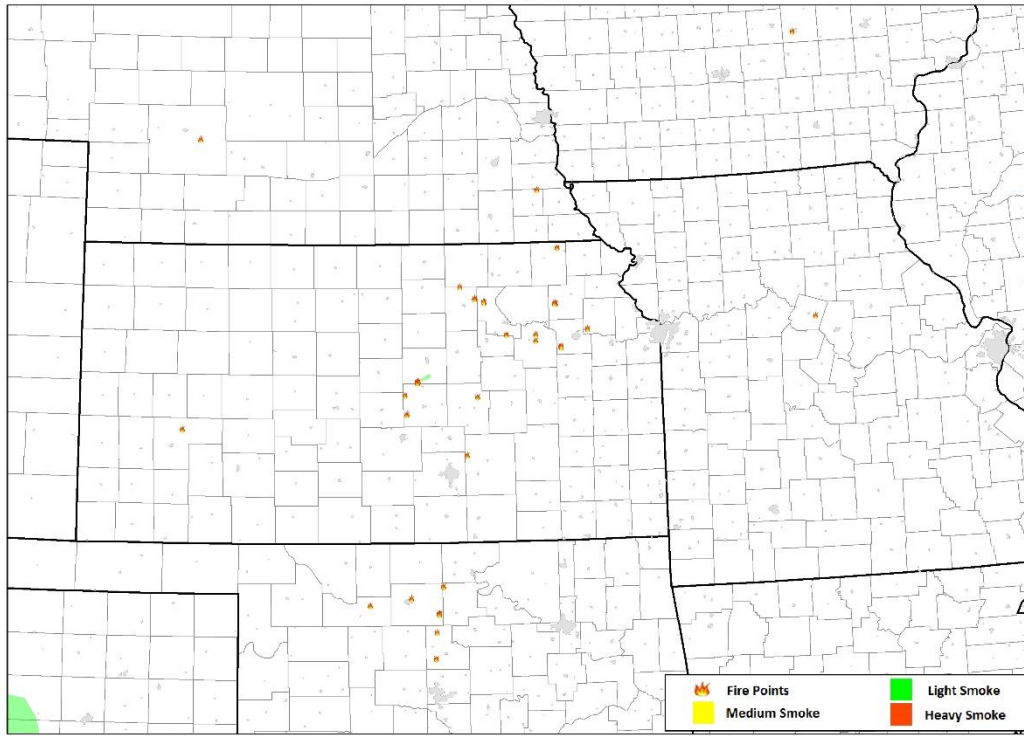


This website was developed as part of the development of the Kansas Flint Hills Smoke Management Plan. Kansas State University hosts the webpage and it includes important information for ranchers and others who might be interested in the Flint Hills. It provides training, regulations, policies, publications,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

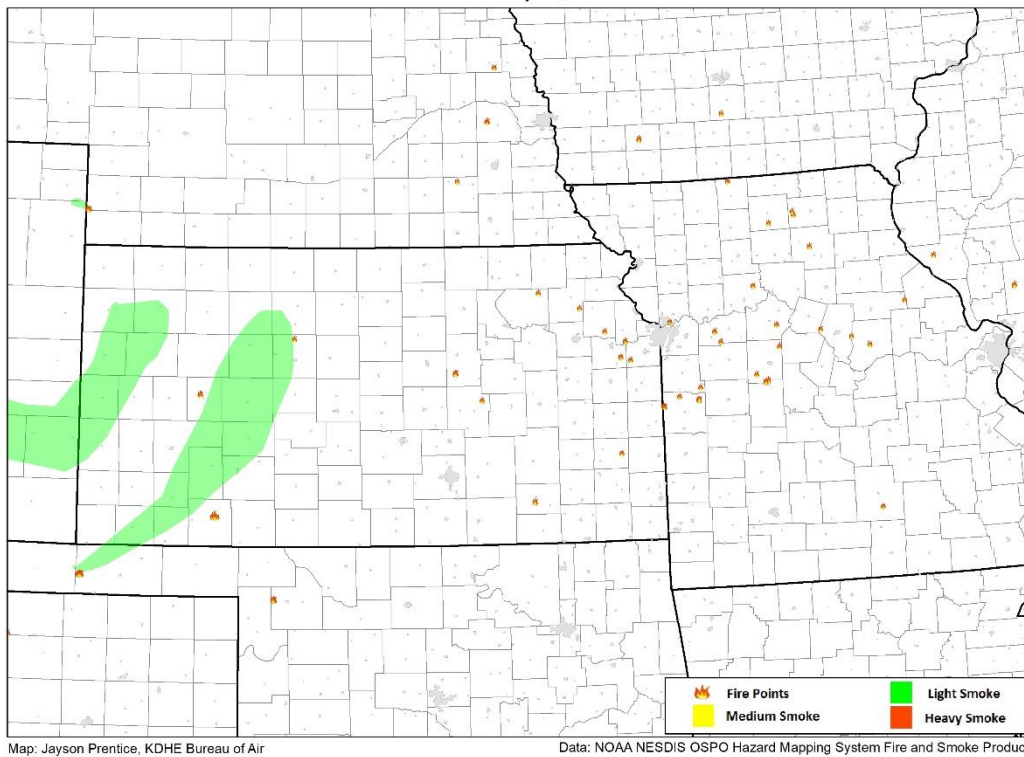
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Satellite Fire & Smoke Analysis February 26, 2021



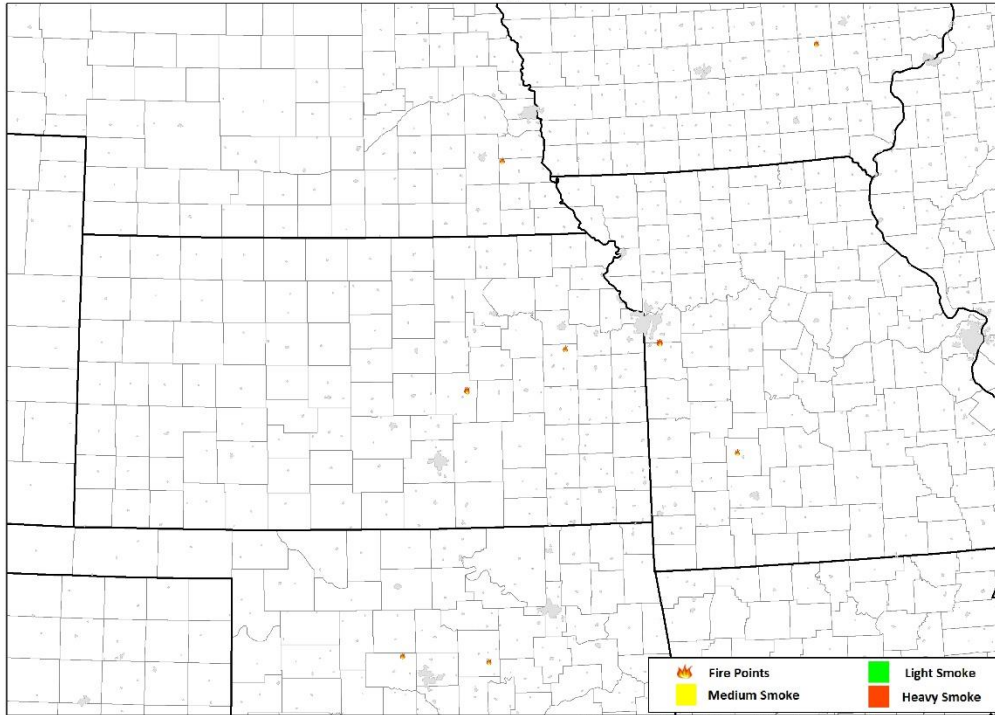
Satellite Fire & Smoke Analysis February 27, 2021



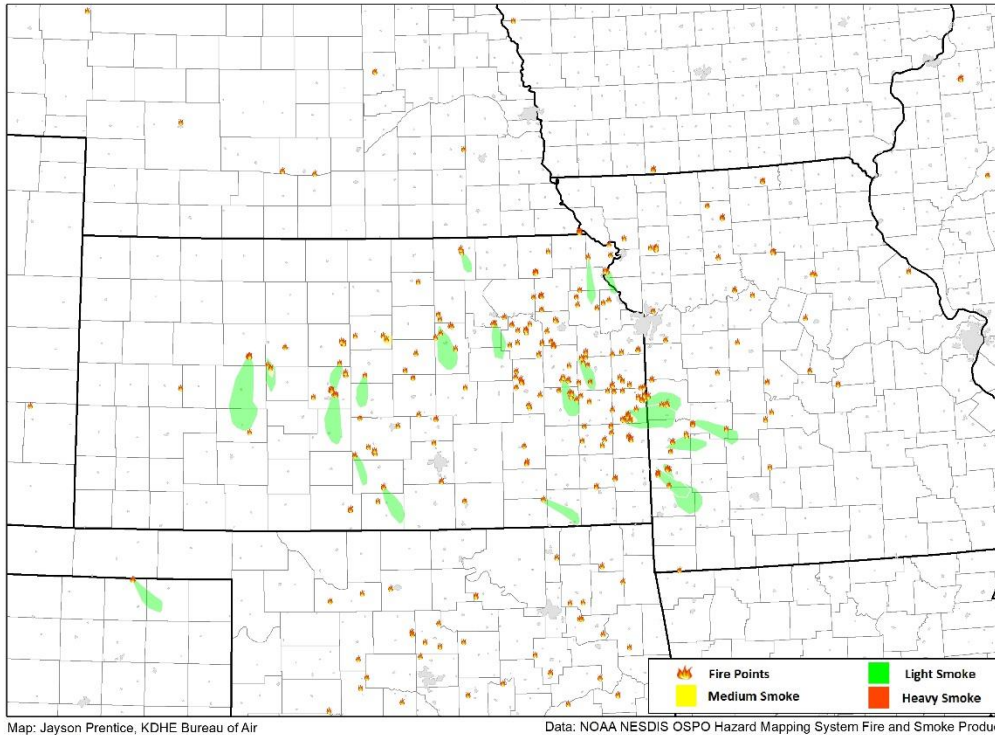
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Satellite Fire & Smoke Analysis February 28, 2021



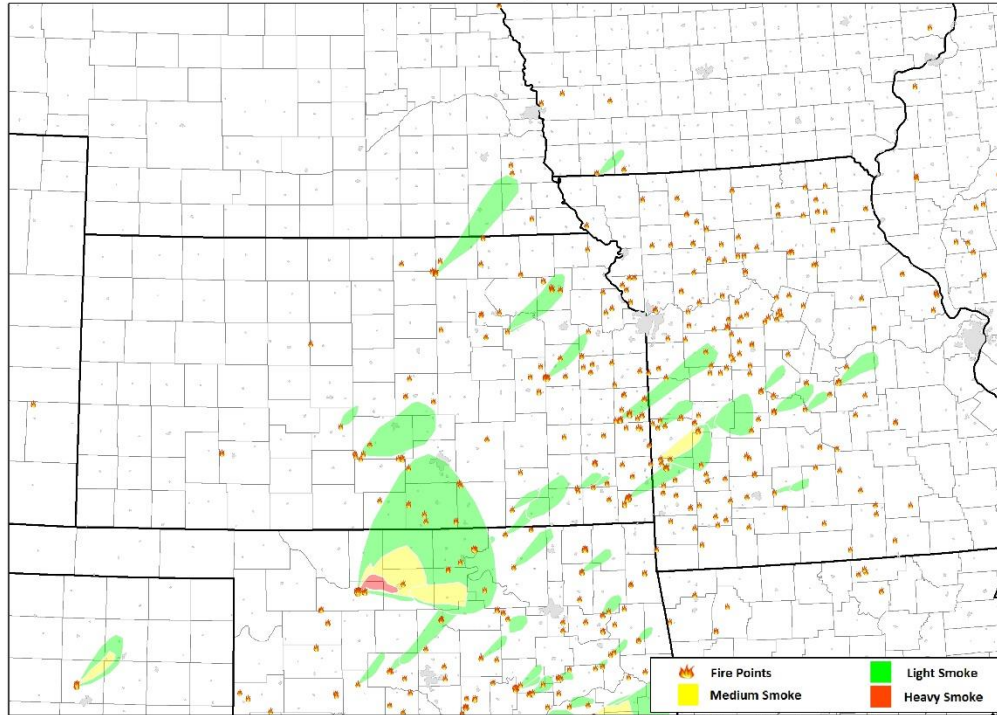
Satellite Fire & Smoke Analysis March 01, 2021



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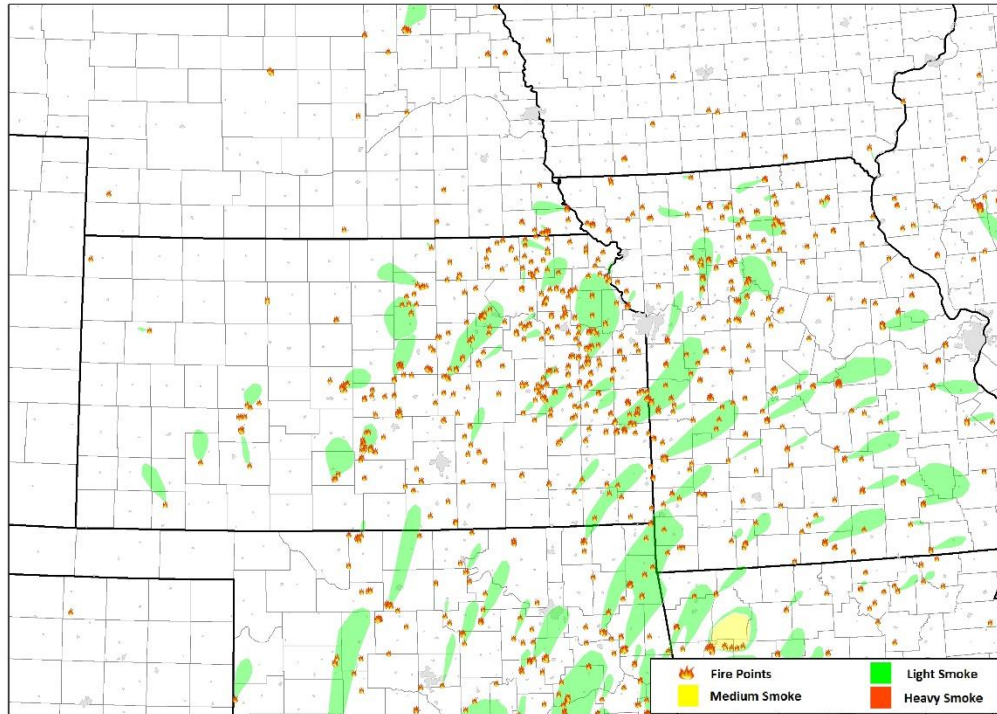
Satellite Fire & Smoke Analysis March 02, 2021



Map: Jayson Prentice, KDHE Bureau of Air

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

Satellite Fire & Smoke Analysis March 03, 2021



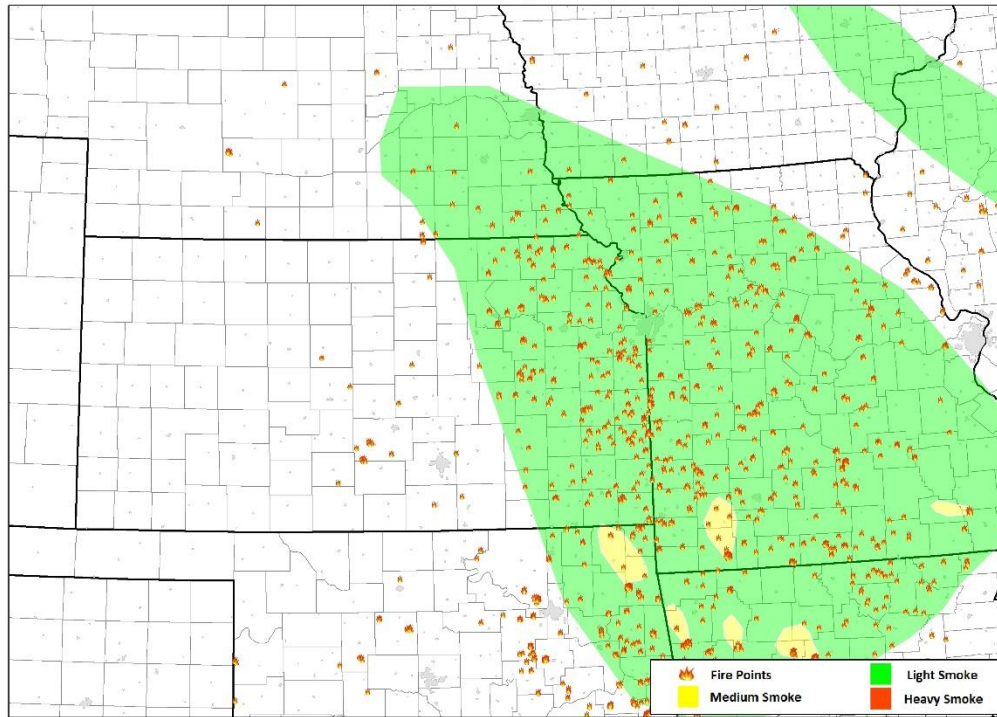
Map: Jayson Prentice, KDHE Bureau of Air

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

Flint Hills Prescribed Fire Update



Satellite Fire & Smoke Analysis March 04, 2021



Map: Jayson Prentice, KDHE Bureau of Air

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

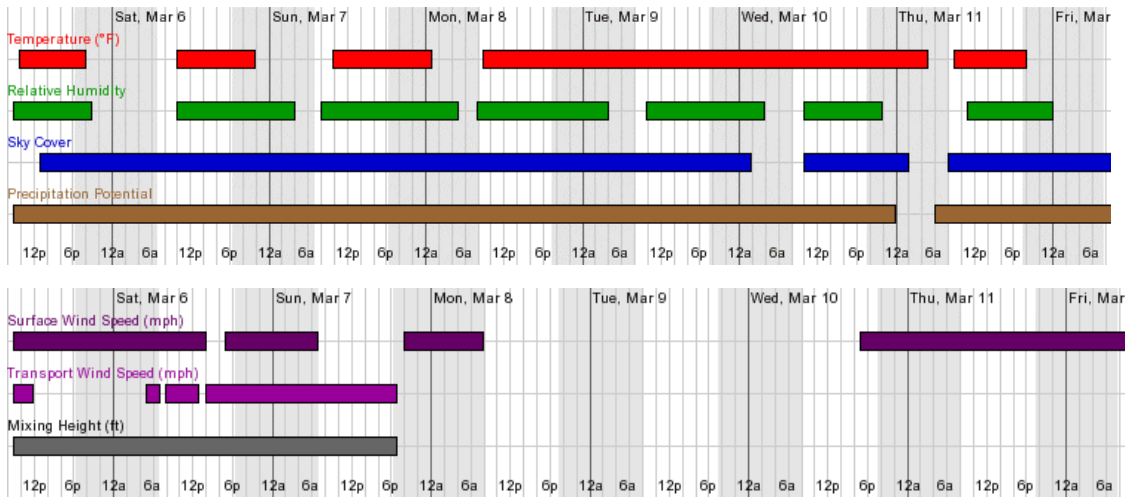


Upcoming Look at Fires and Smoke

Warm temperatures are anticipated throughout the next week with afternoon highs in the 50s-70s across the region. While afternoon relative humidity values are currently forecast to remain above 30 percent, many recent afternoons have “over-achieved” and had lower than forecast values. While a few small chances at precipitation may need to be watched the best potential for any rain will be during the Wednesday-Thursday (March 10-11) period.

The largest factor for burning, and smoke concerns, will be the winds – both surface and transport. While surface winds will remain reasonable for today (March 5) the transport winds will be very light; With strong inversions likely due to it still being early March any fire activity outside of the afternoon hours may lead to air quality issues. Surface wind speeds become gusty for Saturday and Sunday afternoons, and then for the entire Monday-Wednesday period. With such dry conditions any fire activity may be difficult to control with such breezy conditions.

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: 8am March 5, 2021.

For more information, contact:

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