

# Flint Hills Wildland Fire Update

March 19, 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.



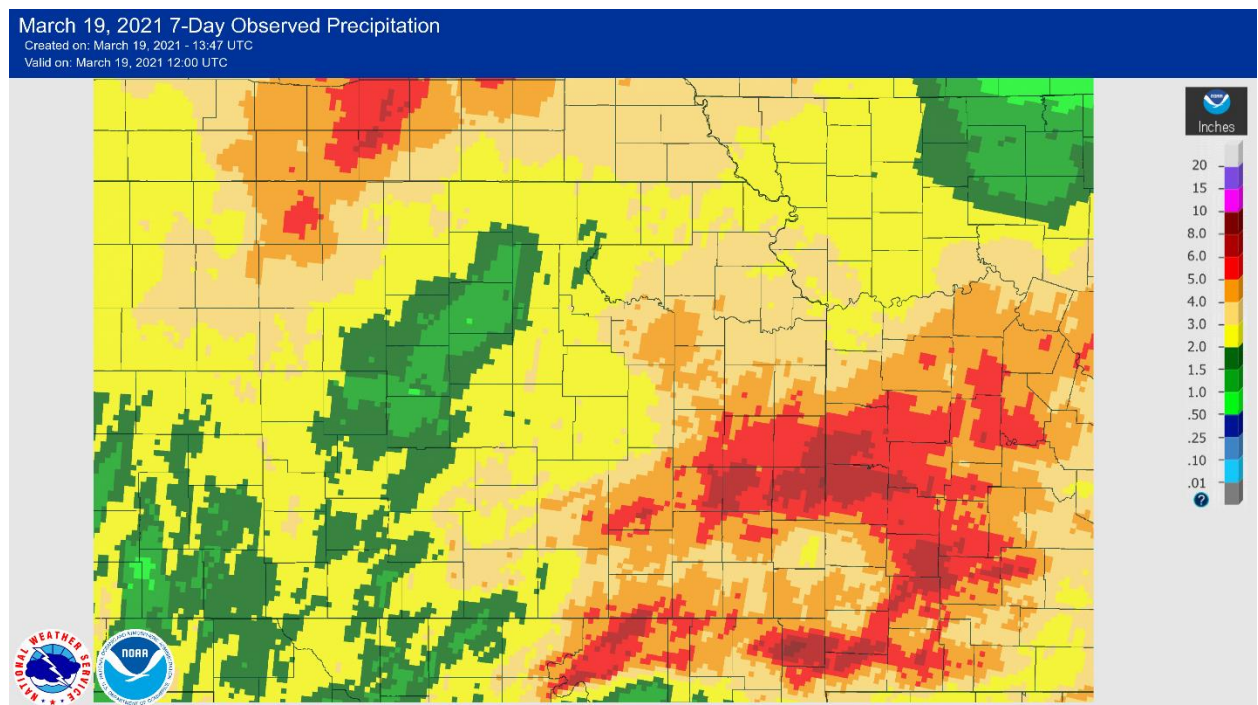


## Meteorology

After battling very dry vegetation and the prolonged period where precipitation was scarce the prior week certainly ended those concerns with the entire region seeing a minimum of 1.5 inches of precipitation and some localized areas receiving more than 5 inches. The Flint Hills saw rain showers, (severe) thunderstorms, and even snowfall leading to those precipitation totals which were the headline of the past week.

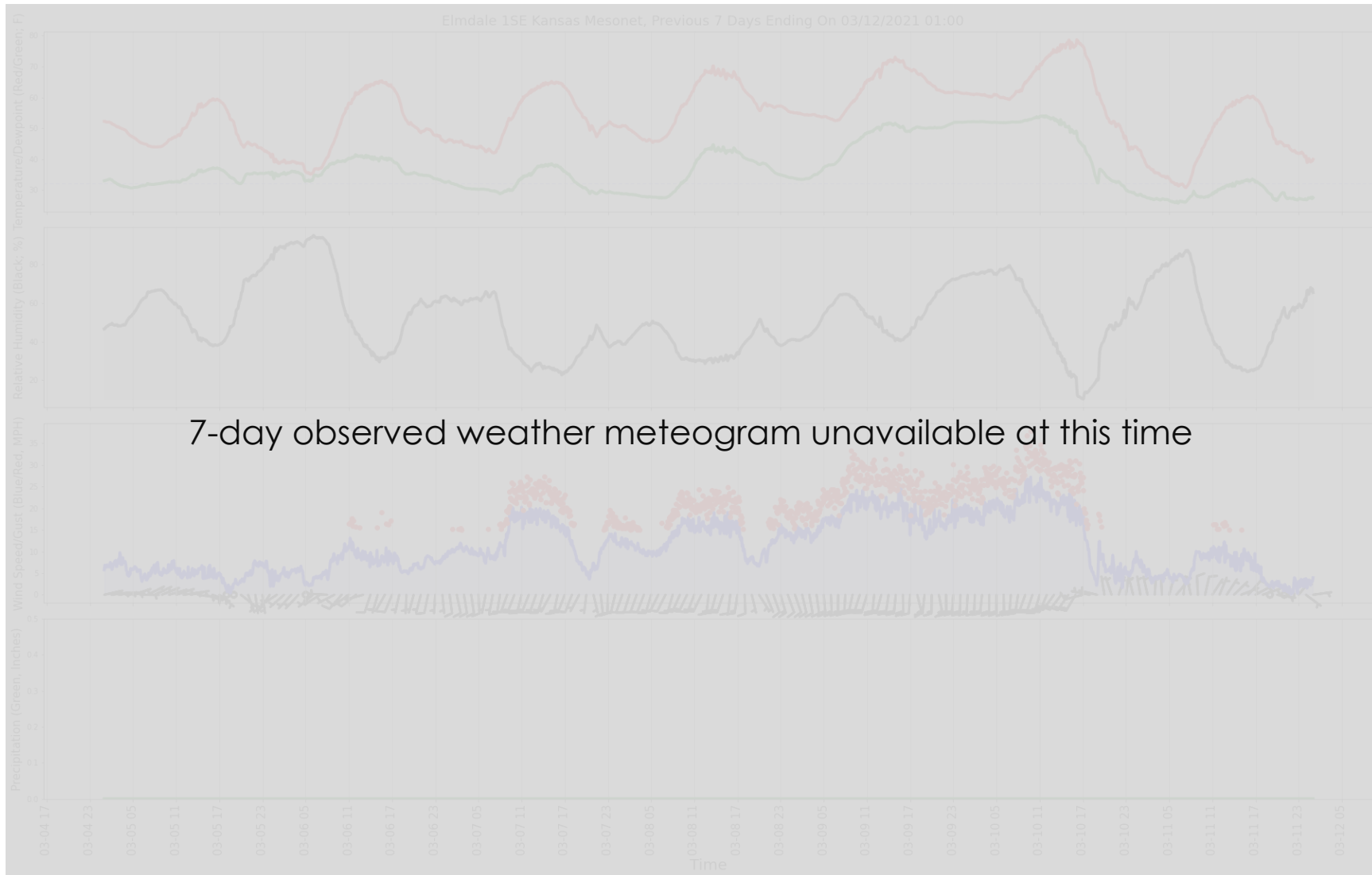
Temperatures were seasonable to below average with highs in the 50s to 60s, but even the mere 40s last Friday (March 12) and Wednesday (March 17). Wind speeds were certainly breezy to gusty with most days seeing wind gusts above 20 mph and a few days with gusts greater than 30 mph.

## Precipitation



NOAA/NWS Observed Total Precipitation for March 12-18, 2021.

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7-day (March 12-18, 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 March 12-18, 2021:

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

**PM<sub>2.5</sub>:** Preliminary data indicates **no** exceedances of the NAAQS daily 24-hour average maximum of 35  $\mu\text{g}/\text{m}^3$ .

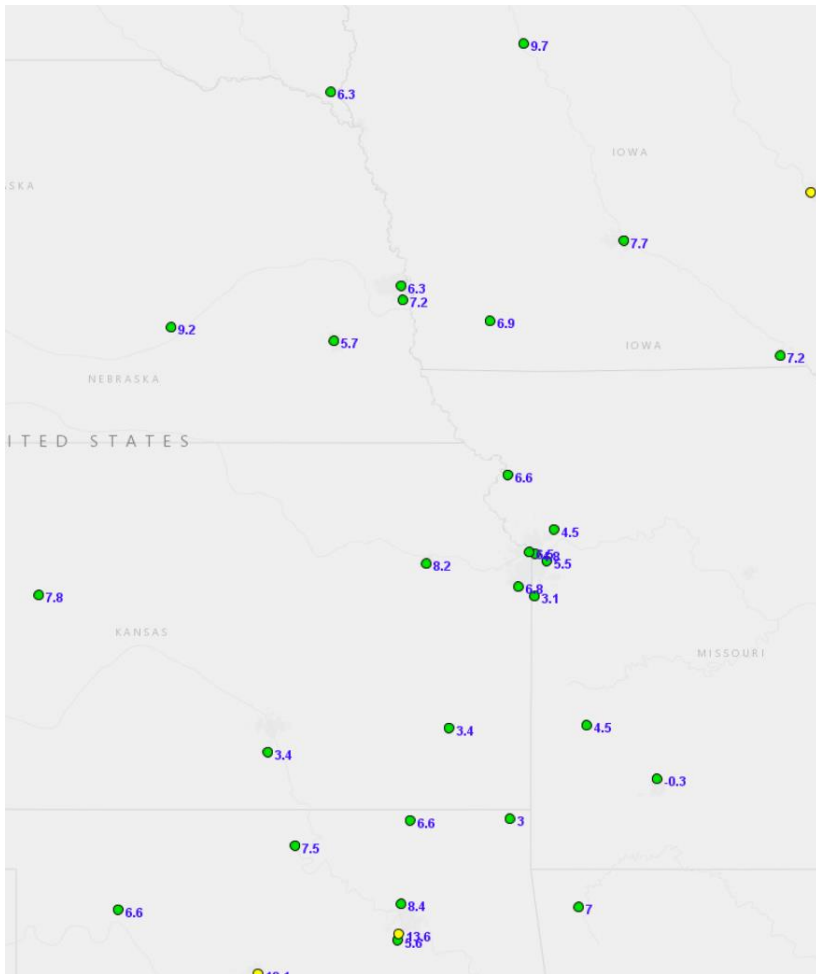
Air quality images on the following pages for each day show preliminary data, courtesy Air Now Tech.

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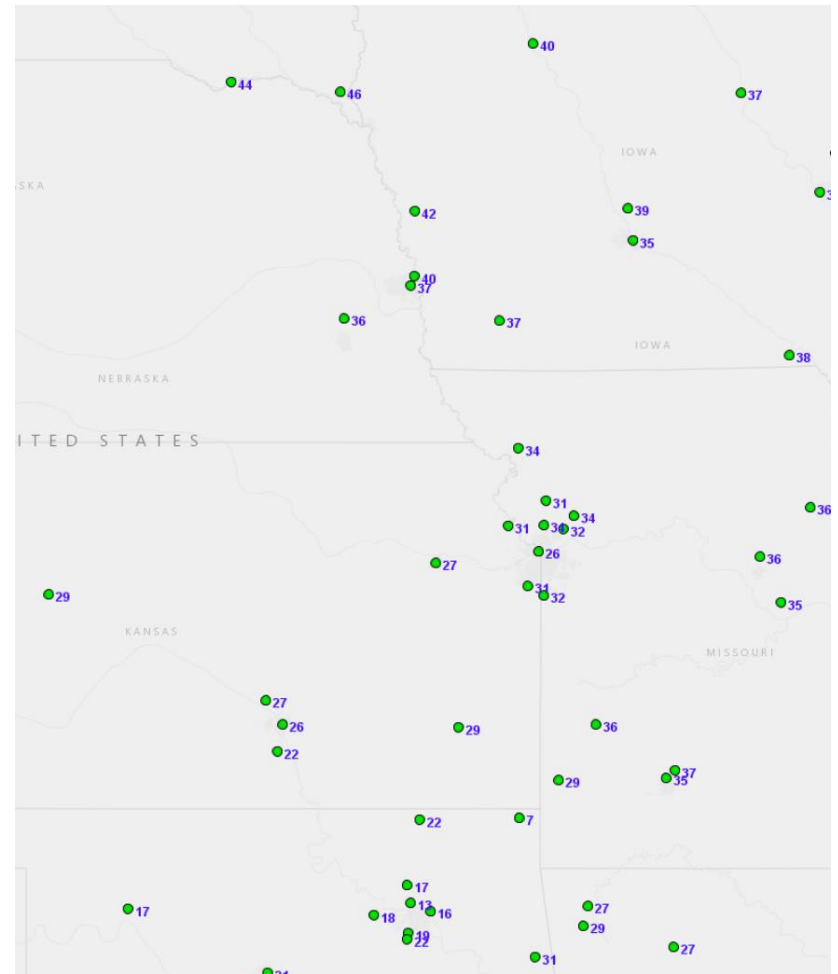


Friday, March 12, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

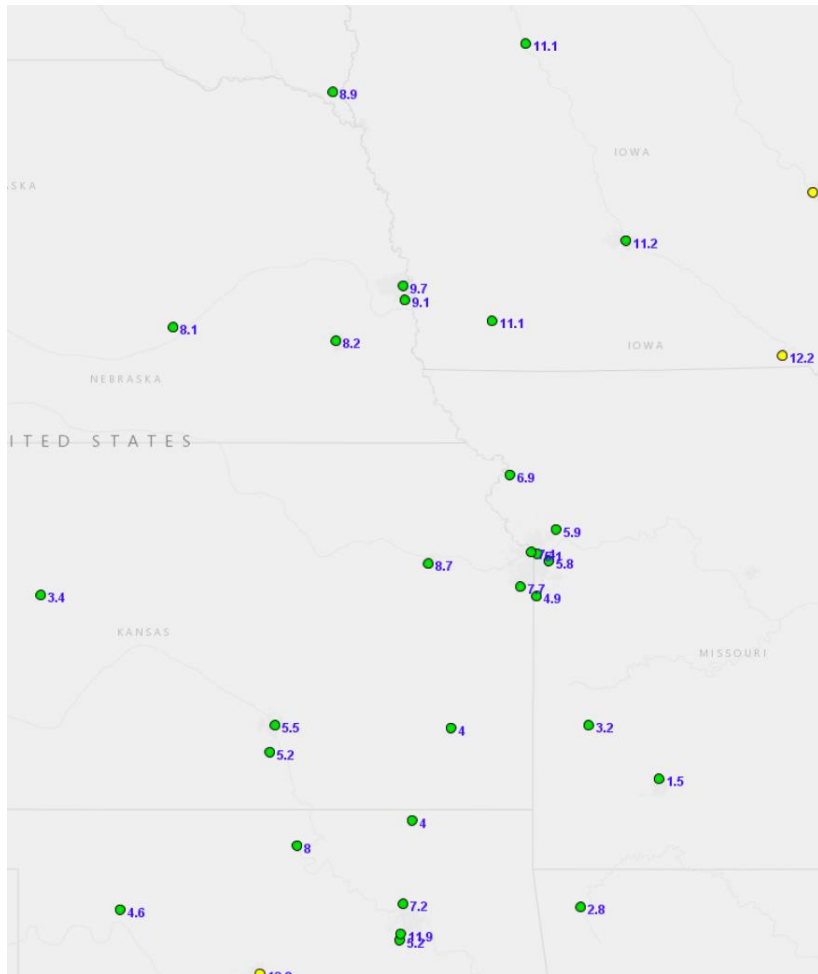


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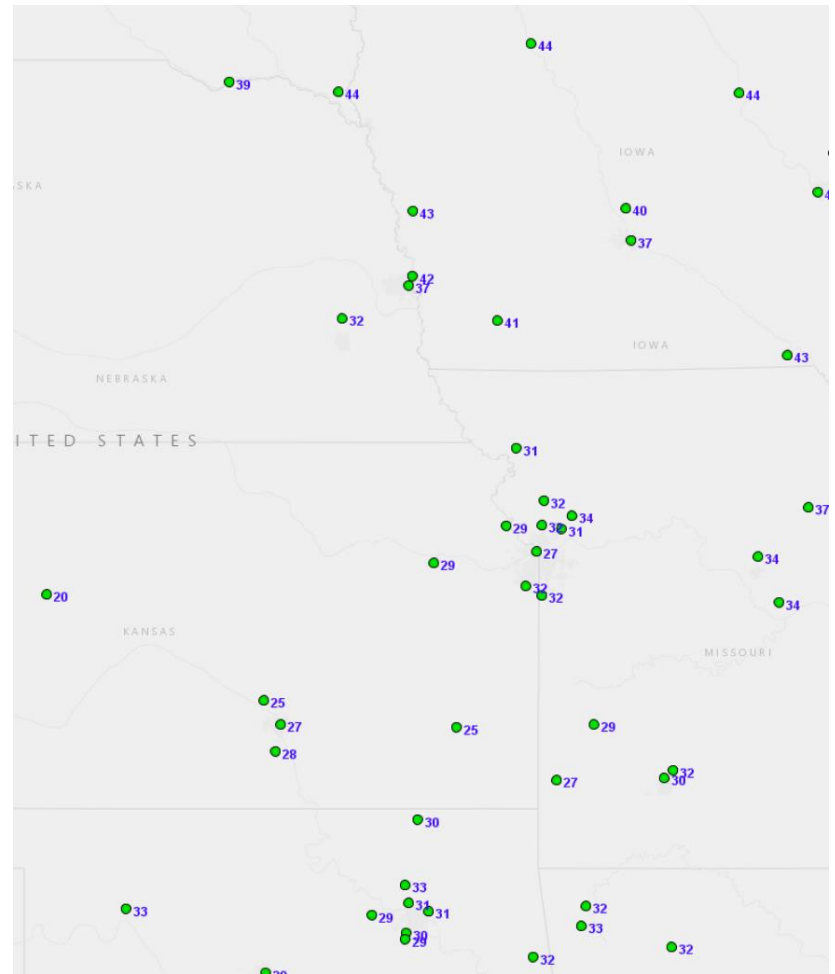


Saturday, March 13, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

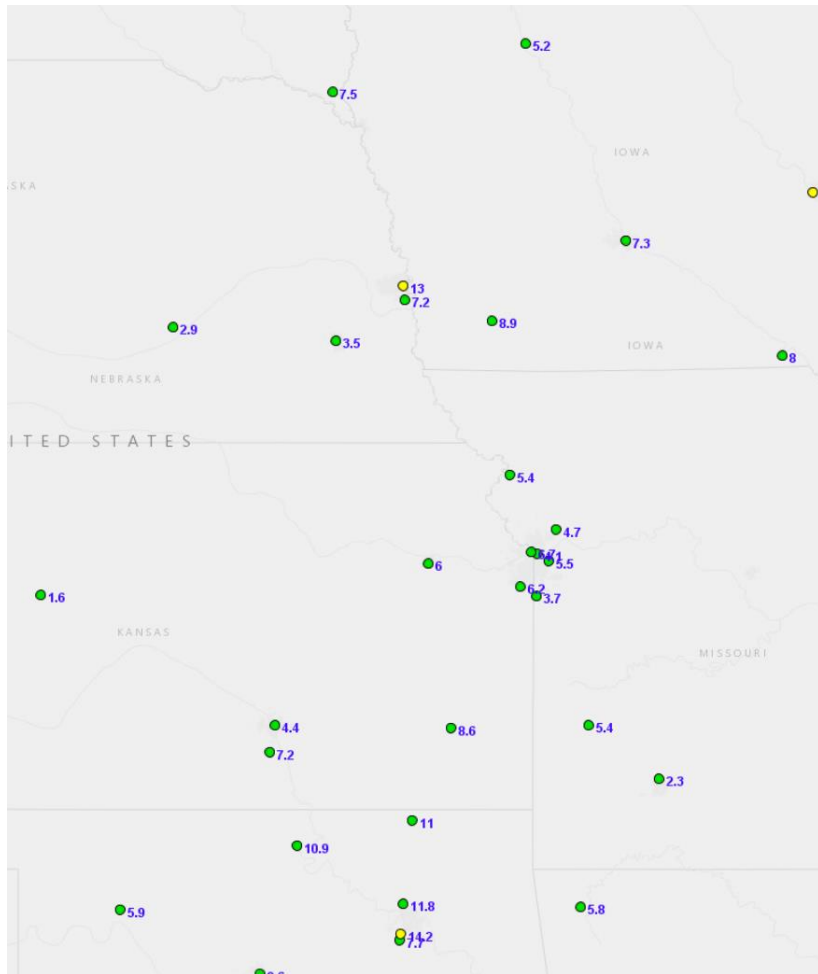


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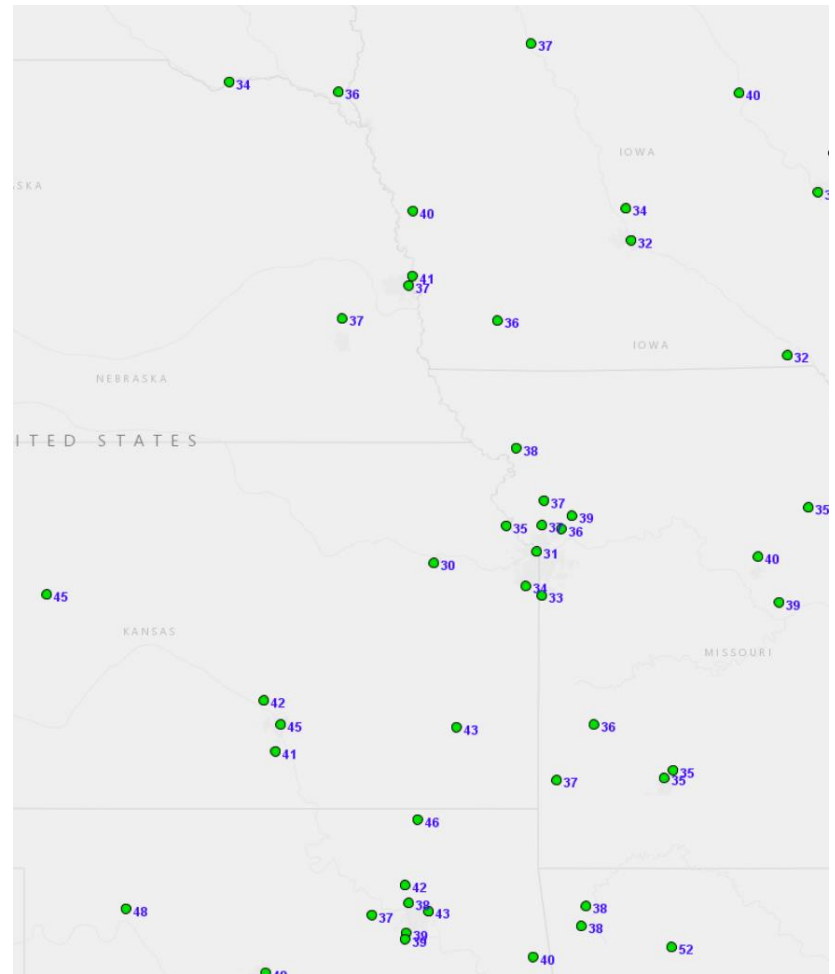


Sunday, March 14, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

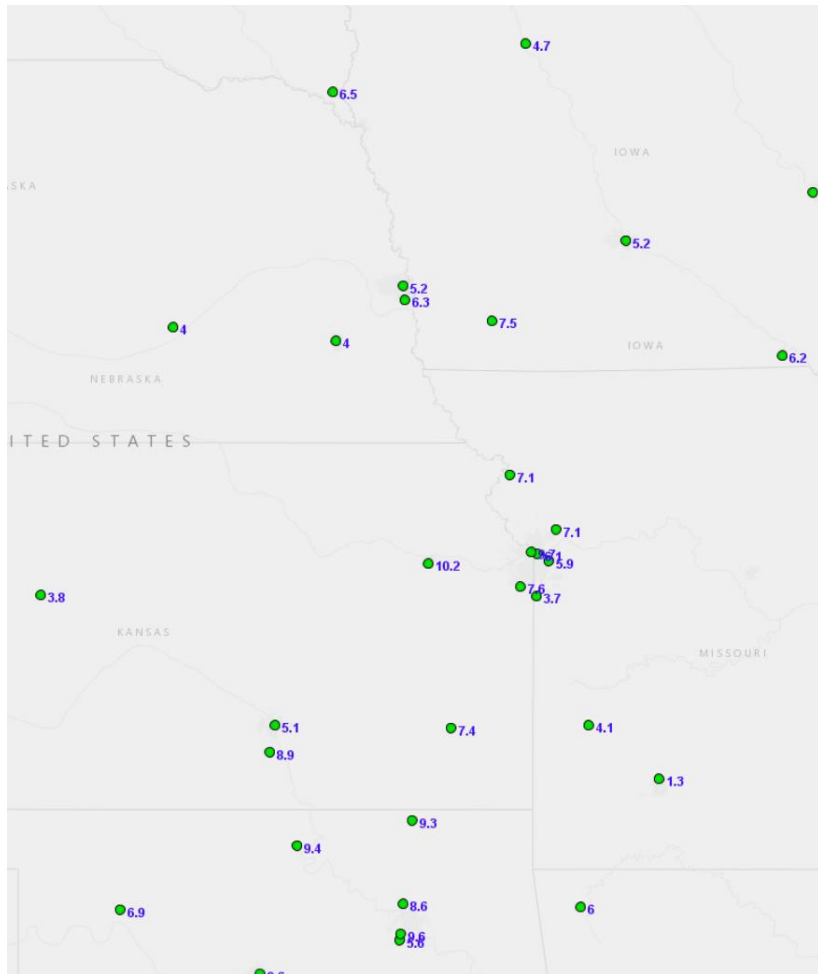


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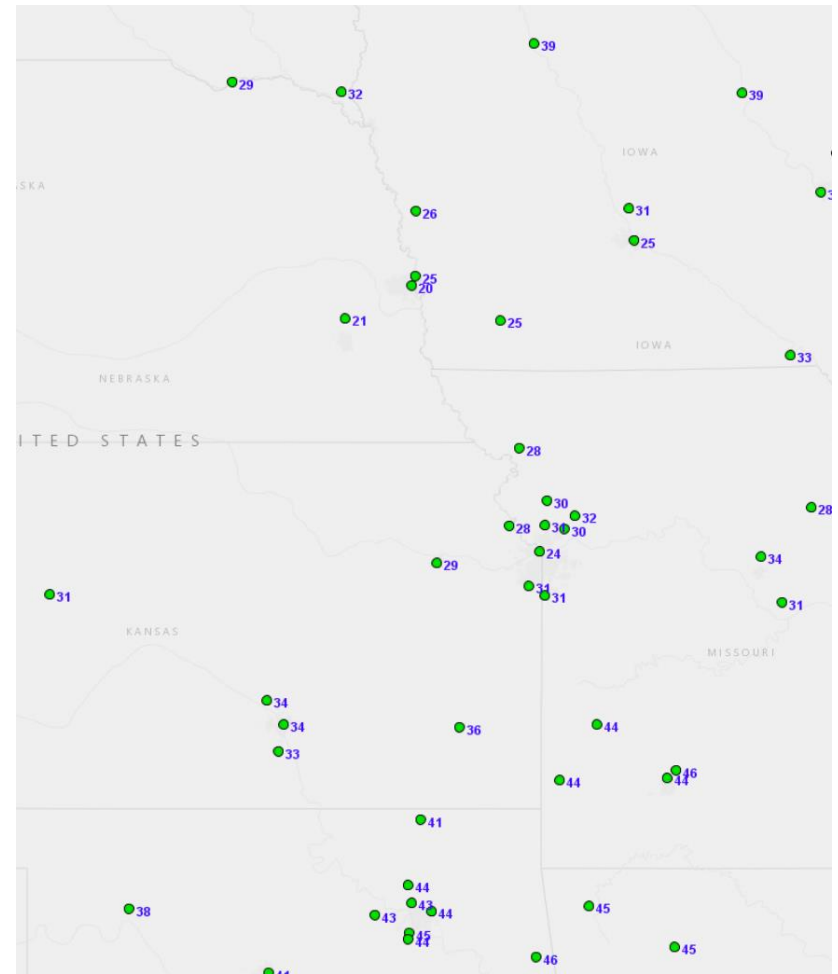


Monday, March 15, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)



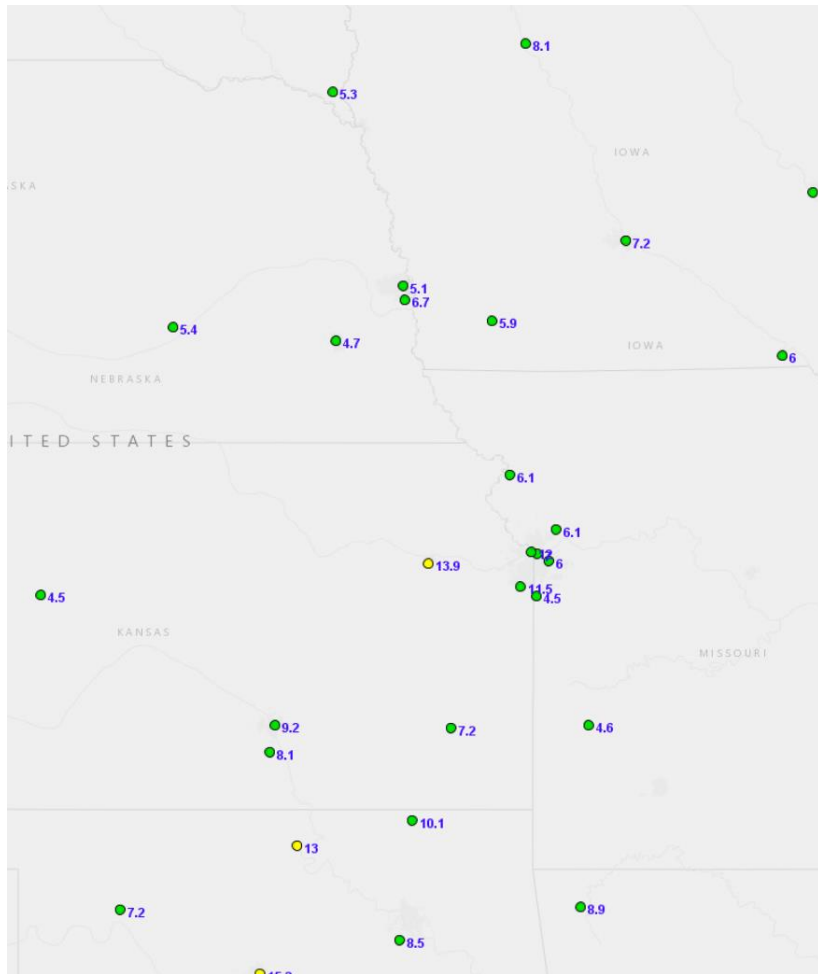


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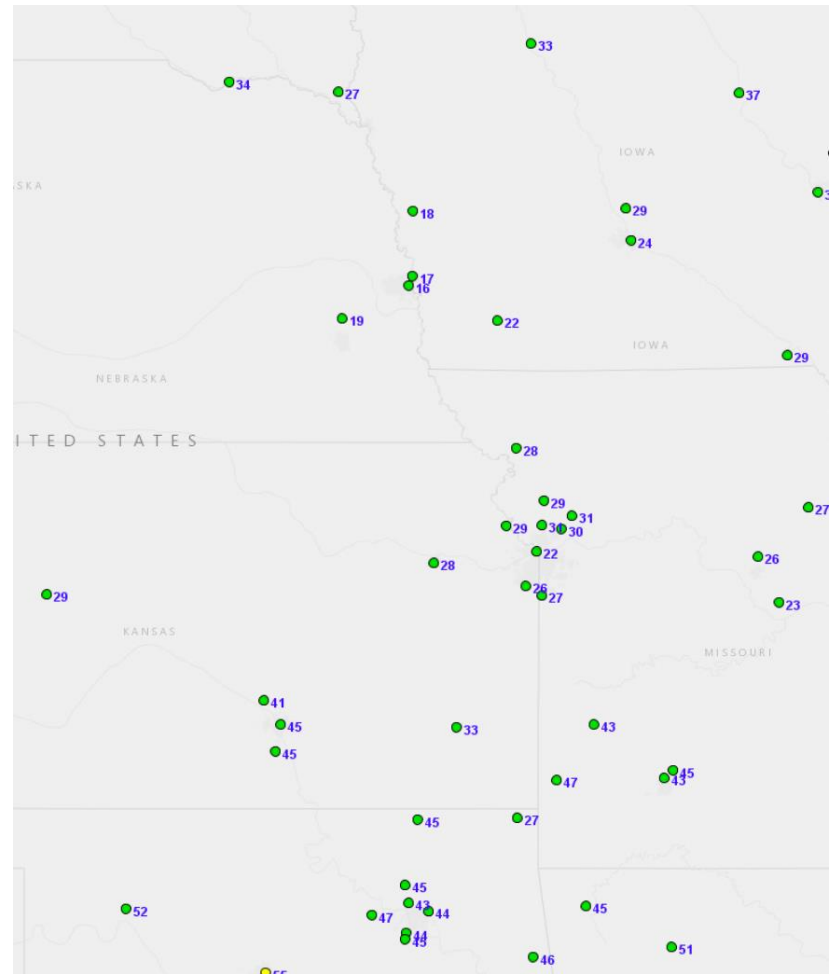


Tuesday, March 16, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

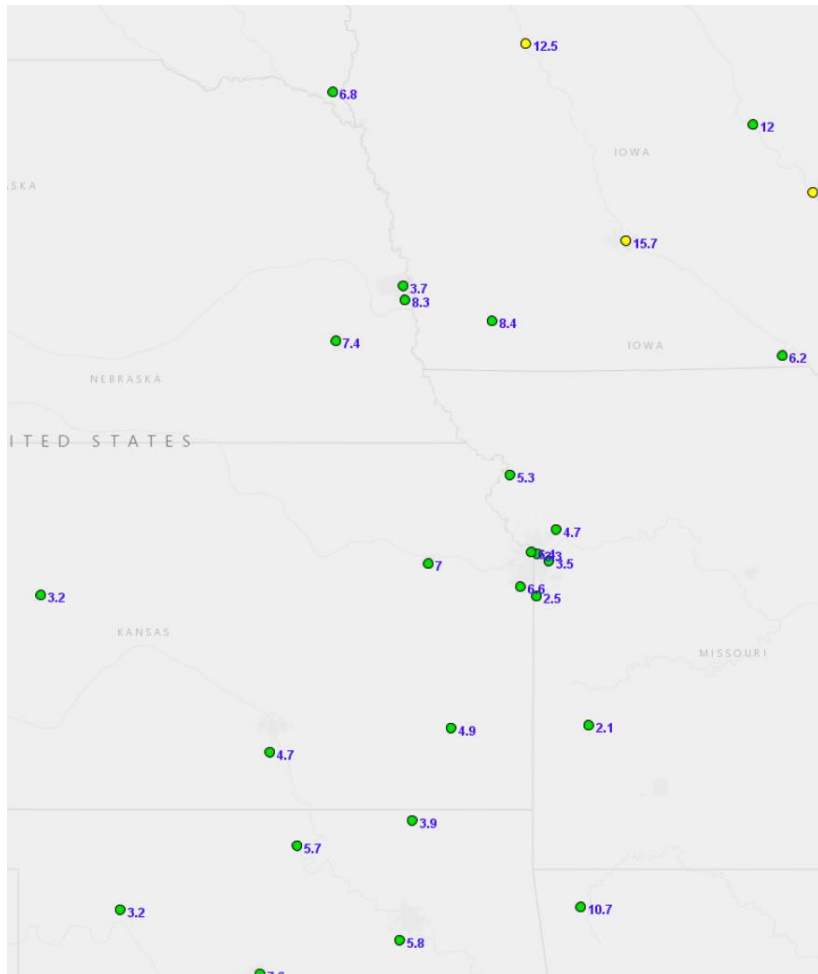


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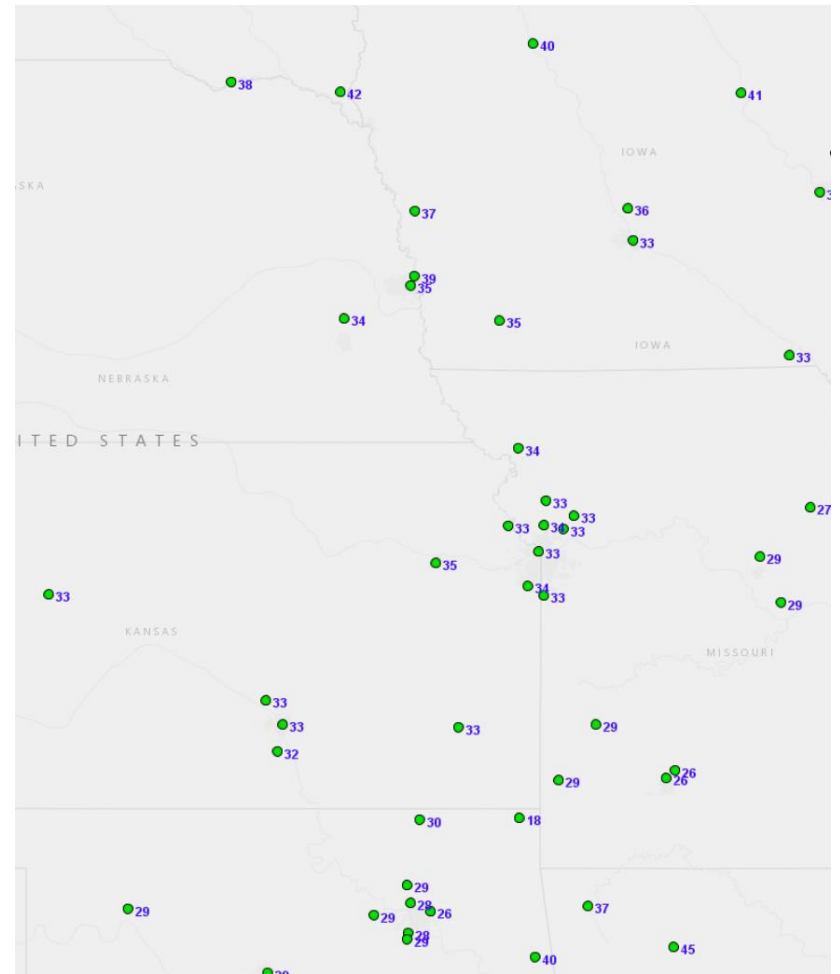


Wednesday, March 17, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

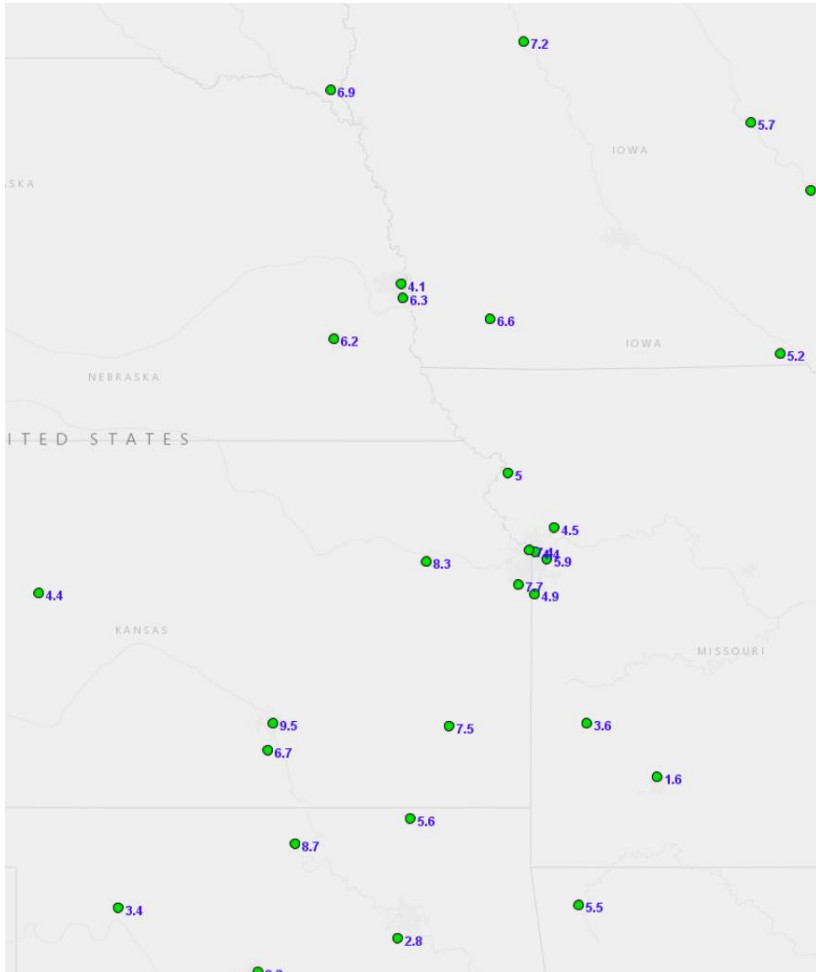


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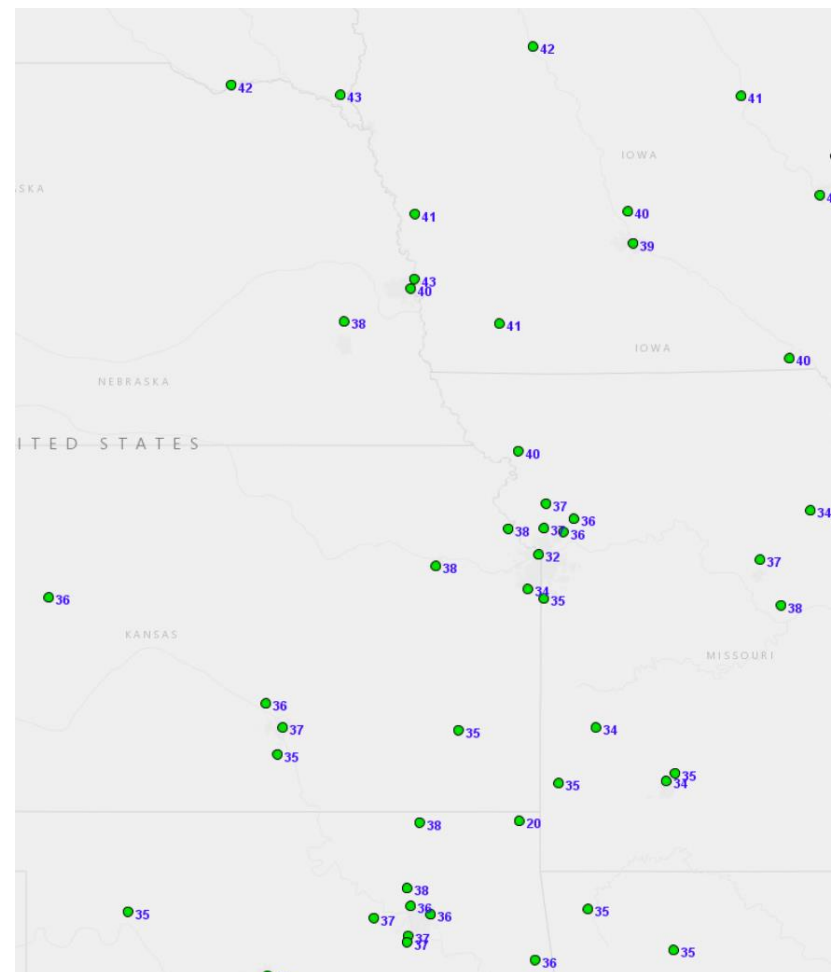


Thursday, March 18, 2021

PM2.5 (24-hour average)

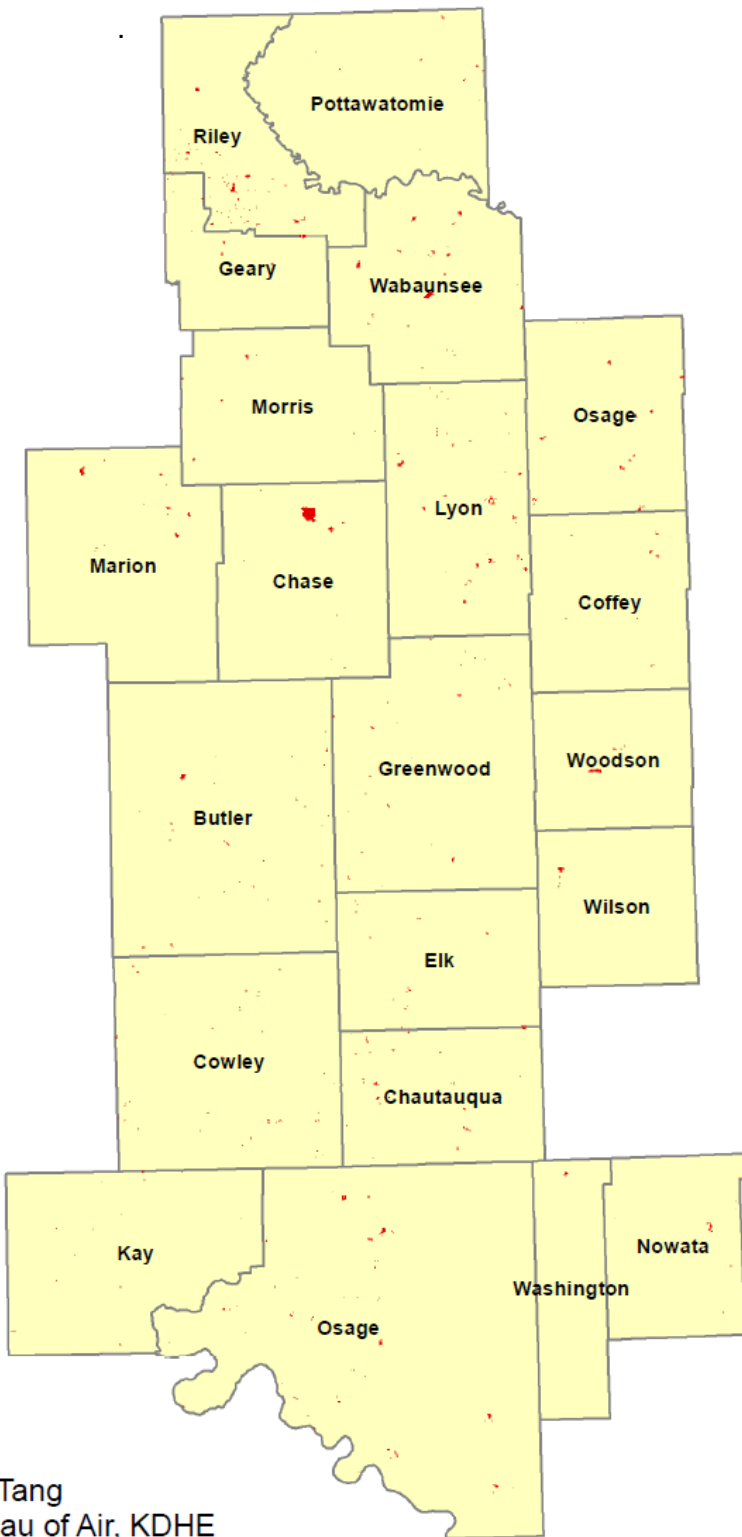


Ozone (8-hour average maximum)





**Flint Hills Acreage Burned (February 23 – March 4, 2021)**



<u>Counties</u>	<u>Acres Burned</u>
Butler	1,112
Chase	2,625
Chautauqua	1,112
Coffey	309
Cowley	1,035
Elk	510
Geary	448
Greenwood	849
Lyon	2,178
Marion	942
Morris	324
Osage (KS)	1,220
Pottawatomie	371
Riley	1,993
Wabaunsee	1,900
Wilson	402
Woodson	479
Nowata (OK)	386
Osage (OK)	2,085
Washington (OK)	124
Kay (OK)	355
<b>Total</b>	<b>20,759</b>
* Denotes county was partly or completely covered by clouds during latest analysis.	

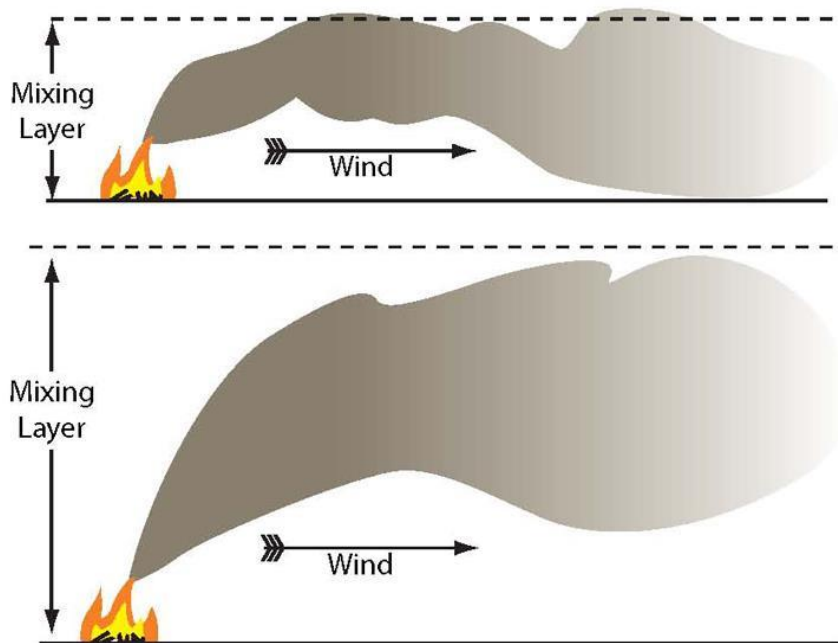
Yao Tang  
Bureau of Air, KDHE



## Fires and Smoke

Fire activity was kept to a minimum nearly every day of the past week due to periods of (heavy) precipitation, cloudy skies, and cooler temperatures. A handful of prescribed fires were analyzed on Tuesday (March 16) which led to elevated particulate matter values at nearby air quality monitors. The air quality impact was emphasized from these fires due to the cooler air, especially above the surface, which led to very low mixing heights and minimal dispersion and mixing of smoke.

7pm March 16, 2021 meteorological sounding from Topeka, KS measured a surface mixing height less than 1700 feet, which is less than the best smoke management practices recommend for minimum mixing height.



*Image: Anecdotal representation of low mixing height compared to higher mixing height and impact on smoke dispersion and impacts downwind.*

## KSFIRE.ORG

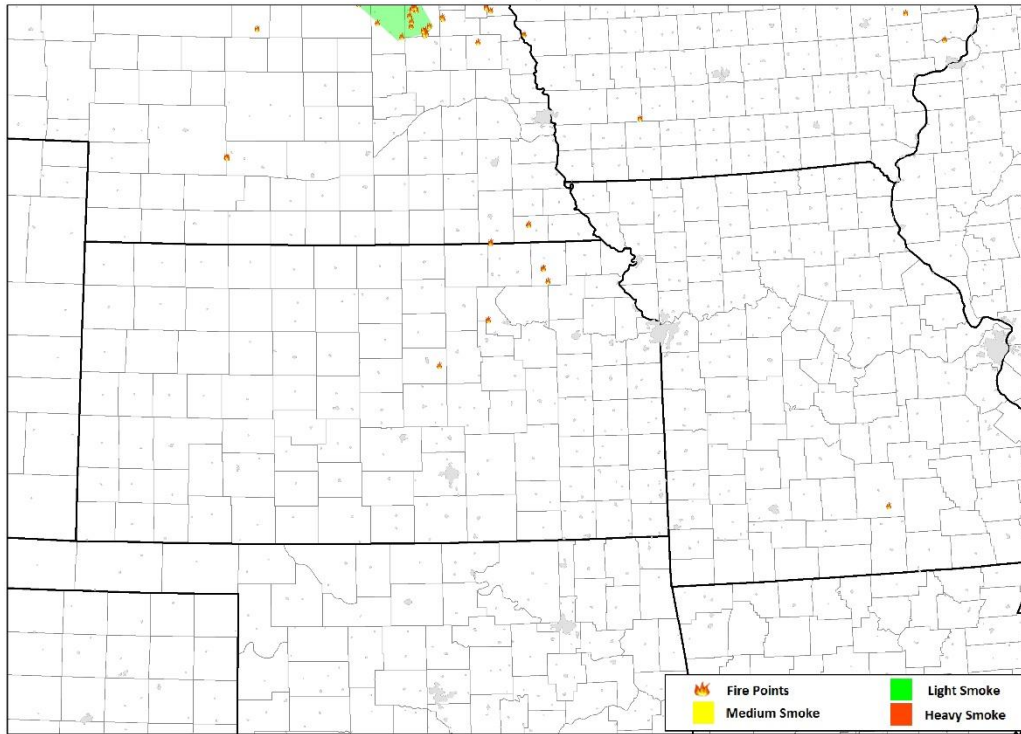


This website was developed as part of the development of the Kansas Flint Hills Smoke Management Plan. Kansas State University hosts the webpage and it includes important information for ranchers and others who might be interested in the Flint Hills. It provides training, regulations, policies, publications, 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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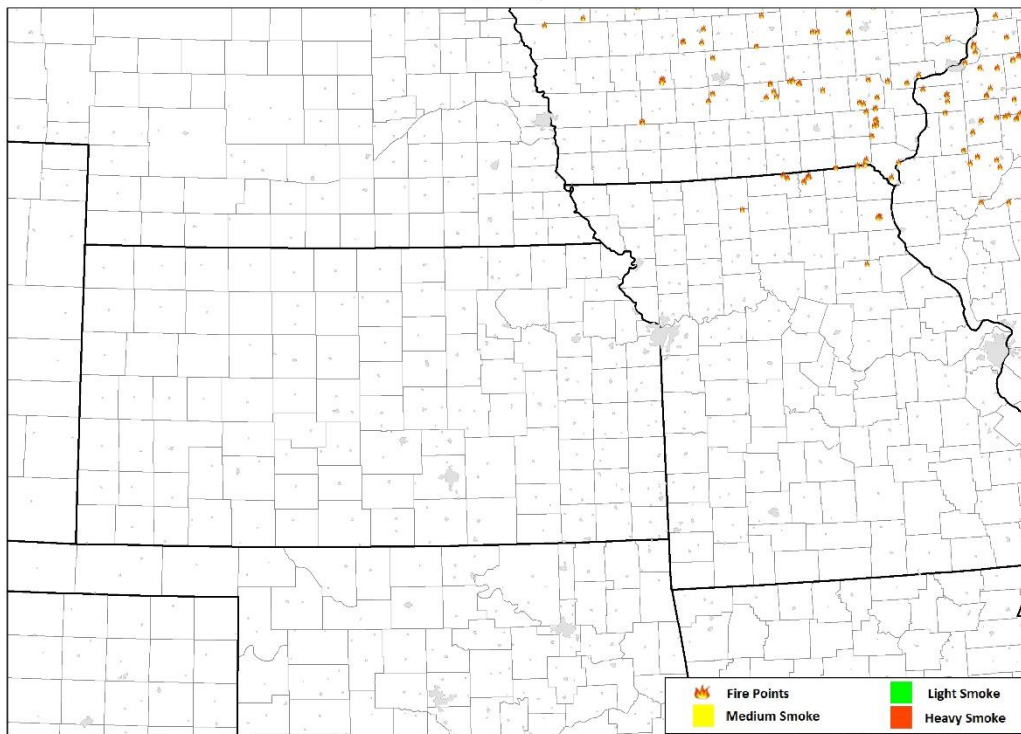
## Satellite Fire & Smoke Analysis March 12, 2021



Map: Jayson Prentice, KDHE Bureau of Air

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

## Satellite Fire & Smoke Analysis March 13, 2021



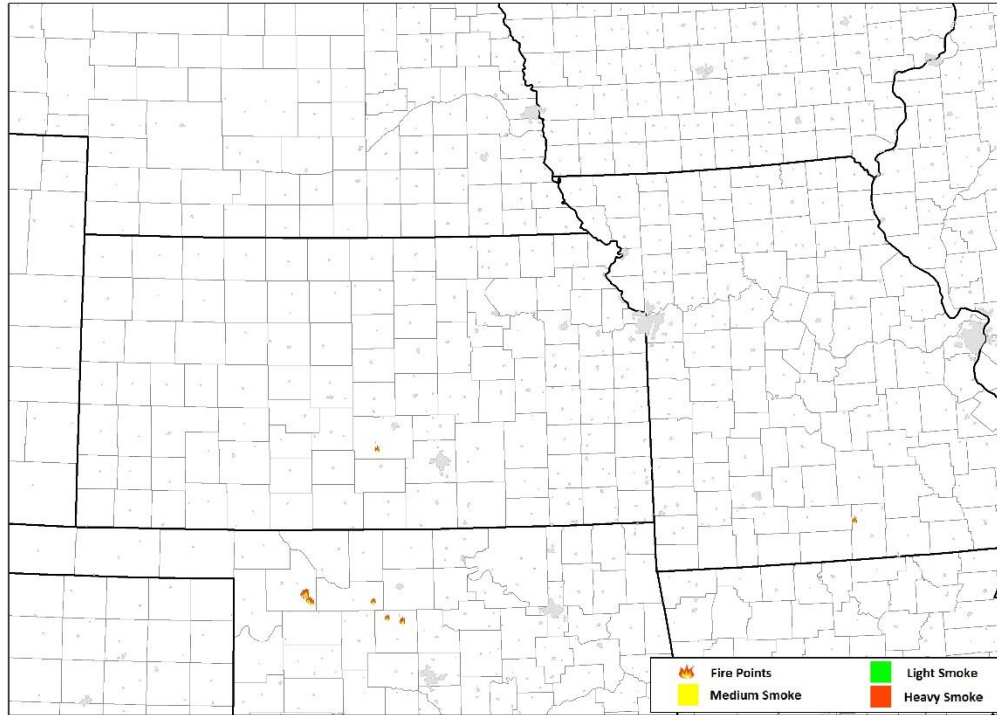
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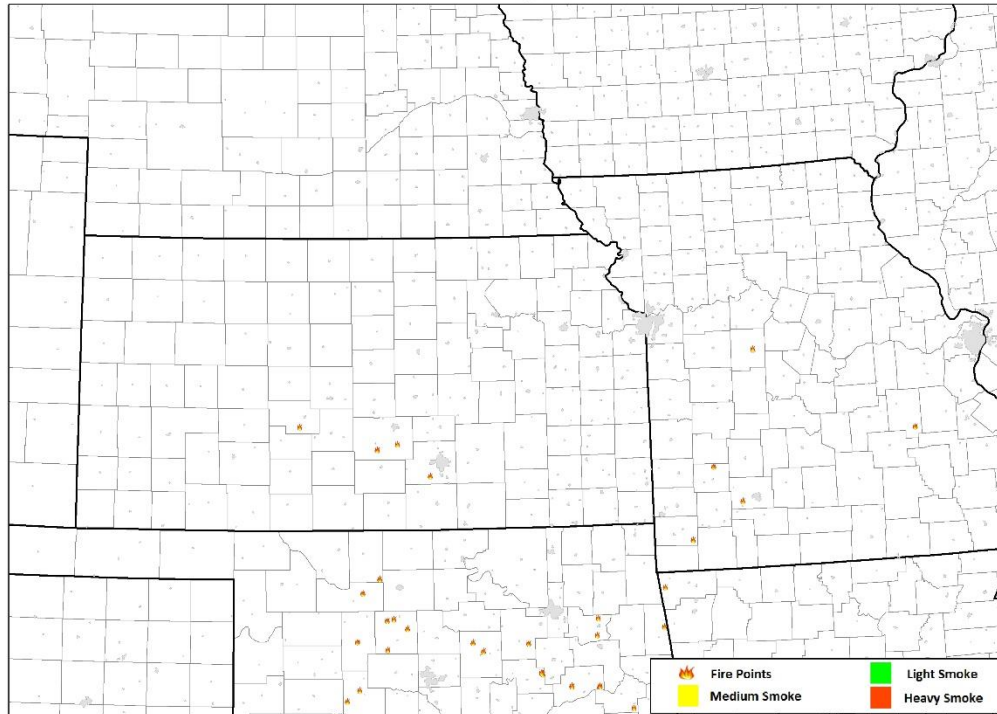
## Satellite Fire & Smoke Analysis March 14, 2021



Map: Jayson Prentice, KDHE Bureau of Air

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

## Satellite Fire & Smoke Analysis March 15, 2021



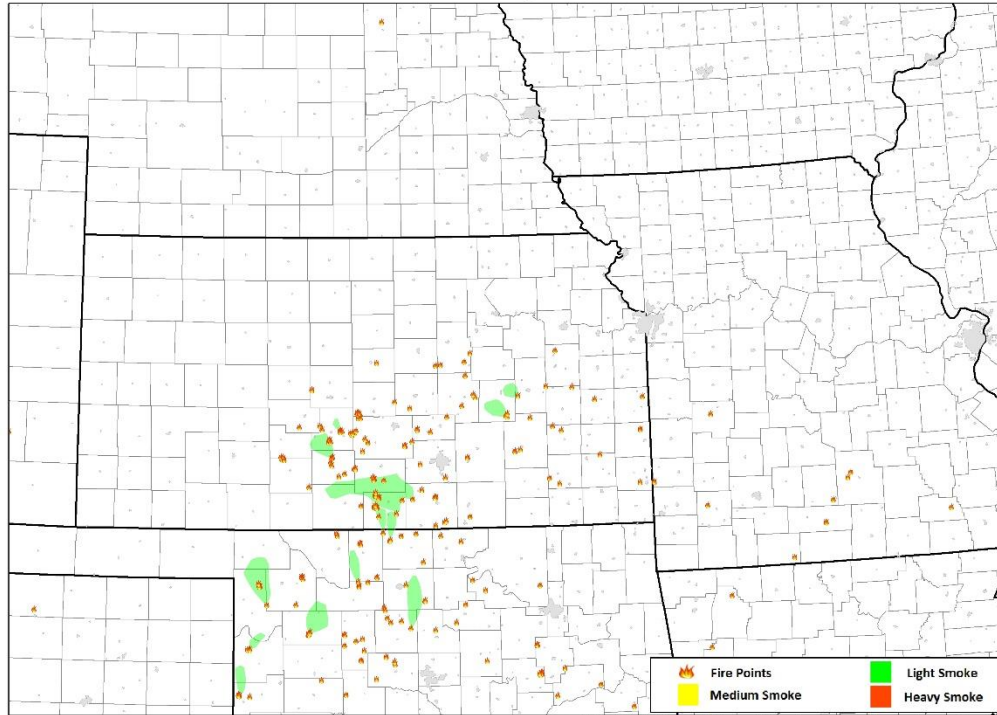
Map: Jayson Prentice, KDHE Bureau of Air

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

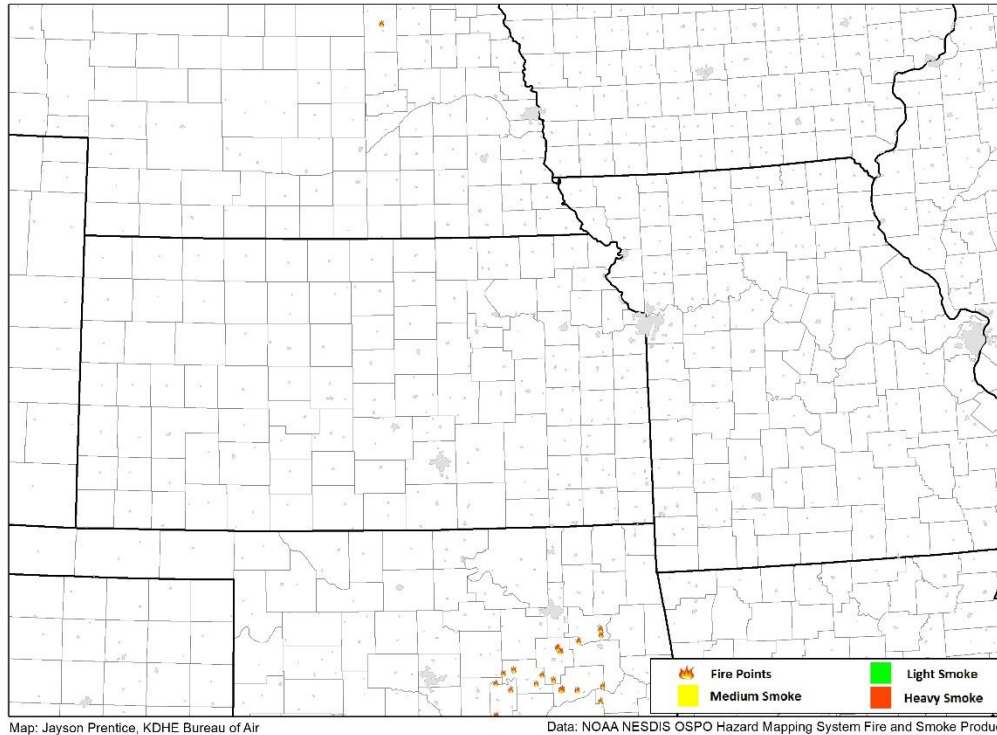
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## Satellite Fire & Smoke Analysis March 16, 2021



## Satellite Fire & Smoke Analysis March 17, 2021

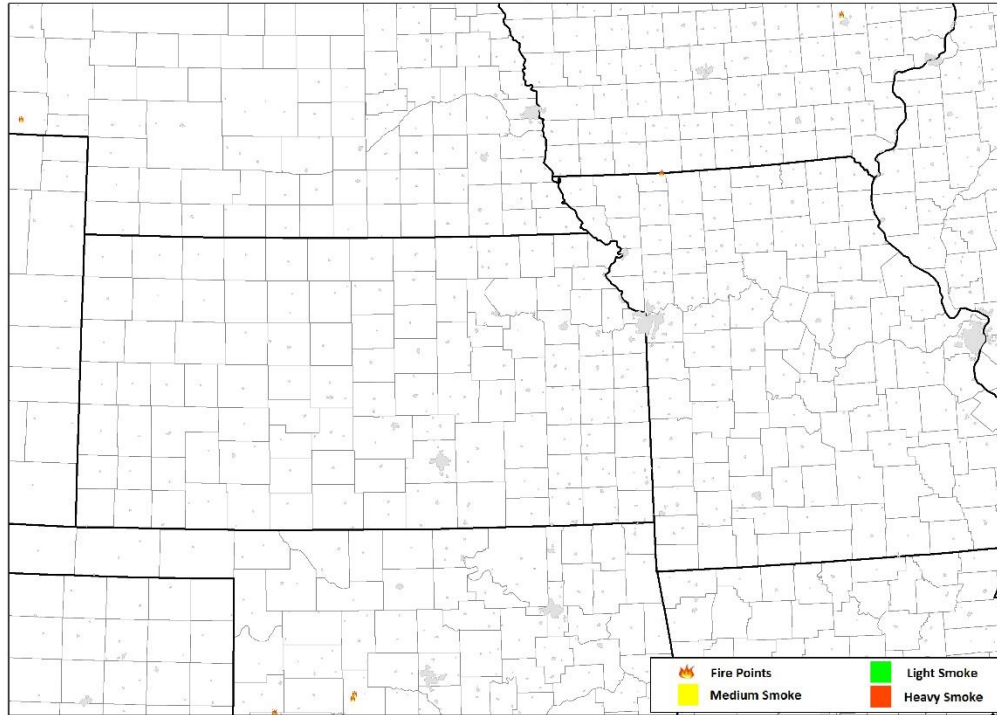




# Flint Hills Wildland Fire Update



## Satellite Fire & Smoke Analysis March 18, 2021



Map: Jayson Prentice, KDHE Bureau of Air

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

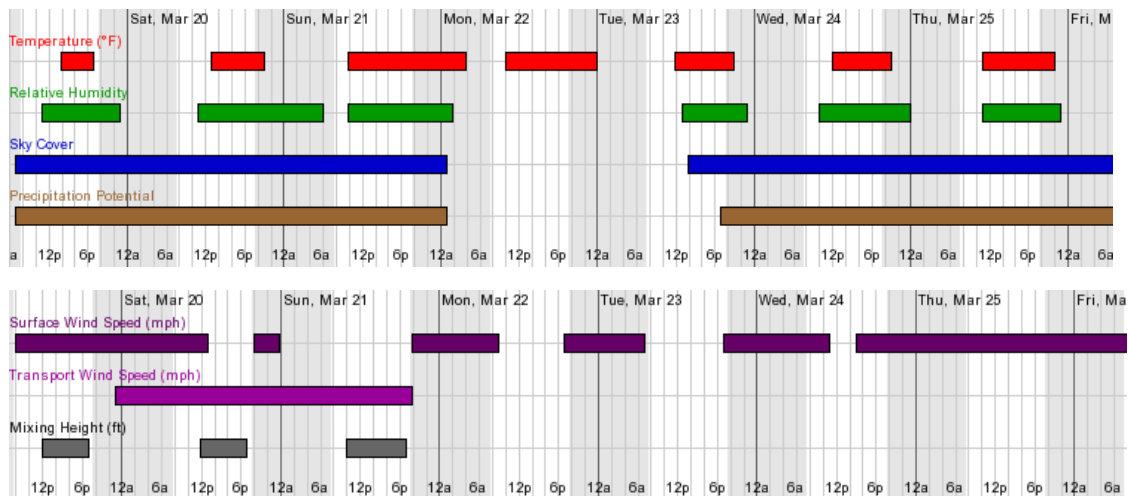


## Upcoming Look at Fires and Smoke

Temperatures look to remain seasonable through the next week with highs in the 50s and 60s for most areas of the Flint Hills. Wind speeds will be light today (Friday, March 19) with very low transport wind speeds too; Smoke dispersion will be low. Wind speeds increase for Saturday and Sunday (March 20-21) though with gusts of at least 20-30 mph likely for much of the Flint Hills. These gusty daytime winds look to continue for Monday-Wednesday (March 22-24) too before finally calming for Thursday (March 25). Another round of rain showers and even thunderstorms is expected for Monday into Tuesday (March 22-23) with some localized heavy rain possible once again.

Between already wet conditions, wind, and another round of rainfall the opportunities for prescribed fire over the next week may be limited. However, dependent upon localized conditions and with good planning some prescribed fire may certainly be seen today through Sunday, and perhaps again late next week.

### 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](http://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 19, 2021.*

For more information, contact:

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