

Flint Hills Wildland Fire Update

March 12, 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.



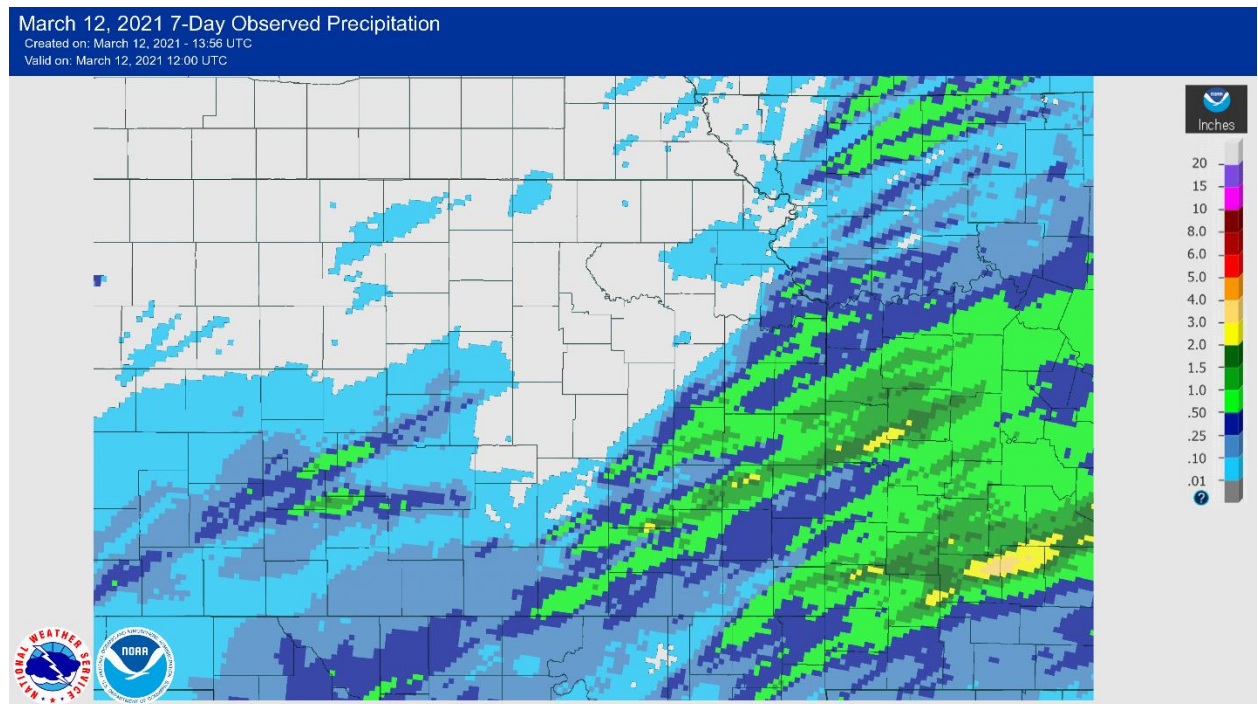


Meteorology

Temperatures over the past week began with the continued stretch of 60s and 70s for highs each afternoon, and lows remaining mild and above freezing for most. Winds were relatively light and variable last Friday (March 5) before turning southerly for Saturday (March 6) and becoming gusty. These south winds became even stronger for the Monday-Wednesday (March 7-9) period where gusts upwards of 50 mph were measured across the area. The combination of dry and windy conditions led to several days of Red Flag Warnings and very high fire danger in the past week.

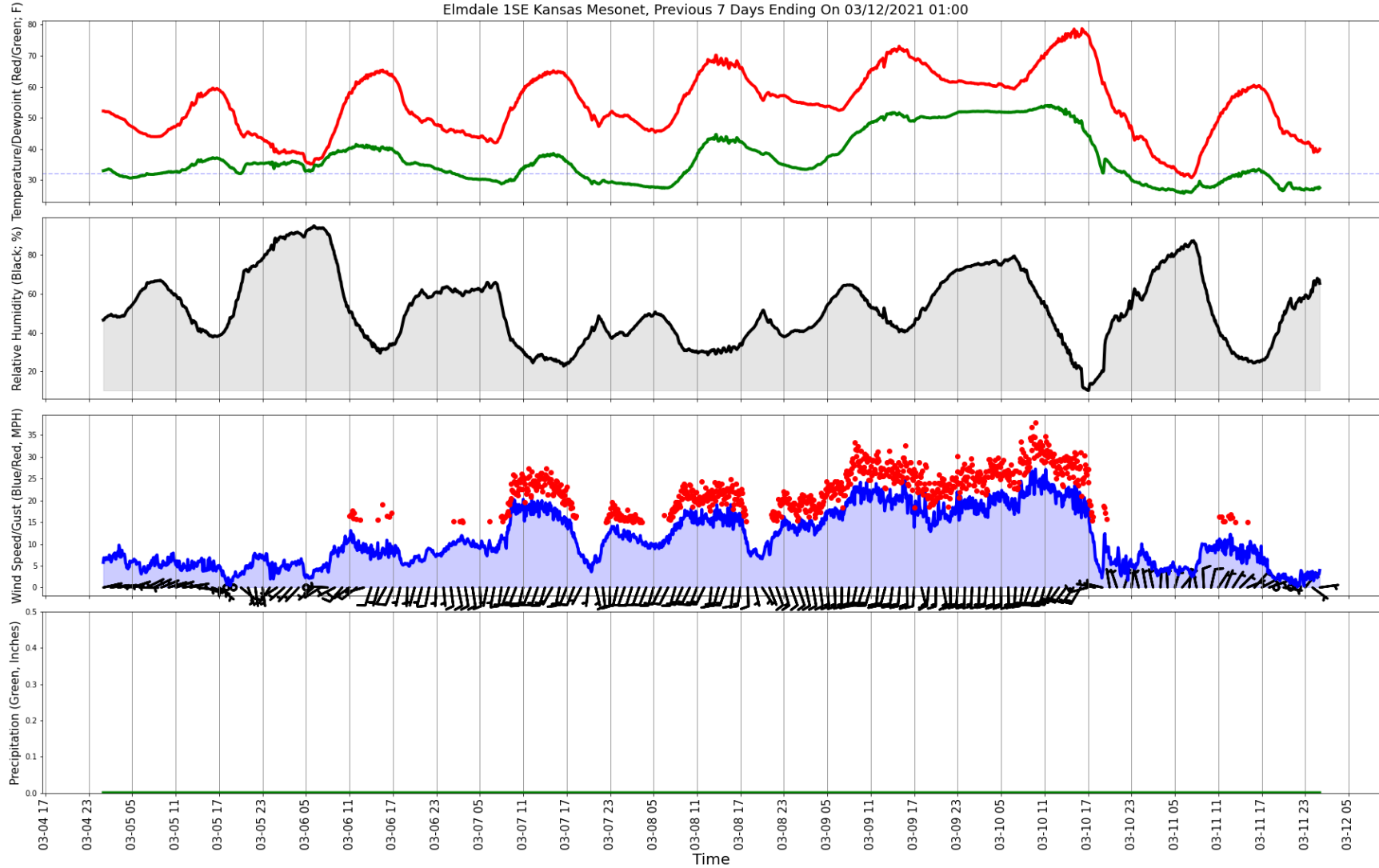
A dryline and cold front pushed across the Flint Hills late Wednesday which brought in precipitation for some and a change in air mass for everyone. Precipitation totals (as shown below) across the Flint Hills ranged from zero to upwards of 2 inches with thunderstorms. Thursday (March 11) featured more near normal temperatures in the 50s and 60s along with a cooler north wind at 10-20 mph.

Precipitation



NOAA/NWS Observed Total Precipitation for March 5-11, 2021.

Flint Hills Wildland Fire Update



7-day (February 26 – March 4, 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 5-11, 2021:

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

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

On March 5, 2021 the monitor near Copan, Oklahoma measured a 24-hour average value of 40.7 $\mu\text{g}/\text{m}^3$.

On March 8, 2021 the monitor near Copan, Oklahoma measured a 24-hour average value of 35.8 $\mu\text{g}/\text{m}^3$.

On March 8, 2021 the monitor in/near Tulsa, Oklahoma measured a 24-hour average value of 48.0 $\mu\text{g}/\text{m}^3$.

On March 8, 2021 the monitor in Glenpool, Oklahoma measured a 24-hour average value of 79.6 $\mu\text{g}/\text{m}^3$.

On March 9, 2021 the monitor in/near Miami, Oklahoma measured a 24-hour average value of 59.1 $\mu\text{g}/\text{m}^3$.

On March 9, 2021 the monitor in/near Olathe, Kansas measured a 24-hour average value of 39.9 $\mu\text{g}/\text{m}^3$.

On March 9, 2021 the monitor in Kansas City, Kansas measured a 24-hour average value of 36.5 $\mu\text{g}/\text{m}^3$.

On March 8, 2021 the monitor in Glenpool, Oklahoma measured a 24-hour average value of 35.9 $\mu\text{g}/\text{m}^3$.

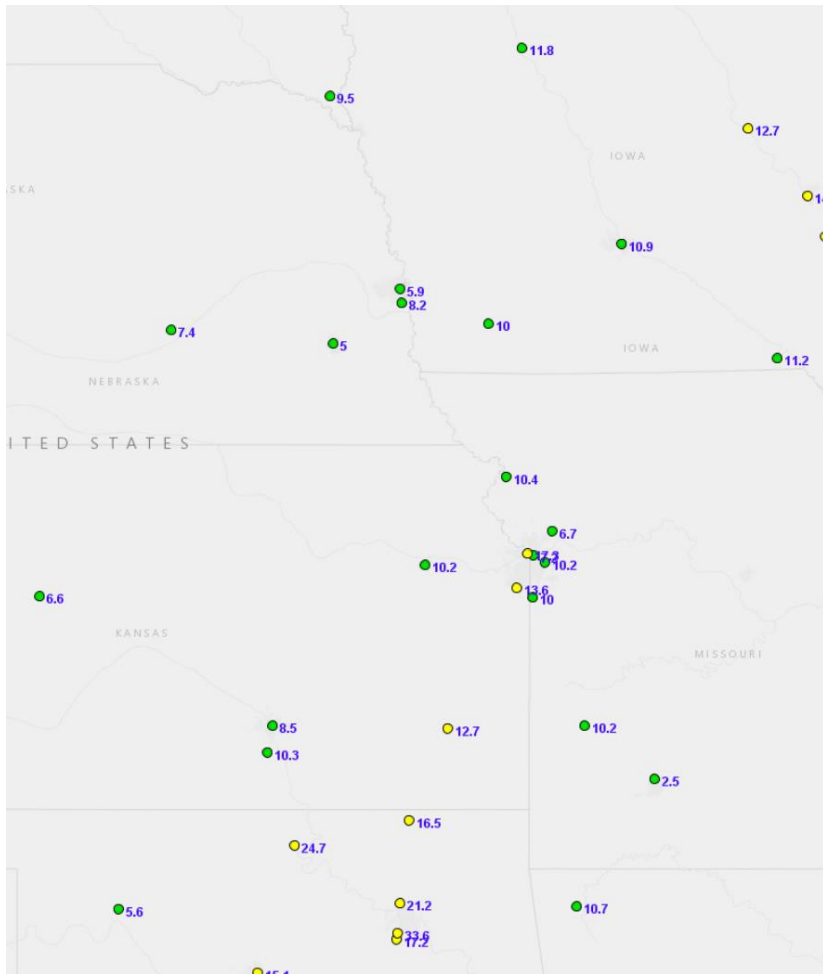
Air quality images on the following pages for each day show preliminary data, courtesy Air Now Tech.

Flint Hills Wildland Fire Update

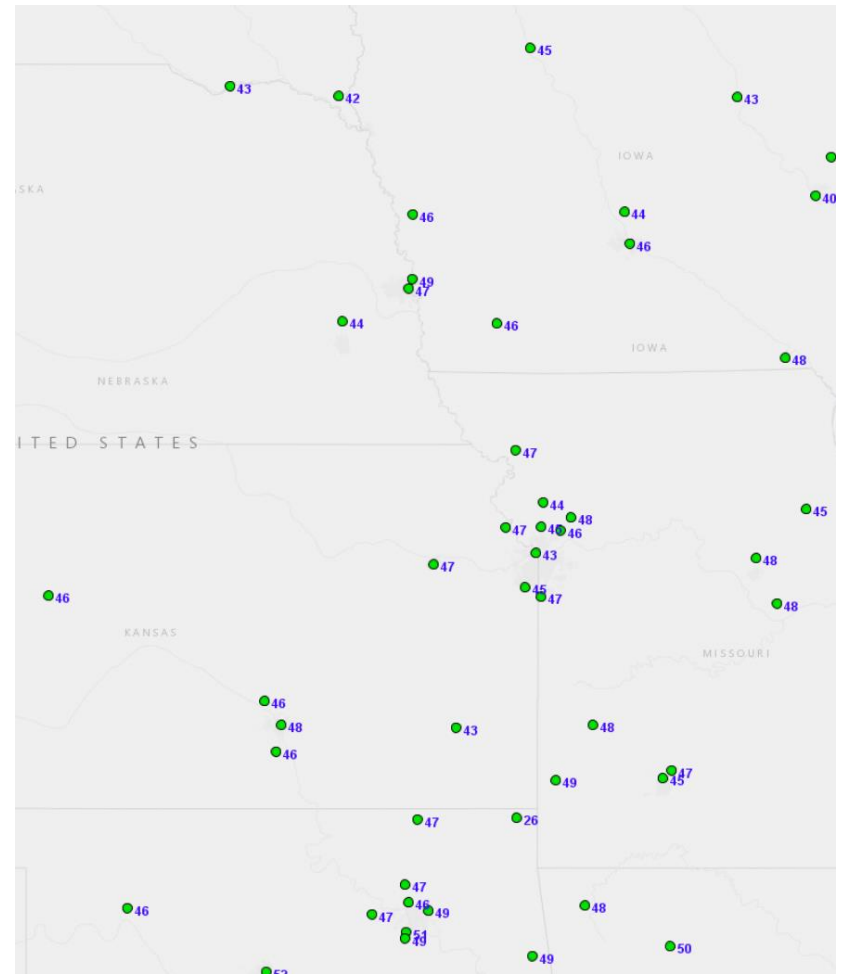


Sunday, March 7, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

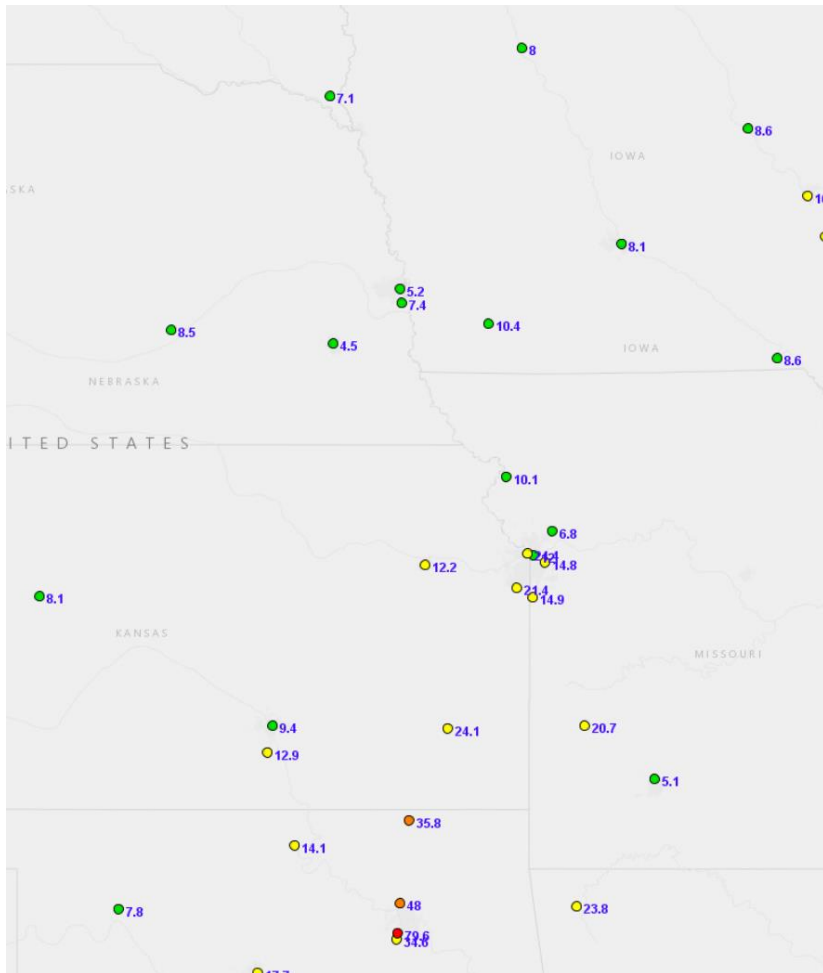


Flint Hills Wildland Fire Update

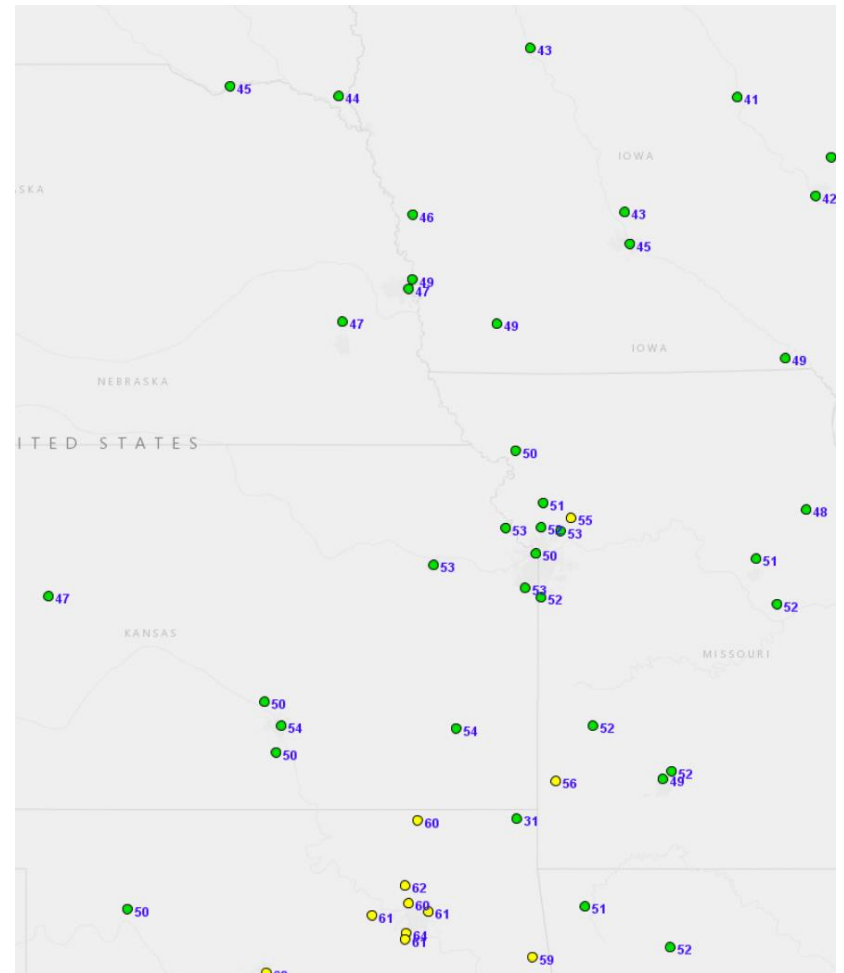


Monday, March 8, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

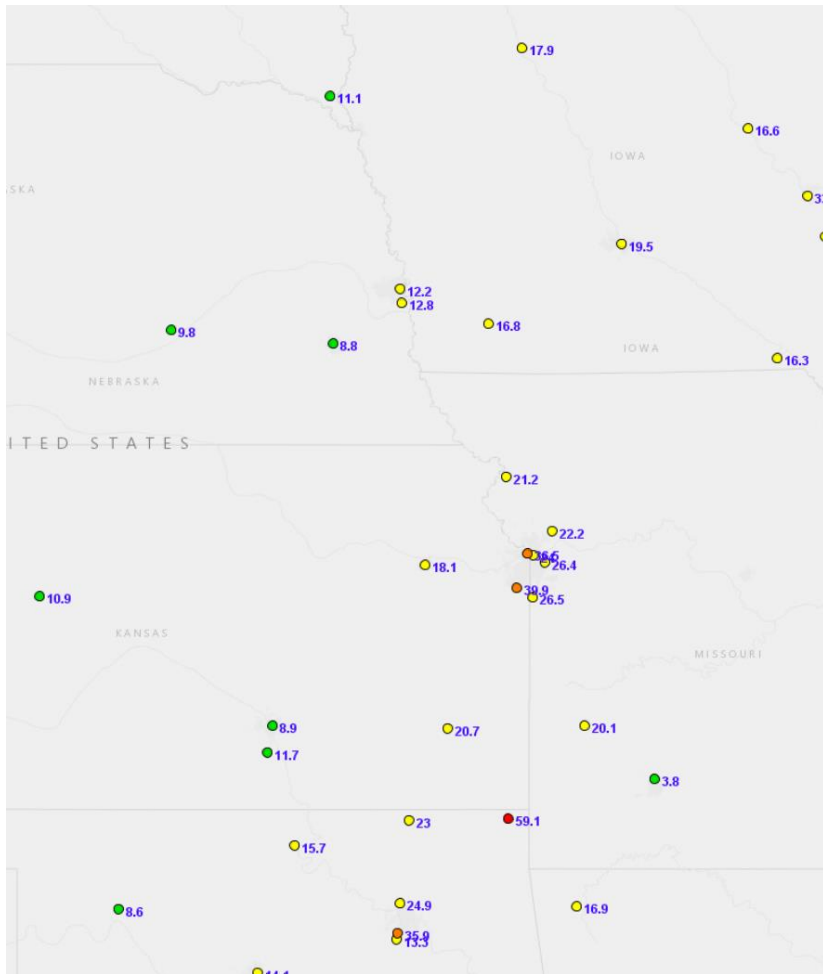


Flint Hills Wildland Fire Update

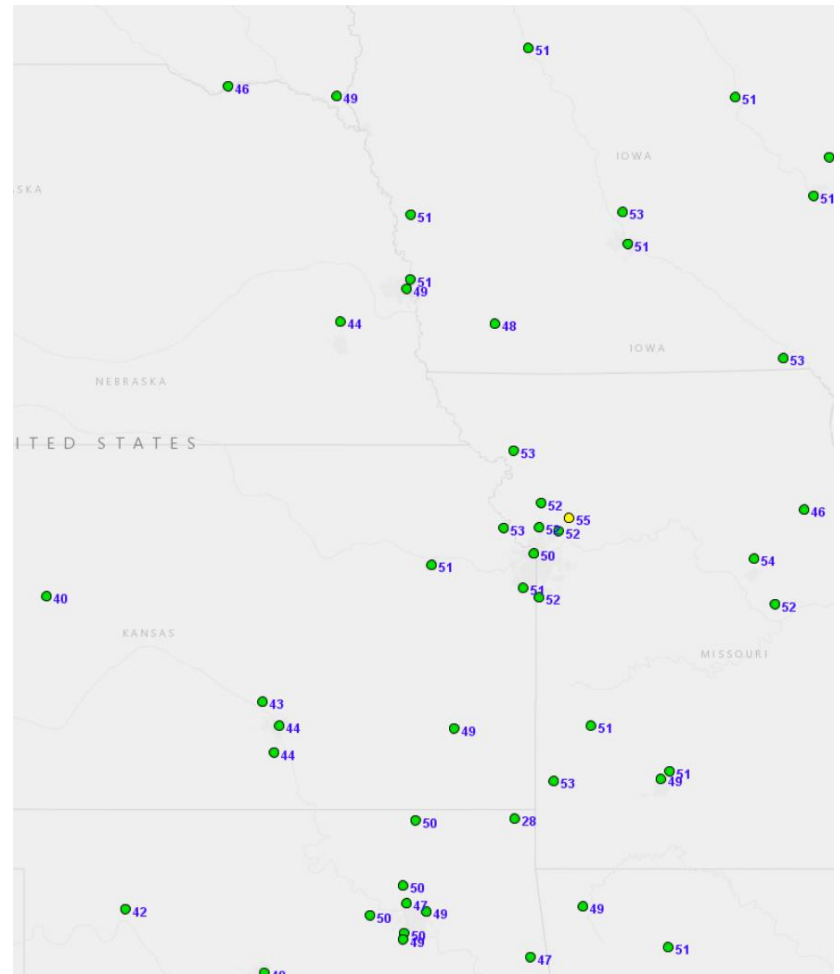


Tuesday, March 9, 2021

PM2.5 (24-hour average)



Ozone (8-hour average maximum)

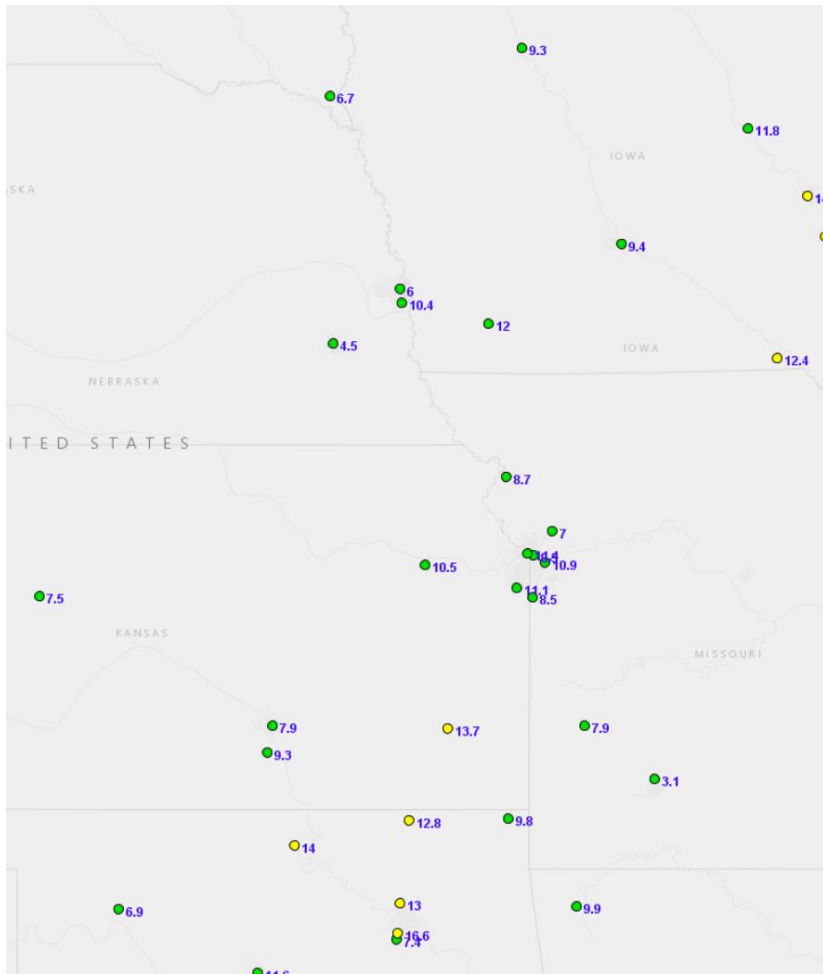


Flint Hills Wildland Fire Update

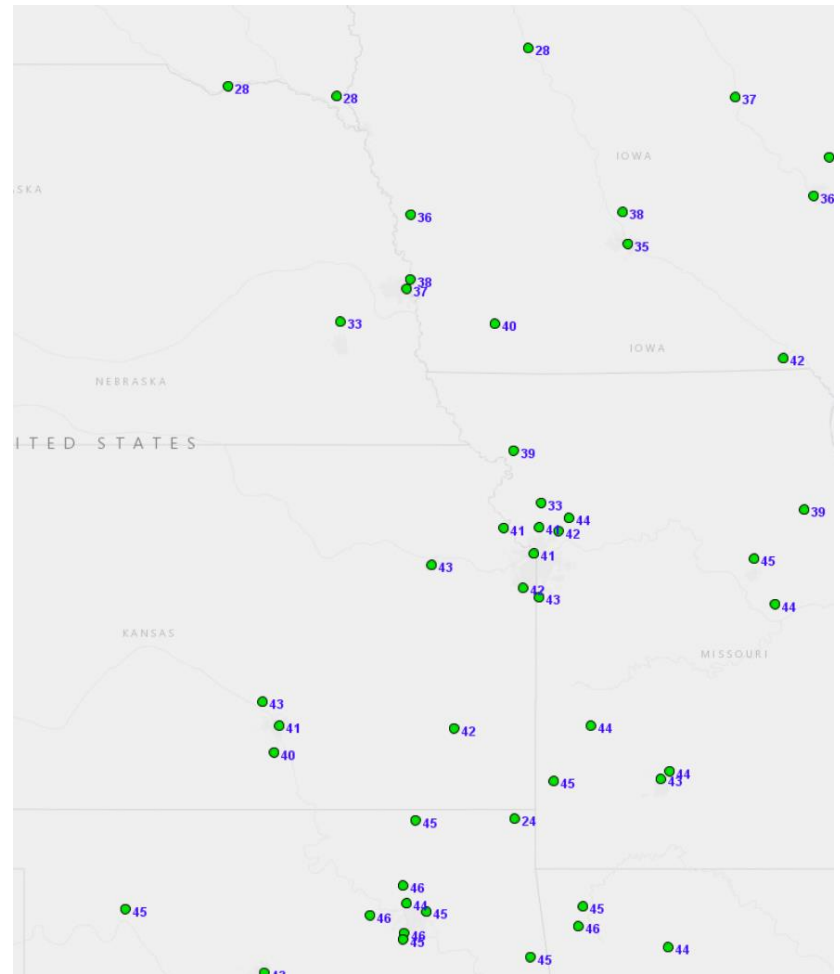


Wednesday, March 10, 2021

PM2.5 (24-hour average)

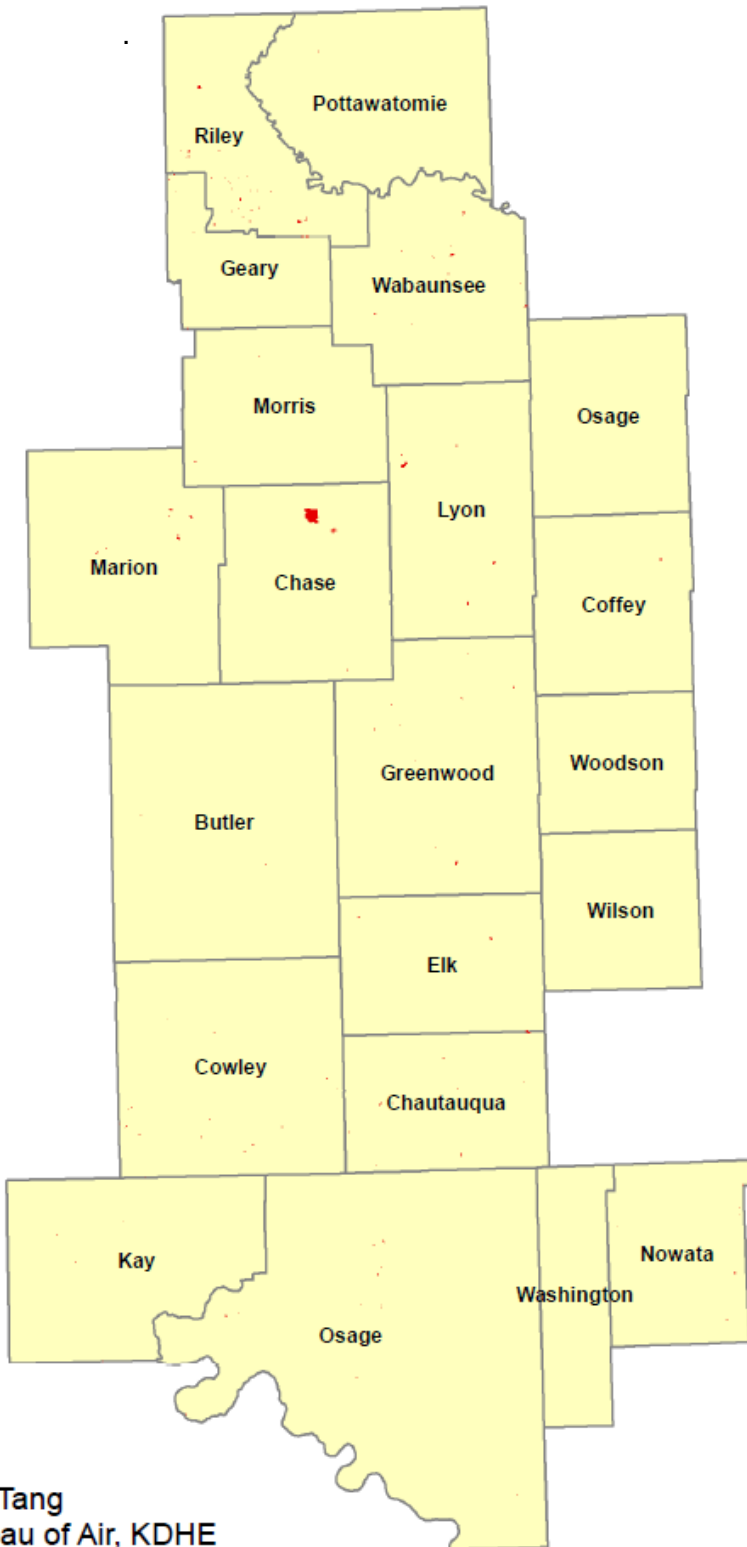


Ozone (8-hour average maximum)





Flint Hills Acreage Burned (February 23 – March 2, 2021)



<u>Counties</u>	<u>Acres Burned</u>
Butler	31
Chase	2,425
Chautauqua	309
Coffey	46
Cowley	293
Elk	170
Geary	170
Greenwood	293
Lyon	571
Marion	324
Morris	46
Osage (KS)	0
Pottawatomie	31
Riley	850
Wabaunsee	464
Wilson	0
Woodson	0
Nowata (OK)	108
Osage (OK)	278
Washington (OK)	0
Kay (OK)	77
Total	6,486
* Denotes county was partly or completely covered by clouds during latest analysis.	

Yao Tang
Bureau of Air, KDHE



Fires and Smoke

Lighter winds for Friday (March 5) prompted prescribed burns to resume among much of the Flint Hills after several days of Very High to Extreme Fire Danger and (near) Red Flag Warning conditions. Parts of the southern Flint Hills and Oklahoma saw some light precipitation on Friday, which limited their opportunities. Numerous prescribed burns were noted during the late evening and overnight hours Friday into Saturday (March 6) with fires continuing Saturday. The combination of light and variable winds along with strong overnight inversion led to air quality impacts on Friday and Saturday across the Flint Hills region and areas north and east.

Some counties continued or resumed their burn bans on Saturday with numerous wildfires or escaped prescribed burns being reported. Gusty winds returned for the Sunday-Wednesday (March 7-10) period where fire danger remained high and Red Flag Warnings were in effect at times. Most of the fire and smoke plumes analyzed over the Flint Hills area during this period were wildfires while a few prescribed burns were still being conducted further south (Oklahoma) and east (Missouri) where winds remained somewhat lighter. Air quality impacts were seen at times, especially Monday and Tuesday, as the combination of prescribed fires and wildfires over eastern Oklahoma pushed smoke through eastern Oklahoma and northward, including impacts in the Kansas City area.

The return of lighter winds prompted prescribed fires to resume on Thursday (March 11) where rainfall was not received Wednesday night, and ahead of the rainfall that is expected to arrive today (March 12).

KSFIRE.ORG

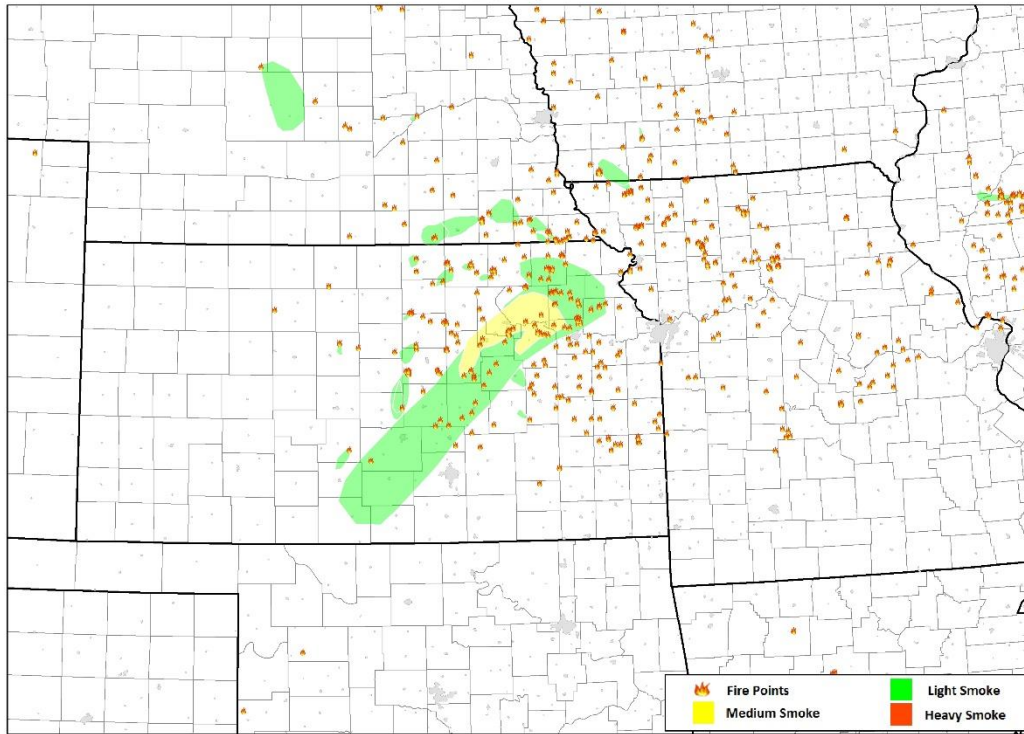


This website was developed as part of the development of the Kansas Flint Hills Smoke Management Plan. Kansas State University hosts the webpage and it includes important information for ranchers and others who might be interested in the Flint Hills. It provides training, regulations, policies, publications,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

Flint Hills Wildland Fire Update



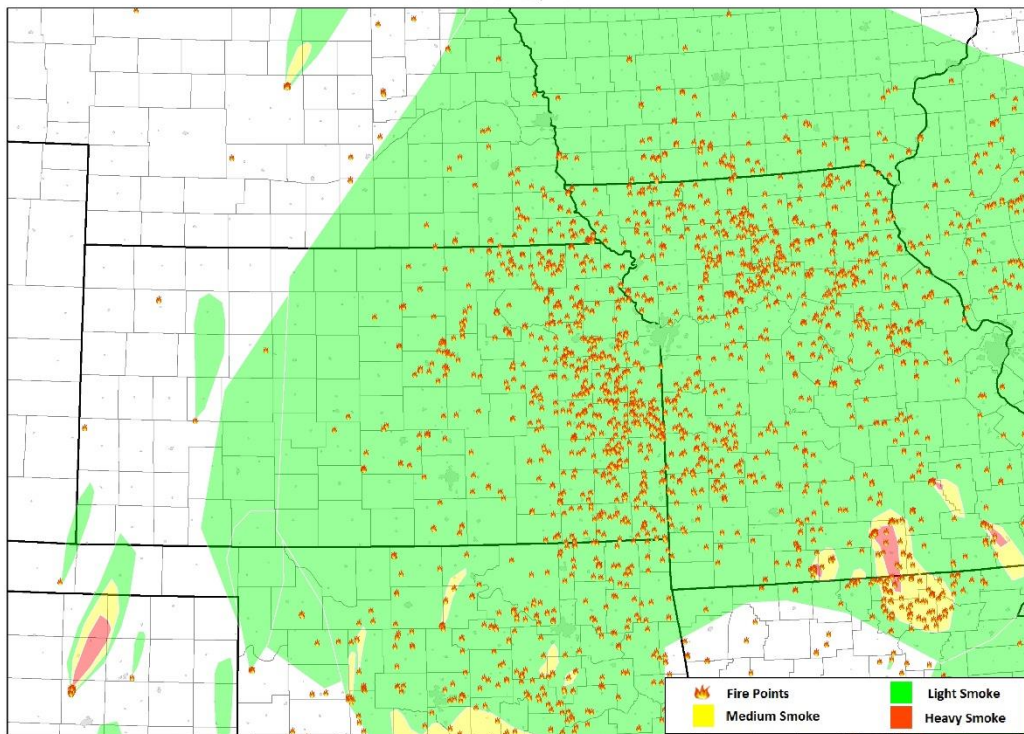
Satellite Fire & Smoke Analysis March 05, 2021



Map: Jayson Prentice, KDHE Bureau of Air

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

Satellite Fire & Smoke Analysis March 06, 2021



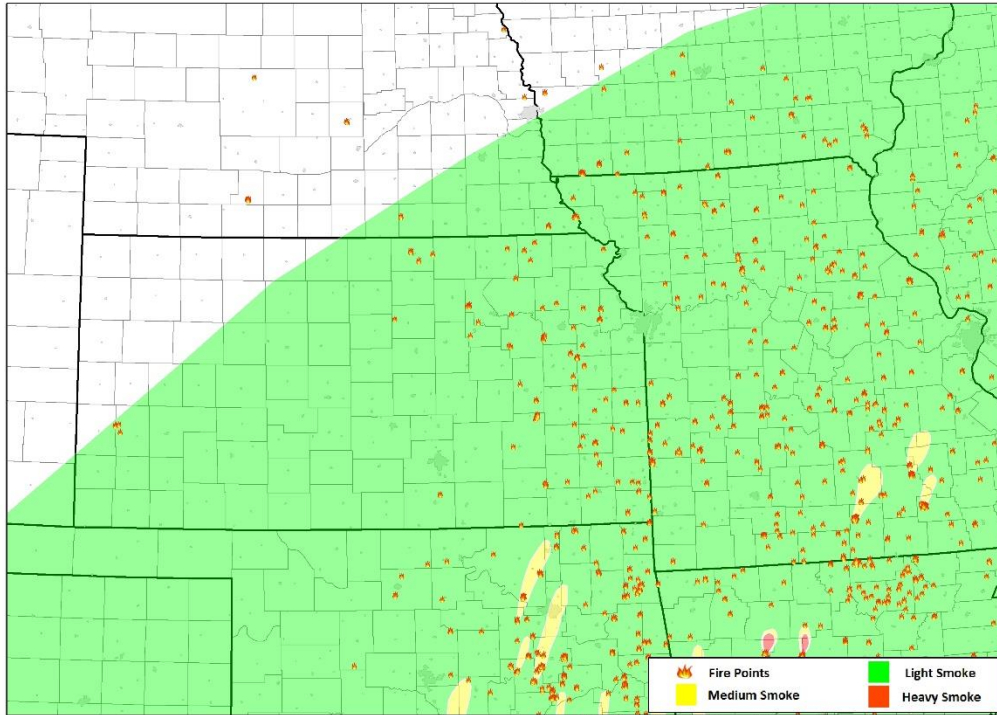
Map: Jayson Prentice, KDHE Bureau of Air

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

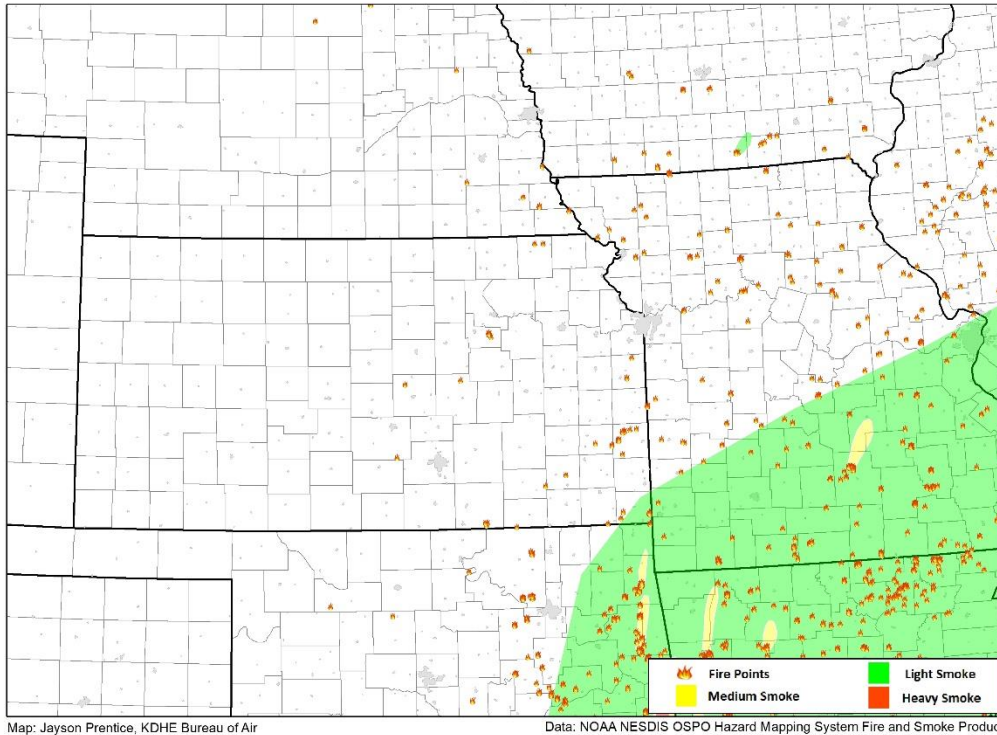
Flint Hills Wildland Fire Update



Satellite Fire & Smoke Analysis March 07, 2021



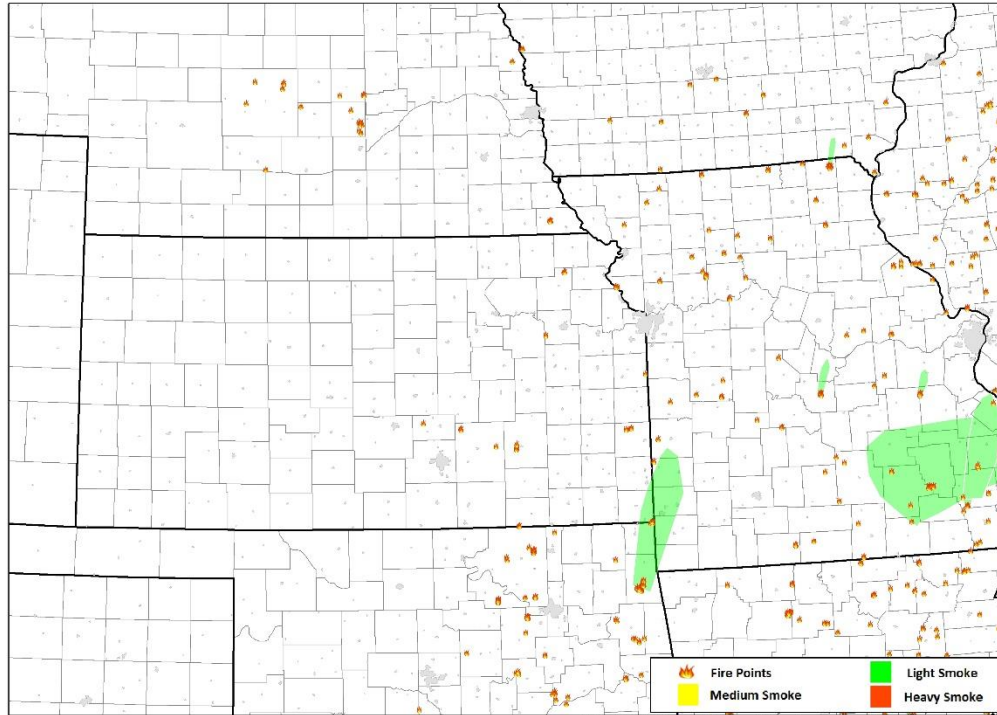
Satellite Fire & Smoke Analysis March 08, 2021



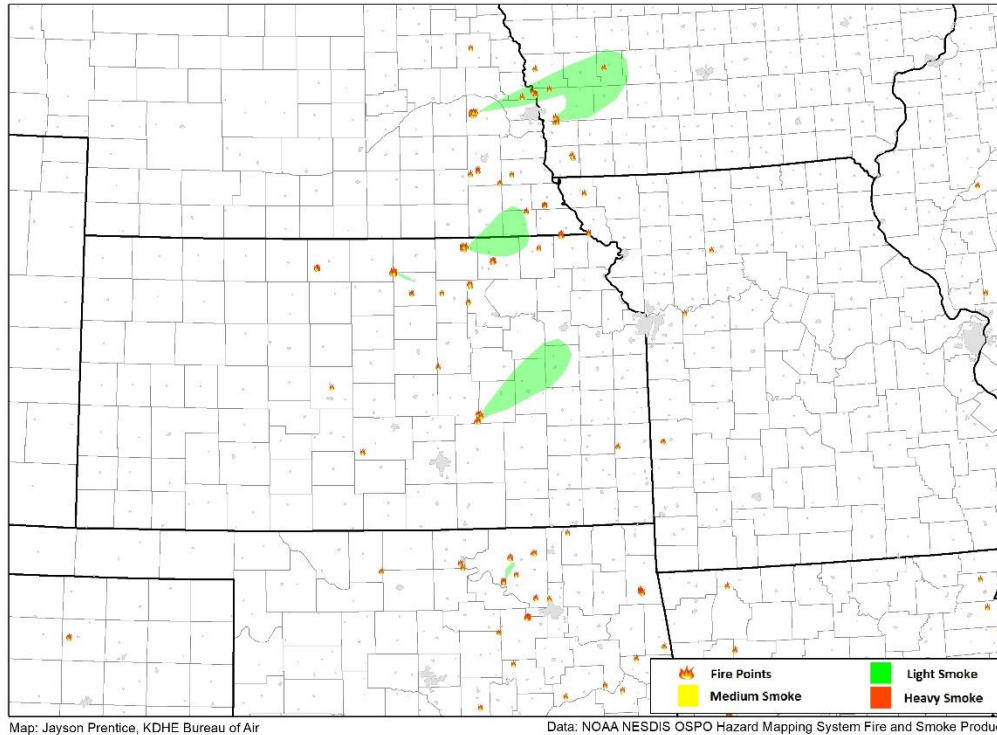
Flint Hills Wildland Fire Update



Satellite Fire & Smoke Analysis March 9, 2021



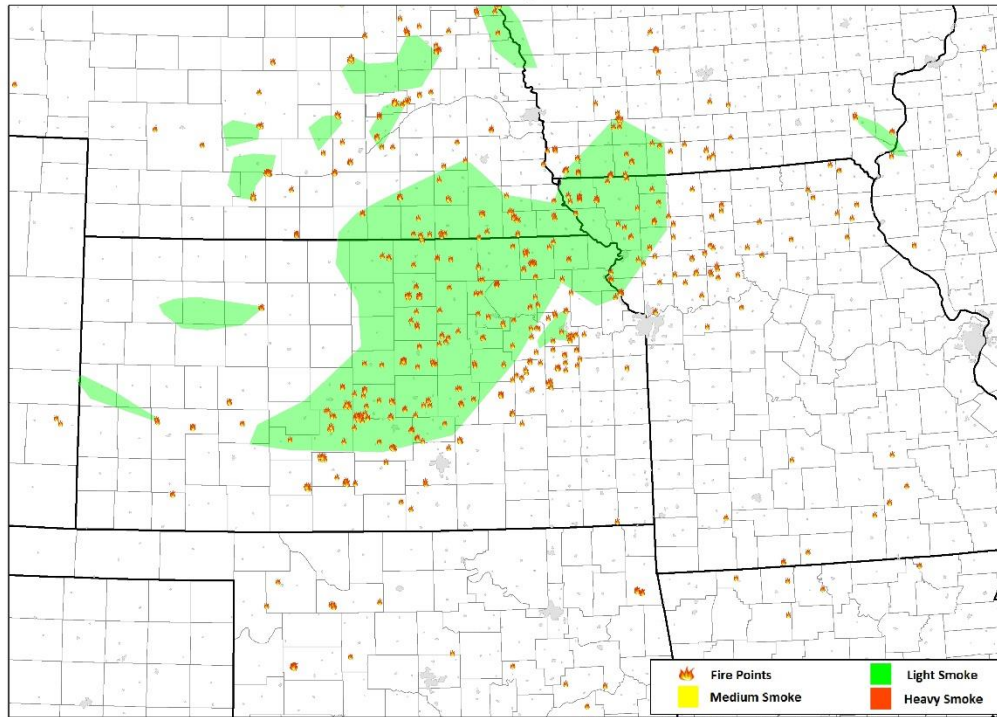
Satellite Fire & Smoke Analysis March 10, 2021



Flint Hills Wildland Fire Update



Satellite Fire & Smoke Analysis March 11, 2021



Map: Jayson Prentice, KDHE Bureau of Air

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

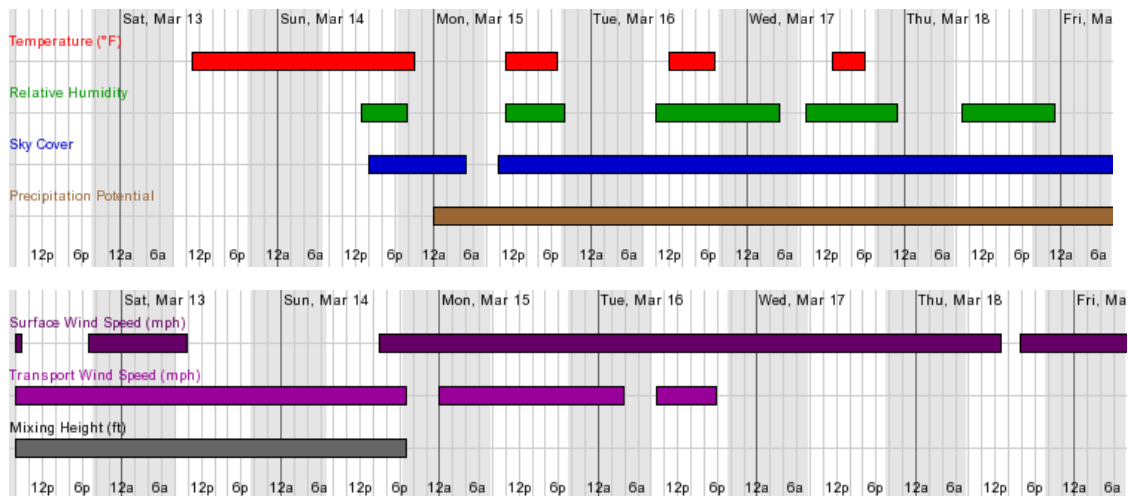


Upcoming Look at Fires and Smoke

Rainfall is arriving across the Flint Hills today (March 12) and will likely continue through Saturday and Sunday (March 13-14) with periods of heavy rain included. Current forecasts indicate that the Flint Hills should see a widespread 1-4 inches of rainfall through the next three days. Conditions begin to dry by Monday (March 15) and should continue Tuesday (March 16) albeit with somewhat cooler temperatures. Additional chances of rain (maybe some snow mixed in) are possible for next Wednesday and Thursday (March 17-18) although those chances are low at this time. Breezy conditions are also anticipated on Thursday (March 18) as well.

Will likely be a tough week for prescribed burning with copious amounts of rain early, then off and on chances later in the week. Still, dependent upon how well conditions dry – the ground should soak up a lot of rain given the dry conditions – some opportunities exist by mid-week dependent upon those extended precipitation chances.

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 12, 2021.

For more information, contact:

Jayson Prentice

Chief, Environmental Data & Projects, Bureau of Air

Kansas Department of Health & Environment

785-291-3782

Jayson.Prentice@ks.gov