

Flint Hills Wildland Fire Update

2024 Summary

May 7, 2024



<https://www.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.



Acreage Burned Analysis

Analysis was conducted during the period of February 14 to April 29, 2024, to determine the approximate total of acres burned within the Flint Hills region. The analysis conducted does not differentiate between prescribed fire and wildfire which is important to note, especially when wildfires are common. While prior year periods of analysis differ in date range the analysis always encompasses a clear majority of the Spring burn period within the Flint Hills.

If you have questions, or for more information, contact:

Jayson Prentice

Data and Sustainability Section Chief

Bureau of Air

Kansas Department of Health & Environment

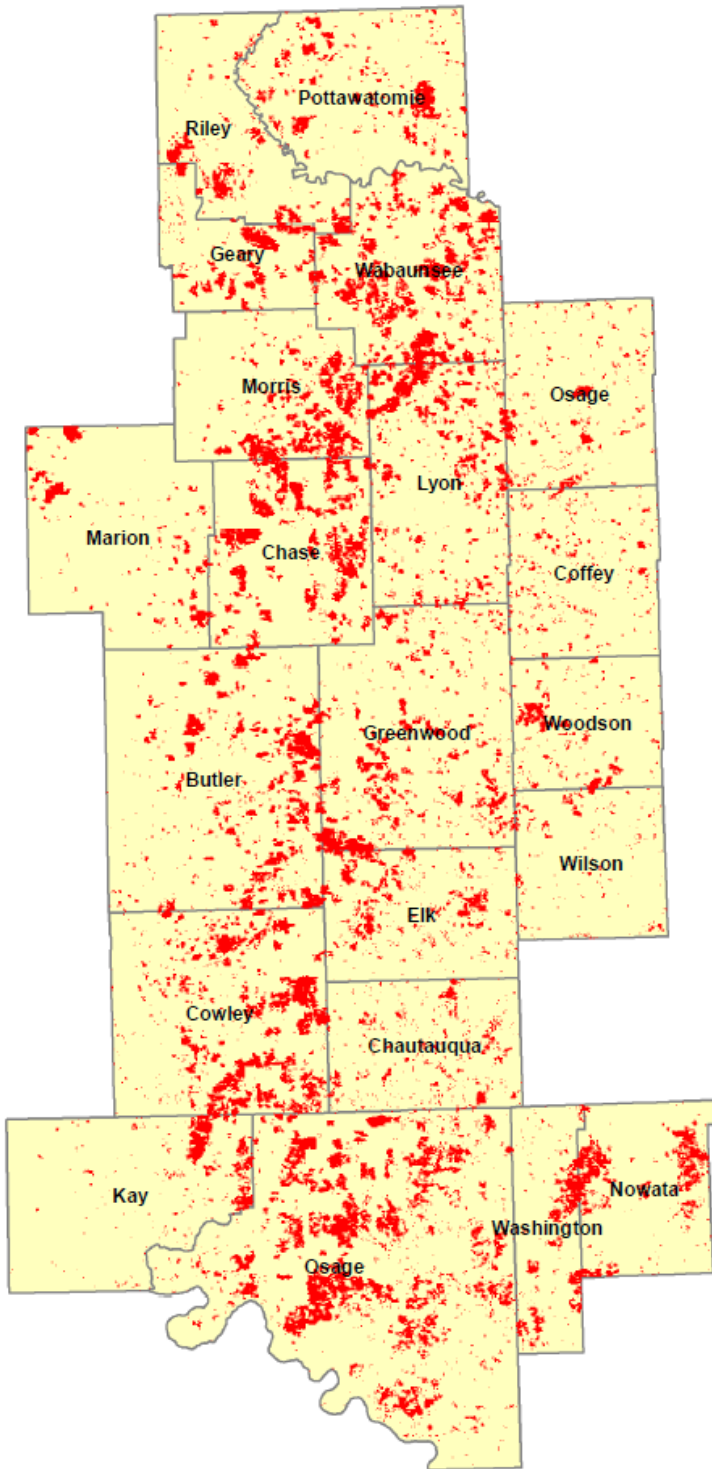
785-291-3782

Jayson.Prentice@ks.gov

Flint Hills Prescribed Fire Update



Flint Hills Acreage Burned (February 14 - April 29, 2024)



<u>County</u>	<u>Acres Burned</u>
Butler	104,064
Chase	101,423
Chautauqua	28,881
Coffey	23,012
Cowley	117,748
Elk	49,082
Gery	38,688
Greenwood	89,885
Lyon	84,913
Marion	29,221
Morris	74,952
Osage (KS)	29,978
Pottawatomie	56,048
Riley	45,823
Wabaunsee	126,103
Wilson	13,900
Woodson	23,923
Nowata (OK)	43,908
Osage (OK)	234,924
Washington (OK)	29,375
Kay (OK)	30,842
Total	1,376,693



Flint Hills Total Acres Burned by Year (Spring burn period)

Year	Acres Burned
2000	2,802,963
2001	1,939,859
2002	1,429,438
2003	2,835,778
2004	1,837,021
2005	3,483,101
2006	1,992,477
2007	1,066,809
2008	2,825,876
2009	3,195,053
2010	2,392,693
2011	2,473,423
2012	706,016
2013	217,377
2014	2,529,468
2015	1,870,018
2016	2,736,791
2017	2,441,355
2018	1,453,748
2019	2,627,737
2020	2,649,203
2021	1,899,225
2022	2,112,759
2023	1,200,613
2024	1,376,693
Average	2,083,820

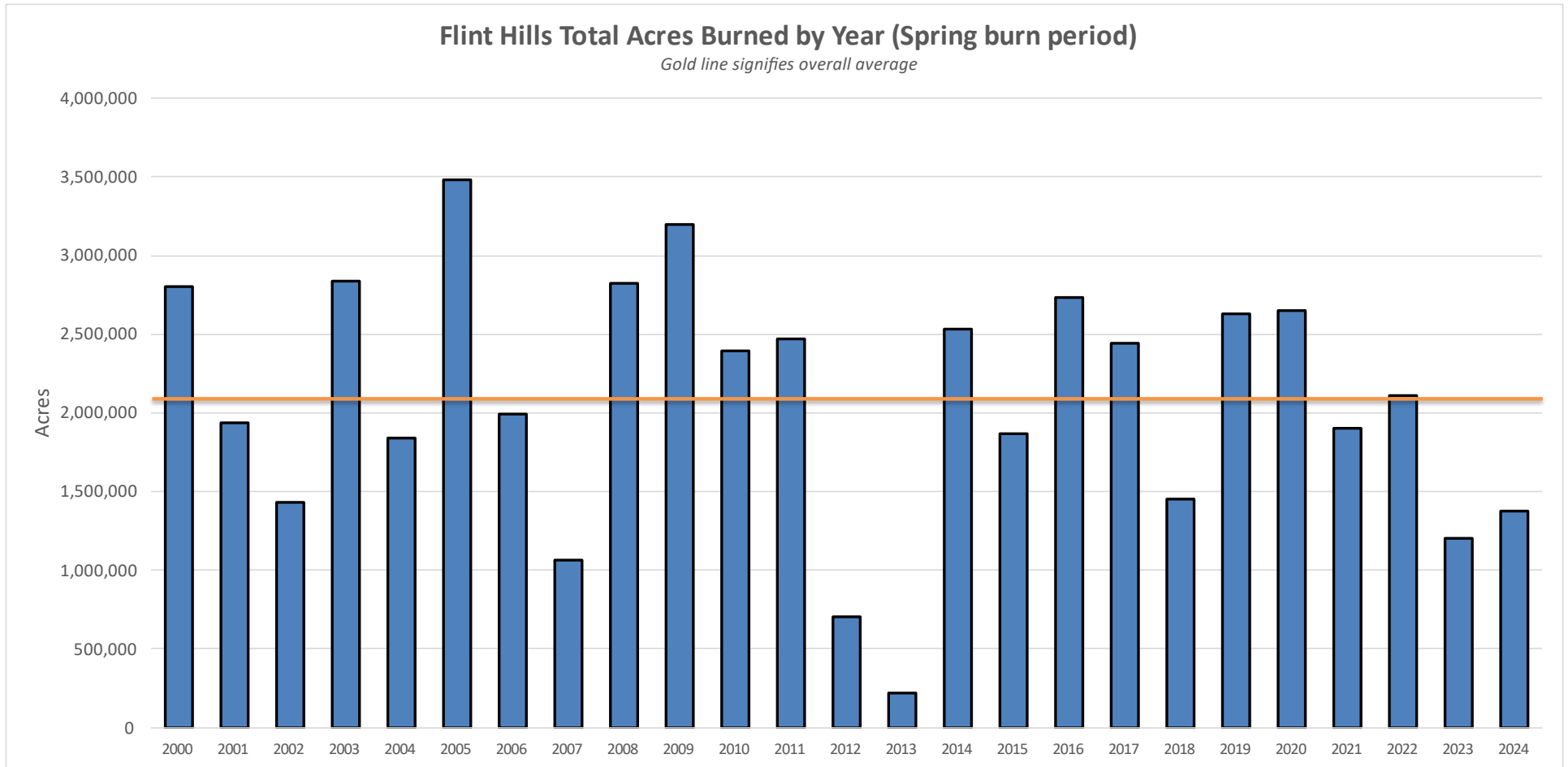
Flint Hills Prescribed Fire Update



2024 Flint Hills acres burned by county compared to 10-year average

County	2023	10-Year Average	% of Average
Butler	104,064	159,787	65%
Chase	101,423	245,195	41%
Chautauqua	28,881	64,684	45%
Coffey	23,012	62,017	37%
Cowley	117,748	98,458	120%
Elk	49,082	103,698	47%
Geary	38,688	37,901	102%
Greenwood	89,885	231,966	39%
Lyon	84,913	135,974	62%
Marion	29,221	43,907	67%
Morris	74,952	98,310	76%
Osage (KS)	29,978	59,331	51%
Pottawatomie	56,048	82,694	68%
Riley	45,823	53,941	85%
Wabaunsee	126,103	167,687	75%
Wilson	13,900	23,626	59%
Woodson	23,923	61,832	39%
Nowata (OK)	43,908	45,270	97%
Osage (OK)	234,924	205,356	114%
Washington (OK)	29,375	29,764	99%
Kay (OK)	30,842	25,418	121%
Total Acres	1,376,693	2,036,814	68%

Flint Hills Prescribed Fire Update



Flint Hills Prescribed Fire Update



Year:	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
County											
Butler	166,442	94,349	245,921	220,221	93,964	240,021	237,628	145,393	163,895	52,418	104,064
Chase	288,529	218,860	318,679	273,258	72,449	332,950	343,359	314,833	237,442	238,693	101,423
Chautauqua	113,499	71,321	94,473	59,353	87,214	110,366	73,515	56,171	57,901	7,645	28,881
Coffey	77,298	81,978	76,450	84,697	50,565	75,029	61,330	55,028	85,902	26,178	23,012
Cowley	92,804	61,036	158,984	99,786	52,758	186,383	149,254	57,422	88,095	13,112	117,748
Elk	167,647	92,990	171,757	126,613	89,809	157,594	139,926	84,975	109,933	14,301	49,082
Geary	47,769	15,583	51,492	62,195	10,965	39,013	70,998	34,889	17,035	38,147	38,688
Greenwood	250,042	247,741	284,624	351,467	148,328	311,482	296,671	219,155	315,605	54,704	89,885
Lyon	143,075	156,975	174,213	151,865	86,242	135,138	159,231	115,879	180,190	115,091	84,913
Marion	44,402	28,124	75,647	68,357	7,043	52,526	83,909	40,711	37,483	16,047	29,221
Morris	107,600	64,433	149,780	118,721	61,376	110,860	147,293	78,288	96,126	81,268	74,952
Osage (KS)	77,901	66,070	64,974	67,229	72,928	50,055	61,870	45,144	83,894	51,167	29,978
Pottawatomie	120,882	63,229	89,114	125,671	39,182	83,245	139,385	77,361	59,106	94,597	56,048
Riley	84,032	50,039	64,110	63,723	32,325	57,407	74,395	41,561	53,700	56,326	45,823
Wabaunsee	240,173	102,349	199,804	194,954	83,832	189,363	231,820	169,966	182,259	196,421	126,103
Wilson	33,236	22,688	23,136	31,090	31,970	31,136	22,997	16,093	33,592	9,653	13,900
Woodson	82,271	82,596	79,276	100,759	47,878	83,647	70,890	53,762	69,422	6,162	23,923
Nowata (OK)	68,217	64,773	48,186	25,051	73,036	66,967	51,970	33,344	43,507	1,961	43,908
Osage (OK)	275,278	206,504	301,258	173,703	248,824	241,457	181,549	197,565	156,297	111,478	234,924
Washington (OK)	48,371	45,669	32,387	14,904	45,515	37,298	27,182	31,877	30,842	2,595	29,375
Kay (OK)	----	32,711	32,526	27,738	17,545	35,800	24,031	29,808	10,533	12,649	30,842
Total Acres	2,529,468	1,870,018	2,736,791	2,441,355	1,453,748	2,627,737	2,649,203	1,899,225	2,112,759	1,200,613	1,376,693



Air Quality Data

Air quality data for the period of March 15 – May 2, 2024, was utilized to estimate the number of exceedances to the daily National Ambient Air Quality Standard (NAAQS) for two pollutants that are commonly impacted by wildland fire smoke, ozone, and fine inhalable particulate matter – often referred to as PM_{2.5}. The NAAQS for ozone is a daily 8-hour maximum of 70 parts per billion (ppb) and for PM_{2.5} is a daily 24-hour average maximum of 35 micrograms per cubic meter (µg/m³). All air quality data is considered preliminary and only data from state-operated regulatory monitors was utilized. The exceedances listed below are likely to have been influenced by wildland fires within the Flint Hills, but it is important to note that regional pollutants, pollutant emissions from other sources, and wildland fire smoke from beyond the Flint Hills – prescribed fire or otherwise – are also likely to have also influenced the air quality monitor and the preliminarily measured value.

There was a total of 20 preliminary exceedances identified, which occurred in three states (Kansas, Oklahoma, and Missouri). This includes six ozone exceedances and fourteen PM_{2.5} exceedances, all of which are listed in the table below.

Date	Location	Pollutant	Preliminary Measured Value
March 16	Glenpool, OK (Tulsa Metro)	PM _{2.5}	39 µg/m ³
March 27	Copan, OK	PM _{2.5}	41 µg/m ³
March 28	Chanute, KS	PM _{2.5}	39 µg/m ³
March 28	Copan, OK	PM _{2.5}	62 µg/m ³
April 4	Glenpool, OK (Tulsa Metro)	Ozone	70 ppb
April 4	Mannford, OK (Tulsa Metro)	Ozone	71 ppb
April 5	Peck, KS (Wichita Metro)	Ozone	91 ppb
April 5	Sedgwick, KS (Wichita Metro)	Ozone	93 ppb
April 5	Wichita, KS	Ozone	95 ppb
April 5	Cedar Bluff, KS	PM _{2.5}	38 µg/m ³
April 5	Copan, OK	PM _{2.5}	43 µg/m ³
April 5	Peck, KS (Wichita Metro)	PM _{2.5}	113 µg/m ³
April 5	Ponca City, OK	PM _{2.5}	116 µg/m ³
April 5	Tulsa, OK	PM _{2.5}	37 µg/m ³
April 5	Wichita, KS	PM _{2.5}	97 µg/m ³
April 6	Peck, KS (Wichita Metro)	PM _{2.5}	37 µg/m ³
April 8	Ponca City, OK	PM _{2.5}	41 µg/m ³
April 9	Peck, KS (Wichita Metro)	PM _{2.5}	38 µg/m ³
April 9	Ponca City, OK	PM _{2.5}	39 µg/m ³
April 14	Liberty, MO (Kansas City Metro)	Ozone	73 ppb