National Weather Service Wichita, KS

Storm Fury on the Plains

Spotter Newsletter

February 2021

Inside this issue:

2020 in Review

By Andy Kleinsasser – Meteorologist

Wichita's County Warning Area Tornado Drought

Amazingly no tornadoes were recorded in 2020 across Wichita's 26-county warning area stretching across portions of central, south-central and southeast Kansas. This is the first time such a feat has occurred across Wichita's county warning area since records began in 1950. On average since 1990, about 28 twisters touch down each year.

Lowest Annual Tornado Totals Across Wichita's 26 County Warning Area Since 1950	
2020	0
1996, 1979, 1976, 1972, 1952	2
1994, 1977, 1967	3
1989, 1969	4
1987, 1968	5

Furthermore, only two tornado warnings were issued in 2020 across Wichita's county warning area. This was one of the lowest 2020 totals compared to all National Weather Service offices across the country. Offices in Idaho, California and Washington state even issued more tornado warnings than the Wichita office! On average since 1986, the Wichita office issues about 30-35 tornado warnings annually.

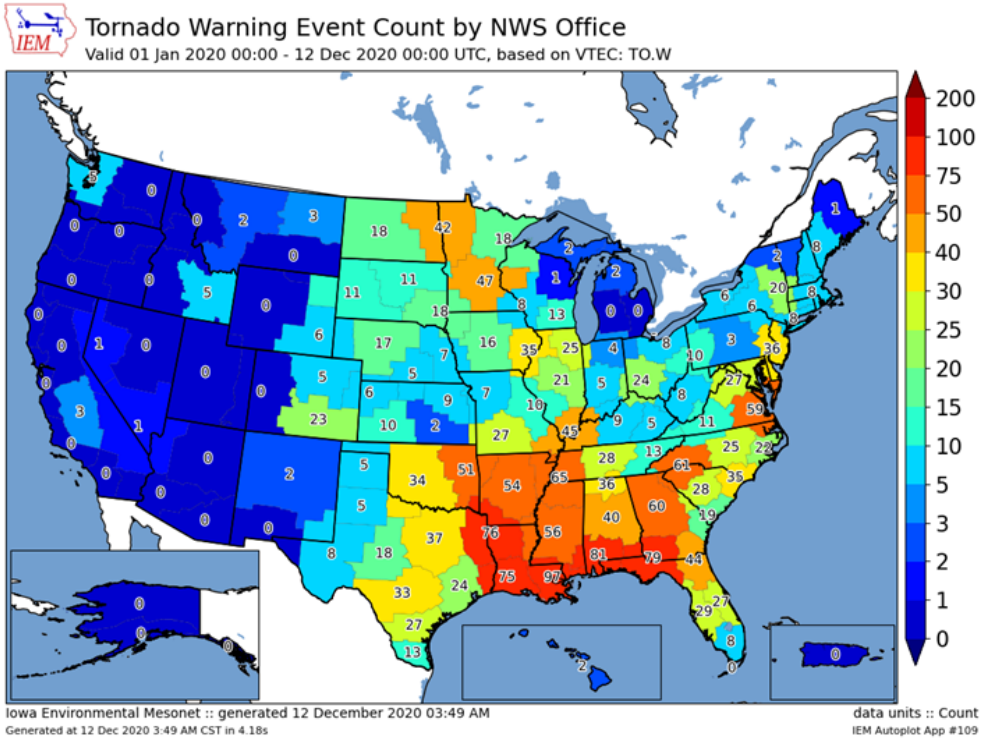


Figure 1. Tornado warnings issued by individual National Weather Service offices in 2020. The Wichita office only issued two tornado warnings in 2020, well below average and one of the lowest numbers in the country.

January 16-17th Ice Storm

Sub-freezing temperatures were in place during the evening of Thursday January 16th as an unseasonably moist airmass was lifted up and over the cold airmass. This resulted in a wintry mix of sleet and snow that eventually changed over to all freezing rain. Some locations over central and northeast Kansas picked-up between a quarter to a half inch of ice with most of this accumulating on elevated surfaces such as trees.

Figure 2. Ice accumulation 5 miles north of Great Bend. Courtesy of Jonathan Lipe.

February 25th Narrow Snow Band

Figure 3. Photo taken by Leigh Marts of the narrow snow band over north-central Kansas. Notice Wilson Lake in the lower left, and Waconda Lake in the upper right.

An extremely narrow band of heavy snow, estimated to be about 10 miles wide, impacted portions of central and north central Kansas during the early morning hours of February 25th. Snow totals in this narrow band ranged from 2 to 13 inches. This area of snow crossed both I-70 and I-135 which caused numerous traffic accidents.

Figure 4. Heavy snow in Sylvan Grove. Courtesy of Damon Vonada.

Figure 5. Multiple power lines and large branches down near Iola. Courtesy of Randy Stitt.

May 3rd – 4th Early Morning Severe Storms

Severe thunderstorms impacted portions of central, south central and southeast Kansas two mornings in a row on May 3rd and 4th. Hail near the size of golf balls was reported across the northern Wichita metro area as well as near Lincoln, New Cambria, Iola, Chanute and Moran. Meanwhile, damaging winds of 75 mph winds downed trees and caused damage to outbuildings in Greenwood County. Near Iola, a weather station recorded a 76 mph wind gust that knocked down trees and snapped power poles. In Woodson County severe winds damaged several outbuildings and metal structures.

July 11th Severe Storms

Figure 6. Wind damage in Oswego. Photo courtesy of Labette County Emergency Management.

Very humid air and above normal temperatures combined to produce extreme instability across the region on the afternoon and evening hours of July 11th. Scattered thunderstorms developed across east central Kansas during the afternoon hours and spread slowly south and east across southeast Kansas through the late afternoon and early evening hours. Some of the storms produced very large hail around the size of softballs as well as numerous reports of damaging winds. The Oswego area experienced more widespread wind damage with estimated speeds around 90 mph and isolated higher gusts.

Figure 7. Large hail in eastern Wilson County. Courtesy of Eric Spaulding.

Wet July, Dry August

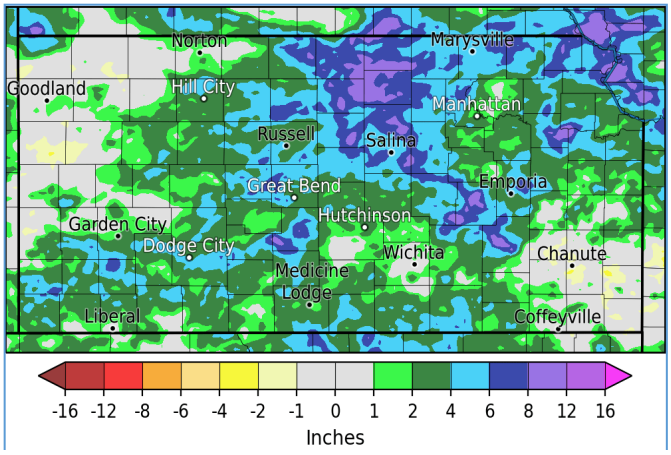


Figure 8. July 2020 departure from normal rainfall across Kansas. Most of the state was much wetter than normal.

Numerous rounds of showers and thunderstorms supported above normal rainfall in July across Kansas. Large portions of the state saw at least 2-4 inches above normal for the month with pockets of 8+ inches above normal. It was Salina's 10th wettest July since records began in 1900 and the wettest since 1994, tallying 7.62 inches at the airport. Additionally, averaging all climate sites across the state gave Kansas its 7th wettest July since 1895. In contrast, not everyone saw above normal precipitation, as Chanute recorded its 7th driest July since 1990, tallying only 1.68 inches for the month.

The rainy weather didn't last though as the next month (August) turned much drier for much of Kansas. Large portions of the state were at least 1-3 inches below normal for the month, although there were pockets of above normal precipitation across mainly west central Kansas. Wichita experienced its 10th driest August since records began in 1888 and the driest since 2000, tallying only 1.05 inches for the month. Salina experienced its 13th driest August since 1900 and the driest since 2007, tallying only 0.68 inches for the month. Additionally, averaging all climate sites across the state gave Kansas its 12th driest August since 1895.

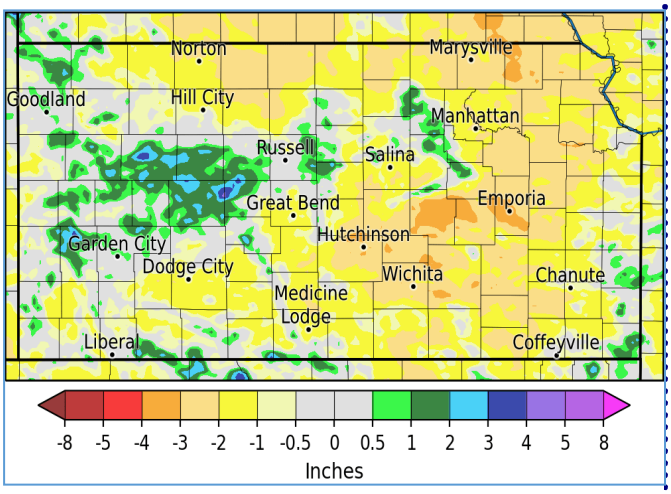


Figure 9. August 2020 departure from normal rainfall across Kansas. Most of the state was much drier than normal.

Record Cold September Airmass

A strong cold front blasted southeast across the region September 8th ushering in record cold temperatures for September standards across Mid-America. Temperatures plummeted from sultry 90s to the 40s-50s within a span of 12 hours. Climatologically, it felt more like early to mid-November than early to mid-September. For Wichita, it was the city's 2nd greatest 24-hour temperature change for the month of September since 1888; temperatures slid from 97 degrees on the 7th to 47 degrees on the 8th. Numerous record low temperatures and record cool daytime temperatures were breached. For many, it was the coldest temperatures ever recorded so early in the fall season and the top-5 to top-10 coldest September temperatures ever tallied. Furthermore, Goodland in northwest Kansas measured 0.5 inches of snowfall on September 9th which was the city's earliest measurable snowfall since records began in the late 1800s.

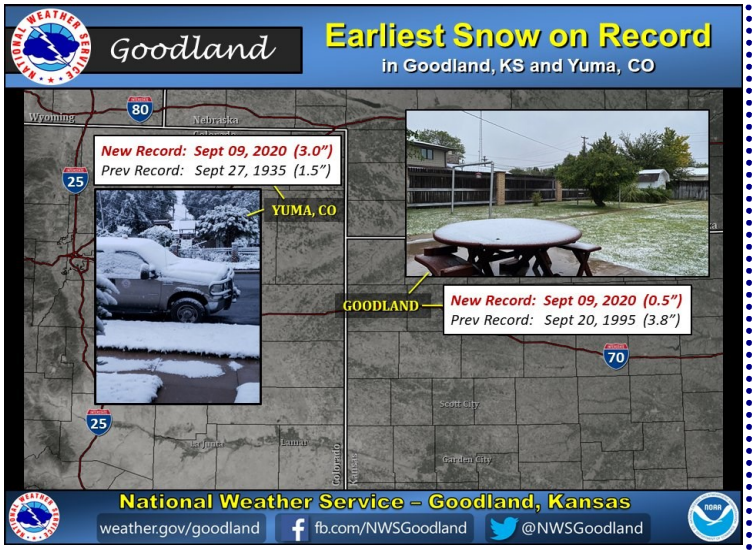


Figure 10. Goodland tallied its earliest measurable snowfall on record on September 9th.

Cold October, Warm November

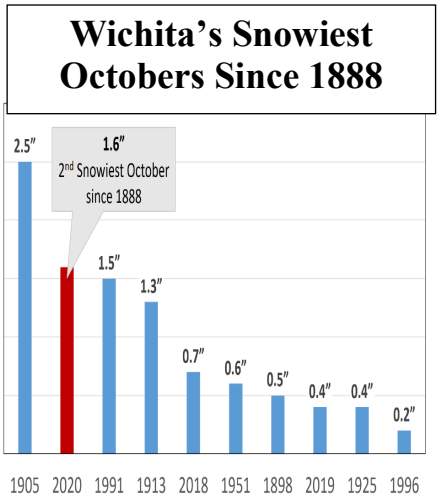


Figure 11. Wichita tallied its 2nd snowiest October since records began in 1888.

The large-scale weather pattern supported well below normal temperatures in October across much of Kansas especially the last 10-15 days of the month. Wichita recorded its 6th coldest October 15-31 period since records began in 1888 and the coldest since 2002. Most Kansas climate divisions recorded a top-10 coldest October since records began in the late 1800s. The last week of the month featured rare October snow, freezing rain and sleet across the state. Wichita tallied 1.6 inches of snow for the month making it the city's 2nd snowiest October since 1888 and the snowiest since 1905. However, the cold weather retreated back north for November with most Kansas locations seeing November average temperatures, 4-6 degrees warmer than normal. It was Kansas 4th warmest November since 1895 and the warmest since 2016. The mercury at Chanute reached 70 degrees or higher 12 times during the month which was the most since November 2001 and tied for 3rd most since records began in 1897. At Salina, the temperature soared to a relatively balmy 83 degrees on the 3rd which set a new record for the date.

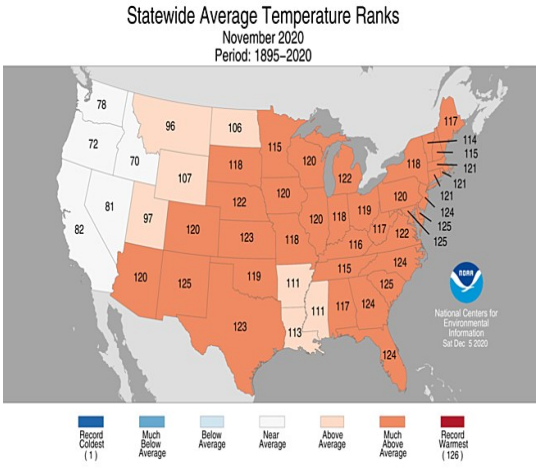
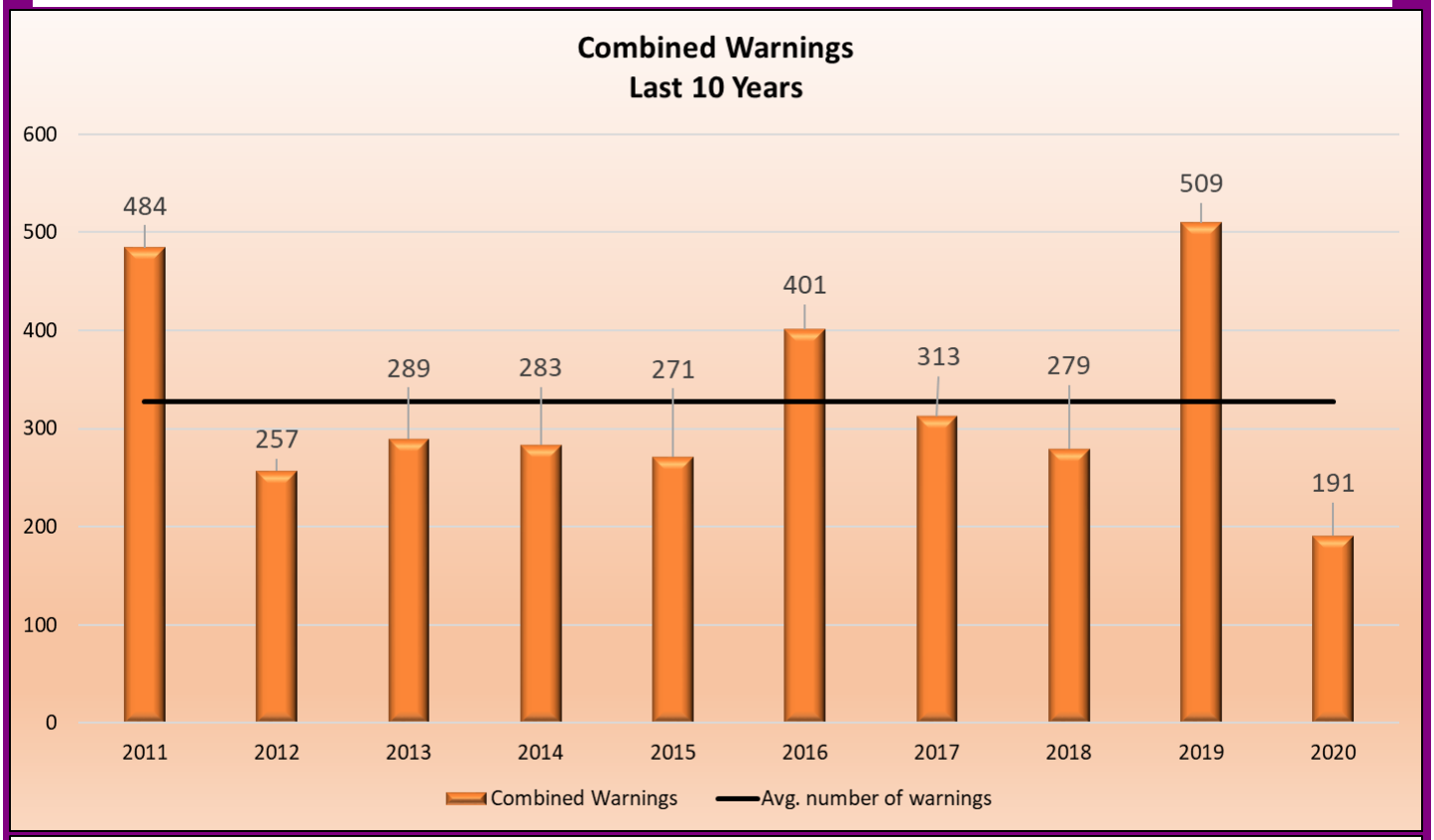
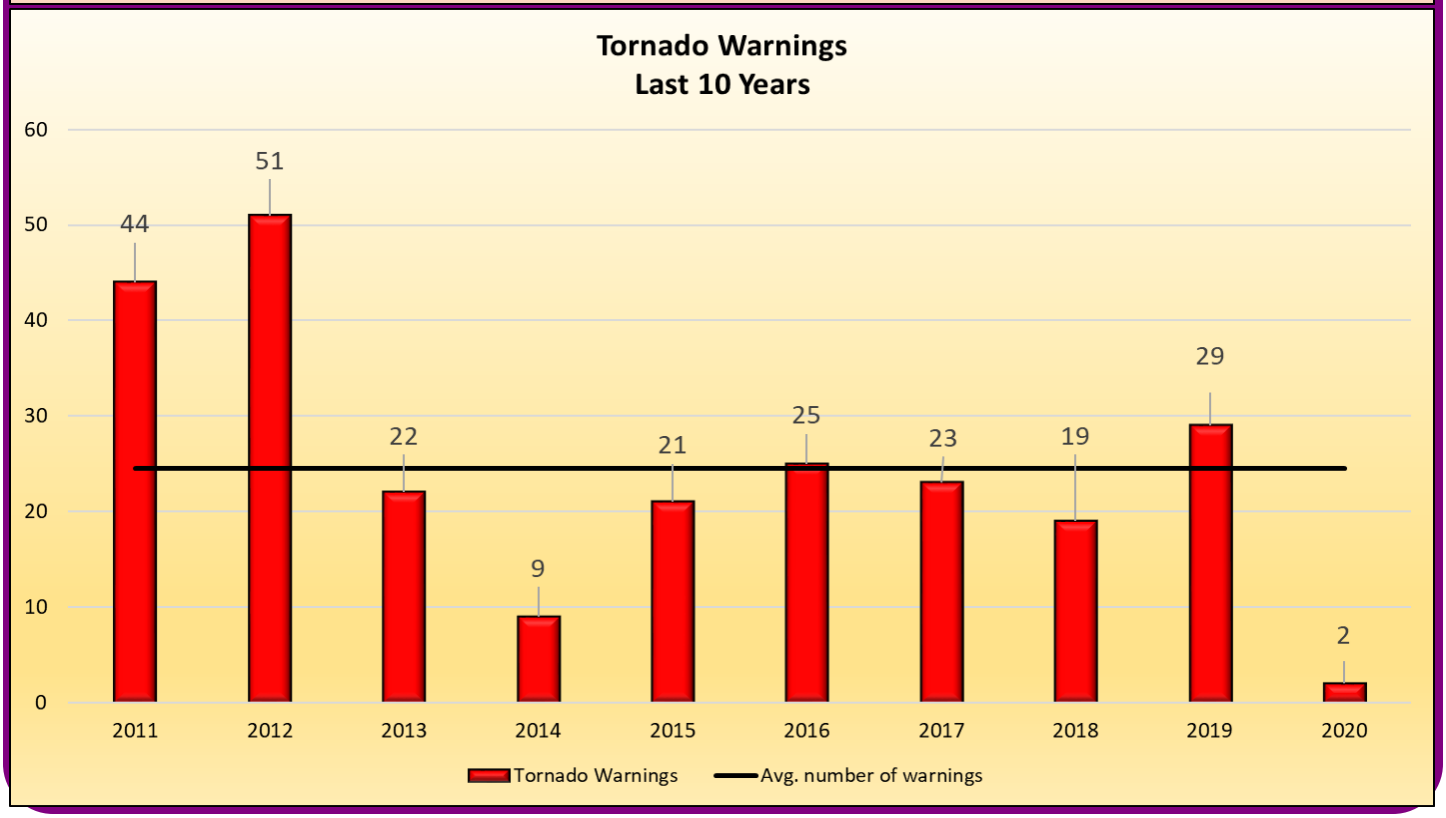


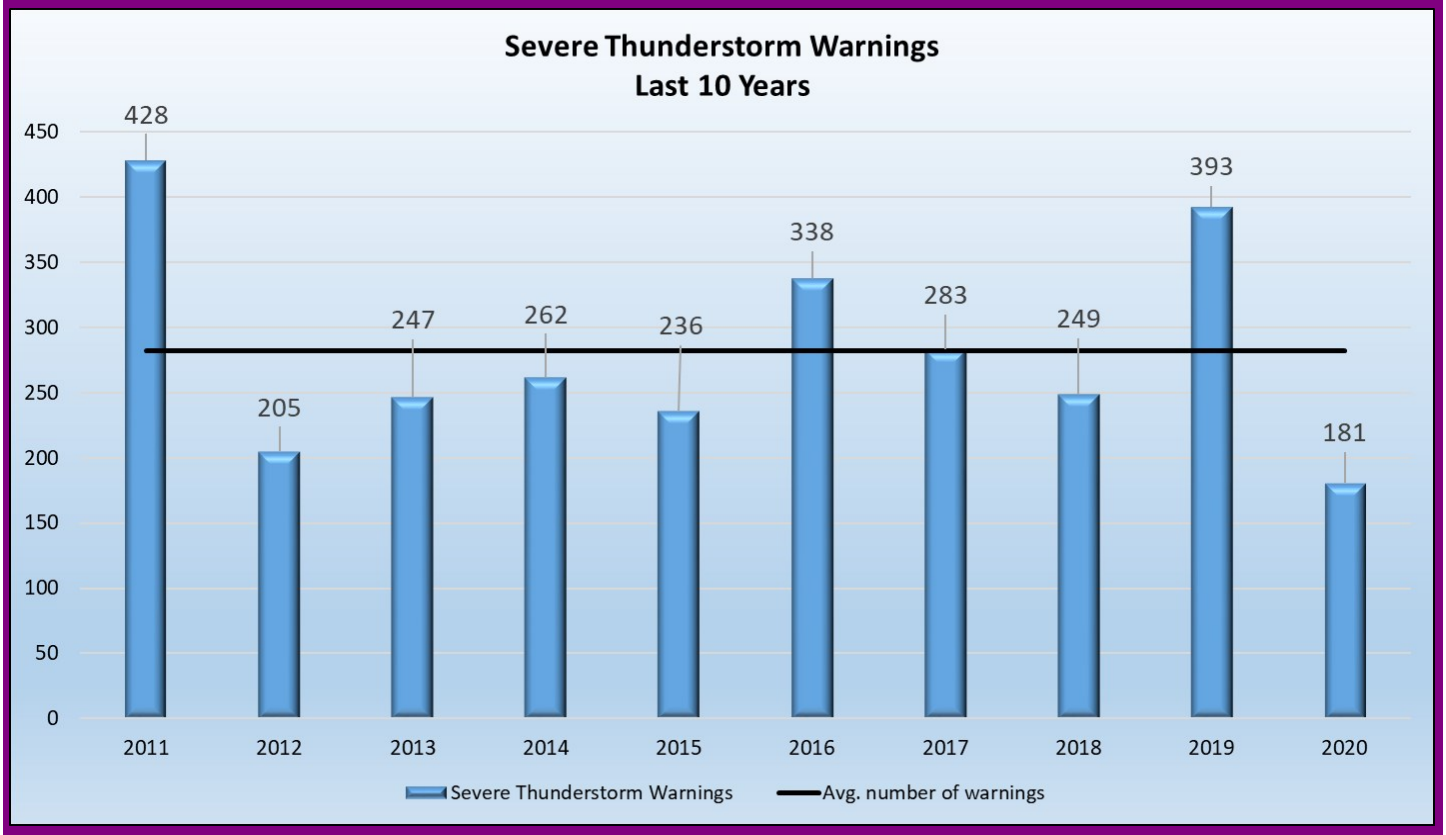
Figure 12. State temperature rankings for November. 126 denotes the warmest November on record (since 1895), 1 denotes the coldest. Kansas experienced its 4th warmest November on record.

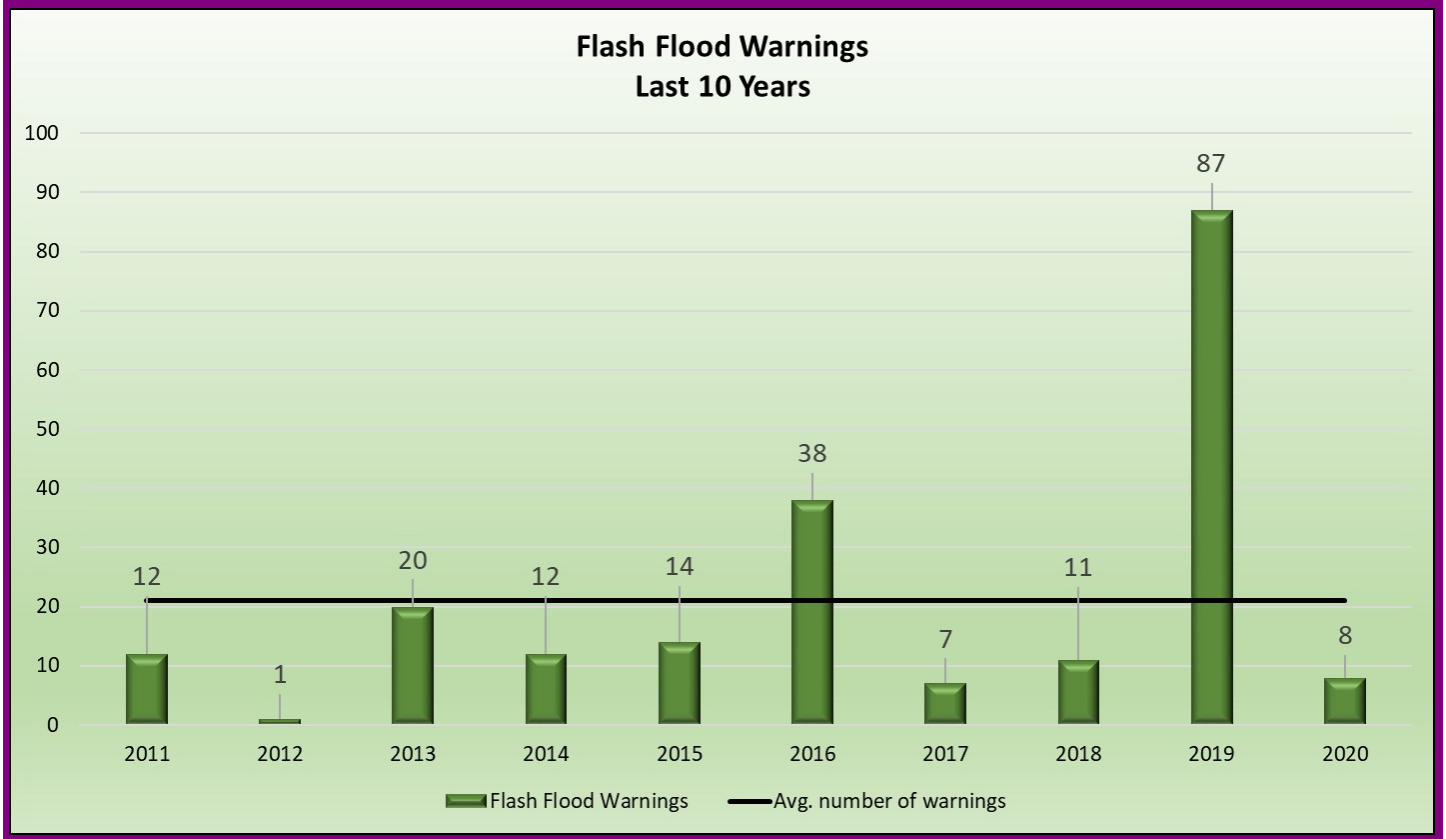
Significant Low Number of Severe Weather Warnings in 2020 across NWS Wichita's County Warning Area

By Chance Hayes – Warning Coordination Meteorologist






Severe Thunderstorm Warnings
Last 10 Years
450
400
350
300
250
200
150
100
50
0
428
205
247
262
236
338
283
249
393
181
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Severe Thunderstorm Warnings
Avg. number of warnings


Flash Flood Warnings
Last 10 Years
100
90
80
70
60
50
40
30
20
10
0
12
1
20
12
14
38
7
11
87
8
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Flash Flood Warnings
Avg. number of warnings

A First for NWS Wichita's County Warning Area

By: Chance Hayes—Warning Coordination Meteorologist

For the first time since 1950 when detailed tornado records began, a total of zero tornadoes touched down in any of the 26 counties served by the NWS Wichita office. On five other occasions a total of two tornadoes in a given year had occurred since 1950 with 1996 being the last. Since 1996, a total of 640 tornadoes have been recorded which averages out to almost 28 tornadoes per year over that time frame. This average is quite high considering the average number of tornadoes since 1950 is 18.67; the last ten year average is 21.4, and the last five year average is 19.4 tornadoes. (See Figure 1)

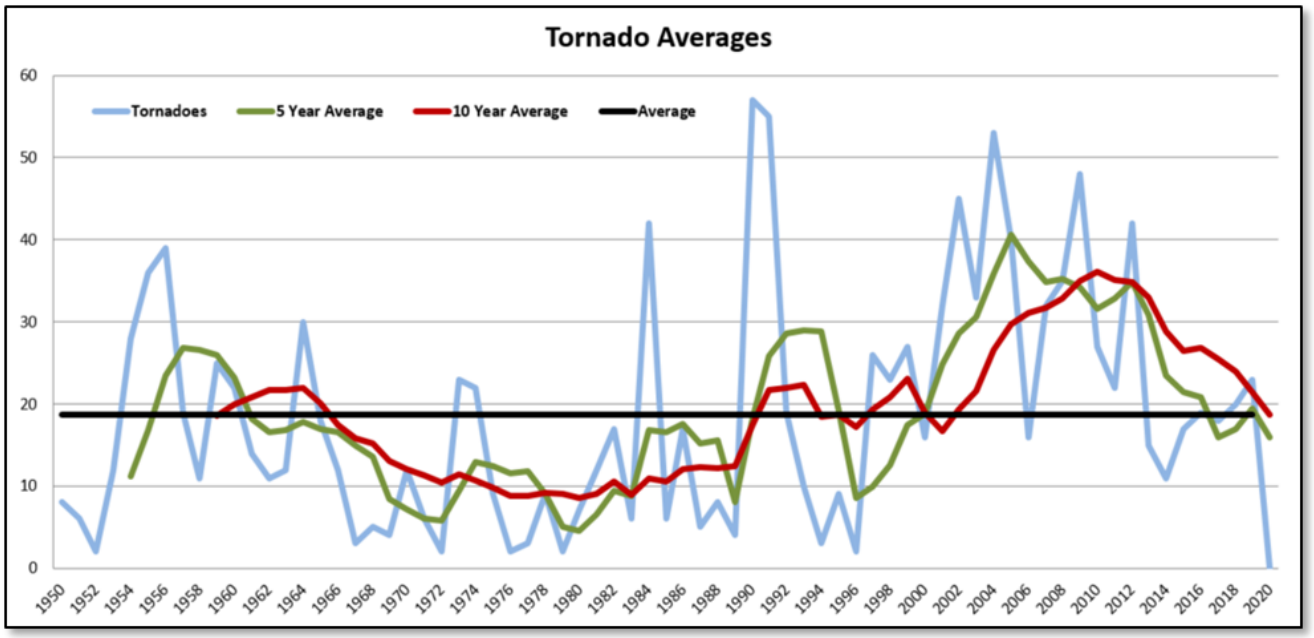


Figure 1- Tornado averages for NWS Wichita warning area

If you hadn't noticed, the average number of tornadoes has begun to decrease each year since 2012. Are we heading into a tornado drought? Probably not, but it would sure make for an interesting research project.

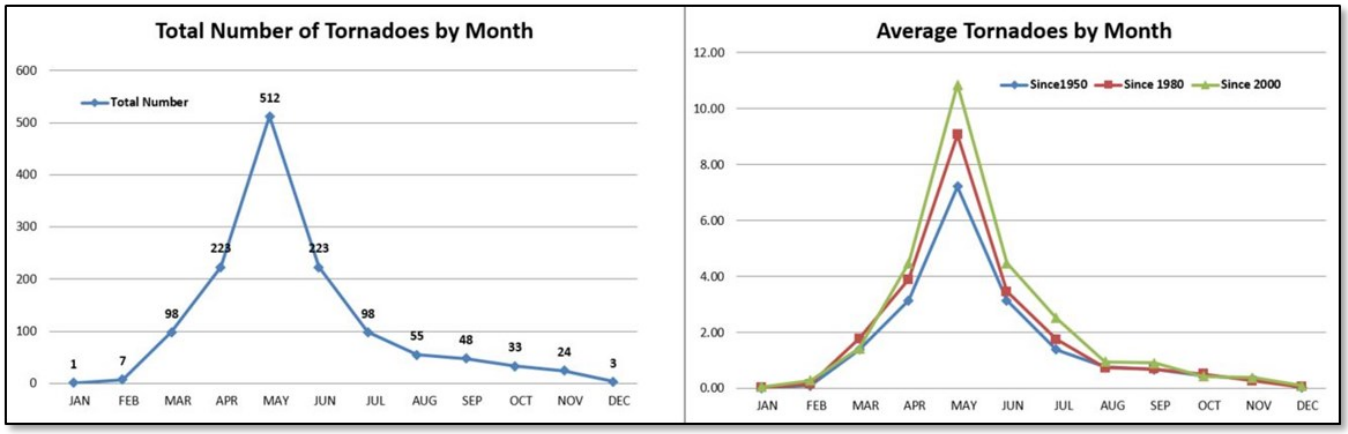


Figure 2 – Total number of tornadoes and average number of tornadoes by month for NWS Wichita warning area

Figure 2 depicts the total number of monthly tornadoes that have occurred since 1950 and the average number of tornadoes by month. The average number of tornadoes was further broken down into 3 different periods (since 1950, 1980, and 2000). You can easily see that the month of May by far exceeds any other month in regards to tornado occurrence. The month of May has experienced more than twice the number in the month of April and June and even surpasses the combined total of tornadoes in April and June. What does that mean? The month of May is when you should be paying the closest attention to tornado potential. However, don't forget as you can see in the figures that a tornado can occur on any day and at any time across central and eastern Kansas.

2020 Climate Records

Weather Element	Wichita	Salina	Chanute	Russell
Warmest Temperature	100° on 6/30, 8/9	100° on 6/30, 8/28, 9/6	100° on 8/28	101° on 9/6
Coldest Temperature	9° on 2/13	2° on 2/14	9° on 2/13	7° on 2/13
Highest Daily Precipitation	1.73" on 5/11	2.38" on 7/30	1.46" on 1/10	2.28" on 6/21
Strongest Wind Gust	65 mph on 10/11	67 mph on 5/24	58 mph on 5/3, 8/29	72mph on 8/14

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By Robb Lawson – Meteorologist

1

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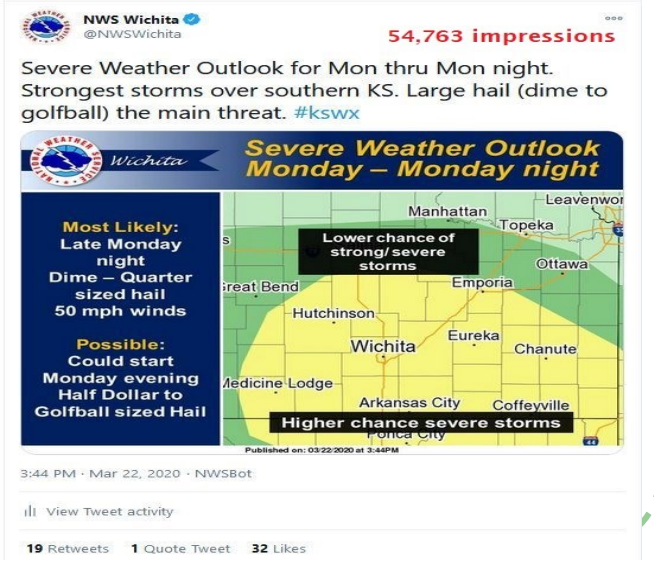
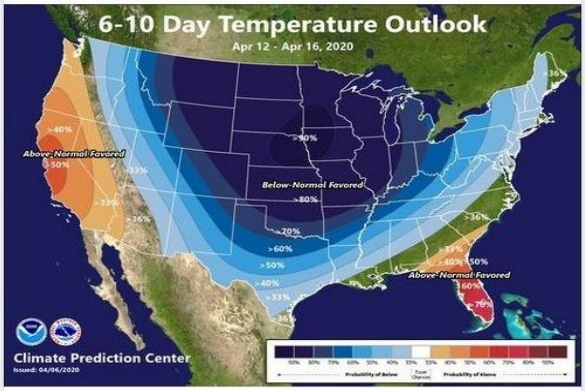


Facebook

2

US National Weather Service Wichita Kansas
Published by Chance Storm [?] · April 7, 2020 ·

Unfortunately, high probability of well below normal temperatures late weekend into at least early to mid next week. Sub-freezing temperatures possible. Heads up for those with agricultural and horticultural interests.



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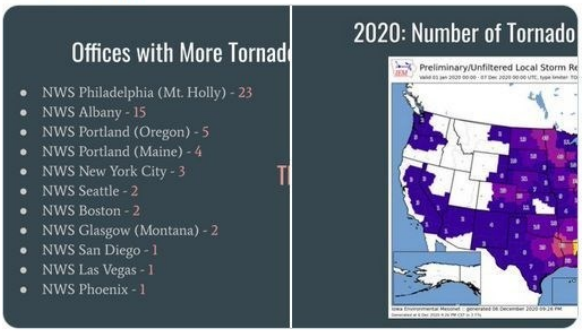
49,545 impressions

The 2020 tornado drought continues across central and southern Kansas. Here's an updated look at which NWS offices have had more tornadoes than our area. These numbers are preliminary, but still give an idea of which areas of the country have been more active than Kansas. #kswx



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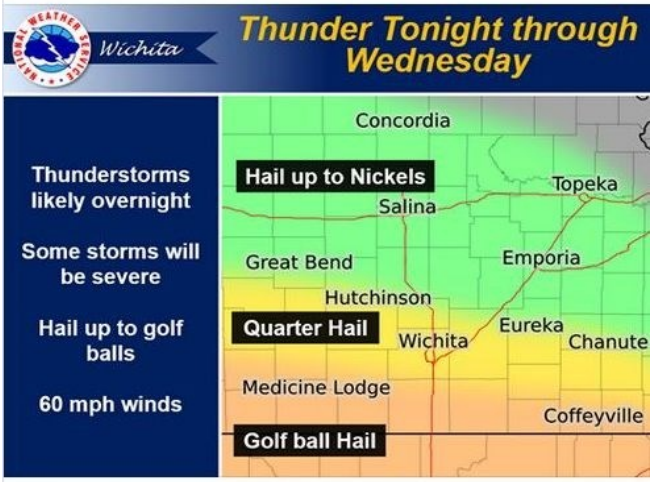
US National Weather Service Wichita Kansas
Published by Chance Storm [?] · April 21, 2020 ·

Thunderstorms will develop and move into the region this evening and overnight. This thunderstorm activity is likely to have some scattered severe storms. Winds of 60 mph are possible along with hail up to golf balls possible along the OK State line. Quarter hail is possible along and south of US 400 with smaller hail further north.



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44,606 impressions

Today breaks the record for going the latest in the year without a tornado in the Wichita forecast area (roughly the southeast quarter of Kansas). The previous record was August 20, 1989. Official tornado record keeping began in 1950. #kswx

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National Weather Service
Wichita, Kansas

Report
Time of Event
Event Type
Location of the Storm
Location of Yourself

@NWSWichita
@NWSWichita
#kswx

www.weather.gov/wichita

Example: "I saw a tornado at 4:43pm approximately 2 miles south of my location, which is 4 miles NW of Winfield."

Hail Sizes

0.75"	Penny
1.00"	Quarter
1.25"	Half Dollar
1.75"	Golf Ball
2.00"	Egg
2.50"	Tennis Ball
2.75"	Baseball
4.00"	Grapefruit

Tornadoes
Damaging Winds
Wall Cloud
Funnel Cloud
Hail
Flooding
Snow Totals
Ice Accumulation

Wind Reports

> 58 MPH	Twigs & small limbs break off
58-72 MPH	Shingles damaged & large limbs broken
73-112 MPH	Roof damage, windows break, & trees uprooted
113+ MPH	Roofs torn off & trailer homes destroyed

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