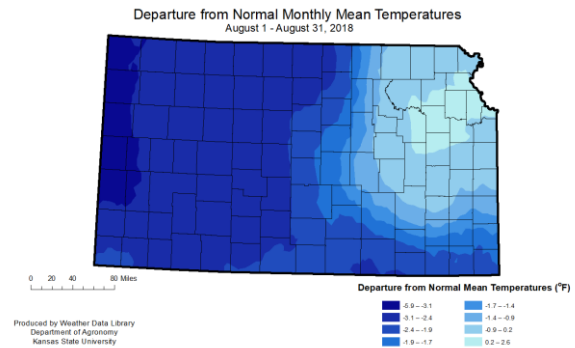


# KANSAS CLIMATE SUMMARY

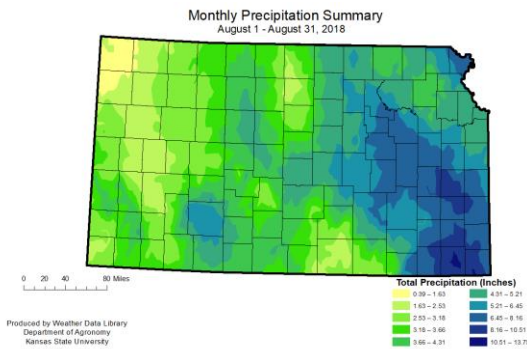
## August 2018

### Change in patterns

After a very warm start to the summer, August had a cooler note. State-wide average temperature for the month was 76.5 °F. This is 1.5 degrees cooler than normal, and ranks as the 37<sup>th</sup> coolest since 1895. The Northeast Division had the largest warm signal with an average of 76.8 °F which was 0.5 degrees warmer than normal. The Northwest Division was the coldest with an average of 76.2 °F and a departure of -2.5 degrees. There were no new record daily warm maximum temperatures. Minimum temperatures were warmer than normal with 34 new daily record warm minimum temperatures were set. None of the daily records set new monthly temperature records for August. There were 41 new record coldest maximums and 6 record coldest minimum temperatures. The warmest temperature reported during the month was 103 °F at Marysville, Marshall County, on the 6<sup>th</sup>. The coldest temperature reported during August was 41 °F, reported at Brewster 4W, Sherman County, on the first.



The August precipitation showed a more even distribution than earlier in the summer and brought drought relief.

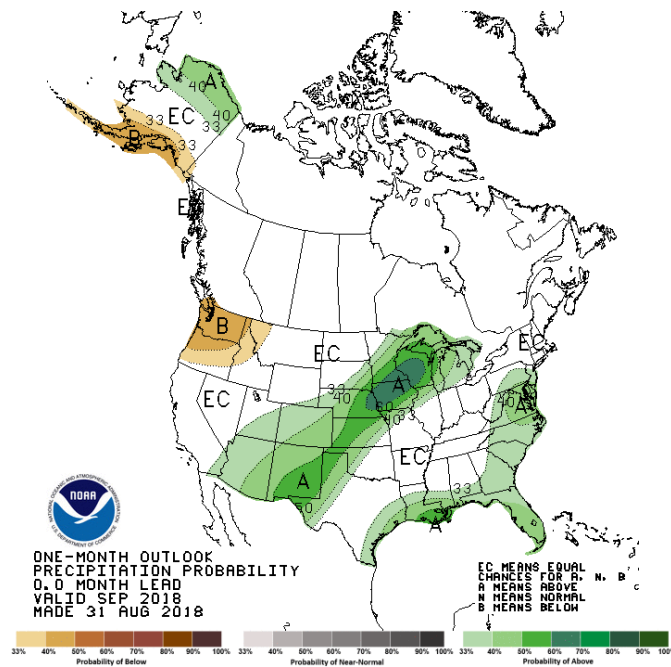
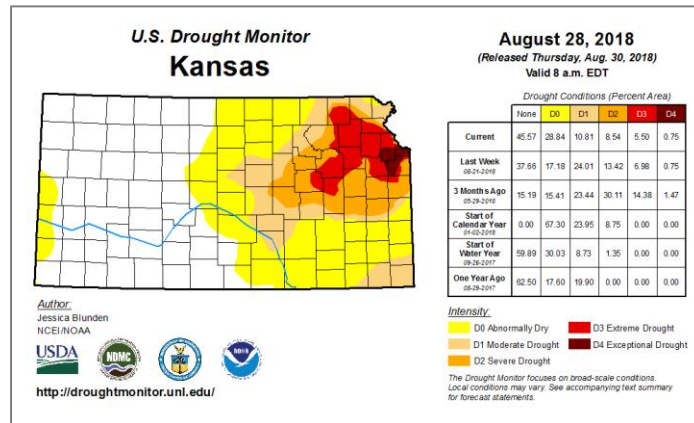


The state-wide average precipitation was 4.17 inches which was 125 percent of normal. The division with the largest surplus was the Southeast Division, with an average of 7.02 inches, or 188 percent of normal. The Northwest Division had the greatest shortfall, with an average of 2.00 inches creating a deficit of 0.73 inches. That translates to 73 percent of normal. Due to the cooler temperatures and favorable distribution, the negative impacts of that deficit were minimal. The greatest monthly total for a National Weather Service Cooperative station was at Bartlett 1 WSW, Labette County, with 13.75 inches. The Community Collaborative Rain, Hail and Snow network

station with the greatest monthly precipitation was Iola 2.7 SSE, Allen County, with 12.98 inches. Among the Kansas Mesonet stations, the Cherokee station near Columbus, had the greatest monthly total with 8.85 inches.

With the resurgence of moisture, severe weather reports during the month also increased. Tornado numbers continued on the low side with only 4 tornado reported. Unfortunately wind and hail caused significant damage in Sherman, Cheyenne, and Rooks counties. Complete damage estimates are not yet available. Total storm reports: 4 tornadoes, 32 hail events, and 45 reports of damaging wind.

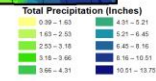
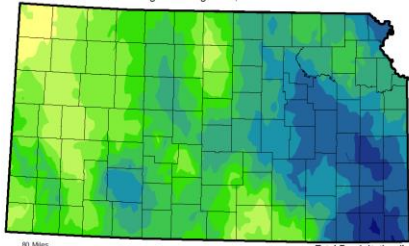
The below normal temperatures in the West moderated the impacts of below normal precipitation. Only a small sliver of abnormal dry conditions persists in that area. Exceptional drought continues in eastern Kansas, and extreme drought has shifted into East Central Kansas. Currently, 46 percent of the state is drought free, while just under 1 percent is in exceptional drought conditions. The September outlook has increased chances for above normal precipitation across a wide swath of the state. However, a more even distribution will be needed to continue improvement of drought conditions across the state. The temperature outlook is for warmer than normal temperatures statewide.



# Appendix:

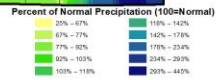
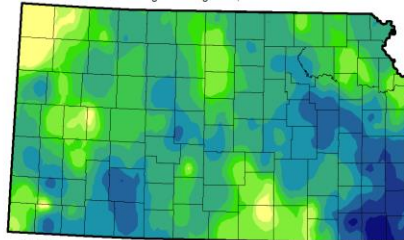
## Precipitation and Temperature Maps

Monthly Precipitation Summary  
August 1 - August 31, 2018



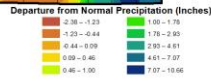
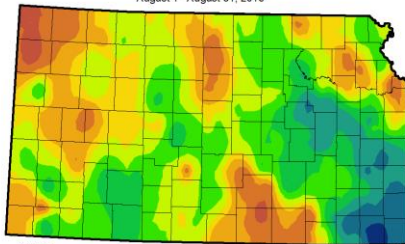
Produced by Weather Data Library  
Department of Agronomy  
Kansas State University

Percent of Normal Monthly Precipitation  
August 1 - August 31, 2018



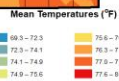
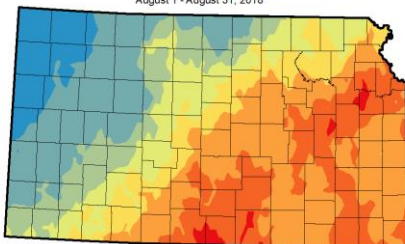
Produced by Weather Data Library  
Department of Agronomy  
Kansas State University

Departure from Normal Monthly Precipitation  
August 1 - August 31, 2018



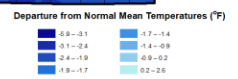
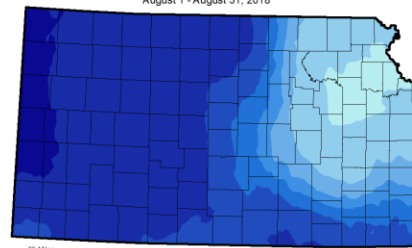
Produced by Weather Data Library  
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Kansas State University

Monthly Mean Temperatures  
August 1 - August 31, 2018



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Department of Agronomy  
Kansas State University

Departure from Normal Monthly Mean Temperatures  
August 1 - August 31, 2018



Produced by Weather Data Library  
Department of Agronomy  
Kansas State University

Table 1.

| <b>Table 1<br/>Aug-18<br/>Kansas Climate Division Summary</b> |                               |                         |                     |                            |                         |                     |                         |                   |                             |            |
|---|-------------------------------|-------------------------|---------------------|----------------------------|-------------------------|---------------------|-------------------------|-------------------|-----------------------------|------------|
|   | <b>Precipitation (inches)</b> |                         |                     |                            |                         |                     | <b>Temperature (°F)</b> |                   |                             |            |
|   | <b>Aug-18</b>                 |                         |                     | <b>2018 through August</b> |                         |                     | <b>Ave</b>              | <b>Dep.<br/>1</b> | <b>Monthly<br/>Extremes</b> |            |
| <b>Division</b>   | <b>Total</b>                  | <b>Dep.<sup>1</sup></b> | <b>%<br/>Normal</b> | <b>Total</b>               | <b>Dep.<sup>1</sup></b> | <b>%<br/>Normal</b> |                         |                   | <b>Max</b>                  | <b>Min</b> |
| <b>Northwest</b>  | 2.00                          | -0.73                   | 73                  | 13.88                      | -3.01                   | 82                  | 72.2                    | -2.5              | 100                         | 41         |
| <b>West Central</b>   | 2.45                          | -0.16                   | 94                  | 16.15                      | -0.14                   | 99                  | 73.3                    | -2.2              | 101                         | 48         |
| <b>Southwest</b>  | 3.96                          | 1.25                    | 146                 | 17.98                      | 2.54                    | 116                 | 75.1                    | -2.2              | 101                         | 50         |
| <b>North Central</b>  | 3.47                          | 0.18                    | 105                 | 18.89                      | -2.42                   | 89                  | 74.9                    | -2.1              | 99                          | 48         |
| <b>Central</b>  | 4.39                          | 0.82                    | 123                 | 18.91                      | -3.57                   | 84                  | 76.4                    | -1.8              | 101                         | 52         |
| <b>South Central</b>  | 3.34                          | -0.10                   | 97                  | 21.79                      | -1.68                   | 93                  | 77.2                    | -2.0              | 101                         | 44         |
| <b>Northeast</b>  | 3.71                          | -0.19                   | 95                  | 17.80                      | -7.86                   | 69                  | 76.8                    | 0.5               | 101                         | 56         |
| <b>East Central</b>   | 6.45                          | 2.36                    | 158                 | 19.97                      | -7.64                   | 72                  | 77.0                    | -0.2              | 101                         | 57         |
| <b>Southeast</b>  | 7.02                          | 3.28                    | 188                 | 26.30                      | -3.11                   | 89                  | 77.2                    | -1.3              | 101                         | 59         |
| <b>STATE</b>  | 4.17                          | 0.84                    | 125                 | 19.38                      | -2.62                   | 88                  | 75.6                    | -1.5              | 101                         | 41         |

1. Departure from 1981-2010 normal value

2. State Highest temperature: 103 oF at Marysville, Marshall County, on the 6th.

3. State Lowest temperature: 41 oF at Brewster 1W, Sherman County, on the 1st.

4. Greatest 24hr: 8.75 inches at Independence, Montgomery County, on the 15th (NWS); 8.25 inches at Independence 1.0 SSW, Montgomery County, on the 15th (CoCoRaHS).

**Source: KSU Weather Data Library**

| August Summary  |                        |           |                |                |           |                |           |
|---|------------------------|-----------|----------------|----------------|-----------|----------------|-----------|
| Station <sup>1</sup>  | Precipitation (inches) |           |                | Temperature °F |           |                |           |
|   | Total                  | Departure | Percent Normal | Mean           | Departure | Extreme (Date) |           |
|   |                        |           |                |                |           | Highest        | Lowest    |
| <b>West</b>   |                        |           |                |                |           |                |           |
| Burlington, CO  | 1.56                   | -0.85     | 65%            | 71.6           | -0.5      | 97 (31)        | 47 (21)   |
| Dodge City  | 6.68                   | 3.93      | 243%           | 77.0           | -1.1      | 100 (31)       | 54 (21)   |
| Garden City   | 2.20                   | -0.25     | 90%            | 74.6           | -2.1      | 100 (31)       | 53 (21)   |
| Goodland  | 0.85                   | -1.85     | 31%            | 73.2           | -0.5      | 100 (27)       | 46 (21)   |
| Guymon, OK  | 1.78                   | -1.14     | 61%            | 78.2           | 0.1       | 104 (31,30)    | 52 (21)   |
| Hill City   | 2.82                   | -0.09     | 97%            | 75.6           | -1.1      | 100 (27)       | 52 (29)   |
| Lamar, CO   | 1.74                   | -0.54     | 76%            | 75.2           | -0.2      | 100 (30,27)    | 51 (21)   |
| McCook, NE  | 1.82                   | -1.32     | 58%            | 73.5           | -0.3      | 97 (27)        | 49 (29)   |
| Springfield, CO   | 3.70                   | 0.86      | 130%           | 69.7           | -4.5      | 95 (31,5)      |           |
| <b>Central</b>  |                        |           |                |                |           |                |           |
| Concordia   | 4.78                   | 1.64      | 152%           | 74.4           | -2.7      | 94 (27)        | 52 (29)   |
| Hebron, NE  | 3.81                   | 0.08      | 102%           | 74.8           | -0.4      | 96 (27)        | 53 (29)   |
| Medicine Lodge  | 4.54                   | 1.42      | 146%           | 78.7           | -1.6      | 99 (31)        | 57 (21,1) |
| Ponca City, OK  | 2.35                   | -0.90     | 72%            | 80.3           | -0.7      | 99 (6,5)       | 60 (1)    |
| Salina  | 4.60                   | 0.65      | 116%           | 77.4           | -2.2      | 99 (31)        | 57 (29)   |
| Wichita (ICT)   | 3.05                   | -0.66     | 82%            | 79.3           | -0.7      | 101 (31)       | 61 (2)    |
| <b>East</b>   |                        |           |                |                |           |                |           |
| Bartlesville, OK  | 4.25                   | 1.18      | 138%           | 78.2           | -2.0      | 99 (6)         | 58 (3,1)  |
| Chanute   | 6.13                   | 2.44      | 166%           | 78.2           | -0.7      | 99 (6)         | 59 (1)    |
| Falls City, NE  | 6.69                   | 2.65      | 166%           | 75.8           | 0.4       | 101 (5)        | 56 (29)   |
| Johnson Co. Exec. Apt   | 2.93                   | -0.79     | 79%            | 77.0           | -0.6      | 95 (6,5)       | 61 (23,1) |
| Joplin, MO  | 6.62                   | 3.27      | 198%           | 78.4           | -1.3      | 99 (6)         | 58 (1)    |
| Kansas City (MCI), MO   | 4.46                   | 0.57      | 115%           | 77.3           | 0.2       | 97 (5)         | 59 (23)   |
| St. Joseph, MO  | 1.67                   | -2.31     | 42%            | 76.0           | 0.7       | 98 (5)         | 55 (1)    |
| Topeka (TOP)  | 4.86                   | 0.62      | 115%           | 78.9           | 1.5       | 101 (5)        | 58 (1)    |
| 1. Airport Automated Observation Stations (NWS/FAA)<br>2. Departure from 1981-2010 normal value<br>T - Trace; M - Missing; --- no normal value from which to calculate departure or percent of normal<br>Source: National Weather Service F-6 Climate Summaries |                        |           |                |                |           |                |           |

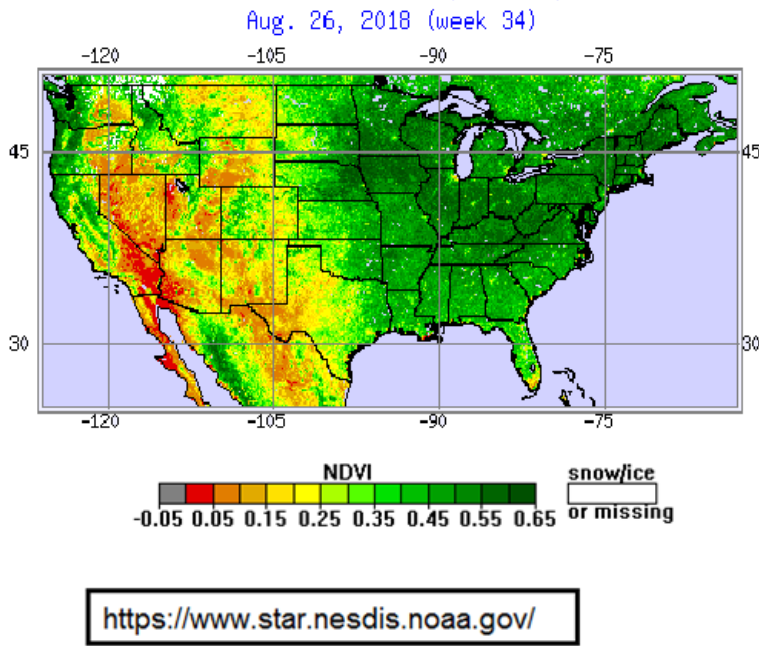


Figure 1. Current Greenness Map (NOAA)

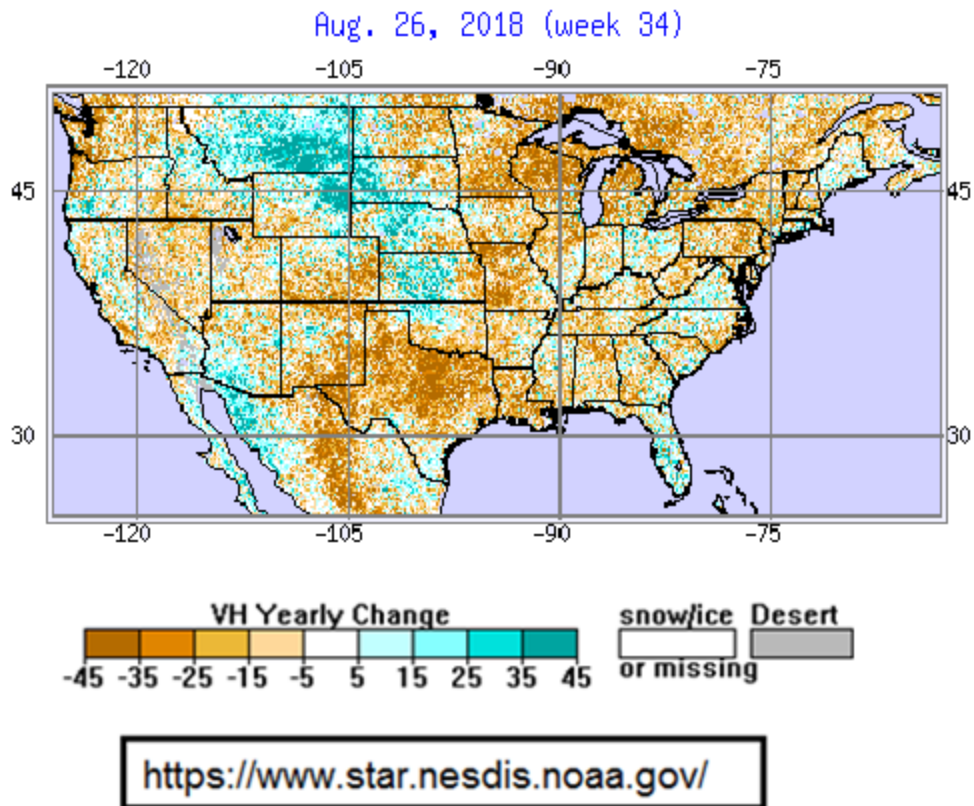


Figure 2. Change in Vegetative Health from 2017