

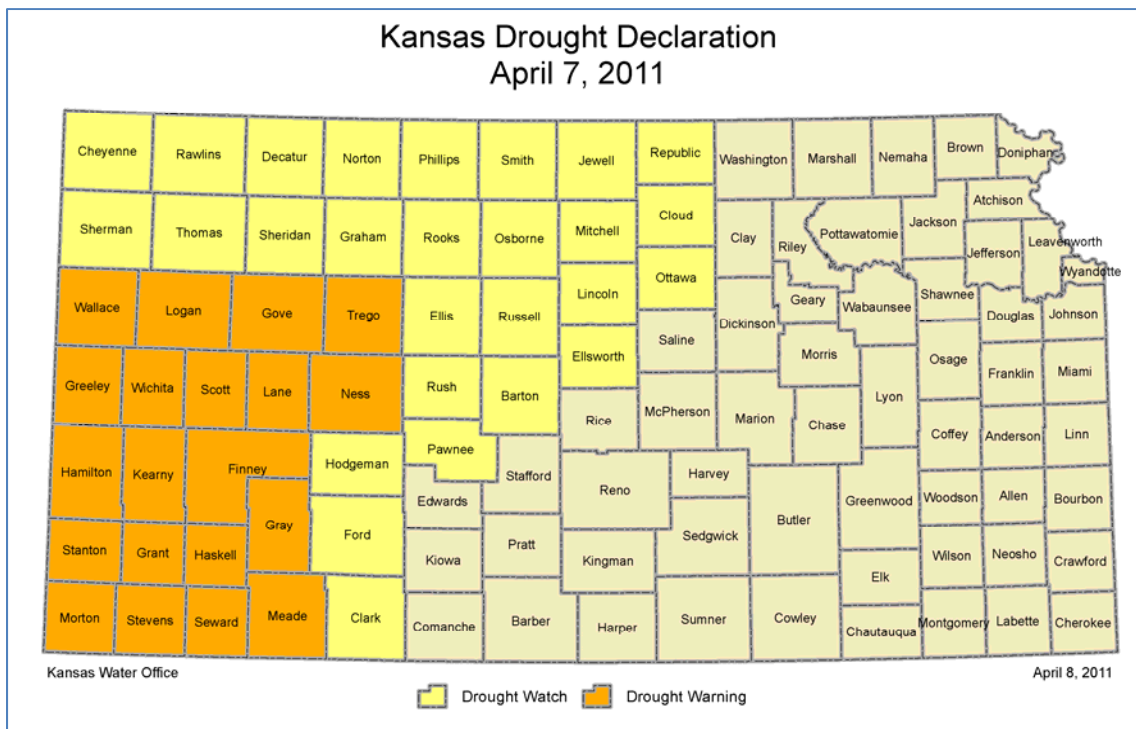
KANSAS CLIMATE SUMMARY AND DROUGHT REPORT

Current Conditions, Drought Impacts and Outlook

March 2011

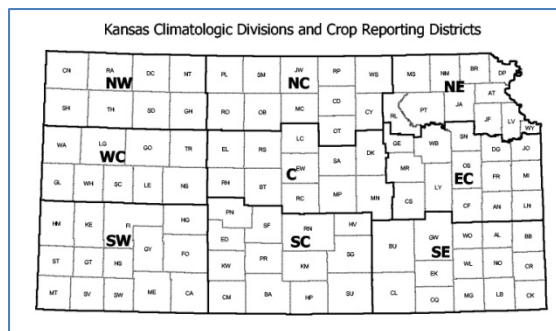
Late Spring

March was a mild month with wide temperature swings and major snowstorms. Throughout the month drought conditions persisted in many parts of Kansas. Most of western Kansas' conditions worsened leading to severe drought in southwest and west central Kansas and moderate drought in the rest of western Kansas, according to the U.S. Drought Monitor. Moderate drought conditions also occurred in other parts of Kansas. On April 7, the Governor declared a drought watch or drought warning for 47 counties in western Kansas. These are shown on the map below.



Preliminary statewide average precipitation was 0.85 inches, which was 38 percent of normal. None of the western divisions averaged as much as an inch. The west central division fared best of the western divisions, with an average of only 0.59 inches or 51 percent of normal precipitation. The central divisions fell in the middle range. However, south central Kansas saw only 30 percent of their normal precipitation. The eastern three divisions were also below average, with the east central division having the greatest average precipitation at 2.10 inches, which was only 69 percent of normal. Only four days saw no location in the state report measurable precipitation, and for an additional 10 days the state-wide average was zero, with only isolated reports of moisture.

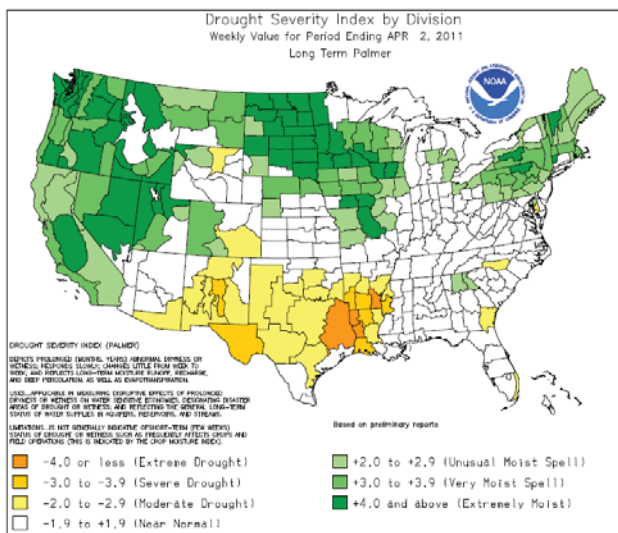
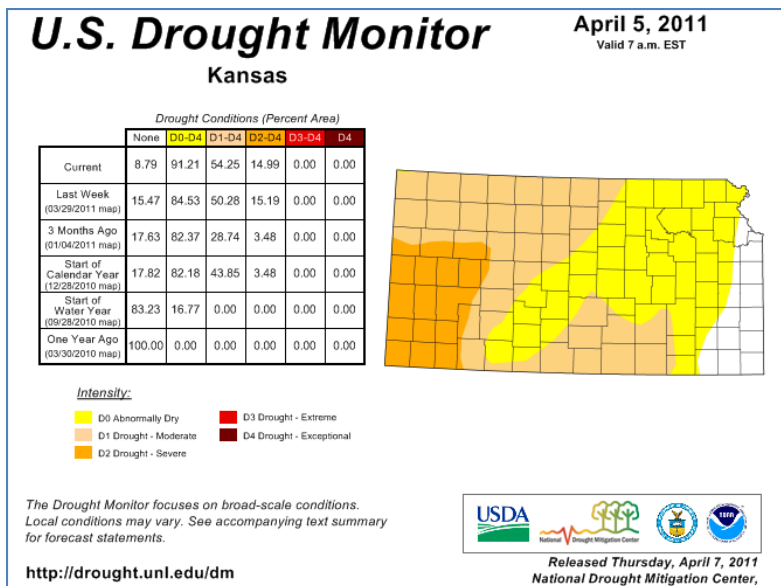
The state-wide average temperature was slightly cooler than normal, average a half degree cooler than normal, placing it at the 49th warmest March on record. Temperatures in western Kansas reached 87 °F, with the warmest reading noted at several locations. Daily record highs were set at 41 locations and tied at 11 others, less than the number of records seen in February. Tuttle Creek Lake saw an all-time high temperature for March, with 81 °F, set on March 18. On the other hand, 31 locations set record low maximum temperatures and five tied records. No location set record low daily minimum temperatures. Fifty-one locations set new records for daily high minimum temperatures. Again, state-wide monthly average temperatures were only -0.5 °F cooler than normal, with the warmest area in south central with a departure of +2.0 °F. The coolest division was the west central division, which averaged 0.6 °F below normal.



With the below average precipitation, the latest Drought Monitor saw an increase in the area of abnormally dry and moderate drought conditions. This leaves only a narrow band from east central Kansas through southeastern Kansas that remains in the near normal state and there is a slight increase in the area of severe drought. The latest Drought Outlook has indicated drought conditions are expected to intensify in the coming months. The La Niña conditions are weakening and are expected to fade, transitioning to neutral by June.

DROUGHT MONITORING AND INDICES

The U.S. Drought Monitor ([current map](#)) is a composite of several observed weather variables and drought indices that is updated weekly. The April 5 map indicates only area of near normal, bisecting the state from east central Kansas to southeastern Kansas to near normal. The map indicates **drought or dry conditions in western Kansas**. The table accompanying the map compares the percentage of the state currently affected by drought conditions with several points during the past year. **As of April 5, 14.99 percent of the state was considered to be in severe drought, 39.26 percent moderate** and 36.96 percent abnormally dry. In the Kansas county drought stage scheme, a Drought Watch equates roughly to moderate drought in the U.S. Drought Monitor, while a Drought Warning is the equivalent of severe drought. A Drought Emergency is reserved for extreme or exceptional drought. (1)



Palmer Drought Severity Index (PDSI) is an indicator used in the U.S. Drought Monitor. The statewide average PDSI for the week ending April 2 was 0.22 (near normal). Divisional PDSI values ranged from -1.77, which translates to moderate drought, in the west central division to 1.37 in east central division which corresponds to near normal. In the west central division 2.50 inches of precipitation would be needed to bring the conditions back to near normal. The long-term average during April in the area is only 1.84 inches.

CURRENT COUNTY DECLARATIONS – State and Federal

On April 7, 2011 county drought stage declarations were issued by the Governor. County drought stages remain in effect until revised or rescinded by executive order.

Counties under the state drought warning include: Finney, Grant, Gray, Greeley, Gove, Hamilton, Haskell, Kearny, Lane, Logan, Meade, Morton, Ness, Scott, Seward, Stanton, Stevens, Trego, Wallace and Wichita. The state drought watch includes the counties of Barton, Cheyenne, Clark, Cloud, Decatur, Ellis, Ellsworth, Ford, Graham, Hodgeman, Jewel, Lincoln, Mitchell, Norton, Osborne, Ottawa, Pawnee, Phillips, Rawlins, Republic, Rooks, Rush, Russell, Sherman, Sheridan, Smith and Thomas.

As of April 11, the Governor has issued a state of disaster emergency due to fires in Ellsworth (4/10/11), Haskell (4/8/11), Saline (4/10/11), Stanton (3/22/11), and Stevens (4/8/11) counties.

A state receives primary (federal) disaster declaration when the principal disaster occurs within the state. Counties within Kansas and counties in bordering states that are adjacent to them are identified as "contiguous." Up-to-date information regarding designated counties and assistance available due to these declarations is available through the Federal Emergency Management Agency (FEMA). Assistance is available for varying periods of time after the disaster designation is affirmed. Disaster designations will be dropped from this list as the relief period ends. For additional information regarding these USDA designations, please see: <http://www.fema.gov/dhsusda/index.jsp>.

Presidential major disaster declarations affecting Kansas:

Presidential Major Disaster Declarations in Kansas					
FEMA Disaster ID	Cause	Date	Kansas Centered	Adjoining State Where Disaster is Centered (Kansas Counties affected)	Termination Date
M1961	SWS, S	01/31/2011	No	Missouri (AT, BB, CK, CR, DP, JO, LV, LN, MI, WY)	11/23/2011
M1945	SS, T, F, SL	09/13/10-09/14/10	No	Nebraska (BR, DP, MS, NM)	06/21/2011
M1934	SS, T, F	6/12/10-7/31/10	No	Missouri (AT, DP, JO, MI, WY)	4/18/2011
M1932	SS, T, F	6/7/10-7/21/10	Yes	45 Primary KS Counties, 27 Contiguous	4/11/2011

SWS: severe winter storm; SS: severe storm; T: tornado; F: flood; S: snowstorm; IJ: ice jams; Straight-line Winds: SL

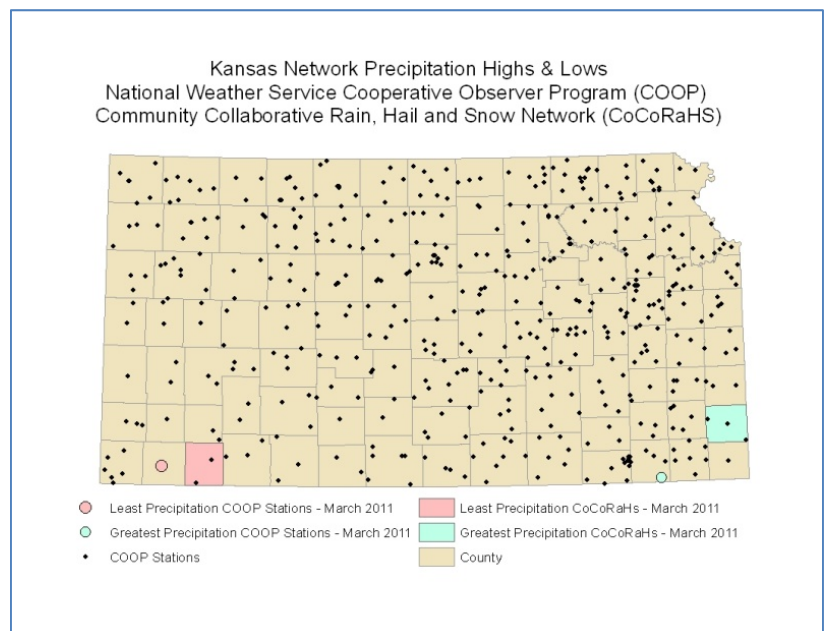
U.S. Secretary of Agriculture Tom Vilsack has made the following Primary Natural Disaster Area designations in Kansas:

Secretarial Major Disaster Declarations in Kansas					
FEMA Disaster ID	Cause	Date	Kansas Centered	Adjoining State Where Disaster is Centered (Kansas Counties affected)	Termination Date
S3098	R, Heat, D	4/23/10-11/01/10	Yes	4 Primary KS Counties, 13 Contiguous	09/26/2011
S3080	D, Heat, W	11/1/09-10-31-10	No	Oklahoma (BA, CA, CM, HP, MT)	08/29/2011
S3061	D, Heat	6/27/10-9/11/10	Yes	1 Primary KS County (RO), 6 Contiguous	7/26/2011
S3054	D	5/01/10 - 9/30/10	No	Missouri (LN, MI)	07/12/2011
S3050	W, H, R, FF	7/10/10 - 7/12/10	Yes	2 Primary KS Counties, 9 Contiguous	07/05/2011
S3041	SS, H, T	6/21/10 - 6/21/10	No	Colorado (CN)	05/31/2011
S3030	R, F, W, H	5/06/10-6/20/10	Yes	2 Primary KS Counties, 8 Contiguous	05/09/2011
S3020	R, FF, F, W	2/1/10-7/15/10	No	Missouri (AT, BB, CR, DP, JO, LV, LN, MI, WY)	4/20/2011
S3019	R, W, H, F, L, T	5/6/10-6/20/10	Yes	9 Primary KS Counties, 25 Contiguous	4/20/2011

SS: severe storm; R: excessive rainfall; FF: flash flooding; F: flooding; W: wind; H: hail; L: lightning; T: tornados; D: drought; FR: frost

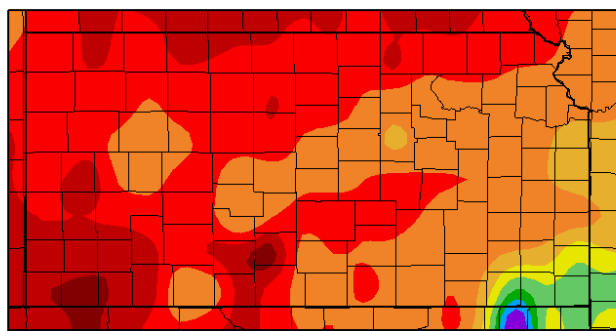
March Precipitation and Climate Conditions

March ranks as the 49th driest on record (1895-2010) in Kansas with a statewide average total precipitation of 1.12 inches. This is 38 percent of normal. Based on preliminary reports, the greatest total precipitation received in March from the National Weather Service COOP network stations was 7.43 inches at Coffeyville, Montgomery County. Greatest for the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) in March was 4.32 inches at McCune, Crawford County. On the low end of the NWS reporting stations was Hugoton, Stevens County, with just 0.02 inches. For the CoCoRaHS network, the lowest was recorded at Moscow 9.7 ESE, in Seward County, with 0.13 inches of precipitation. (2)



The maps below show total precipitation received and the percent of normal across the state in March. These and others are available at the [High Plains Regional Climate Center](http://www.hprcc.org).

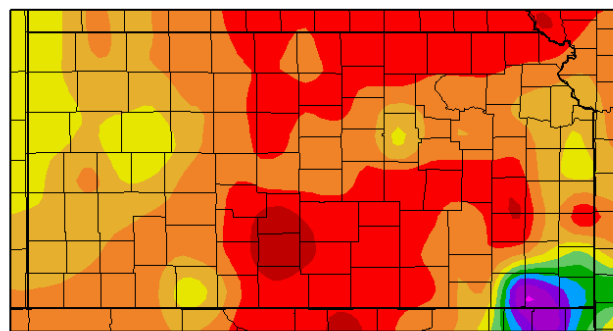
Precipitation (in)
3/1/2011 - 3/31/2011



Generated 4/1/2011 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Precipitation (in)
3/1/2011 - 3/31/2011



Generated 4/1/2011 at HPRCC using provisional data.

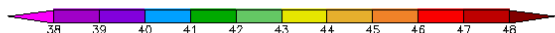
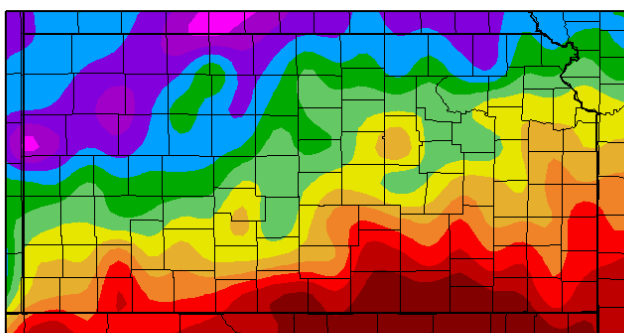
Regional Climate Centers

The statewide average temperature of 43.0 °F was 0.5 degrees above normal. This was the 49th warmest March of record (1895-2010) for Kansas. March 1910 was the warmest with a statewide average temperature of 54.7 °F. March 1912 was the coldest with a statewide average temperature of just 30.8 °F.

Average monthly temperatures at individual reporting locations ranged from 48.2 °F at Wellington (Sumner County) to 37.8 °F at Oakley 4W (Logan County). The highest temperature recorded in Kansas during the month was 87 °F at several locations March 20-22. The coolest reading observed in the state during March was 9 °F at Tribune 14N (Greeley County) on the 9th. Tribune 1W (Greeley County) saw the greatest temperature range going from 11 °F on the 9th to 86 °F on the 22nd, for a 79 degree swing.

The following maps show average monthly temperature and the departure from normal across Kansas during March 2011.

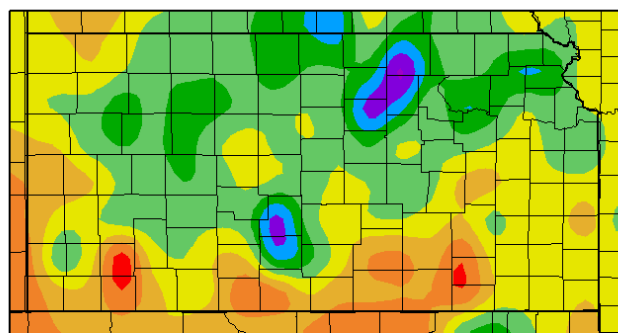
Temperature (F)
3/1/2011 - 3/31/2011



Generated 4/1/2011 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Temperature (F)
3/1/2011 - 3/31/2011



Generated 4/1/2011 at HPRCC using provisional data.

Regional Climate Centers

Table 1 summarizes March temperature and precipitation conditions by climate division while Appendix A provides a summary for principal reporting locations within and adjacent to Kansas. Please note that the data used in compiling Table 1 and Appendix A is preliminary and comes from different sources. This may result in slight differences in the average or extreme values presented.

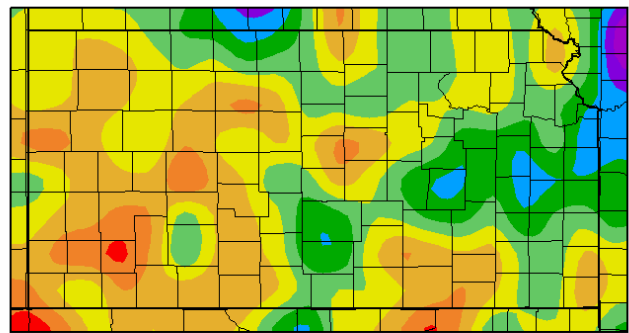
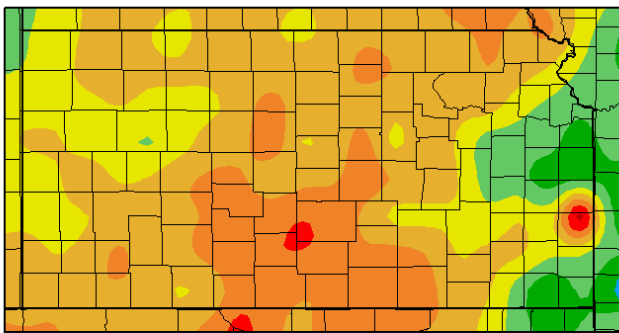
Table 1 March 2011 Kansas Climate Division Summary										
Division	Precipitation (inches)						Temperature (°F)			
	March 2011			2011 through March 31			Average	Dep. ¹	Monthly Extremes	
	Total	Dep. ¹	% Norm	Total	Dep. ¹	% Norm			Highest	Lowest
Northwest	0.37	-1.02	27	0.96	-1.24	44	39.4	0.2	85	9
West Central	0.69	-0.62	51	1.33	-0.88	59	40.0	-0.6	87	12
Southwest	0.40	-0.85	30	0.81	-1.32	36	44.3	1.0	87	13
North Central	0.52	-1.52	25	2.03	-1.19	63	41.3	-0.1	85	4
Central	0.91	-1.25	42	2.10	-1.48	58	43.1	0.1	86	13
South Central							46.6	2.0	87	11
Northeast	0.69	-1.45	30	1.62	-2.08	41				
East Central	0.83	-1.49	35	2.86	-1.19	69	42.3	0.0	85	10
Southeast	1.05	-1.57	40	3.29	-1.34	72	43.5	0.5	84	17
STATE	0.85	-1.17	38	2.16	-1.30	57	43.0	0.5	87	19

1. Departure from 1971-2000 normal value
2. State Highest temperature of 87 °F at several locations between the 20th and 22nd.
3. State Lowest temperature of 4 °F at Tribune 14N (Greeley County) on the 9th.
4. Greatest 24hr rainfall: 1.77 inches at Burlington 0.9NNE (CoCoRaHS) on the 19th.
Source: KSU Weather Data Library <http://www.ksre.k-state.edu/wdl/>

Longer-Term Precipitation Trends - The following two maps show the percentage of normal precipitation received across Kansas during the past three months (January 2011 – March 2011) and during the past 12 months (April 2010 – March 2011).

Departure from Normal Precipitation (in)
1/1/2011 – 3/31/2011

Departure from Normal Precipitation (in)
4/1/2010 – 3/31/2011



Generated 4/1/2011 at HPRCC using provisional data.

Regional Climate Centers Generated 4/1/2011 at HPRCC using provisional data.

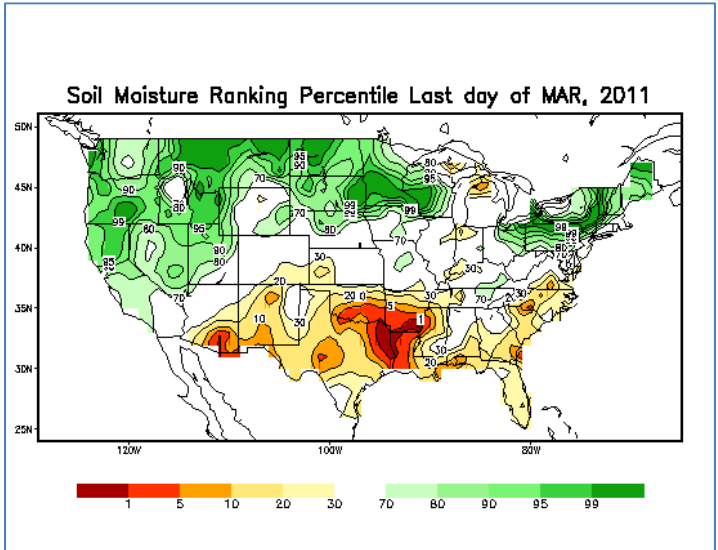
Regional Climate Centers

Radar-based [precipitation estimate maps](#) covering multiple time periods are available from the National Weather Service. These maps are updated daily. Monthly and annual individual county [precipitation data](#) is available from the Weather Data Library at Kansas State University.

DROUGHT IMPACTS AND RESPONSE

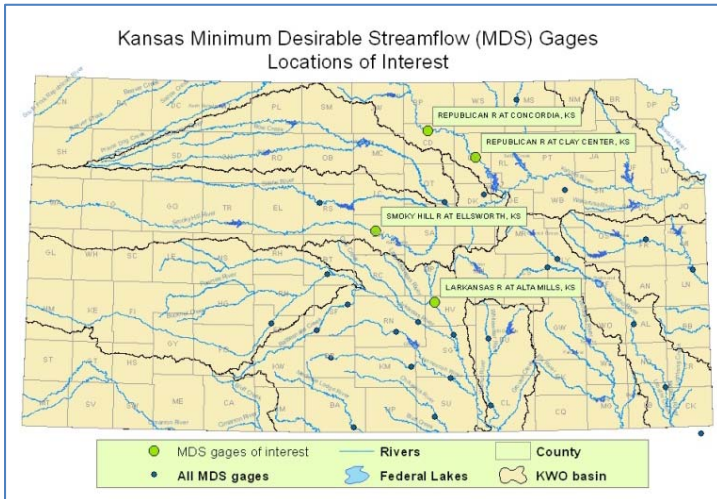
Agriculture

For the month of March 2011, topsoil moisture supplies statewide were 17 percent very short, 21 percent short, 53 percent adequate, and nine percent surplus as of March 24. Topsoil moisture ratings continued to vary widely between eastern areas which are mostly adequate to surplus and western areas which are mostly short to very short. For more detailed crop information please see the Kansas Department of Agriculture weekly reports. Range and pasture condition was rated at 10 percent very poor, 19 percent poor, 38 percent fair, 31 percent good, and two percent excellent.(3) The Climate Prediction Center at NOAA, provides a national ranking of soil moisture. The figure at the right indicates March soil moisture in parts of western Kansas was in the 10-30 percentiles. Soil moisture percentile of 11-20 is one indicator of possible moderate drought conditions.



Kansas Streamflow and Reservoir Levels

No streams were under Minimum Desirable Streamflow (MDS) administration at the end of March, in fact flows were above MDS at gages of interest on March 30. The table below provides a comparison of these flows and corresponding MDS information.



Stream Flows			
Gaging Station	March 30 th Flow	Mar MDS	Apr MDS
Republican River at Concordia	739	150	150
Republican River at Clay Center	872	200	250
Little Arkansas River at Alta Mills	11	8	8

Table 2 summarizes federal reservoir pool elevations as of February 28 in terms of departure from the top of the conservation/multipurpose pool and pool elevation changes since the beginning of February. (5)

Reservoir	Top MP/C Pool ¹	Pool Elevation (Feet MSL)		End of Period	
		2/28/2011	4/1/2011	Departure from Top Beginning of Month ²	Change from Beginning of February
Kansas River Basin					
Norton ³	2304.3	2297.36	2297.6	-6.94	-0.24
Harlan County, NE	1946	1946.89	1946.73	0.89	0.16
Lovewell ³	1582.6	1580.56	1581.04	-2.04	-0.48
Milford ³	1144.4	1143.66	1144.54	-0.74	-0.88
Cedar Bluff	2144	2129.36	2129.4	-14.64	-0.04
Kanopolis ³	1463	1464.04	1464.43	1.04	-0.39

Table 2 Kansas Federal Reservoirs End-of-Month Pool Elevation Summary					
		Pool Elevation (Feet MSL)		End of Period	
Reservoir	Top MP/C Pool ¹	2/28/2011	4/1/2011	Departure from Top Beginning of Month ²	Change from Beginning of February
Wilson ³	1516	1515.58	1515.84	-0.42	-0.26
Webster ³	1892.5	1889.95	1890.64	-2.55	-0.69
Kirwin ³	1729.3	1729.51	1729.48	0.21	0.03
Waconda ³	1455.6	1453.15	1452.01	-2.45	1.14
Tuttle Creek ³	1075	1073.16	1072.89	-1.84	0.27
Perry ³	891.5	890.62	890.01	-0.88	0.61
Clinton ³	875.5	875.55	875.28	0.05	0.27
Pomona ³	974	1035.61	1034.74	-0.39	0.87
Melvern ³	1036	973.89	973.03	-0.11	0.86
Hillsdale ³	917	917	916.69	0.00	0.31
Arkansas River Basin					
Cheney	1421.6	1421.89	1421.63	0.29	0.26
El Dorado	1339	1338.02	1338.44	-0.98	-0.42
Toronto ³	901.5	899.79	899.76	-1.71	0.03
Fall River ³	948.5	948.52	949.05	0.02	-0.53
Elk City ³	796	795.08	794.4	-0.92	0.68
Big Hill	858	857.68	858.17	-0.32	-0.49
Council Grove ³	1274	1272.68	1272.49	-1.32	0.19
Marion ³	1350.5	1349.09	1349.18	-1.41	-0.09
John Redmond ³	1039	1039.93	1037.77	0.93	2.16
<p>1. Elevations listed are the multi-purpose/conservation pool level. All figures are in comparison to this level, not the seasonal pool operation levels that are in effect at numerous reservoirs. El Dorado has a seasonal pool level.</p> <p>2. All values are in feet. Negative (-) numbers indicate feet below top. Source: U.S. Army Corps of Engineers</p> <p>3. Lake level management plan in place</p>					

Public Water Systems

No drought-related public water system impacts are currently being reported. (6)

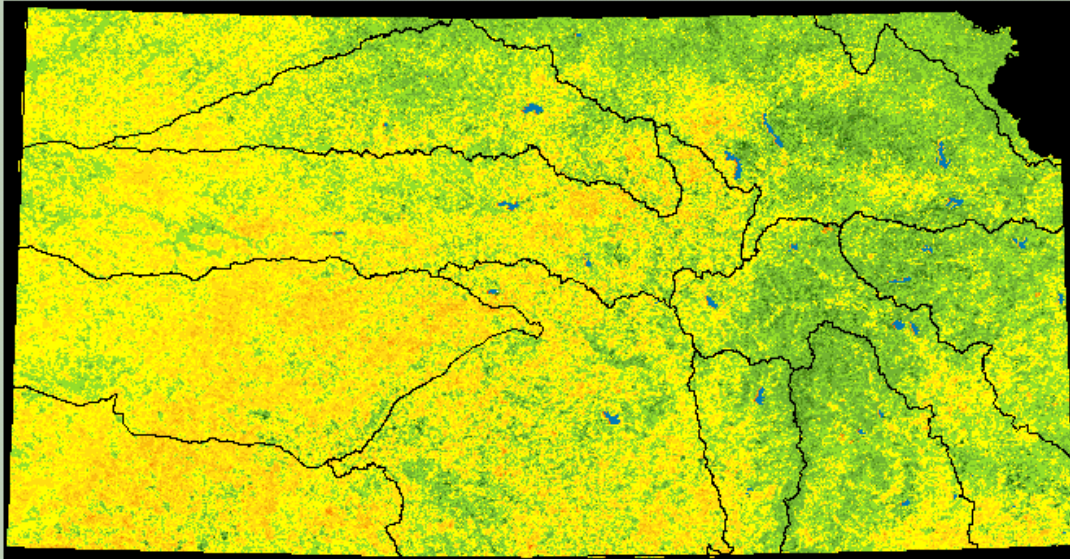
Vegetation Conditions

The Kansas Vegetation Condition Index Map, included in the Green Report, illustrates vegetation health and levels of plant stress based on current and historic vegetation greenness and surface temperatures. (7)

At the end of March, vegetation in many western counties is indicative of the drought warning stage. Yellow areas on the map for period 14 are places to monitor if conditions continue to be dry. Some areas in the central part of the state are doing well, but vegetation in several counties in the southeast are also indicative of a watch stage.

According to the [USDA Crop Progress and Condition](#) report for Kansas, the condition of the winter wheat April 3 was 13 percent very poor, 21 percent poor, 35 percent fair, 27 percent good and four percent excellent. Appendix B provides a comparison of vegetative conditions from March 2010 to March 2011.

Kansas Vegetation Condition Map

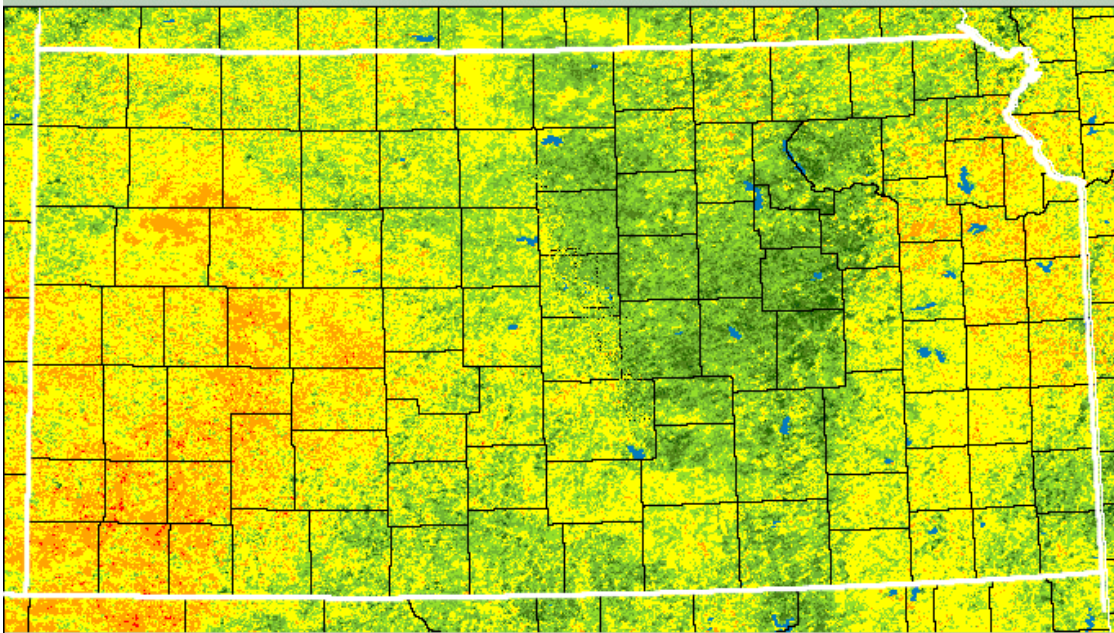


Kansas Water Office

KARS

Kansas Applied Remote Sensing Program

Kansas Vegetation Condition Map



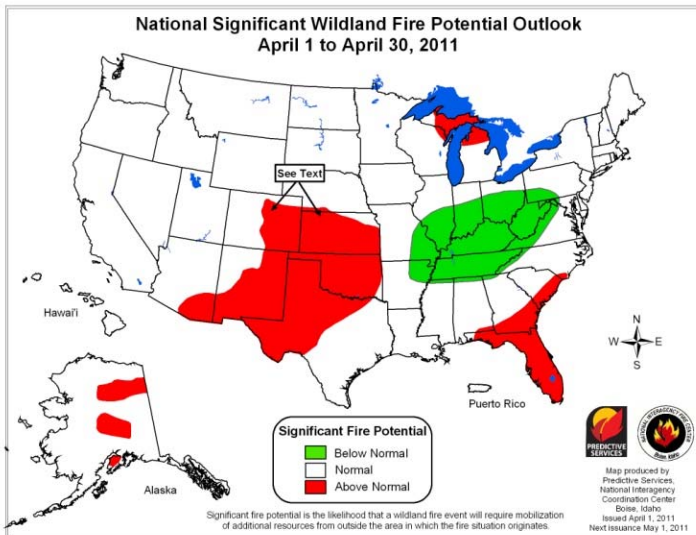
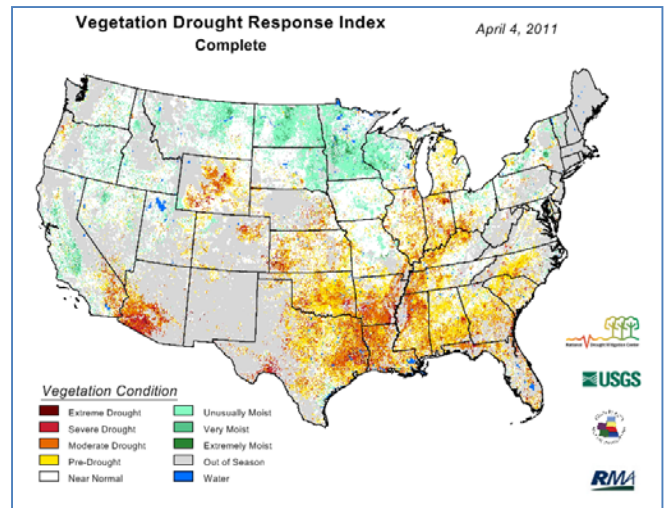
Kansas Water Office

KARS

Kansas Applied Remote Sensing Program



The Vegetation Drought Response Index ([VegDRI](#)) indicates vegetation conditions across the nation for a comparison with surrounding states as of April 4, 2011. Generally, the growing season has started across the Great Plains region. Because of predominantly drier condition, the pre-drought to moderate drought conditions were observed over eastern Nebraska and most parts of Kansas. Moderate to severe drought conditions persisted over Oklahoma and most parts of Texas. Parts of Kansas are reported as out of season (gray). See Appendix B for larger map of Kansas conditions.



Wildfire

Wildfires were reported in late March and into April with the availability of dry fuel for burning. The more significant fires include a wildfire in Stanton County on March 22 that burned an estimated 60 square miles (38,400 acres), threatening Johnson City and the City of Manter. Near Satanta, a grass fire burned 9,600 acres in Haskell and Stevens counties on April 3. A large wildfire in Ellsworth County burned several thousand acres and threatened the communities of Bavaria and Brooksville in Saline County on April 10. Grass fires also burned approximately 6,000 acres in Reno County on April 10.

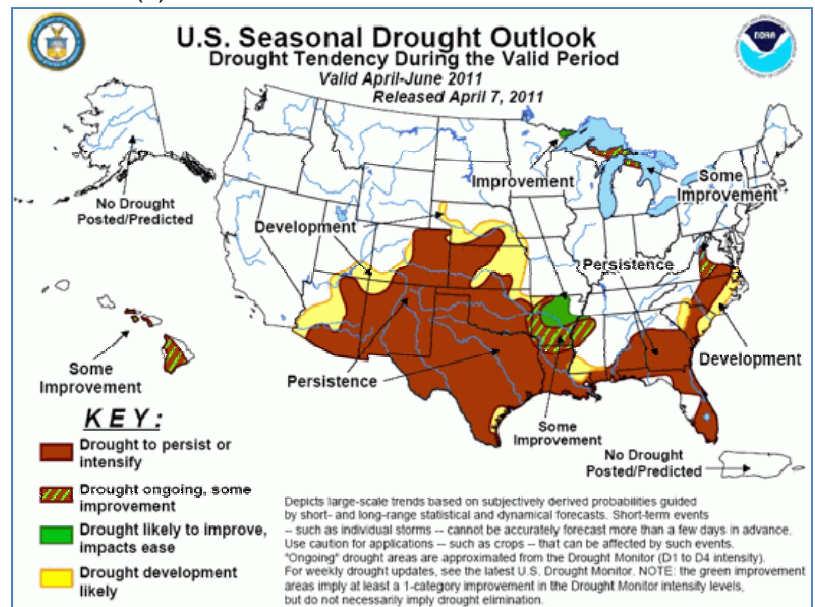
Kansas Division of Emergency Management recommends Kansans closely monitor weather conditions, check the fire danger index and use appropriate fire precautions to prevent additional grass fires.

The [Wildland Fire Outlook](#) issued by the National Interagency Fire Center on April 1, foresees **above normal significant wildfire potential across most of Kansas during April 2011**. The forecast for the period of May to July period is above normal wildfire potential in the southwestern corner of the state. (8)

LOOKING AHEAD

The Seasonal Drought Outlook http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html was released by the NOAA Climate Prediction Center April 7, 2011 (9)

According to the Climate Prediction Center, the south-central Plains conditions continue to deteriorate. During the past three months precipitation deficits of 30-90 mm accumulated in Kansas. **Drought is predicted to persist or intensify in western and north central Kansas while the southeast area of drought remains similar to the past month. The outlook for spring includes likely drought development over the remaining areas of the state.**



ADDITIONAL INFORMATION

The Kansas Climate Summary and Drought Report is compiled each month by the Kansas Water Office from various federal, state, local and academic sources. Some of the data is preliminary and subject to change once final data is available. The Kansas Water Office web site, [KWO Drought](#), contains additional drought information including links to other agencies with drought information and past issues of the Kansas Climate Summary and Drought Report. Kansas State Climatologist, Mary Knapp, is the primary source of the narrative on each month's weather. She works closely with meteorologists throughout the state and region. Details of current conditions at Evapotranspiration (ET) and Mesonet sites across Kansas are available at <http://www.ksre.k-state.edu/wdl/>.

RESOURCES

1. The [U.S. Drought Monitor](#), from the national Drought Mitigation Center at the University of Nebraska-Lincoln, provides a “big picture” perspective of conditions across the nation. In the Kansas county drought stage scheme, a Drought Watch equates roughly to moderate drought in the U.S. Drought Monitor, while a Drought Warning is the equivalent of severe drought. A Drought Emergency is reserved for extreme or exceptional drought.

2. The National Weather Service (NWS) Cooperative Observer Program (COOP) is the Nation's weather and climate observing network made up of observers that send monthly reports of daily temperatures and precipitation to the NWS. <http://www.nws.noaa.gov/om/coop/wfo-rfcmap.htm>

CoCoRaHS is a community-based network of volunteers that measure and map precipitation (rain, hail and snow). Locations and daily precipitation observed through the CoCoRaHS system can be seen at <http://www.cocorahs.org/state.aspx?state=ks>

3. The [Kansas Crop Progress and Condition Report](#) is updated weekly by USDA during the growing season and monthly during the winter. The weekly report is found at http://www.nass.usda.gov/Statistics_by_State/Kansas/Publications/Crop_Progress_and_Condition.

4. The U.S. Geological Survey [Drought Watch](#) provides information on 7-day average streamflow measured at long-term gaging stations and compares them to normal flows.

5. The water levels of the federal lakes fluctuate during a year according to the management plan. [Lake level management](#) plans are posted on the Kansas Water Office web site www.kwo.org.

6. [Responding to Drought: A Guide for City, County and Water System Officials](#) provides an overview of Kansas county drought stage declarations, local planning and coordination, disaster declarations, and available state and federal assistance. [The 2007 Municipal Water Conservation Plan Guidelines](#) and the [Drought Vulnerability Assessment Report](#), both by Kansas Water Office, provide guidance regarding drought preparedness and response.

7. The Kansas Applied Remote Sensing Program (KARS) at the University of Kansas produces a [Kansas Green Report](#) each week during the growing season. For a full set of national and regional **GreenReport®** maps, go to: <http://www.kars.ku.edu/products/greenreport/greenreport.shtml>

The Vegetation Drought Response Index ([VegDRI](#)) by the National Drought Mitigation Center provides another perspective on vegetation conditions across the nation. VegDRI updated bi-weekly, attempts to isolate the impact of drought or other moisture conditions that influence vegetation condition.

8. The [Wildland Fire Outlook](#) is issued by the National Interagency Fire Center.

The National Weather Service (NWS) provides fire weather products and services for Kansas that include the Rangeland Fire Danger Index, Fire Weather Forecasts, Red Flag Watches/Warnings, and Spot Forecasts. The five NWS offices that serve Kansas websites may be accessed from the [NWS Offices' page](#).

[Fire weather](#) links also are available from the Weather Data Library at Kansas State University, as are prescribed burning guidance publications.

9. The [Seasonal Drought Outlook](#), developed by the NOAA Climate Prediction Center (NOAA CPC), assesses the likelihood for improvement, persistence or deterioration in drought conditions for areas currently experiencing drought as identified by the U.S. Drought Monitor.

Please contact Diane Coe at the Kansas Water Office (785) 296-3185 or diane.coe@kwo.ks.gov should you have any questions or suggestions.

**Appendix A
March 2011
Kansas Regional Climate Summary**

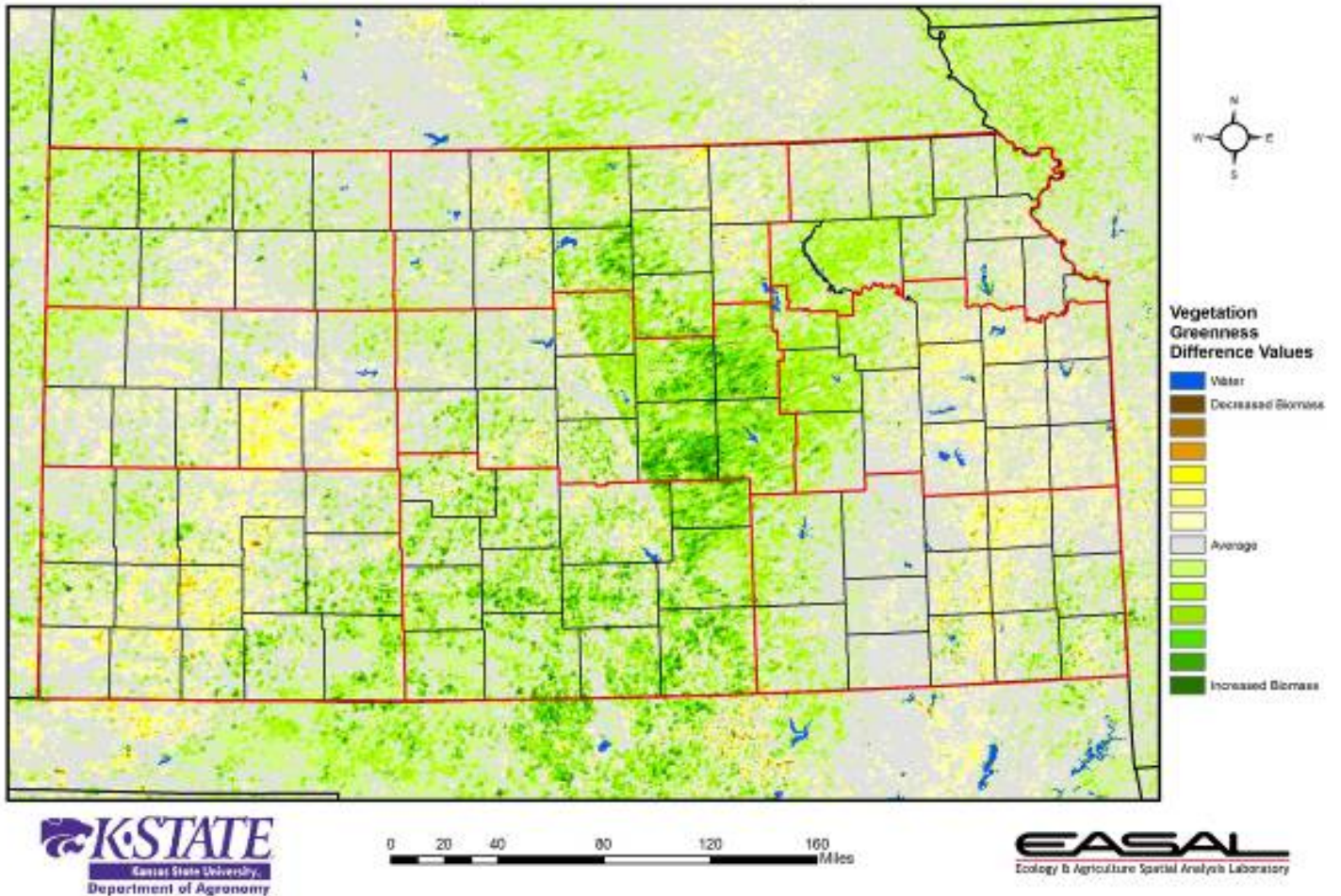
Station	Precipitation (inches)			Temperature (Degrees Fahrenheit)			
	Total	Departure	Percent Normal	Mean	Departure	Extreme (Date)	
						Highest	Lowest
West							
Burlington, CO	0.68	-0.37	65%	40.2	1.6	84 (21)	10 (9,8)
Dodge City	0.73	-1.11	40%	44.3	0.0	83 (20)	17 (5)
Garden City	0.56	-1.06	35%	43.3	-0.4	83 (16)	13 (5)
Goodland	0.81	-0.39	68%	39.9	0.1	84 (21)	10 (9)
Guymon, OK	0.05	-1.05	5%	48.1	2.2	86 (21,16)	20 (3)
Hill City	0.65	-1.22	35%	42.0	1.3	85 (21)	15 (5,2)
Lamar, CO	0.04			43.7		86 (21)	13 (5)
McCook, NE	0.42	-0.99	30%	40.6	0.6	79 (16)	10 (9)
Springfield, CO	0.20			44.1		83 (16)	14 (5)
Central							
Concordia	0.80	-1.55	34%	42.7	0.2	83 (20)	14 (5)
Hebron, NE				41.7	2.6	81 (22)	13 (5)
Medicine Lodge	0.94	-1.56	38%	48.0	3.1	87 (20)	21 (5)
Ponca City, OK	1.61			50.7	1.5	85 (22,17)	23 (5)
Salina	1.35	-1.27	52%	44.2	-0.8	83 (22,20)	17 (5)
Wichita (ICT)	0.97	-1.74	36%	48.0	2.1	85 (22)	21 (5)
East							
Bartlesville, OK	3.25	-0.18	95%	49.5	-1.5	87 (17)	20 (6)
Chanute	2.40	-1.07	69%	47.3	0.7	83 (17)	21 (6)
Fall City, NE	0.60	-1.85	24%	41.6	0.5	83 (22)	17 (5,2)
Johnson Co. Exec. Apt	1.58	-1.16	58%	44.0	-1.4	79 (21)	21 (6)
Joplin, MO	5.18	1.56	143%	48.5	0.3	80 (20)	23 (6)
Kansas City (MCI), MO	1.95	-0.49	80%	43.5	-0.3	81 (21)	18 (6)
St. Joseph, MO	1.13	-1.23	48%	42.7	-0.8	81 (21,20)	17 (6)
Topeka (TOP)	1.81	-0.75	71%	44.9	0.7	83 (20)	21 (5)

1. Airport Automated Observation Stations (NWS/FAA)
2. Departure from 1971-2000 normal value
T - Trace; M - Missing; --- no normal value from which to calculate departure or percent of normal Source:
National Weather Service F-6 Climate Summaries

Appendix B

Kansas Vegetation Condition Comparison

Late-March 2011 compared to the 22-Year Average for Late-March



Compared to the 22-year average at this time for Kansas, this year's Vegetation Condition Report for March 22 – April 4 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows that photosynthetic activity in West Central Kansas as well as along the Flint Hills is below average for the period. In the western areas, continue dry conditions coupled with above normal temperatures stressed the vegetation. In the eastern areas, clouds and cooler temperatures slowed development.