

KANSAS CLIMATE SUMMARY AND DROUGHT REPORT

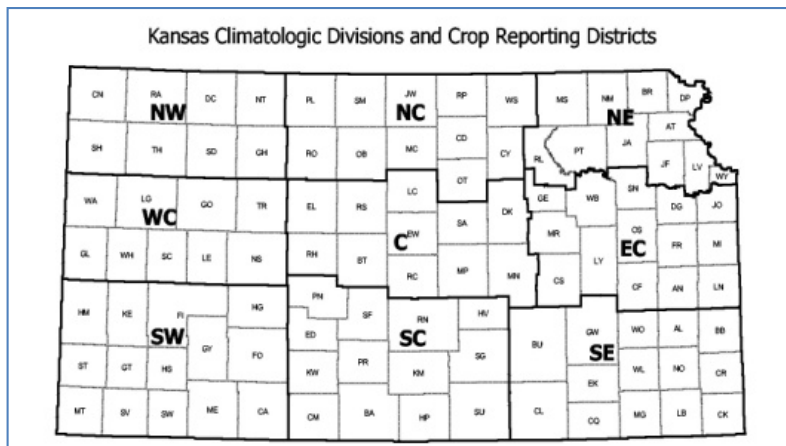
Current Conditions, Drought Impacts and Outlook

February 2011

February Sees Some Moisture – Drought Conditions Persist

Drought conditions persisted in many parts of Kansas in February. Drought conditions remained similar to January conditions with most of **western Kansas in moderate drought and a portion of west central Kansas now considered to be in extreme drought** according to the U.S. Drought Monitor. Moderate drought conditions also occurred in much of southeastern and east central parts of Kansas. The percentage of the state in abnormally dry to moderate drought conditions has decreased to 79.52 % from the 82.5 % in January.

Preliminary statewide average precipitation was 0.79 inches, which was 89% of normal. None of the western divisions averaged as much as half an inch. The West Central division fared best of the western divisions, with an average of only 0.35 inches. In addition, much of the moisture occurred in just two storms. The Central divisions fell in the middle range. However, South Central Kansas saw only 64% of their normal precipitation, despite having record snows in many locations. The eastern three divisions were all above average, with the East Central division having the greatest at 163% of normal. Multiple systems, with heavy rains contributed to that pattern. The Southeast averaged the greatest amount at 1.96 inches, but this translates to 149% of the normal precipitation. Only 4 days saw no location in the state report measurable precipitation, and on an additional 12 days the state-wide average was zero, with only isolated reports of moisture.



February was a wild month with wide temperature swings, and major snowstorms. The state-wide average temperature was much cooler than normal, average four degrees cooler than normal, and placing it at the 23rd coolest February on record. Temperatures in Western KS topped 80 °F, with the warmest reading being 85 °F at Liberal. Daily record highs were set at 61 locations, and tied at 13 others. Tuttle Creek Lake saw an all-time high temperature for February, with 81 °F, set on the 18th. On the other hand, 131 locations set record low maximum temperatures and 19 tied records. Two locations set record low daily minimum temperatures. Medicine Lodge set an all-time record low for February with a -17 °F, on the 10th. Again, state-wide monthly average temperatures were only -4.0 °F cooler than normal, with the warmest areas in the Southwest with a departure of -2.7 °F. The coolest division was the Northwest division, which averaged 5.3 °F below normal.

With the above average precipitation, the latest Drought Monitor decrease expanded the area of abnormally dry and moderate drought conditions. This decrease is seen exclusively in the eastern third of the state. This leaves only a narrow band from South Central KS through Northeastern KS 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 summer.

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 March 1st map indicates only a very narrow band of near normal bisecting the state from South Central KS to Northeastern KS and a portion of East Central KS is near normal. A reduced drought area is now depicted on the map, with only abnormally dry conditions.

U.S. Drought Monitor

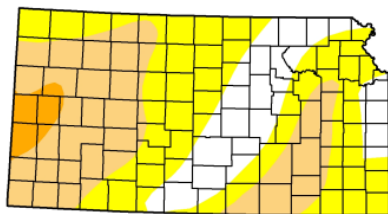
March 1, 2011

Valid 7 a.m. EST

Kansas

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	20.48	79.52	37.80	3.55	0.00	0.00
Last Week (02/22/2011 map)	17.50	82.50	43.85	3.48	0.00	0.00
3 Months Ago (11/30/2010 map)	52.66	47.35	20.06	0.00	0.00	0.00
Start of Calendar Year (12/28/2010 map)	17.82	82.18	43.85	3.48	0.00	0.00
Start of Water Year (09/25/2010 map)	83.23	16.77	0.00	0.00	0.00	0.00
One Year Ago (02/23/2010 map)	100.00	0.00	0.00	0.00	0.00	0.00



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

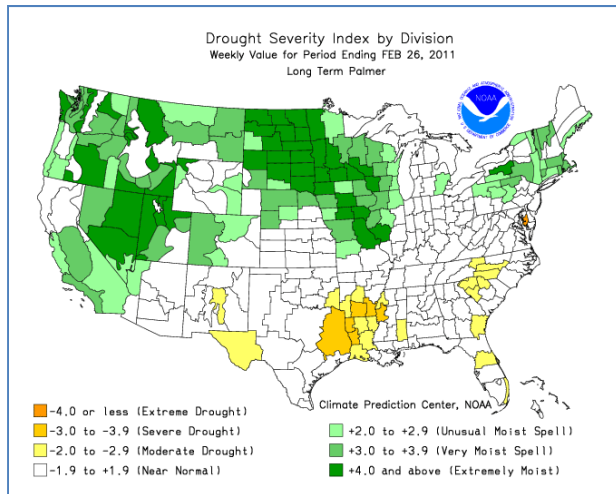
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

<http://drought.unl.edu/dm>



Released Thursday, March 3, 2011
L. Edwards, Western Regional Climate Center

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 March 1st, 3.55% of the state was considered to be in severe drought, 34.25% moderate and 41.72% 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 March 5th was 0.13 (near normal). Divisional PDSI values ranged from -1.81, which translates to moderate drought, in the West Central division to 1.92 in East Central division which corresponds to the wet side of near normal. In the West Central division 1.88 inches of precipitation would be needed to bring the conditions back to near normal. The long-term average for March in the area is only 1.71 inches.

CURRENT COUNTY DECLARATIONS

No county drought stage declarations issued by the Governor are in effect as of March 17, 2011.

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
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
M1926	SS,SL,T,F	6/13/10-6/15/10	No	Oklahoma (CA, ME,MT, SW, SV)	3/28/11
M1924	SS, F, T	6/01/10- NA	No	Nebraska (BR, DP, JW, NM, NT, PL, RP, SM)	3/15/11

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

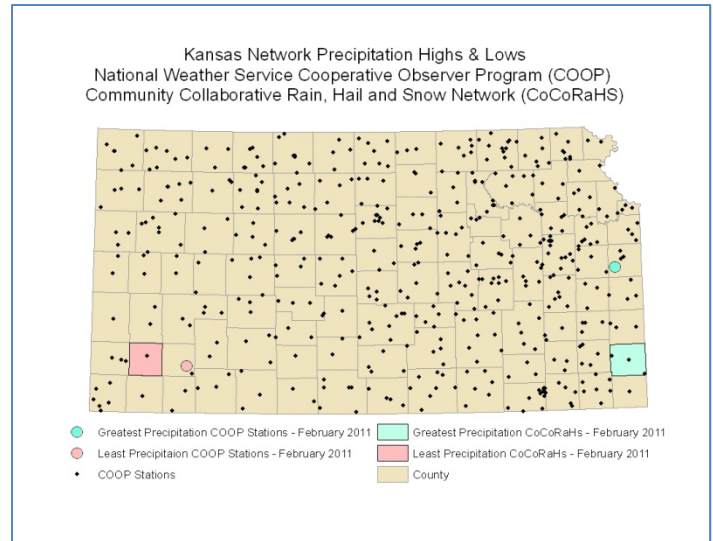
S3050	W, H, R, FF	7/10/10 – 7/12/10	Yes	2 Primary KS Counties, 9 Contiguous	07/05/2011
S3041	SS,H, T	6/21/10 - 6/21/10	No	Colorado (CN)	05/31/2011
S3030	R, F, W, H	5/06/10-6/20/10	Yes	2 Primary KS Counties, 8 Contiguous	05/09/2011
S3020	R, FF, F, W	2/1/10-7/15/10	No	Missouri (AT, BB, CR, DP , JO, LV, 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

February Precipitation and Climate Conditions

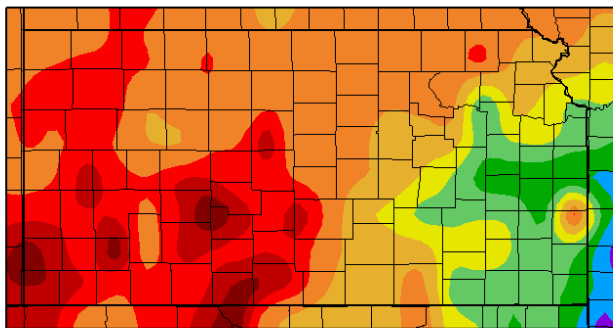
February ranks as the 55th driest on record (1895-2010) in Kansas with a statewide average total precipitation of 0.79 inches. This is 78 percent of normal. Based on preliminary reports, the greatest total precipitation received in February from the National Weather Service COOP network stations was 5.60 inches at Osawatomie, Miami County. Greatest for the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) in February was 4.84 inches at McCune, Crawford County. On the low end of the NWS reporting stations was Sublette, Haskell County, with just 0.02 inches. For the CoCoRaHS network, the lowest was recorded at Ulysses 0.3 SE, in Grant County, with zero precipitation.

(2)



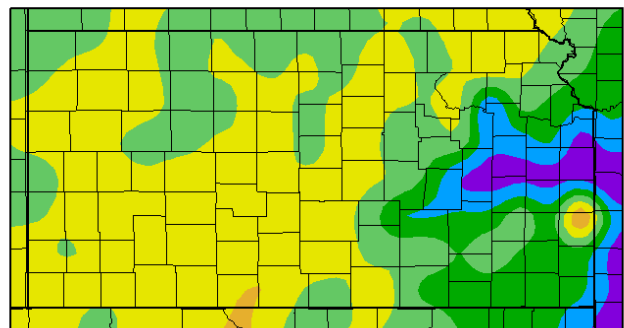
The maps below show total precipitation received and the percent of normal across the state in February are shown below. These and others are available at the [High Plains Regional Climate Center](#).

Precipitation (in)
2/1/2011 – 2/28/2011



Generated 3/5/2011 at HPRCC using provisional data. Regional Climate Centers

Departure from Normal Precipitation (in)
2/1/2011 – 2/28/2011



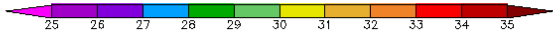
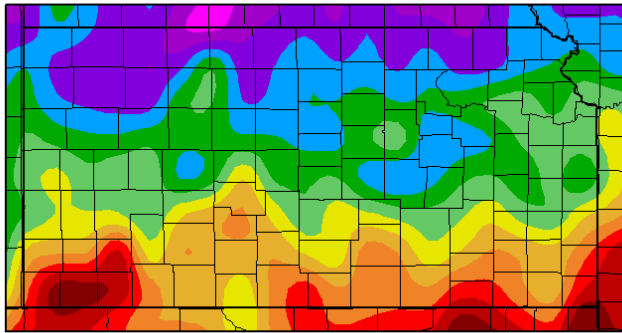
Generated 3/5/2011 at HPRCC using provisional data. Regional Climate Centers

The statewide average temperature of 29.1 °F was 4.0 degrees below normal. This was the 23rd coldest February of record (1895-2010) for Kansas. February 1954 was the warmest with a statewide average temperature of 45.1 °F. February 1889 was the coldest with a statewide average temperature of just 18.4 °F.

Average monthly temperatures at individual reporting locations ranged from 36.9 °F at Hugoton (Stevens County) to 22.5 °F at Plainville (Rooks County). The highest temperature recorded in Kansas during February was 85 °F at Liberal (Seward County) on the 17th. The coolest reading observed in the state during February was -26 °F at Mound Valley (Labette County) on the 10th. Ashland (Clark County) saw the greatest temperature range going from -20 °F on the 10th to 84 °F on the 18th, for a 104 degree swing.

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

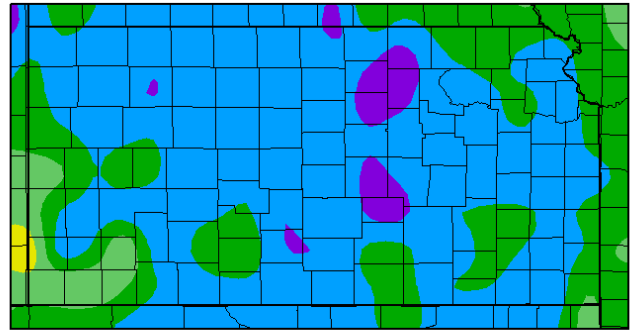
Temperature (F)
2/1/2011 – 2/28/2011



Generated 3/5/2011 at HPRDC using provisional data.

Regional Climate Centers

Departure from Normal Temperature (F)
2/1/2011 – 2/28/2011



Generated 3/5/2011 at HPRDC using provisional data.

Regional Climate Centers

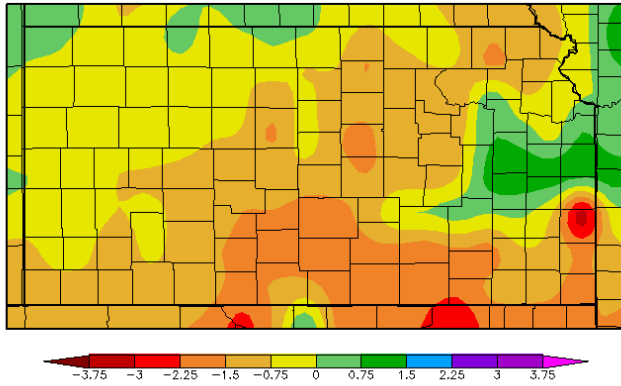
Table 1 summarizes February temperature and precipitation conditions by climate division while Appendix A provides a November summary for principal reporting locations within and adjacent to Kansas. Please note that the data used in compiling Table 1 and Appendix A is preliminary and comes from different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

Division	Precipitation (inches)						Temperature (°F)			
	February 2011			2011 through January 31			Average	Dep. ¹	Monthly Extremes	
	Total	Dep. ¹	% Norm	Total	Dep. ¹	% Norm			Highest	Lowest
Northwest	0.24	-0.18	58	0.59	-0.22	74	26.4	-5.3	79	-13
West Central	0.35	-0.13	68	0.65	-0.24	71	28.8	-4.2	79	-18
Southwest	0.23	-0.27	45	0.41	-0.47	45	32.4	-2.7	85	-20
North Central	0.56	-0.09	87	1.49	0.31	126	26.9	-4.2	75	-12
Central	0.65	-0.15	81	1.19	-0.23	84	28.1	-4.7	77	-20
South Central	0.61	-0.29	64	0.93	-0.63	57	31.8	-3.3	79	-20
Northeast	0.96	0.09	104	2.01	0.28	115	27.8	-3.6	74	-14
East Central	1.57	0.59	163	2.21	0.20	114	28.3	-4.0	76	-19
Southeast	1.96	0.64	149	2.47	-0.02	100	31.7	-3.8	80	-26
STATE	0.79	0.01	89	1.30	-0.15	84	29.1	-4.0	85	-26

1. Departure from 1971-2000 normal value
 2. State Highest temperature of 85 °F at Liberal (Seward County) on the 17th.
 3. State Lowest temperature of -26 °F at Mound Valley (Labette County) on the 10th.
 4. Greatest 24hr rainfall: 2.14 at Coffeyville (NWS) on the 25th; 1.94 at Emporia 4.0 ESE (CoCoRaHS) on the 28th.
 Source: KSU Weather Data Library <http://www.ksre.k-state.edu/wdl/>

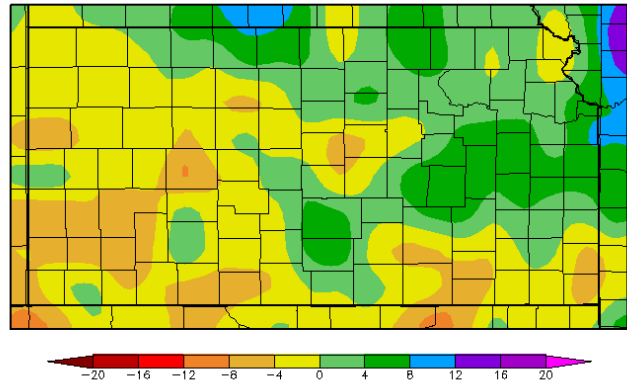
Longer-Term Precipitation Trends - The following two maps show the percentage of normal precipitation received across Kansas during the past three months (December 2010 – February 2011) and during the past 12 months (March 2010 – February 2011).

Departure from Normal Precipitation (in)
12/1/2010 – 2/28/2011



Generated 3/5/2011 at HPRCC using provisional data.

Departure from Normal Precipitation (in)
3/1/2010 – 2/28/2011



Regional Climate Centers Generated 3/1/2011 at HPRCC using provisional data.

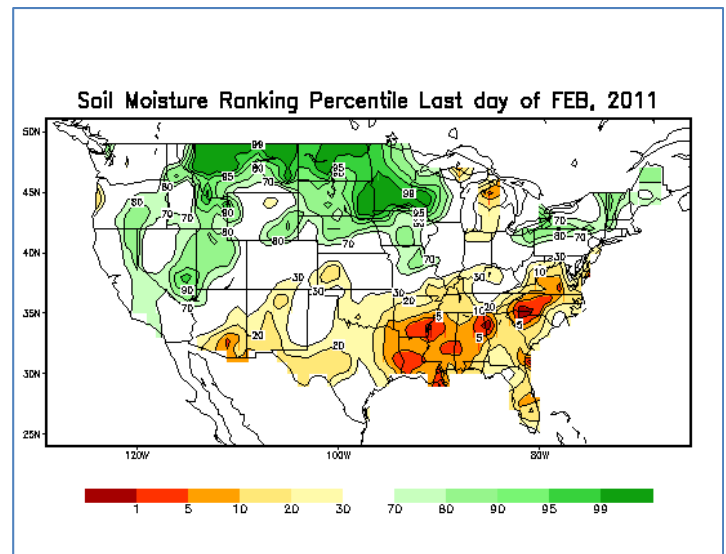
Regional Climate Centers

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

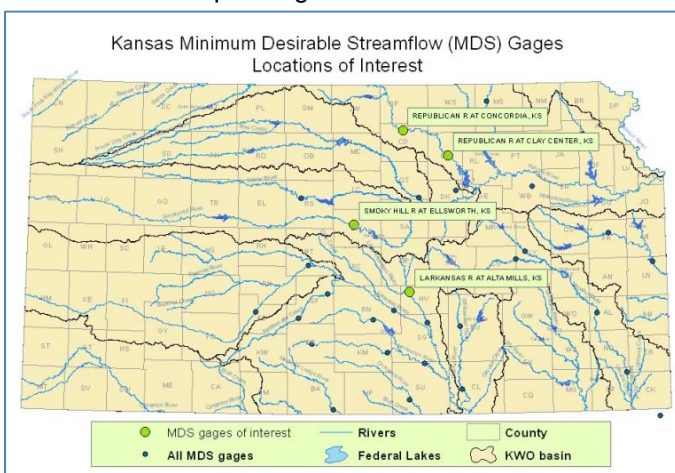
Agriculture

For the month of February 2011, topsoil moisture supplies did improve some and were rated 20 percent very short, 23 percent short, 49 percent adequate, and 8 percent surplus as of February 27th but are far shorter than what producers would like going into spring. For more detailed crop information please see the Kansas Department of Agriculture weekly reports. (3) The Climate Prediction Center at NOAA, provides a national ranking of soil moisture. The figure at the right indicates February 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 February, in fact flows were above MDS at gages of interest on February 23 and March 2, 2011. The table below provides a comparison of these flows and corresponding MDS information.



Stream Flows	February 23 rd Flow	Feb MDS	March 2 nd Flow	Mar MDS
Republican River at Concordia	560	125	555	150
Republican River at Clay Center	728	150	709	200
Smoky Hill River at Ellsworth	52	20	NA	25
Little Arkansas River at Alta Mills	25	8	14	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)

Table 2 Kansas Federal Reservoirs End-of-Month Pool Elevation Summary					
Reservoir	Top MP/C Pool ¹	Pool Elevation (Feet MSL)		End of Period	
		1/31/11	2/28/2011	Departure from Top Beginning of Month ²	Change from Beginning of February
Kansas River Basin					
Norton ³	2304.3	2297.07	2297.36	-7.23	0.29
Harlan County, NE	1946	1946.81	1946.89	0.81	0.08
Lovewell ³	1582.6	1579.95	1580.56	-2.65	0.61
Milford ³	1144.4	1142.79	1143.66	-1.61	0.87
Cedar Bluff	2144	2129.33	2129.36	-14.67	0.03
Kanopolis ³	1463	1463.6	1464.04	0.60	0.44
Wilson ³	1516	1515.31	1515.58	-0.69	0.27
Webster ³	1892.5	1889.39	1889.95	-3.11	0.56
Kirwin ³	1729.3	1729.4	1729.51	0.10	0.11
Waconda ³	1455.6	1453.88	1453.15	-1.72	-0.73
Tuttle Creek ³	1075	1072.12	1073.16	-2.88	1.04
Perry ³	891.5	889.48	890.62	-2.02	1.14
Clinton ³	875.5	874.42	875.55	-1.08	1.13
Pomona ³	974	1034.52	1035.61	-1.48	1.09
Melvern ³	1036	972.25	973.89	-1.75	1.64
Hillsdale ³	917	915.8	917	-1.20	1.20
Arkansas River Basin					
Cheney	1421.6	1421.73	1421.89	0.13	0.16
El Dorado	1339	1337.55	1338.02	-1.45	0.47
Toronto ³	901.5	899.57	899.79	-1.93	0.22
Fall River ³	948.5	946.69	948.52	-1.81	1.83
Elk City ³	796	795.23	795.08	-0.77	-0.15
Big Hill	858	856.71	857.68	-1.29	0.97
Council Grove ³	1274	1273.18	1272.68	-0.82	-0.50
Marion ³	1350.5	1348.68	1349.09	-1.82	0.41
John Redmond ³	1039	1037.63	1039.93	-1.37	2.30
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. 2. All values are in feet. Negative (-) numbers indicate feet below top. Source: U.S. Army Corps of Engineers 3. Lake level management plan in place					

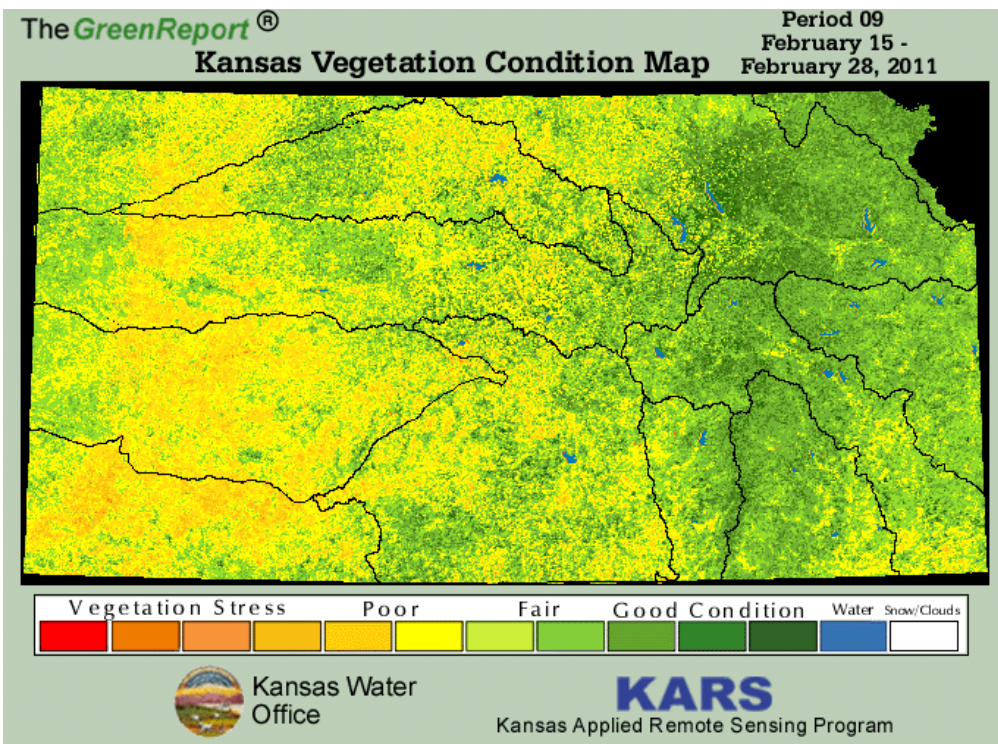
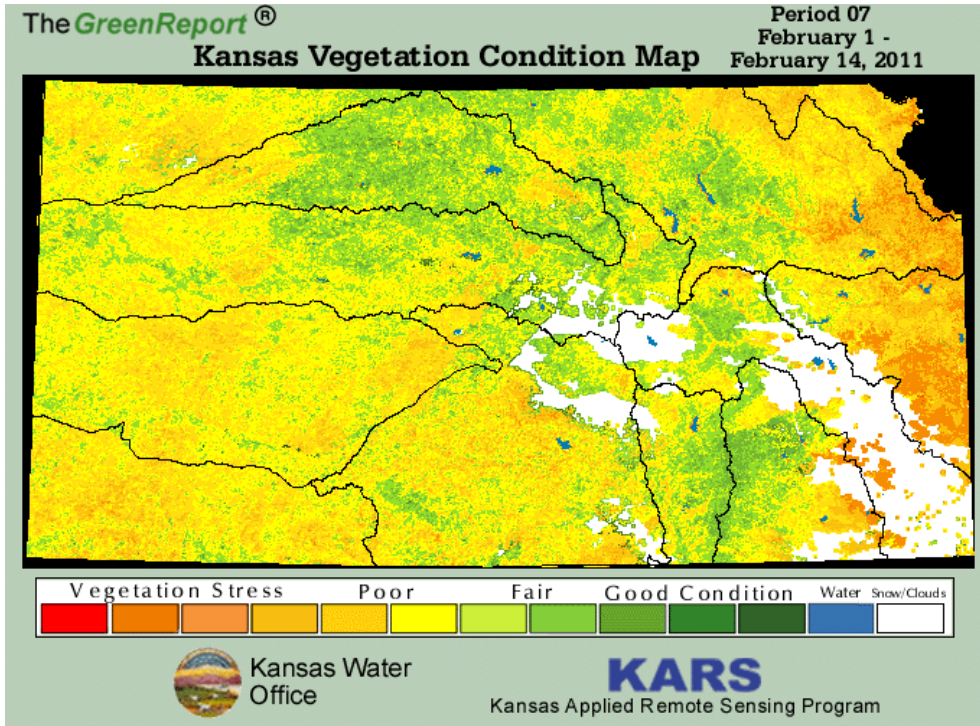
Public Water Systems

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

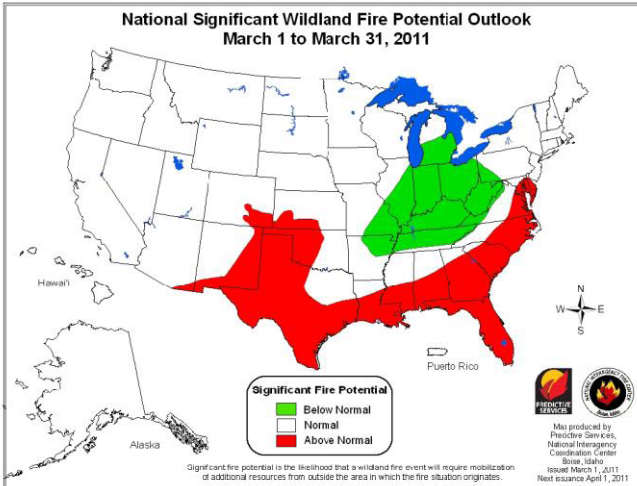
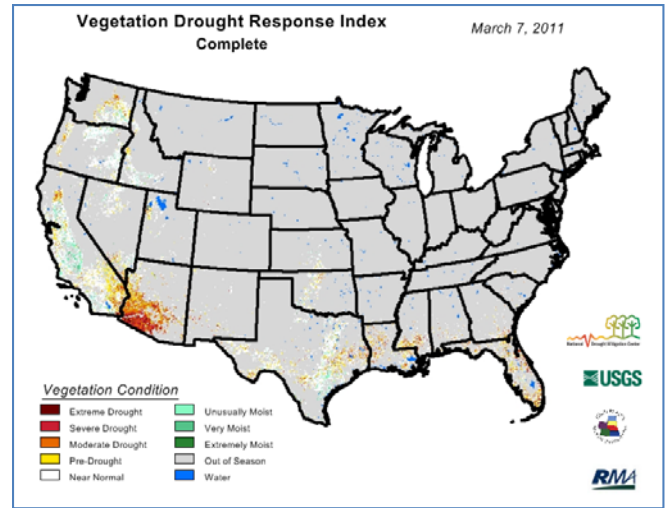
Vegetation Conditions

The 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)

Early February conditions have the typical winter effects on vegetation, with most natural vegetation and the winter wheat crop dormant at this time. Vegetation saw some improvement during the month with conditions mixed from poor to good for winter wheat and pasture. Conditions in the east seem to have improved, perhaps due to the moisture from the recent deep snow cover. Vegetation condition in the west is mixed, with a band of poor conditions in the west-central areas. According to the USDA Crop Progress and Condition report for Kansas, the condition of the winter wheat declined slightly from the end of January to 17 percent very poor, 23 percent poor, 35 percent fair, 23 percent good and 2 percent excellent at the end of February. Appendix B provides a comparison of vegetative conditions from February 2010 to February 2011.



The Vegetation Drought Response Index (**VegDRI**) indicates vegetation conditions across the nation for a comparison with surrounding states as of March 7, 2011. Near normal conditions are shown in south central Kansas. The majority of the state is reported as out of season (gray). See Appendix B for larger map of Kansas conditions.



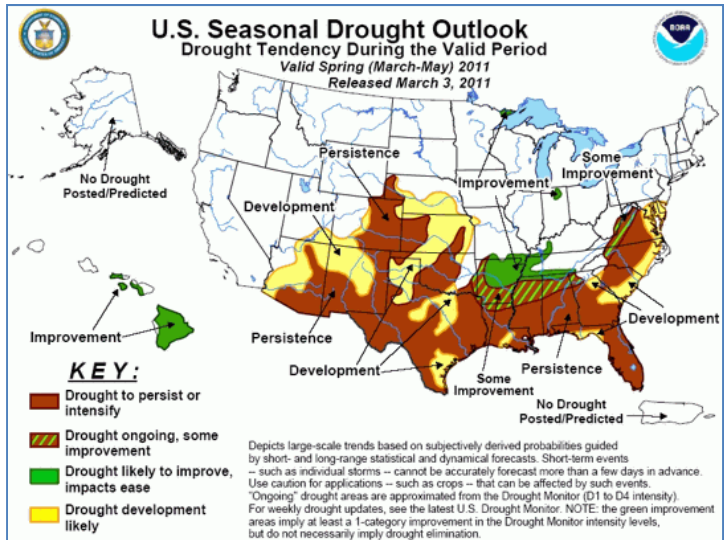
Wildfire

The **Wildland Fire Outlook** issued by the National Interagency Fire Center on March 1, 2011 foresees normal significant wildfire potential across most of Kansas during March 2011, with above normal potential for the southern part of western Kansas. **The forecast for the April to June 2011 period is for above normal wildfire potential to expand to the western 2/3rd 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 March 3, 2011 (9)

According to the Climate Prediction Center, two heavy snow storms blanketed parts of the south-central Plains in early February, but missed most of the main drought areas. The drought condition in extreme south east Kansas was relieved along the eastern border. Drought is predicted to persist in western Kansas, while expanding north and east ward, 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 data used is preliminary and is subject to change when final data is available at a later date. The Kansas Water Office web site, [KWO Drought](http://www.kwo.org), 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.

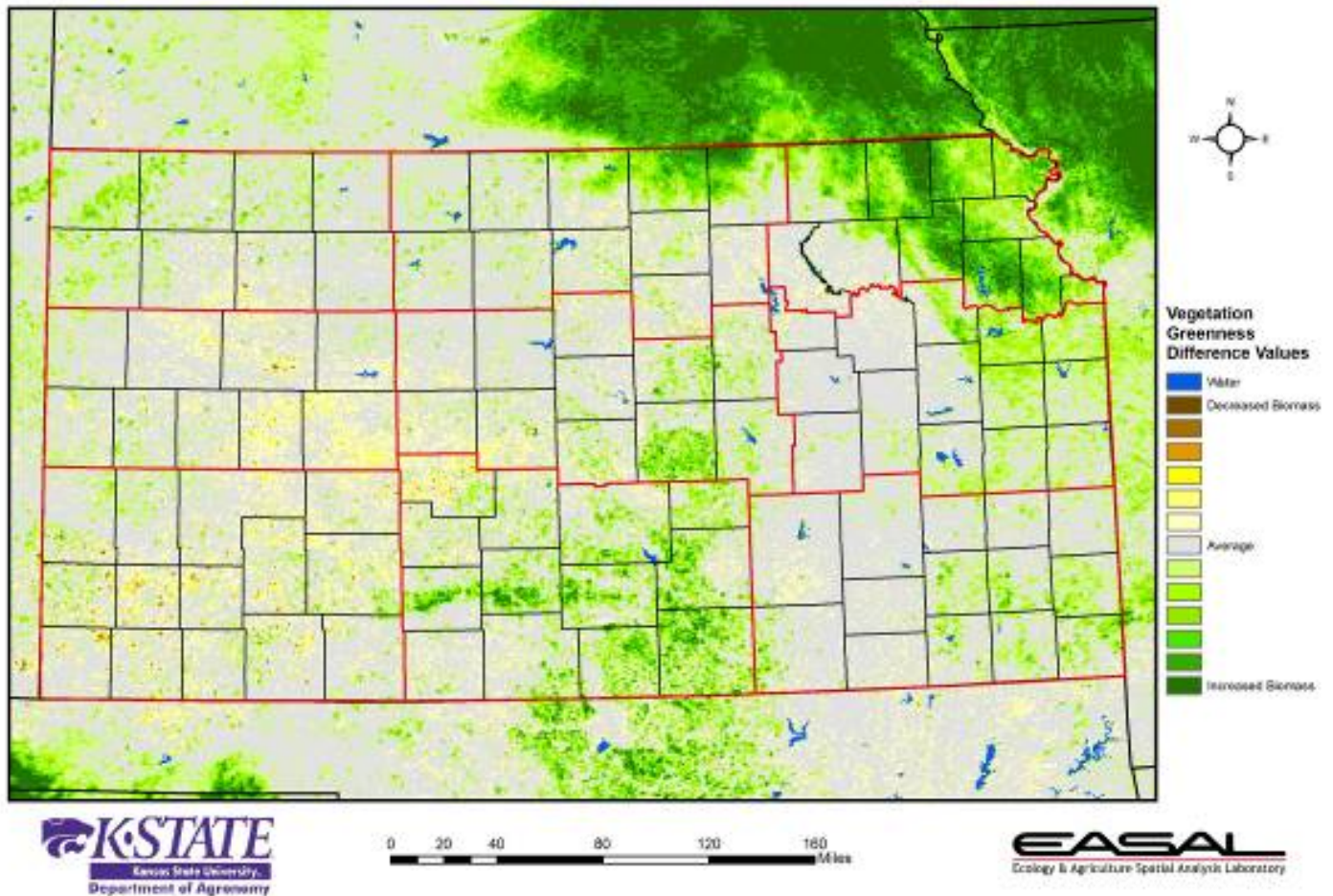
**Appendix A
January 2011
Kansas Regional Climate Summary**

Station	Precipitation (inches)			Temperature (Degrees Fahrenheit)			
	Total	Departure	Percent Normal	Mean	Departure	Extreme (Date)	
						Highest	Lowest
West							
Burlington, CO	0.41	0.00	100%	28.5	-3.6	73 (16)	-16 (2)
Dodge City	0.26	-0.40	39%	32.3	-3.7	80 (16)	-10 (10)
Garden City	0.12	-0.41	23%	31.3	-3.7	81 (16)	-12 (10)
Goodland	0.42	-0.02	95%	28.8	-3.6	75 (16)	-13 (2)
Guymon, OK	0.14	-0.22	39%	36.0	-2.2	83 (16)	-6 (3)
Hill City	0.26	-0.49	35%	29.1	-2.9	78 (16)	-6 (10,3)
Lamar, CO	T			28.8		76 (16)	-22 (10, 9)
McCook, NE	0.30	-0.34	47%	27.9	-3.9	74 (16)	-9 (2)
Springfield, CO	0.10			32.1		78 (16,13)	-18 (2)
Central							
Concordia	0.71	-0.02	97%	29	-3.4	72 (17)	-1 (2)
Hebron, NE							
Medicine Lodge	0.20	-0.77	21%	34.3	-1.8	79 (17)	-17 (10)
Ponca City, OK	0.51			35.6	-4.1	82 (17)	-25 (10)
Salina	0.67	-0.39	63%	29.3	-5.6	74 (17)	-15 (10)
Wichita (ICT)	1.39	0.37	136%	32.7	-3.6	78 (17)	-17 (10)
East							
Bartlesville, OK	2.77	0.84	144%	35.4	-5.7	82 (17)	-28 (10)
Chanute	3.03	1.13	159%	32.5	-4.1	78 (17)	-16 (10, 3)
Fall City, NE	0.74	-0.21	78%	27.9	-2.3	72 (20)	-10 (3)
Johnson Co. Exec. Apt	2.18	0.91	172%	30.5	-4.6	74 (17)	-9 (3)
Joplin, MO	2.46	0.21	109%	35.9	-3.0	75 (19)	-11 (3)
Kansas City (MCI), MO	2.27	0.96	173%	29.5	-3.5	74 (17)	-12 (3)
St. Joseph, MO	0.83	-0.3	73%	27.8	-4.8	72 (20)	-13 (3)
Topeka (TOP)	1.85	0.67	157%	30.9	-2.5	76 (17)	-9 (10)

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-February 2011 compared to the Late-February 2010



Map 1. Compared to last year at this time, this year's Vegetation Condition Report for February 15 – 28 from K-State's Ecology and Agriculture Spatial Analysis Laboratory shows more photosynthetically active material in South Central KS than last year. Much of that is due to the fact the wheat was actually planted this season, while last year's acres planted to wheat were reduced. The eastern portions of West Central KS show the signs of below normal precipitation, which continued in February.