

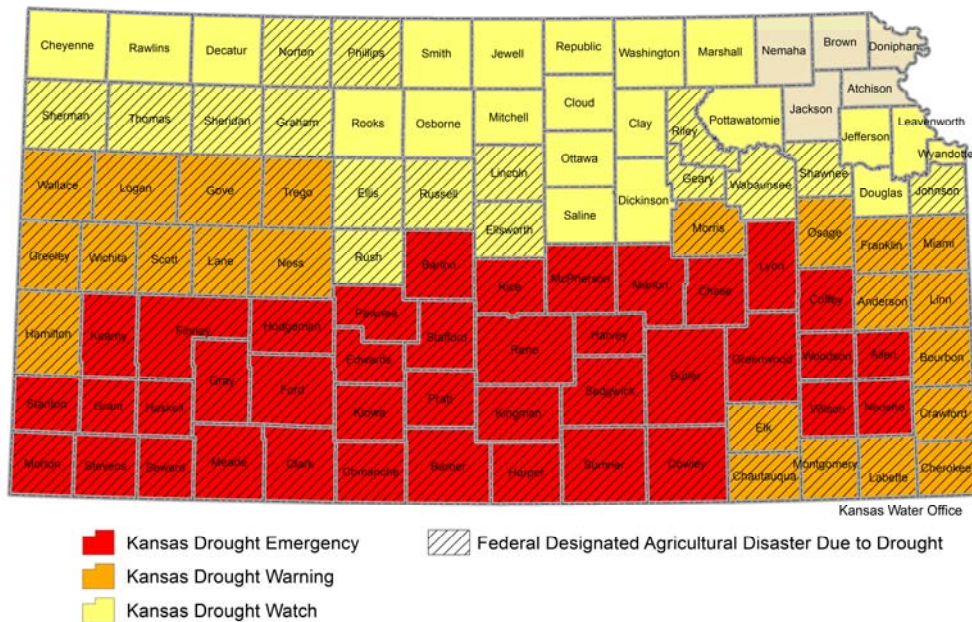
# KANSAS WEEKLY DROUGHT UPDATE – November 22, 2011

Summary of Conditions and Changes November 15-22:

- Drought conditions continue to expand east and northeast in Kansas.
- Governor issued executive order 11-48 placing 100 counties of Kansas under a drought declaration on November 21, 2011. (see map below)
- For the week ending November 20, the Kansas Ag Statistics reported stock water supplies were rated at 25 percent very short, 23 percent short, 51 percent adequate, and 1 percent surplus.
- The November 15, 2011 U.S. Drought Monitor indicates drought conditions impacting 86 percent of the State. Along the northern border, the area of extreme drought (D3) in southern Kansas was extended southward into northeastern Osage County. In east-central Kansas, moderate rains (0.5 to 2 inches) fell this past week, but surface water supplies remain in serious condition.
- The only lake still reported as affected by blue-green algae (November 9) is Memorial Park Lake, Great Bend (Barton County) with a warning level.
- Administration of junior water rights to meet Minimum Desirable Stream flows remain in effect on the Smoky Hill, Little Arkansas, Ninnescah, Walnut/Whitewater, Medicine Lodge and Neosho/Cottonwood Rivers.
- Since the beginning of 2011, 42 of 52 weather stations have recorded below normal precipitation totals with Dodge City, Liberal, and Elkhart in the Southwest District receiving less than 8 inches.
- Governor issued Executive Order 11-47 extends Executive Order 11-38 that temporarily suspends certain motor carrier rules and regulations in order to expedite efforts to transport hay to livestock in drought-stricken areas November 18. This is in effect until December 14, 2011.

Counties under Kansas drought stages and/or Federal Agriculture Disaster Declarations based on drought this year are shown on the map below.

**Kansas Drought Declarations**  
November 21, 2011



**County Drought Declarations:** A total of 100 counties are under state drought stages, with 40 counties in an emergency stage, 23 in Warning and 37 in Watch. State Emergency allows public water suppliers aid and opportunities to supplement their water supply, as well as provide opportunity for domestic and livestock water from emergency sources.

### **Kansas Drought Emergency:**

Allen, Barber, Barton, Butler, Chase, Clark, Coffey, Comanche, Cowley, Edwards, Finney, Ford, Grant, Gray, Greenwood, Harper, Harvey, Haskell, Hodgeman, Kearny, Kingman, Kiowa, Lyon, Marion, McPherson, Meade, Morton, Neosho, Pawnee, Pratt, Reno, Rice, Sedgwick, Seward, Stafford, Stanton, Stevens, Sumner, Wilson, Woodson

### **Kansas Drought Warning:**

Anderson, Bourbon, Chautauqua, Cherokee, Crawford, Elk, Franklin, Gove, Greeley, Hamilton, Labette, Lane, Linn, Logan, Miami, Montgomery, Morris, Ness, Osage, Scott, Trego, Wallace, Wichita

### **Kansas Drought Watch:**

Cheyenne, Clay, Cloud, Decatur, Dickinson, Douglas, Ellis, Ellsworth, Geary, Graham, Jefferson, Jewel, Johnson, Leavenworth, Lincoln, Marshall, Mitchell, Norton, Osborne, Ottawa, Phillips, Pottawatomie, Rawlins, Republic, Riley, Rooks, Rush, Russell, Saline, Shawnee, Sheridan, Sherman, Smith, Thomas, Wabaunsee, Washington, Wyandotte

A total of 79 counties are designated federal agricultural disasters during 2011 (S3117, S3061, S3156, S3167 & S3189) due to drought, high winds and excessive temperatures and are now eligible for federal programs, along with the contiguous counties. USDA agricultural disaster declarations are based on anticipated crop losses, while Kansas drought stages are based primarily on water resource conditions.

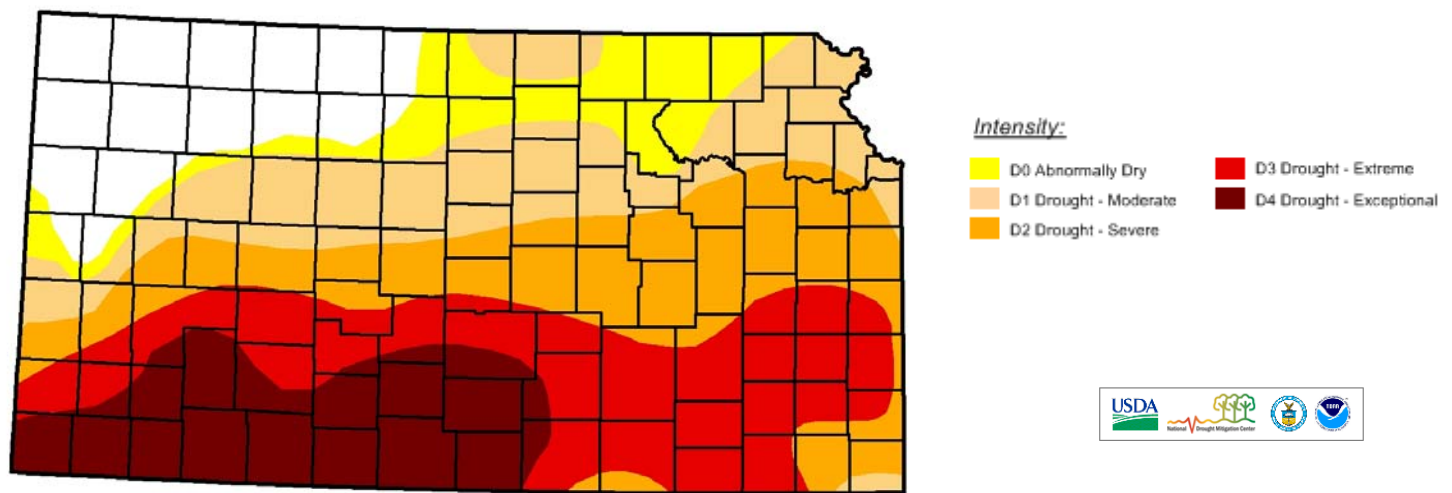
In addition numerous presidential (FEMA) and secretarial (USDA) disaster declarations at the federal level are in effect as a result of flooding and storms. Up-to-date information regarding designated counties and assistance available due to these declarations is available here: <http://www.fema.gov/dhsusda/index.jsp>.

### **General Conditions**

The November 15, U.S. Drought Monitor showed little change. Along the northern border, the area of extreme drought (D3) in southern Kansas was extended southward into northeastern Osage County. In east-central Kansas, moderate rains (0.5 to 2 inches) fell this past week, but surface water supplies remain in serious condition. The exceptional drought stands at 15 percent of Kansas. Just below 86 percent of the state is reported as abnormally dry to exceptional drought. La Niña is expected to influence the precipitation patterns through the winter, with drier than normal conditions expected across the Southern Plains.

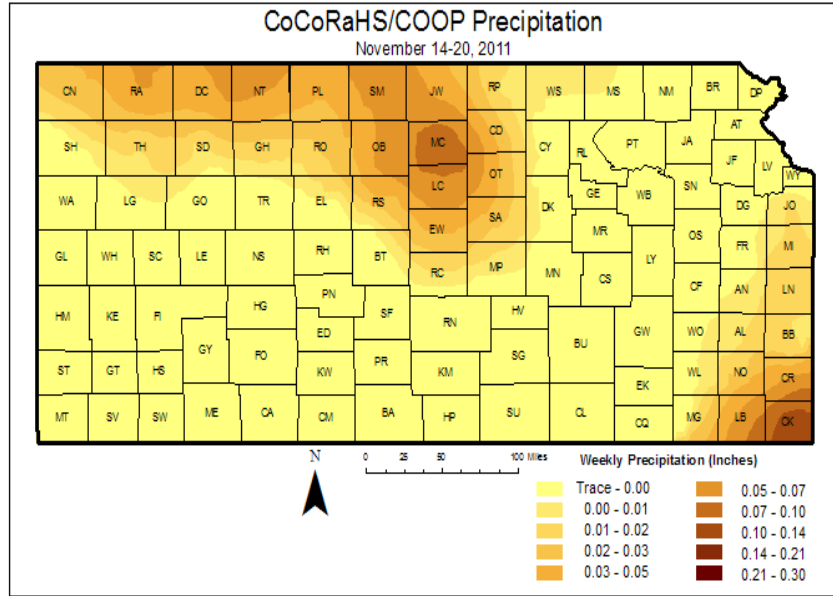
A description of the Drought Monitor process can be found in an separate document under useful links on the KWO drought page.

## **US Drought Monitor – November 15, 2011**



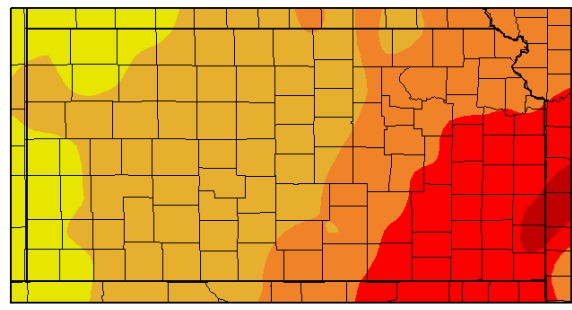
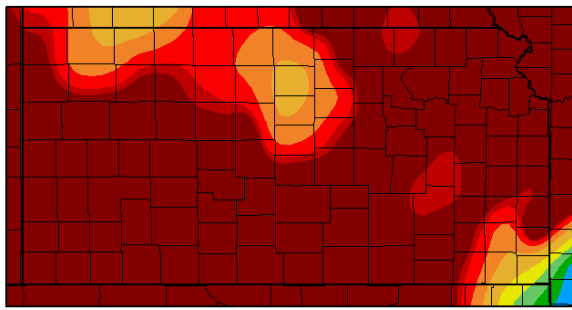
# Climate (Precipitation and Temperature)

Almost no rain fell in the state November 14-20. Recent week's precipitation is summarized by the maps below, the first, prepared by Kansas State Climatologist and the others by the High Plains Regional Climatic Center.



Precipitation (in)  
11/14/2011 - 11/20/2011

Departure from Normal Precipitation (in)  
11/14/2011 - 11/20/2011



0.01 0.02 0.05 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

-1 -0.8 -0.6 -0.4 -0.2 0 0.2 0.4 0.6 0.8 1

Generated 11/21/2011 at HPRCC using provisional data.

Regional Climate Centers

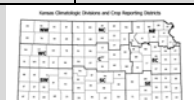
Generated 11/21/2011 at HPRCC using provisional data.

Regional Climate Centers

The table below summarizes precipitation by climate division. Please note that the data used in compiling is preliminary and comes from different sources. This may result in slight differences in the average or extreme values presented.

Kansas Climate Division Precipitation Summary (inches)												
Climate Division	November 14-20			January 1 to November 20			April 1 to November 20			September 1 to November 20		
	Actual	Normal	% Normal	Actual	Normal	% Normal	Actual	Normal	% Normal	Actual	Normal	% Normal
Northwest	0.02	0.19	10	16.36	19.55	82	15.22	17.35	86	3.22	3.57	87
West Central	0.03	0.27	11	21.81	25.84	84	19.67	22.62	86	2.50	5.80	43
Southwest	0.00	0.19	0	8.51	18.63	46	7.59	16.50	46	2.47	3.60	71
North Central	0.01	0.27	2	21.79	25.69	84	19.65	22.46	87	2.48	5.64	44
Central	0.01	0.33	3	16.71	27.34	61	14.19	23.75	60	3.32	6.35	52
South Central	0.00	0.36	0	12.18	26.83	44	10.07	23.13	42	3.30	6.44	49
Northeast	0.00	0.42	0	24.36	33.35	73	20.90	29.29	71	4.21	8.62	49
East Central	0.00	0.50	0	19.77	34.66	57	15.81	30.03	53	4.06	9.10	46
Southeast	0.02	0.62	2	24.10	35.95	66	18.73	30.52	61	6.17	9.79	63
<b>STATE</b>	<b>0.01</b>	<b>0.34</b>	<b>2</b>	<b>16.95</b>	<b>26.62</b>	<b>63</b>	<b>14.4</b>	<b>23.16</b>	<b>62</b>	<b>3.57</b>	<b>6.28</b>	<b>60</b>

Note: 1971-2000 normal value, 100 % =normal  
Source: KSU Weather Data Library



The Palmer Drought Severity Index (PDSI) is a meteorological drought index and it responds to weather conditions that have been abnormally dry or abnormally wet. The PDSI is calculated based on precipitation and temperature data, as well as the local Available Water Content (AWC) of the soil. The table below summarizes conditions by climate division. Please note that the data used in compiling is preliminary and comes from different sources. This may result in slight differences in the average or extreme values presented.

Kansas Climate Division Palmer Drought Index Summary for Week Ending November 20, 2011										
Climate Division	Temp. (°F)	Precip. (inches)	Soil Moisture		Percent Field Capacity	Crop Moisture Index	Change from previous week	Month Moisture Anom (Z) Index	Palmer Drought Index	Precip. to End Drought (inches)
			Upper Layer (inches)	Lower Layer (inches)						
Northwest	43	0.22	0.75	3.22	36.1	0.16	-0.01	0.69	1.33	
West Central	44.6	0.22	0.49	1.04	17	0.09	0	0.49	-0.06	
Southwest	47.9	0.1	0	0.06	0.7	-0.16	-0.02	-0.8	-4.06	6.09
North Central	44.7	0.33	0.35	4.29	46.4	0.1	0.02	-0.25	0.51	
Central	46.5	0.25	0.14	0.81	11.9	-0.09	0.15	-0.81	-2.42	4.51
South Central	49	0.17	0	0.16	2.3	-0.1	0.07	-1.12	-3.91	8.34
Northeast	47.1	0.34	0.28	4.66	49.4	-0.12	0.14	-1.21	-1.27	2.45
East Central	49.5	0.65	0.83	0.78	23	-0.27	0.26	-0.84	-2.67	6.68
Southeast	50.5	0.53	0.59	0.81	17.5	-0.32	0.24	-1.16	-3.16	8.78

### Public Water Supply Conditions

A Memorandum of Understanding (MOU) for emergency use of state fishing lake water under conditions of drought emergency declared by the Governor is in place. This will allow small communities and individuals within the emergency counties category to pump water from named state fishing lakes if they are in dire need of water. Individuals and communities need to contact the KWO for a water supply request and they will in turn be referred to the appropriate Kansas Department of Wildlife, Parks and Tourism office to obtain the necessary permit to withdraw the water. The MOU limits the types of water use and a fee may be set for use of the state fishing lakes' water supply. The priority order established for this MOU is domestic, municipal and then livestock uses, while also protecting the lake's fish population.

The State Fishing Lakes available for withdrawals for Emergency Declared counties include Atchison, Barber, Brown, Bourbon, Butler, Chase, Clark, Crawford, Goodman, Jewell, Kingman, Leavenworth, Lyon, Pott#1, Pott#2, McPherson, Miami, Mined Lands (Pits), Neosho, Osage, Ottawa, Saline, Scott, Shawnee, Sheridan, Washington, Wilson and Woodson Lakes.

Additional water may also be available for Drought Emergency counties from federal lakes. Water from U.S. Army Corps of Engineer lakes is available for domestic, industrial and livestock use but is prohibited for irrigation use. Requests from applicants must go through the KWO. It may also be possible to obtain water under surplus contracts from State owned storage in certain Corps lakes with water available for purchase. Bureau of Reclamation lake water may also be made available by temporary contract under drought conditions

### Local Public Water Supply Status

Barton County: Barton County Community College and Barton RWD #2 have enacted Stage 1 of their Conservation Plan. Stage 1 was enacted to prevent over pumping of their wells, prevent exceedance of their water rights, and help slow down decline of water levels in their wells. The community of Susank issued notice the week of September 21 for voluntary water conservation. Susank purchases water from the City of Otis (Russell County).

Butler County: Augusta has declared a water emergency due to drought. Water sources for Augusta Lake and Santa Fe Lake are at historic lows; the El Dorado Lake supply pipeline is running close to capacity. Mandatory restrictions are in place for the cities of Augusta and Mulvane. Augusta supplies Mulvane, Butler RWD 4 and has an emergency connection to Butler RWD 6 and Sedgwick RWD 3. On August 2 it was estimated Augusta had 6 weeks of water supply left in the city lake. Butler RWD 4 has also requested conservation including outside watering restrictions. In addition, KDHE has issued a public health warning (no contact) for Santa Fe and Augusta City lakes due to blue-green algae.

Dickinson County: Dickinson RWD 2 has mandatory water restrictions in effect through October 31, 2011.

Elk County: The City of Howard has initiated voluntary water conservation measures.

Ellsworth County: City of Ellsworth is in phase 1 of the city's water conservation plan which calls for voluntary conservation including limited outdoor watering. City well pumping is limited due to senior water rights (MDS) on the Smoky Hill River at Ellsworth.

Gray County: The City of Cimarron has mandatory watering restrictions in place.

Greenwood County: The City of Eureka has gone to water watch, for voluntary water conservation. The City of Madison has also initiated voluntary water conservation measures. The City of Severy has received permission to pump water to the city lake.

Harvey County: The City of Hesston has issued mandatory restrictions on residential yard use (lawn and car washing). Hesston is experiencing declines in the city's water wells which has lowered the ability to keep up with demand.

Haskell County: The City of Sublette has implemented water rationing due to problems with two of their four wells.

Johnson County: City of Gardner has requested voluntary conservation measures.

Kearny County: City of Lakin has initiated voluntary water conservation measures.

Labette County: The City of Oswego is in a stage 1 water watch, voluntary water conservation measures, due to low water and increased daily usage.

Marion County: The City of Burns has issued a request that citizens do not fill swimming pools and use water sparingly when watering lawns, gardens and flowers as the city wells are getting low due to the excessive heat and lack of rain. The City of Florence is under a voluntary water restriction; the City utilizes a spring and drought has caused them to be cautious.

Montgomery County: The City of Independence has requested voluntary water conservation practices. The City of Caney has initiated voluntary water conservation measures.

Neosho County: The City of St. Paul is under a conserve order as the city's intake is unable to access the low flow in the Neosho River. Emergency measures to pump water to the intake are underway.

Ottawa County: The City of Tescott is on mandatory water restriction due to declining water levels in their wells.

Reno County: The City of Buhler has implemented voluntary water restrictions to reduce usage due to concerns with exceeding water rights.

Rice County: City of Lyons implemented a stage 1 water watch which includes voluntary water conservation measures.

Rush County: City of Otis has implemented conservation measures due to declining water levels in their supply wells. Otis also supplies Russell RWD No. 3 and the community of Susank.

Russell County: The City of Russell has moved to the second stage of its water conservation plan due to lack of flow in Big Creek and the Smoky Hill River at Pfeiffer and the associated aquifer decline. Residents are asked not to perform any outside watering or washing of vehicles. Russell RWD No. 3 has implemented voluntary water conservation measures.

Sedgwick County: The City of Goddard has issued a water warning and asked residents to voluntarily conserve water. The Chisholm Creek Utility Authority which supplies water to Bel Aire and Park City also in Sedgwick County has issued a

water watch. The City of Wichita has requested voluntary water conservation. A public health warning due to blue-green algae is in effect for Cheney Lake, which supplies drinking water to the City of Wichita.

Sumner County: The City of Caldwell has put their emergency water plan (mandatory water conservation measures) into effect for all customers including Rural Water District No. 7. The primary source of water supply is the Chikaskia River. City of Wellington has initiated a water watch for voluntary water conservation due to low flows in the Ninnescah and declines in lake level.

### **Other Water Supply Conditions**

In eastern Kansas, the primary source of water is surface water including: rivers, federal reservoirs, multipurpose small lakes and municipal lakes. Many federal reservoirs store water for public water supply and other uses. The lakes which have water supply through the Water Marketing and/or Water Assurance programs include Big Hill, Clinton, Council Grove, Elk City, Hillsdale, John Redmond, Kanopolis, Marion, Melvern, Milford, Pomona, Perry and Tuttle Creek. Cedar Bluff, Glen Elder and Keith Sebelius reservoirs also contain supply water for a community.

In lakes where all state owned water is not under contract, it may be possible to negotiate for an emergency water supply.

As of November 21, 2011:

The reservoirs in the Marais des Cygnes basin are all below conservation pool. Remaining conservation storage in Hillsdale, Melvern, and Pomona is 88, 89, and 89 percent, respectively. Inflows are minimal and releases from conservation storage water quality pools are ongoing. Releases from assurance district storage are ongoing for municipal and industrial water users.

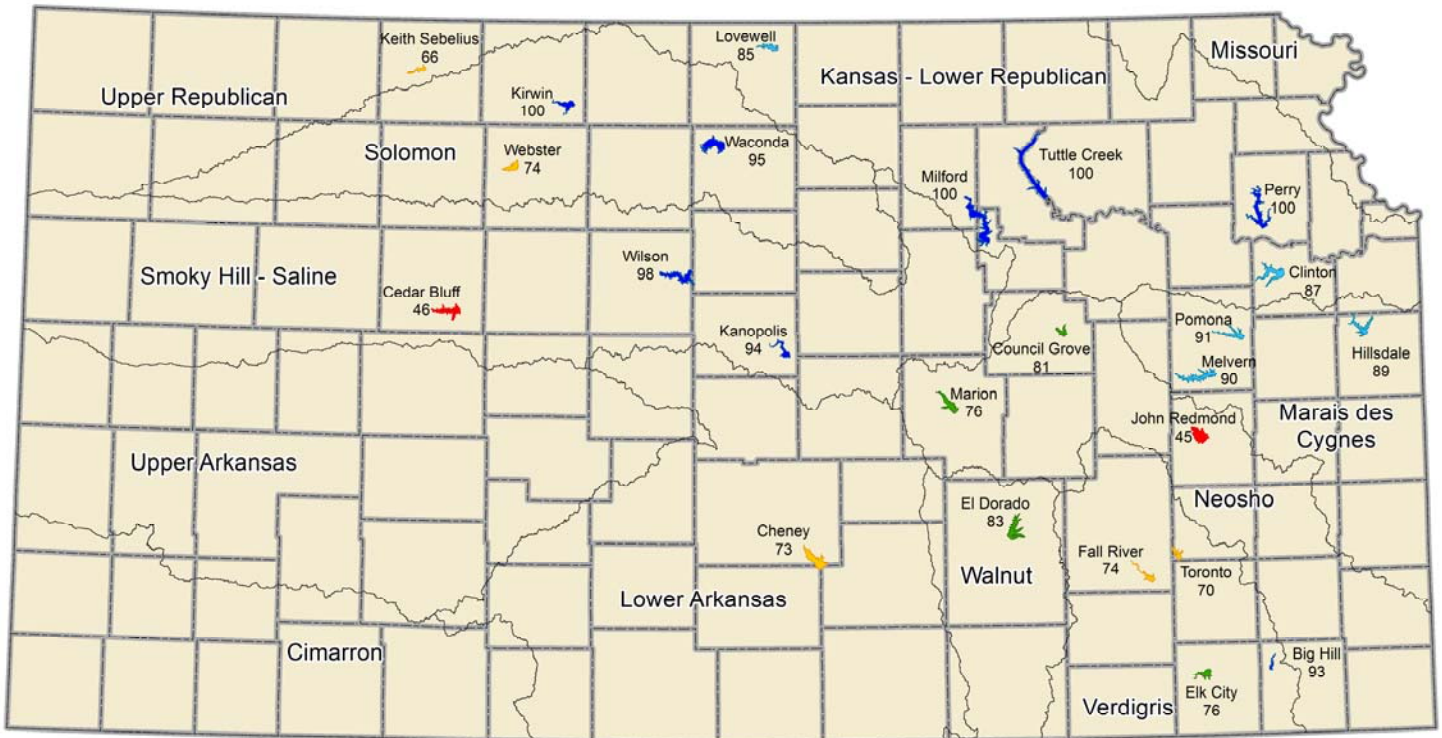
The Neosho basin (Marion, Council Grove and John Redmond reservoirs) had experienced a short duration of runoff from precipitation but basin is again being supported by releases from conservation storage. Marion has 76 percent, Council Grove 80 percent and John Redmond 45 percent of storage remaining in the conservation pool. The water supply release from Council Grove Reservoir is the sole source for Emporia and is ongoing. Supplemental releases will continue from John Redmond to meet the needs of the water assurance district members and Wolf Creek power plant. MDS orders remain in effect upstream of Parsons for the Neosho and Cottonwood rivers.

The Smoky Hill basin is experiencing low flow conditions. Kanopolis Reservoir is now about one foot below normal pool with minimal decline in elevation due to the decreased minimum release and lower temperatures. There is no flow from Cedar Bluff to Pfeiffer. The City of Russell has water supply in Cedar Bluff, which is released when specific criteria and the need arises.

The Verdigris basin has minimal natural flow. Toronto continues to support streamflow in the upper Verdigris; Fall River reservoir is supporting streamflow and water supply demands on the Fall River; and water quality releases are ongoing from Elk City with water supply anticipated in the near future. The remaining conservation pool storage is as follows: Elk City 85 percent, Toronto 67 percent, Fall River 72 percent and Big Hill 94 percent.

## Federal Reservoirs November 21, 2011

### General Reservoir Conditions



#### Percent of Conservation Pool



### Kansas Federal Reservoirs

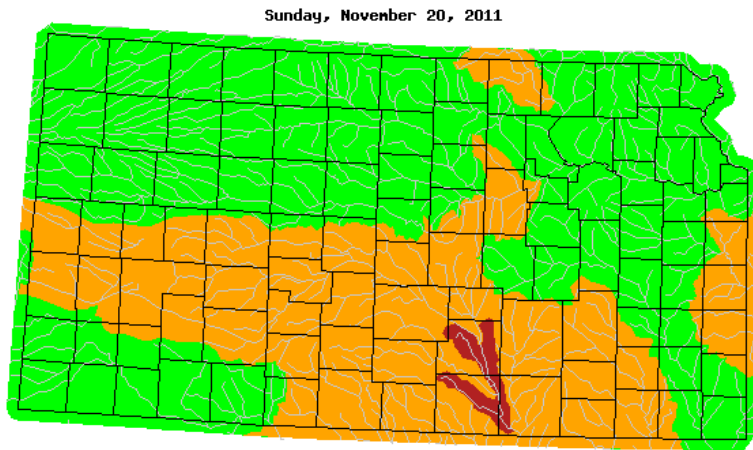
Reservoir	Top of Multipurpose/Conservation Pool (Feet MSL)	Multipurpose/Conservation Pool Elevation (Feet MSL)	Change from Top of Pool (Feet)
<b>Kansas River Basin</b>		<b>11/21/2011</b>	
Norton <sup>1</sup>	2304.3	2298.13	-6.17
Harlan County, NE	1946	1946.25	0.25
Lovewell <sup>1</sup>	1582.6	1580.81	-1.79
Milford <sup>1</sup>	1144.4	1144.64	0.24
Cedar Bluff	2144	2126.39	-17.61
Kanopolis <sup>1</sup>	1463	1462.09	-0.91
Wilson <sup>1</sup>	1516	1515.37	-0.63
Webster <sup>1</sup>	1892.5	1886.73	-5.77
Kirwin <sup>1</sup>	1729.3	1729.34	0.04
Waconda <sup>1</sup>	1455.6	1454.77	-0.83
Tuttle Creek <sup>1</sup>	1075	1080.04	5.04
Perry <sup>1</sup>	891.5	893.65	2.15
Clinton <sup>1</sup>	875.5	873.06	-2.44
Melvorn <sup>1</sup>	1036	1033.49	-2.51
Pomona <sup>1</sup>	974	972.15	-1.85
Hillsdale <sup>1</sup>	917	914.90	-2.10

Reservoir	Top of Multipurpose/Conservation Pool (Feet MSL)	Multipurpose/Conservation Pool Elevation (Feet MSL)	Change from Top of Pool (Feet)
<b>Arkansas River Basin</b>			
Cheney	1421.6	1416.80	-4.80
El Dorado	1339	1335.14	-3.86
Toronto <sup>1</sup>	901.5	899.99	-1.51
Fall River <sup>1</sup>	948.5	946.52	-1.98
Elk City <sup>1</sup>	796	794.32	-1.68
Big Hill	858	856.64	-1.36
Council Grove <sup>1</sup>	1274	1270.83	-3.17
Marion <sup>1</sup>	1350.5	1347.28	-3.22
John Redmond <sup>1</sup>	1039	1035.38	-3.62
1. Lake level management plan in place Source: U.S. Army Corps of Engineers			

### Lakes and Blue-green Algae

Kansas Department of Health and Environment (KDHE) issues a [Public Health Advisory or Public Health Warning](#) for some lakes in Kansas. These notification levels are determined by the concentration of a harmful toxin(s) or the concentration of cyanobacteria (commonly referred to as blue green algae) cell counts. High nutrient and light levels and warm water temperature contribute to algae blooms. The only lake affected as of November 9th is Memorial Park Lake, Great Bend (Barton County) with a warning. Logan City Lake (Phillips County) has been removed for any warning or advisory.

### Streamflow Conditions



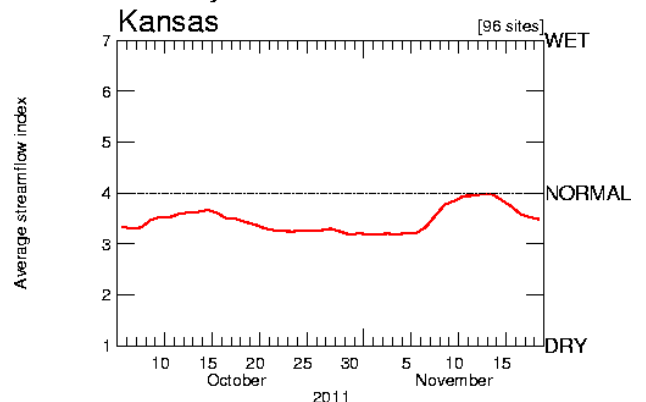
Historical Stream Flow Compared to Year

Explanation - Percentile classes						
Low	<10	10-24	25-75	76-90	>90	High
	Much below normal	Below normal	Normal	Above normal	Much above normal	



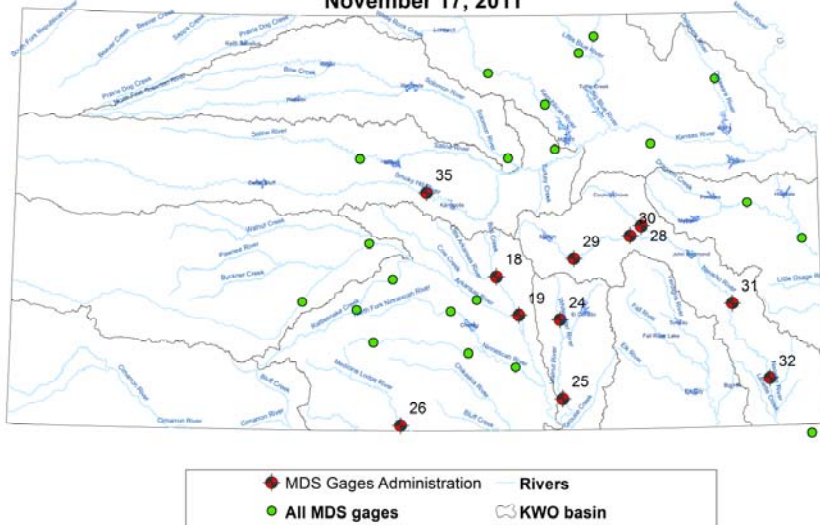
USGS seven day average stream flow compared to normal flow values recorded for the all days of the year during all years measurements have been collected. In general, a streamflow which is greater than the 75 percentile is considered *above normal*, a streamflow which is between 25 and 75 percentiles is considered *normal* and a streamflow which is less than the 25 percentile is considered *below normal*. Color codes are for basins with streamflow averages less than 25 percent of historic values. The comparison of steam flow for November 20 historical flows for all days of the year is shown on the map above. Below normal flows are indicated in much more of the state. Recent is compared to the historical streamflow in the USGS graph at right.

### Last 45 Days



## Water Right Administration/Minimum Desirable Streamflow (MDS)

**Kansas Minimum Desirable Streamflow (MDS) Gages Administration  
November 17, 2011**



The map at left shows the MDS gages related to Department of Agriculture, Division of Water Resources water right administration at this time. The table below shows the gage name for the location on the map where administration is occurring, as well as providing flows in cubic feet per second (cfs) at selected gaging stations as of November 17 for streams where MDS is of interest.

**Streamflows in cfs**

Gaging Station	November 17 Flow (CFS)	November MDS (CFS)	ADMIN	Map Location
Republican River at Concordia	252	80		
Republican River at Clay Center	277	100		
Smoky Hill River at Ellsworth	18	20	9/14/11	35
Little Arkansas River at Alta Mills	2	8	5/12/11	18
Little Arkansas River at Valley Center	22	20	7/13/11	19
North Fork Ninescah River above Cheney	38	40		
South Fork Ninescah River near Pratt	5	10	NA	
South Fork Ninescah River near Murdock	110	80		
Ninescah River near Peck	129	100		
Whitewater River near Towanda	4	6	05/13/11	24
Walnut River at Winfield	42	20	05/13/11	25
Medicine Lodge River near Kiowa	37	40	06/23/11	26
Chikaskia River near Corbin	34	30		
Neosho River near Americus	18	5	08/06/11	28
Cottonwood River near Florence	39	10	08/06/11	29
Cottonwood River near Plymouth	55	20	08/06/11	30
Neosho River near Iola	61	40	08/06/11	31
Neosho River near Parsons	60	50	08/06/11	32

Chikaskia River: Flow at Corbin has been dropping and is now hovering just slightly above MDS.

Little Arkansas River: Orders were effective May 12 and July 13 requiring cessation of pumping on sections of the Little Arkansas River. These orders pertain to the basin which drains to the Little Arkansas River between Alta Mills and Valley Center respectively. These orders remain in affect for 26 water rights/permits. Flow at Alta Mills was above MDS beginning November 9, but fell below again on November 15. Flow at Valley Center has been above MDS since November 11, but is dropping at this time.

Medicine Lodge River: The orders for two water rights/permits remain in effect. Although there has been improvement in flow, the November MDS value (40 cfs) prevents ceasing MDS administration at this time. Flow had been above MDS beginning on November 8, but fell below again on November 16.

Neosho/Cottonwood River: Orders remain in effect for 160 water rights/permits in both the Neosho and Cottonwood basins.

Ninnescah River: MDS orders under 12 water rights/permits were lifted on Tuesday, October 25, ceasing MDS administration. Flow remains above MDS at both Peck and Murdock, however it is below at both the above Cheney and Pratt gages. There are no junior surface water rights in the basin above Pratt, but there are some above the above Cheney gage. If the flow remains below MDS at the above Cheney gage for 7 consecutive days, MDS orders may again be needed.

Smoky Hill River: Orders remain in effect requiring cessation of diversion under 3 water rights.

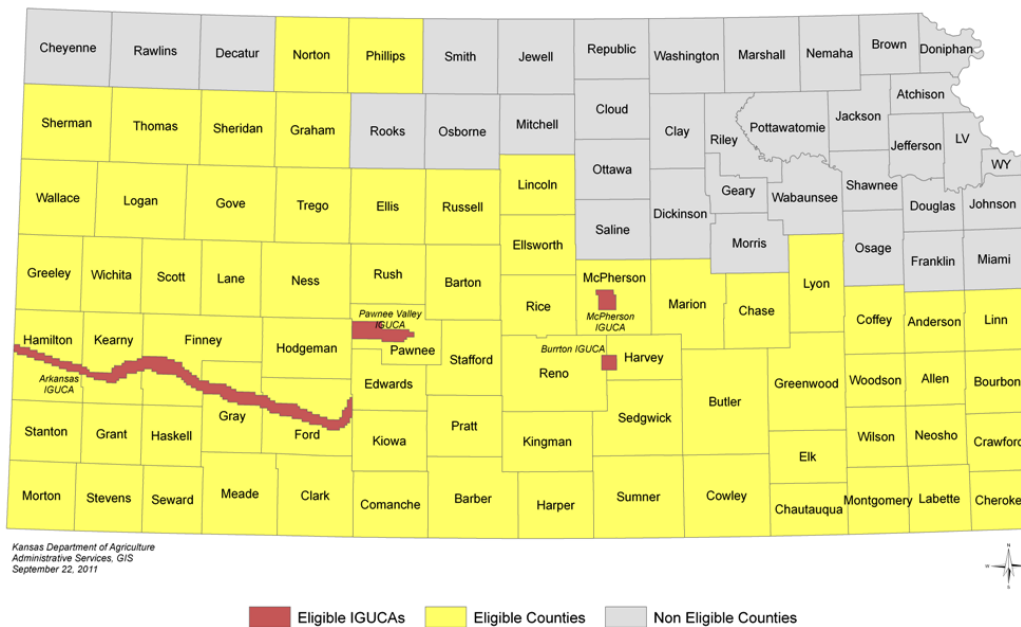
Walnut/Whitewater: Orders remain in effect for 61 water rights/permits above the Towanda gage. The flow at Winfield has been above MDS since November 5, however, the flow at Towanda is currently below MDS.

**Other Water Right Administration** In addition to MDS needs, administration of water rights/permits occurs when there is not enough water to meet all appropriations. Senior water rights needs, water quality and the protection of releases may also trigger the need.

### Water Right Term Permit Opportunity

A 2011 Drought Emergency Term Permit is available from Kansas Department of Agriculture, Division of Water Resources (KDA-DWR) for the below counties in Kansas. The one-time, drought-focused term permit allows holders of existing water rights the flexibility to borrow a portion of next year's authorized quantity for irrigation in order to complete the 2011 growing season. In general, this is available outside Intensive Groundwater Use Control Areas (IGUCAs) in the counties shown below. The term permit allocation will be based on the sum of the quantity authorized for 2011 and 2012. Three qualifying IGUCAs are Arkansas River IGUCA (Hamilton, Kearny, Finney, Gray and Ford Counties), Burrton IGUCA (Harvey County) and Pawnee Valley IGUCA (Pawnee County). Municipal water rights are also eligible.

Areas Eligible for 2011  
Drought Emergency Term Permit

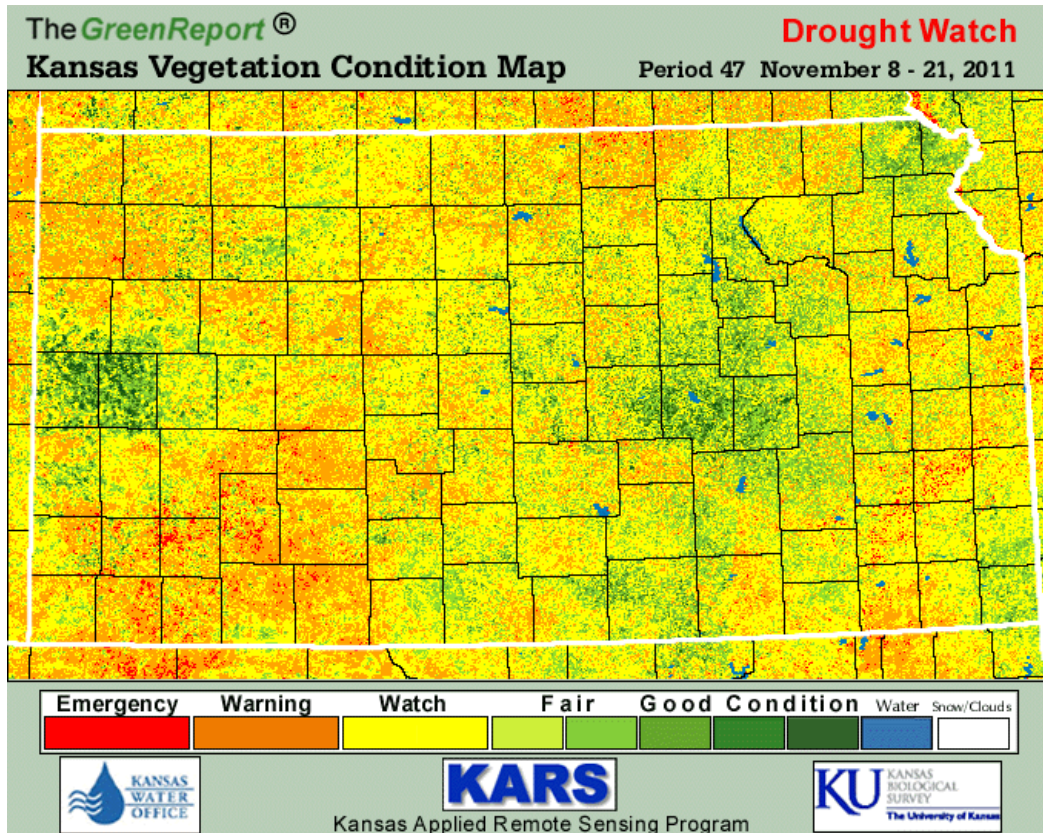


### Burn Bans and Fires

Most counties require permits prior to a burn and are controlling burns through that process. A county issues a ban as they deem necessary at any time, for a specific time period or until repealed. Dry conditions in much of Kansas allow fires to start or spread easily. Please contact your county officials before you burn. Conditions continue that allow fires to start easily. The National Weather Service has issued Fire Weather/Red Flag Warnings for many Kansas areas each day due to critical fire weather conditions. November 16 the National Weather Service warned that significant fire potential will

exist across most of the area through February with the greater potential occurring over central and south-central Kansas where the greater potential exists for above normal temperatures and below normal precipitation. The outlooks change daily. See <http://www.spc.noaa.gov/fire/> for current information.

## Kansas Vegetative Conditions



### Crops, Feed and Livestock

For the week ending November 20, USDA reports topsoil moisture supplies declined to 19 percent very short, 25 percent short, 53 percent adequate, and 3 percent surplus. Subsoil moisture supplies were rated 32 percent very short, 32 percent short, 35 percent adequate, and 1 percent surplus.

The range and pasture condition declined slightly from the previous week to 37 percent very poor, 25 percent poor, 25 percent fair, 12 percent good, and 1 percent excellent. Feed grain supplies in Kansas were rated at 11 percent very short, 18 percent short, 67 percent adequate, and 4 percent surplus. Hay and forage supplies were rated at 27 percent very short, 29 percent short, 41 percent adequate, and 3 percent surplus, while the stock water supplies were rated at 25 percent very short, 23 percent short, 51 percent adequate, and 1 percent surplus.

### Emergency Haying and Grazing

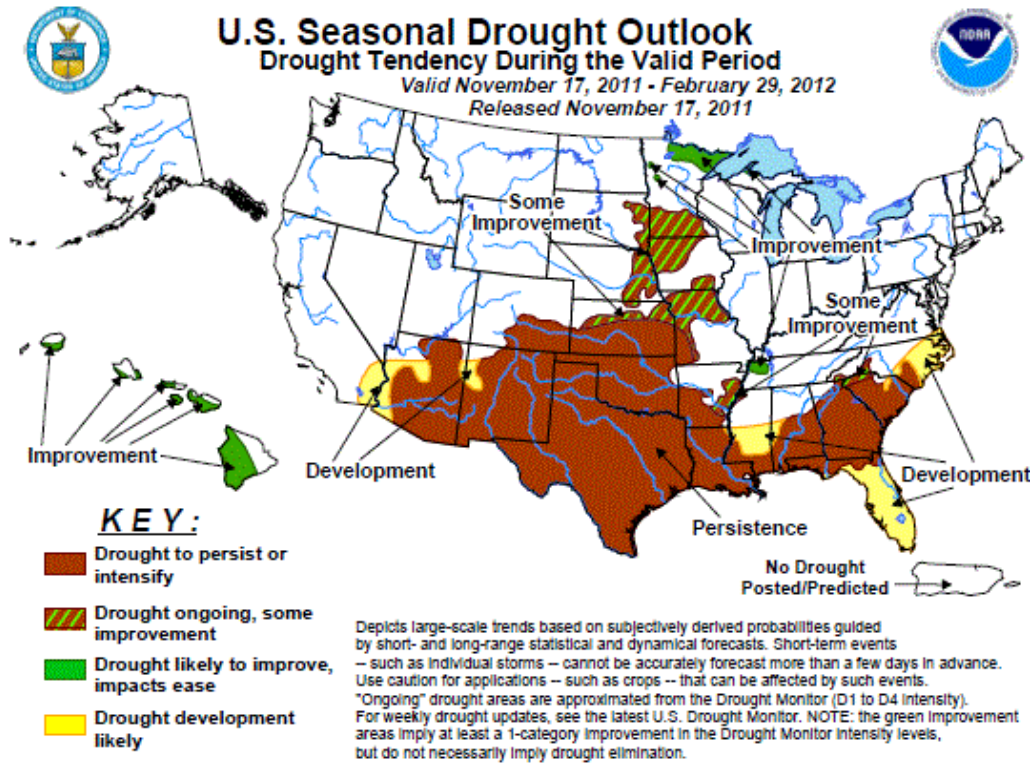
Emergency haying and grazing of CRP acreage were authorized in 2011 to provide relief to livestock producers in areas affected by a severe drought or similar natural disaster. Emergency authorization is provided by either national Farm Services Agency (FSA) office authorization or by a state FSA committee determination utilizing the U.S. Drought Monitor. Emergency haying was allowed until September 30. Emergency grazing in approved counties, normally allowed through September 30, was extended to October 31, 2011. Emergency haying and grazing is not allowed on the same acreage. All livestock must be removed by the end of this grazing period. In addition FSA allowed producers nationwide to use harvested hay from expiring CRP acres rather than destroy the hay as normally required. There are nearly 230,000 expiring acres in Kansas.

An executive order was signed by the Governor July 27 suspending certain motor carrier rules and regulations for people hauling hay to livestock. Additional measures were added by an executive order on October 6, 2011. Those include rules on permits, load sizes and nighttime travel of oversized loads. The executive order will be in effect until it's rescinded or until drought emergency and disaster declarations are lifted.

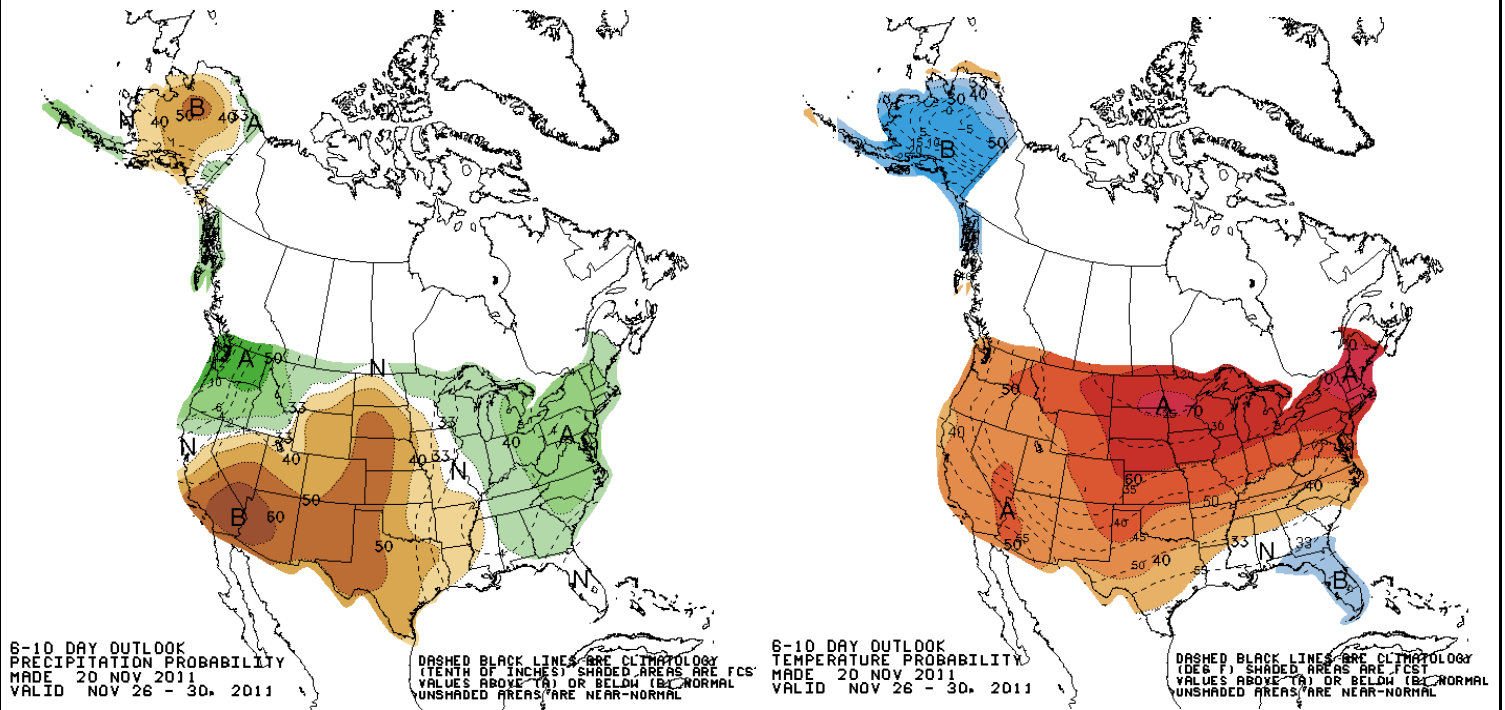
USDA Risk Management Agency provides information on crop insurance and drought damaged crops can be found at [http://www.rma.usda.gov/fields/ks\\_rso/2011/droughtfaq.pdf](http://www.rma.usda.gov/fields/ks_rso/2011/droughtfaq.pdf).

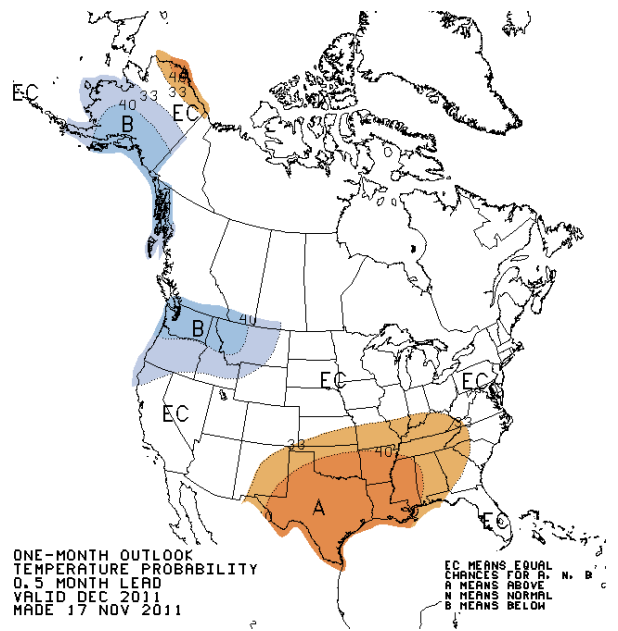
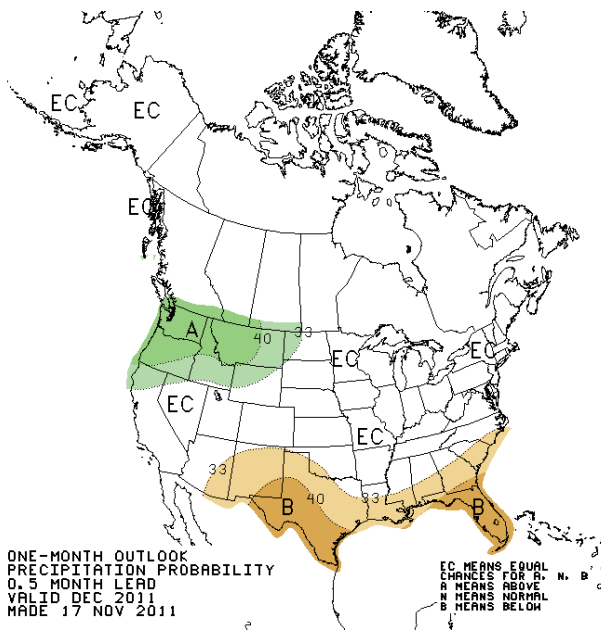
### Future Outlook

The National Weather Service drought outlook for November 3, 2011 through January 2012 reflects forecasts and outlooks for periods ranging from the next few days to the next few months, as well as La Nina composites for that time periods and related events. The various tools almost unanimously favor subnormal precipitation on all time scales across eastern Colorado and the western halves of Oklahoma and Kansas, where drought should persist. Precipitation during the first two weeks of November could have a significant and lasting impact on some of the drought areas in the eastern Great Plains and adjacent Mississippi Valley from central Arkansas, northeastern Oklahoma, and east-central Kansas northward. The 3-month forecast leans toward dryness from Kansas and Missouri southward.



NOAA outlook for the next 10 days and month:





The Kansas Weekly Climate Summary and Drought Report is compiled each week when conditions warrant, by the Kansas Water Office (KWO). Information from various federal, state, local and academic sources is used. Some of the data is preliminary and subject to change once final data is available. The KWO web site, [KWO Drought](http://www.kwo.org/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 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 and ACTIVITIES

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. Palmer Drought Severity Index - The Palmer Index (PDSI) is one indicator used in the U.S. Drought Monitor.

The [High Plains Regional Climate Center](#) provides precipitation and temperature summary maps.

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

The Kansas Department of Agriculture-Division of Water Resources monitors stream flow using the USGS gages for determination of administrative needs. Administration may be needed due to [Minimum Desirable Streamflow \(MDS\)](#) requirements, impairments, and reservoir release protection.

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](http://www.kwo.org).

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>. This Kansas Vegetation Drought Response Index map is developed weekly by the Kansas Biological Survey using state drought triggers as its key. In addition the Vegetation Drought Response Index, by the National Drought Mitigation Center provides another a national perspective on vegetation conditions. VegDRI maps may be found at <http://vegdiri.unl.edu/>

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](#).

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. Also see:

<http://www.ncdc.noaa.gov/oa/climate/research/dm/weekly-dm-animations.html>

[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.

[USDA has programs for agricultural](#) producers and businesses for drought affected areas. In some cases a eligibility is dependent on a federal disaster declaration but other programs are triggered by specific conditions.

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