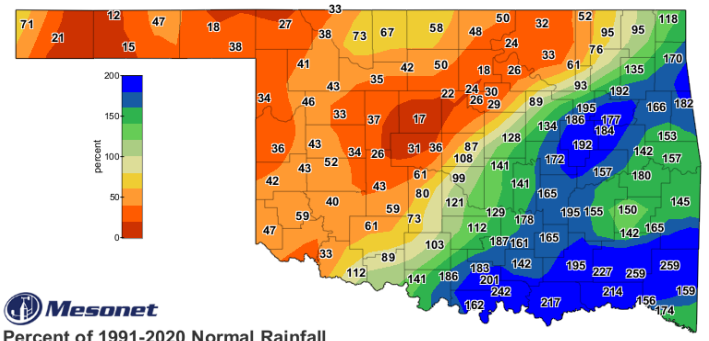
Oklahoma Water Resources Bulletin
& Summary of Current Conditions

March 16, 2023

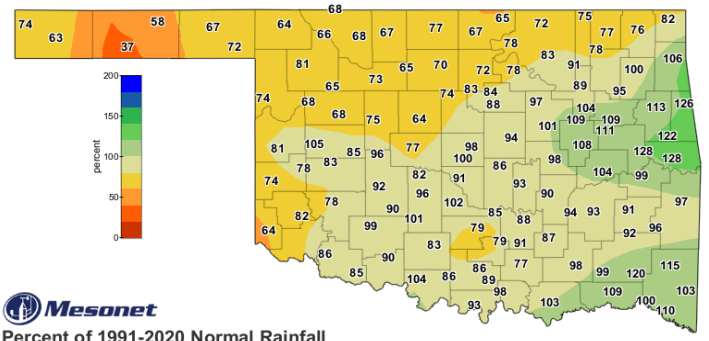
Statewide Precipitation

Climate Division	Last 30 Days (Feb 14, 2023 – Mar 15, 2023) Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921	Last 365 Days (Mar 16, 2022 – Mar 15, 2023) Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921
PANHANDLE	0.27"	-0.70"	28%	28th driest	12.52"	-8.06"	61%	4th driest
N. CENTRAL	0.79"	-1.11"	42%	33rd driest	21.70"	-9.72"	69%	9th driest
NORTHEAST	2.61"	-0.23"	92%	37th wettest	36.99"	-5.68"	87%	34th driest
W. CENTRAL	0.60"	-1.10"	35%	29th driest	22.02"	-6.38"	78%	20th driest
CENTRAL	1.72"	-0.72"	71%	52nd wettest	33.07"	-4.56"	88%	42nd driest
E. CENTRAL	5.18"	+1.88"	157%	11th wettest	50.89"	+4.75"	110%	18th wettest
SOUTHWEST	0.97"	-0.93"	51%	38th driest	25.69"	-4.58"	85%	36th driest
S. CENTRAL	4.71"	+1.76"	160%	8th wettest	35.81"	-4.90"	88%	40th driest
SOUTHEAST	7.37"	+3.40"	186%	7th wettest	52.04"	+1.45"	103%	38th wettest
STATEWIDE	**2.62"**	**+0.19"**	**108%**	**33rd wettest**	**32.07"**	**-4.40"**	**88%**	**35th driest**



Percent of 1991-2020 Normal Rainfall
Last 30 Days

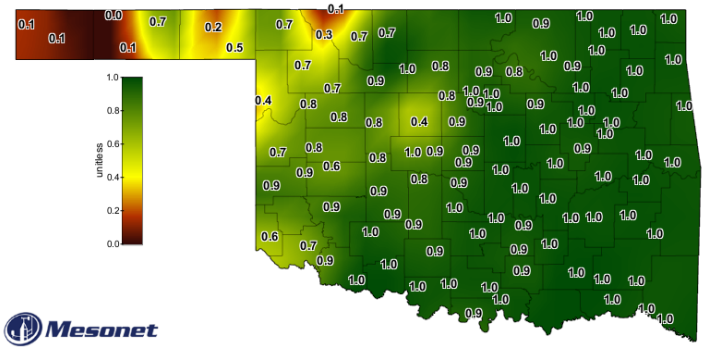
Feb 14, 2023 through Mar 15, 2023



Percent of 1991-2020 Normal Rainfall
Last 365 Days

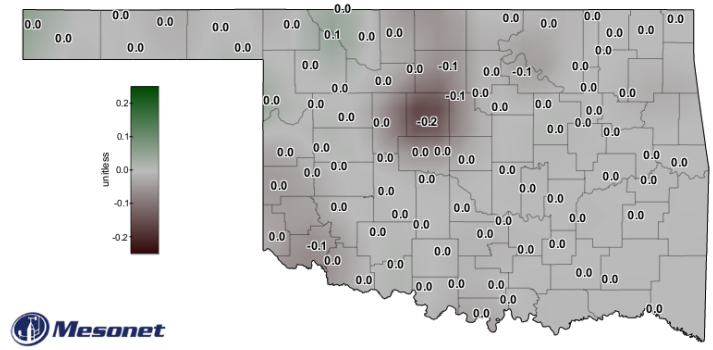
Mar 16, 2022 through Mar 15, 2023

Soil Moisture



1-day Average 10-inch Fractional Water Index

March 15, 2023



7-day 10-inch Fractional Water Index Change

March 15, 2023

The Fractional Water Index ranges from very dry soil having a value of 0 to soil at field capacity illustrated by a value of 1.
[1.0-0.8 = Enhanced Growth; 0.8-0.5 = Limited Growth; 0.5-0.3 = Plants Wilting; 0.3-0.1 = Plants Dying; <0.1 = Barren Soil.]

Drought Indices

Palmer Drought Severity Index (PDSI)

Climate Division	Status 3/11/23	Value 2/11	Value 3/11	Change in Value
NORTHWEST	Extreme Drought	-4.95	-4.88	0.07(+)
NORTH CENTRAL	Near Normal	-1.49	-1.37	0.12(+)
NORTHEAST	Near Normal	0.02	1.00	0.98(+)
WEST CENTRAL	Near Normal	-1.60	-1.82	0.22(-)
CENTRAL	Near Normal	-0.32	0.55	0.87(+)
EAST CENTRAL	Unusual Moist Spell	1.48	2.52	1.04(+)
SOUTHWEST	Near Normal	0.45	0.59	0.14(+)
SOUTH CENTRAL	Unusual Moist Spell	0.76	2.35	1.59(+)
SOUTHEAST	Very Moist Spell	2.21	3.19	-0.98

extreme drought	severe drought	moderate drought	near normal	unusual moist spell	very moist spell	extremely moist
-4.0 or less	-3.0 to -3.9	-2.0 to -2.9	-1.9 to +1.9	+2.0 to +2.9	+3.0 to +3.9	+4.0 and above

The PDSI is based upon precipitation, temperature, and soil moisture, and is considered most effective for unirrigated cropland, spanning from -10 (dry) to +10 (wet). According to the latest PDSI, as of March 11, 2023, all climate regions were Near Normal or wetter except the Northwest, which remained in Extreme Drought.

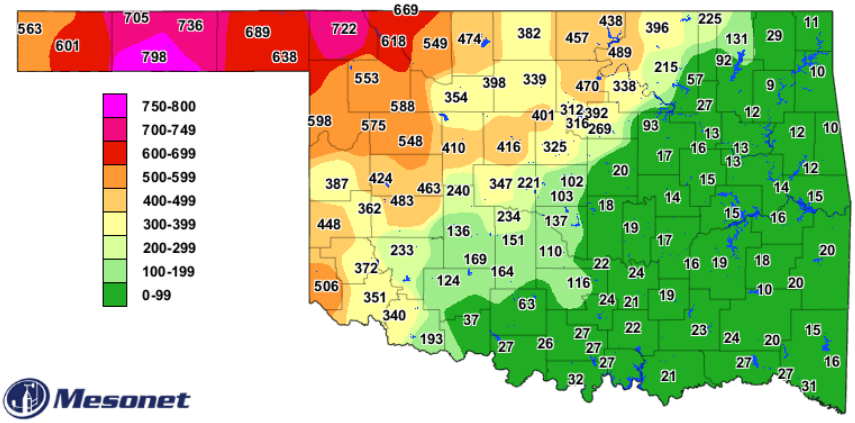
Standardized Precipitation Index (SPI)
Through February 2023

3-month	12-month	24-month
Abnormally Dry	Extremely Dry	Severely Dry
Near Normal	Moderately Dry	Moderately Dry
Abnormally Moist	Near Normal	Near Normal
Near Normal	Moderately Dry	Moderately Dry
Abnormally Moist	Near Normal	Near Normal
Moderately Moist	Near Normal	Near Normal
Near Normal	Near Normal	Near Normal
Near Normal	Near Normal	Near Normal
Near Normal	Near Normal	Near Normal

exceptionally dry	extremely dry	severely dry	moderately dry	abnormally dry	near normal	abnormally moist	moderately moist	very moist	extremely moist	exceptionally moist
-2.00 and below	-1.99 to -1.60	-1.59 to -1.30	-1.29 to -0.80	-0.79 to -0.51	-0.50 to +0.50	+0.51 to +0.79	+0.80 to +1.29	+1.30 to +1.59	+1.60 to +1.99	+2.00 and above

The SPI provides a comparison of precipitation over several specified time periods with totals from the periods for all years in the historical record. Through February 2023, the Northwest was Abnormally Dry for the 3-month period, Extremely Dry for the 12-month period, and Severely Dry for the 24-month period. North Central and West Central were Moderately Dry for the 12- and 24-month periods.

Keetch-Byram Drought Fire Index

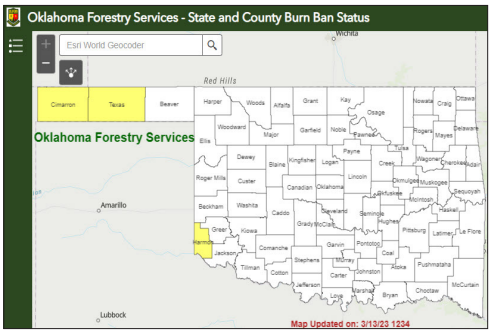


Mesonet
Keetch-Byram Drought Index

6:30 PM March 16, 2023 CDT
Created 6:45:51 PM March 16, 2023 CDT. Copyright 2023

The Keetch-Byram Drought Index measures the state of near-surface soil moisture (within the uppermost eight inches of soil) as well as the amount of fuel available for fires. KBDI values of 600 and above are often associated with more severe drought and increased wildfire occurrence.

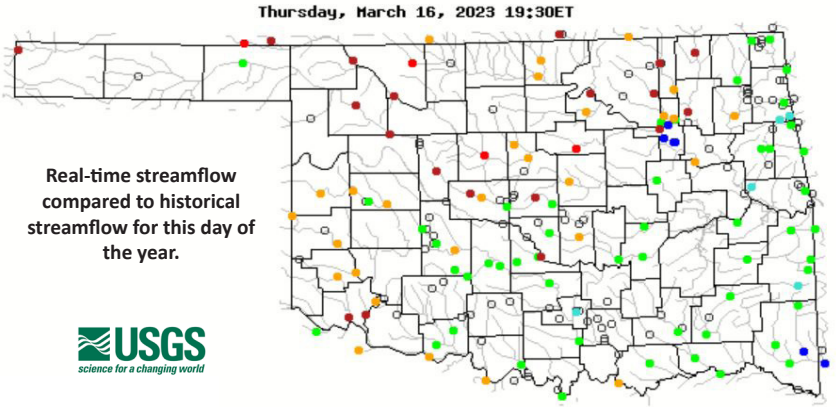
State & County Burn Ban Status



Streamflow Conditions

Explanation - Percentile classes							
Low	<10	10-24	25-75	76-90	>90	High	Not ranked
	Much below normal	Below normal	Normal	Above normal	Much above normal		

Visit waterwatch.usgs.gov for additional real-time streamflow information.



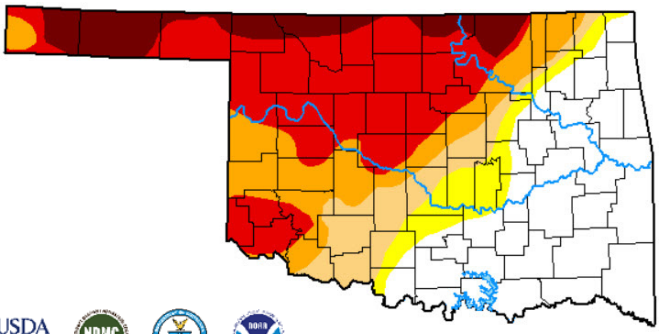
Real-time streamflow compared to historical streamflow for this day of the year.

USGS science for a changing world

Drought Summary for Oklahoma

U.S. Drought Monitor

Oklahoma



droughtmonitor.unl.edu

March 14, 2023
(Released March 16, 2023)
Valid 7 a.m. EDT

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

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

Author:
Brad Rippey
U.S. Department of Agriculture

D0 - Abnormally Dry
- Crops are stressed (wheat, canola, alfalfa, pecans); winter wheat germination is delayed
- Stock pond levels decline

D1 - Moderate Drought
- Summer crop and forage yields are reduced
- Wildfire risk increases
- Lake recreation activities are affected; deer reproduction is poor

D2 - Severe Drought
- Dryland crops are severely reduced; pasture growth is stunted
- Cattle are stressed
- Burn bans begin

D3 - Extreme Drought
- Grasses are dormant, and hay is nonexistent; planting is delayed; fields are spotty; emergency CRP grazing is authorized
- Cattle have little water and feed
- Wildfires are increasing in number and severity; air quality is poor, with dust storms and smoke

D4 - Exceptional Drought
- Ground is cracking; farmers are bailing failed crops or abandoning fields; pastures are bare; land is abandoned
- Cost of hay and water is high and supplies are scarce; producers are liquidating herds
- Burn restrictions increase; fire season is long

Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4	DSCI
Current	2023-03-14	34.39	65.61	59.07	50.58	36.64	8.86	221
Last Week	2023-03-07	32.93	67.07	59.92	51.53	36.64	8.86	224
3 Months Ago	2022-12-13	1.55	98.45	90.18	83.45	57.35	11.64	341
Start of Calendar Year	2022-12-27	1.82	98.18	89.73	80.92	56.13	11.65	337
Start of Water Year	2022-09-27	0.00	100.00	99.88	94.44	64.44	17.25	376
One Year Ago	2022-03-15	8.16	91.84	86.62	74.46	56.73	14.42	324

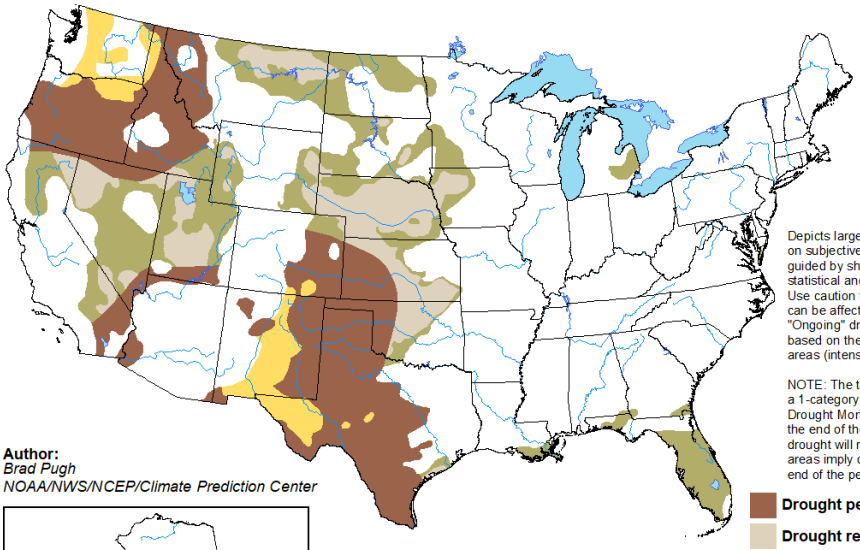
According to the latest U.S. Drought Monitor, as of March 14, 2023, an estimated 2,059,472 people in Oklahoma (59.07% of the state in area) were experiencing drought conditions, including 8.86% of the state in area in Exceptional Drought (D4), 36.64% in Extreme Drought (D3) or worse, and 50.58% in Severe Drought (D2) or worse.

Drought Probability

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for March 16 - June 30, 2023
Released March 16



Author:
Brad Pugh
NOAA/NWS/NCEP/Climate Prediction Center

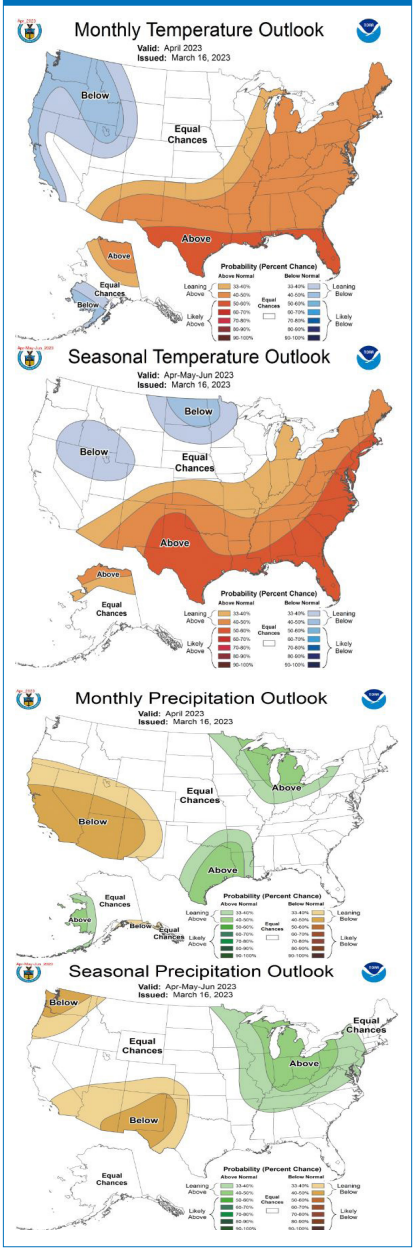
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

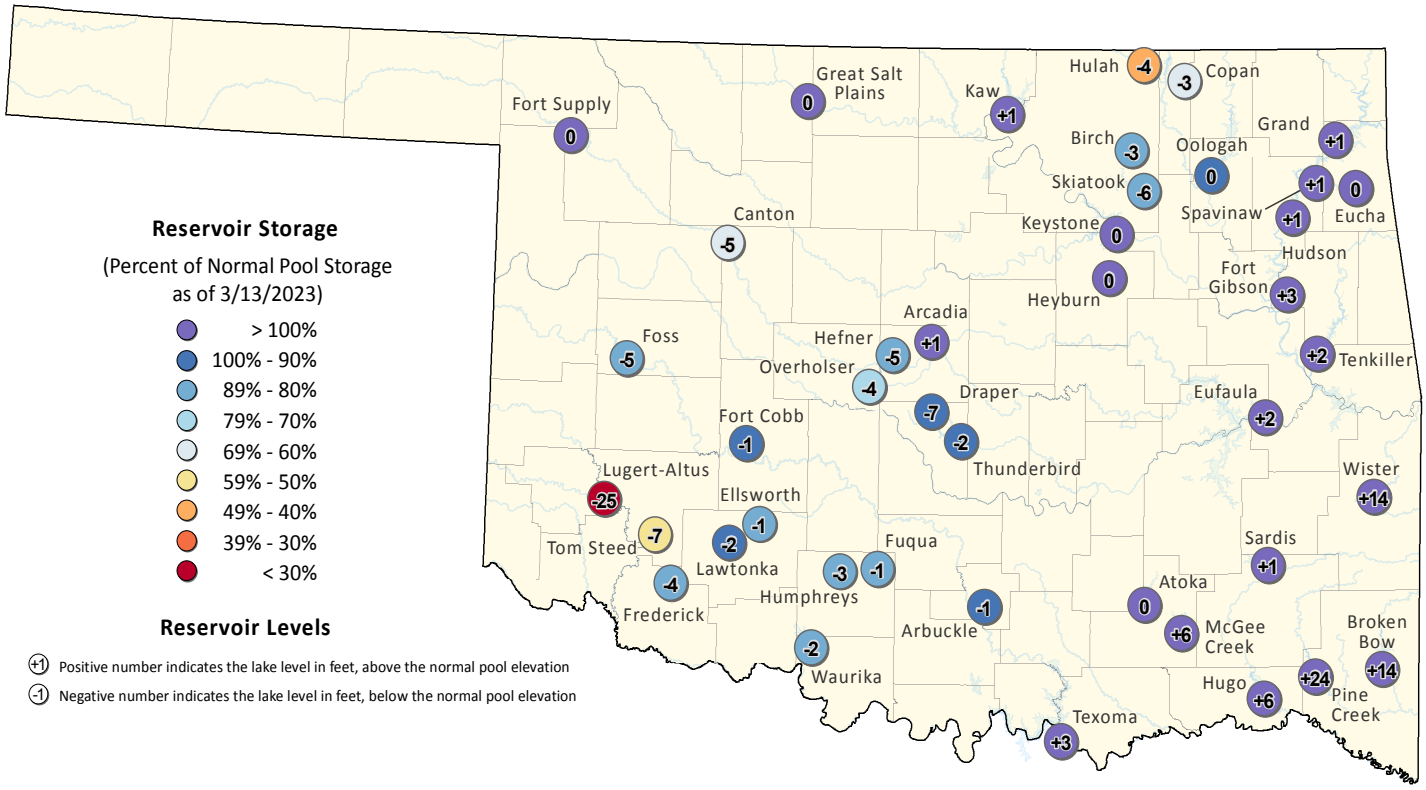
- **Drought persists**
- **Drought remains but improves**
- **Drought removal likely**
- **Drought development likely**

http://go.usa.gov/3eZ73

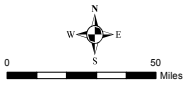
Monthly/Seasonal Outlook



Oklahoma Reservoir Levels and Storage as of 3/13/2023



This map shows reservoir storage as a percentage of normal pool storage capacity.
The source information was collected from real-time lake gages monitored by the U.S. Army Corps of Engineers (https://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf), and the U.S. Geological Survey(https://waterdata.usgs.gov/ok/nwis/current/?type=lake&group_key=basin_cd).
For more information please visit the OWRB's website: (https://www.owrb.ok.gov).



OKLAHOMA
Water Resources Board

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