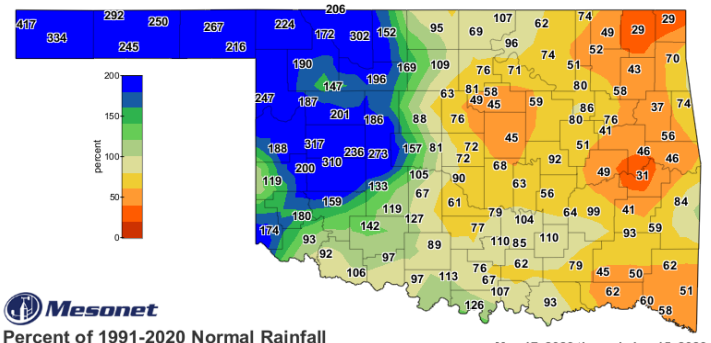
Oklahoma Water Resources Bulletin
& Summary of Current Conditions

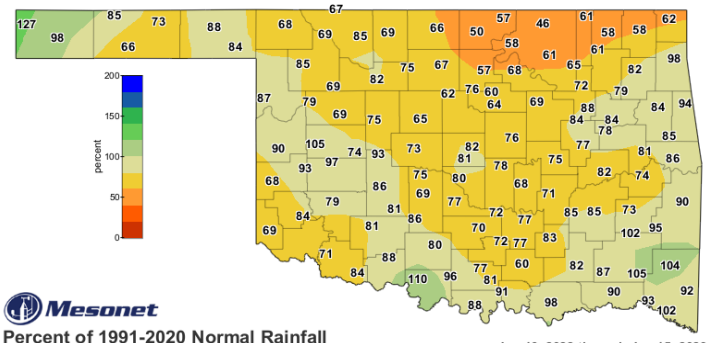
June 16, 2023

Statewide Precipitation

Climate Division	Last 30 Days May 17, 2023 – June 15, 2023 Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921	Last 365 Days June 16, 2022 – June 15, 2023 Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921
PANHANDLE	6.88"	+3.80"	223%	3rd wettest	16.68"	-3.90"	81%	30th driest
N. CENTRAL	6.43"	+1.80"	139%	24th wettest	21.24"	-10.18"	68%	9th driest
NORTHEAST	3.34"	-2.31"	59%	19th driest	29.24"	-13.43"	69%	6th driest
W. CENTRAL	8.12"	+3.55"	178%	11th wettest	22.94"	-5.46"	81%	32nd driest
CENTRAL	3.60"	-1.57"	70%	31st driest	26.88"	-10.75"	71%	13th driest
E. CENTRAL	2.91"	-2.63"	53%	15th driest	38.03"	-8.11"	82%	28th driest
SOUTHWEST	5.74"	+1.29"	129%	29th wettest	24.03"	-6.24"	79%	23rd driest
S. CENTRAL	4.51"	-0.85"	84%	46th driest	32.93"	-7.78"	81%	30th driest
SOUTHEAST	3.07"	-2.39"	56%	19th driest	47.48"	-3.11"	94%	42nd driest
STATEWIDE	**4.87"**	**-0.02"**	**100%**	**47th wettest**	**28.48"**	**-7.99"**	**78%**	**19th driest**

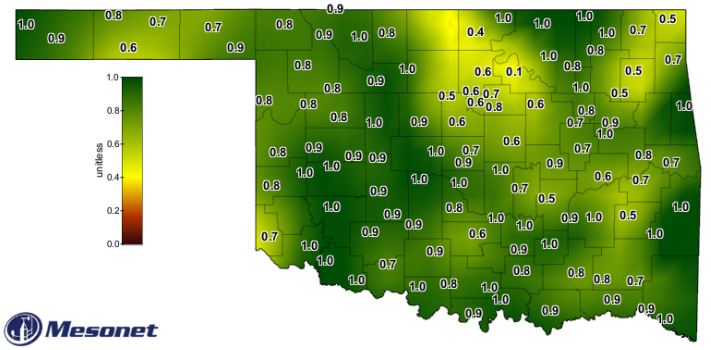


Percent of 1991-2020 Normal Rainfall
Last 30 Days

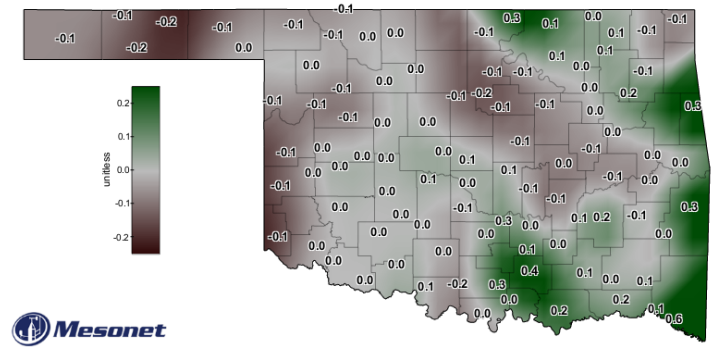


Percent of 1991-2020 Normal Rainfall
Last 365 Days

Soil Moisture



1-day Average 10-inch Fractional Water Index



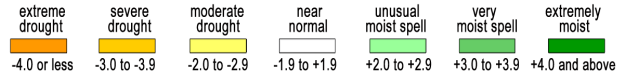
7-day 10-inch Fractional Water Index Change

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)

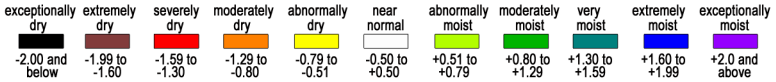
Climate Division	Status 6/10/23	Value 5/6	Value 6/10	Change in Value
NORTHWEST	Near Normal	-2.86	0.07	+2.93
NORTH CENTRAL	Near Normal	0.94	0.61	-0.33
NORTHEAST	Near Normal	0.72	-1.12	-1.84
WEST CENTRAL	Near Normal	-0.71	1.54	+2.25
CENTRAL	Near Normal	1.96	0.52	-1.44
EAST CENTRAL	Near Normal	2.13	-0.50	-2.63
SOUTHWEST	Near Normal	0.70	1.07	+0.37
SOUTH CENTRAL	Near Normal	1.90	-0.09	-1.99
SOUTHEAST	Near Normal	2.96	-0.12	-3.08



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, all climate regions are Near Normal.

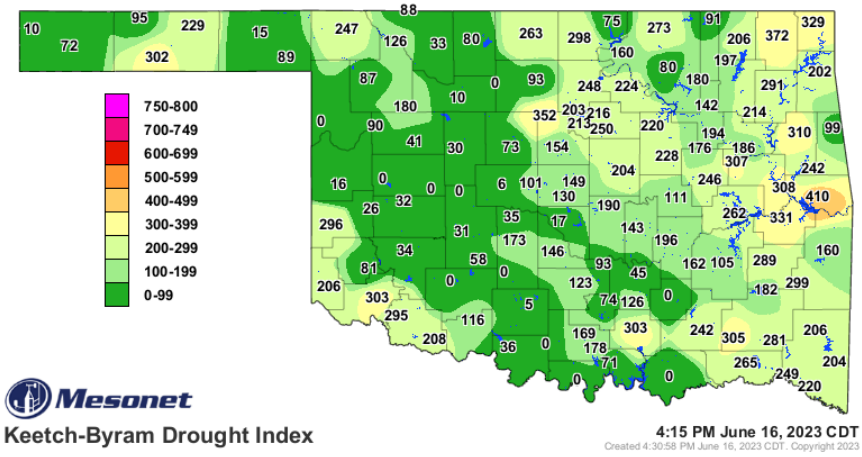
Standardized Precipitation Index (SPI)
Through May 2023

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



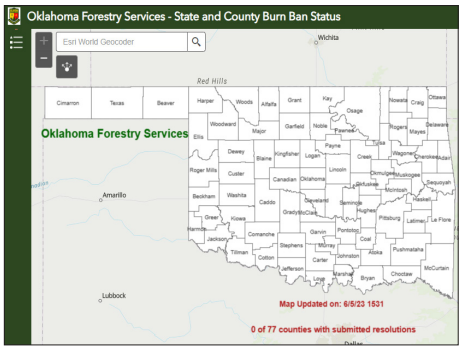
The SPI provides a comparison of precipitation over several specified time periods with totals from the periods for all years in the historical record. Through May 2023, the Northwest and North Central regions were Extremely Dry for the 24-month period, the North Central and Northeast were Severely Dry during the 12-month period. All other regions except the Southeast experienced Abnormally Dry or worse conditions for one or more period.

Keetch-Byram Drought Fire Index



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.

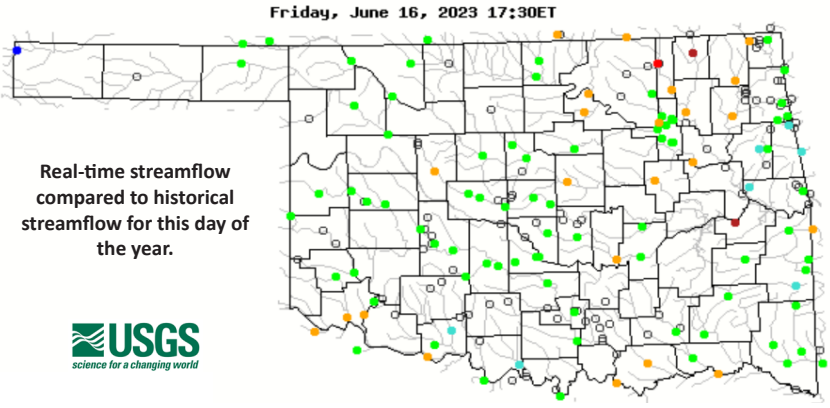
State & County Burn Ban Status



Streamflow Conditions

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

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



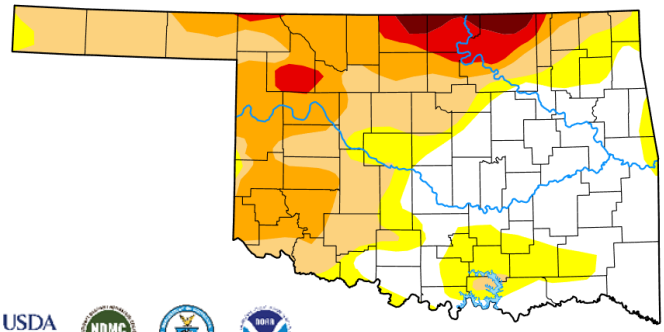
Real-time streamflow compared to historical streamflow for this day of the year.

USGS science for a changing world

Drought Summary for Oklahoma

U.S. Drought Monitor

Oklahoma



June 13, 2023
(Released June 15, 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:
Adam HartmanNOAA/NWS/NCEP/CPC

droughtmonitor.unl.edu

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	6/13/2023	34.99	65.01	49.25	25.38	5.85	1.45	147
Last Week	6/6/2023	35.41	64.59	50.56	35.72	9	1.45	161
3 Months Ago	3/14/2023	34.39	65.61	59.07	50.58	36.64	8.86	221
Start of Calendar Year	12/27/2022	1.82	98.18	89.73	80.92	56.13	11.65	337
Start of Water Year	9/27/2022	0	100	99.88	94.44	64.44	17.25	376
One Year Ago	6/14/2022	59.68	40.32	30.38	15.81	5.45	1.46	93

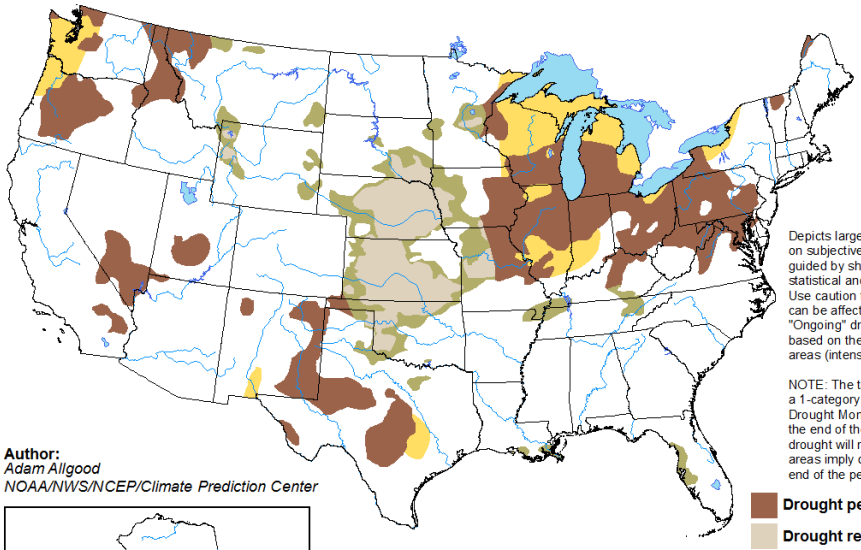
According to the latest U.S. Drought Monitor, as of June 13, 2023, an estimated 825,429 people in Oklahoma (49.25% of the state in area) were experiencing drought conditions, including 1.45% of the state in Exceptional Drought (D4), 5.85% in Extreme Drought (D3) or worse, and 25.38% in Severe Drought (D2) or worse.

Drought Probability

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for June 15 - September 30, 2023
Released June 15



Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center

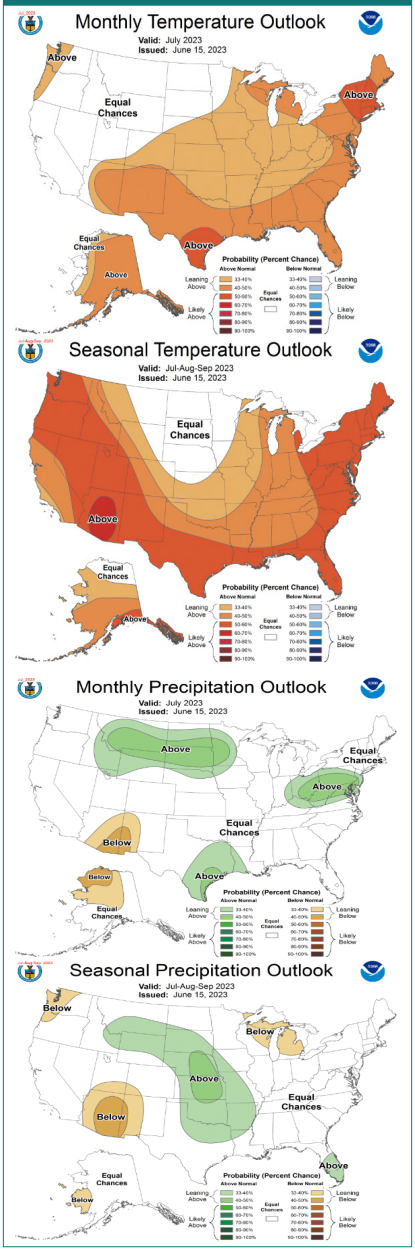
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to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

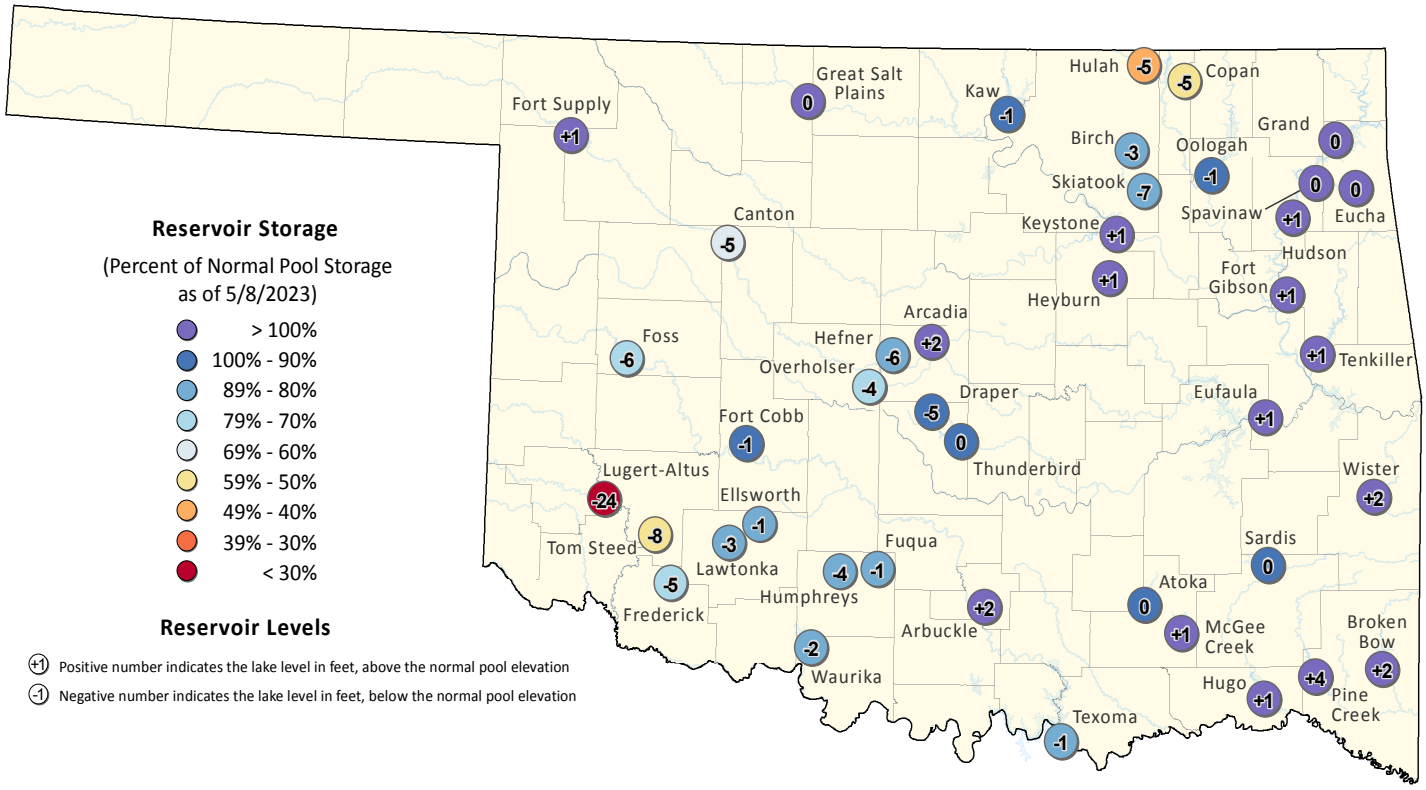
- **Drought persists**
- **Drought remains but improves**
- **Drought removal likely**
- **Drought development likely**

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

Monthly/Seasonal Outlook



Oklahoma Reservoir Levels and Storage as of 5/8/2023



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