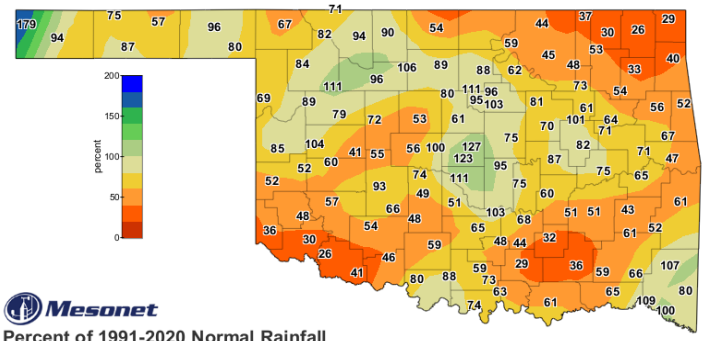
Oklahoma Water Resources Bulletin
& Summary of Current Conditions

May 11, 2023

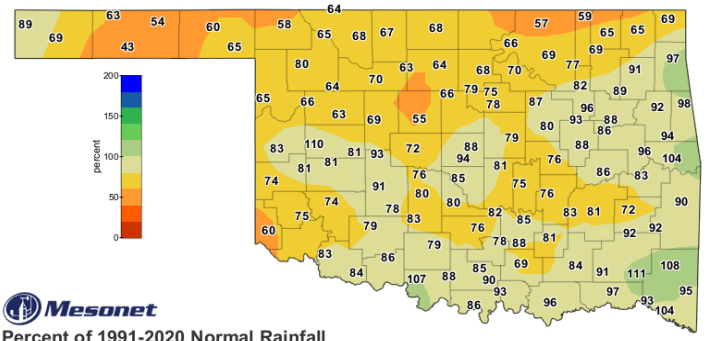
Statewide Precipitation

Climate Division	Last 30 Days (April 11, 2023 – May 10, 2023) Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921	Last 365 Days (May 11, 2022 – May 10, 2023) Total Rainfall (inches)	Departure From Normal (inches)	Percent of Normal	Rank Since 1921
PANHANDLE	1.58"	-0.29"	85%	47th driest	12.21"	-8.37"	59%	4th driest
N. CENTRAL	2.83"	-0.46"	86%	48th driest	20.18"	-11.24"	64%	8th driest
NORTHEAST	2.31"	-2.33"	50%	14th driest	32.11"	-10.56"	75%	15th driest
W. CENTRAL	2.16"	-0.62"	78%	39th driest	21.71"	-6.69"	76%	19th driest
CENTRAL	3.43"	-0.51"	87%	38th driest	28.78"	-8.85"	76%	19th driest
E. CENTRAL	3.31"	-1.46"	69%	26th driest	41.44"	-4.70"	90%	42nd driest
SOUTHWEST	1.72"	-1.43"	55%	18th driest	23.90"	-6.37"	79%	22nd driest
S. CENTRAL	2.57"	-1.81"	59%	15th driest	34.31"	-6.40"	84%	36th driest
SOUTHEAST	3.88"	-1.31"	75%	26th driest	48.16"	-2.43"	95%	48th driest
STATEWIDE	**2.66"**	**-1.13"**	**70%**	**21st driest**	**28.93"**	**-7.54"**	**79%**	**16th driest**



Percent of 1991-2020 Normal Rainfall
Last 30 Days

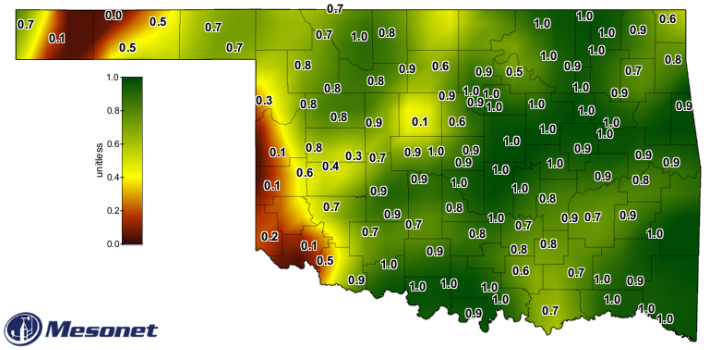
Apr 11, 2023 through May 10, 2023



Percent of 1991-2020 Normal Rainfall
Last 365 Days

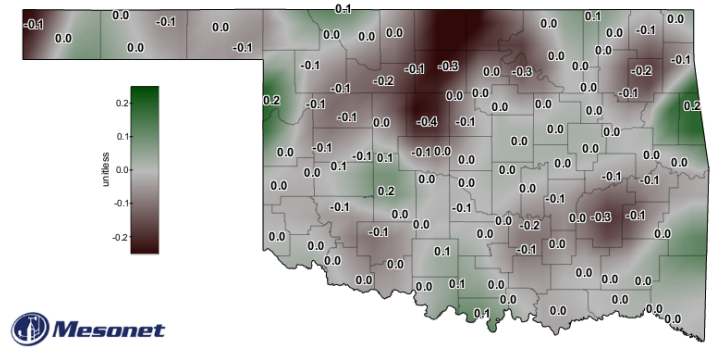
May 11, 2022 through May 10, 2023

Soil Moisture



1-day Average 10-inch Fractional Water Index

May 10, 2023



7-day 10-inch Fractional Water Index Change

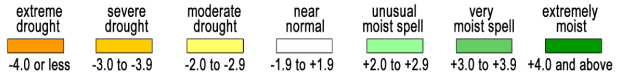
May 10, 2023

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)

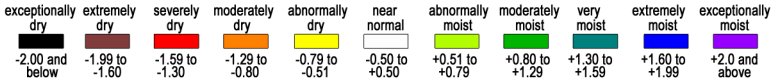
Climate Division	Status 5/6/23	Value 4/15	Value 5/6	Change in Value
NORTHWEST	Moderate Drought	-5.44	-2.86	2.58(+)
NORTH CENTRAL	Near Normal	-2.72	0.94	3.66(+)
NORTHEAST	Near Normal	0.21	0.72	0.51(+)
WEST CENTRAL	Near Normal	-2.93	-0.71	2.22(+)
CENTRAL	Near Normal	0.27	1.96	1.69(+)
EAST CENTRAL	Unusual Moist Spell	1.25	2.13	0.88(+)
SOUTHWEST	Near Normal	-0.12	0.70	0.82(+)
SOUTH CENTRAL	Near Normal	1.36	1.90	0.54(+)
SOUTHEAST	Unusual Moist Spell	2.03	2.96	0.93(+)



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, conditions have improved over the past month, but the Northwest region remains in Moderate Drought.

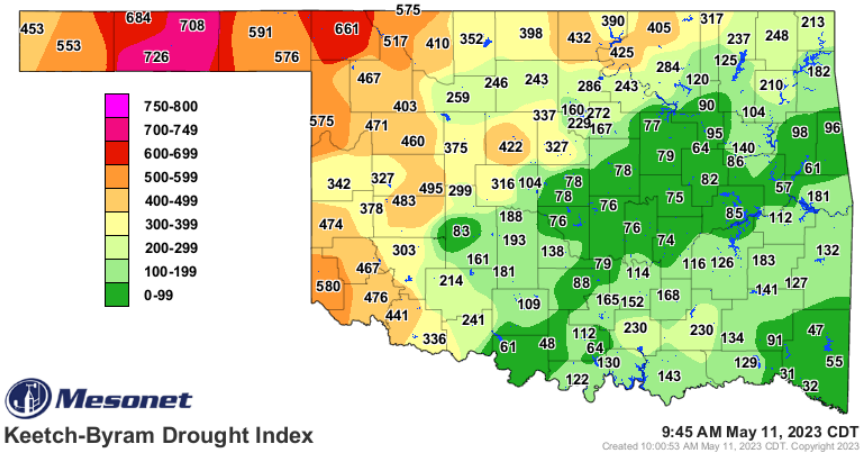
Standardized Precipitation Index (SPI)
Through March 2023

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



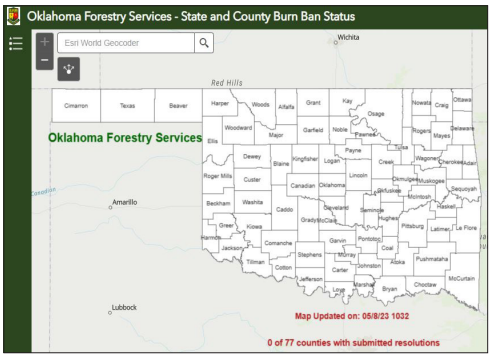
The SPI provides a comparison of precipitation over several specified time periods with totals from the periods for all years in the historical record. Through March 2023, the Northwest was Exceptionally Dry for the 24-month, Extremely Dry for the 12-month, and Moderatly Dry for the 3-month period. North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

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.

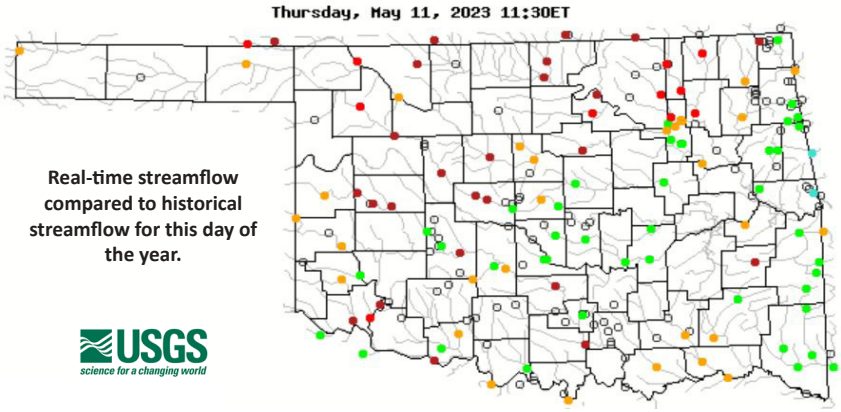
State & County Burn Ban Status



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.



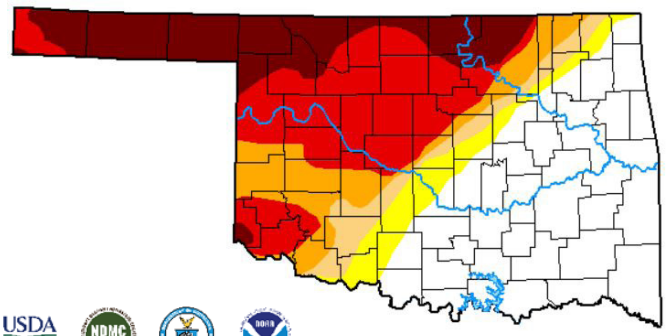
Real-time streamflow compared to historical streamflow for this day of the year.

USGS science for a changing world

Drought Summary for Oklahoma

U.S. Drought Monitor

Oklahoma



droughtmonitor.unl.edu

May 9, 2023
(Released May 11, 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 Pugh, NOAA/CPC

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	2023-05-09	39.19	60.81	52.47	48.07	33.10	10.09	205
Last Week	2023-05-02	40.58	59.42	52.47	48.90	33.47	10.09	204
3 Months Ago	2023-02-07	5.88	94.12	84.95	79.25	56.20	11.27	326
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	2022-05-10	39.71	60.29	53.54	44.86	35.88	10.45	205

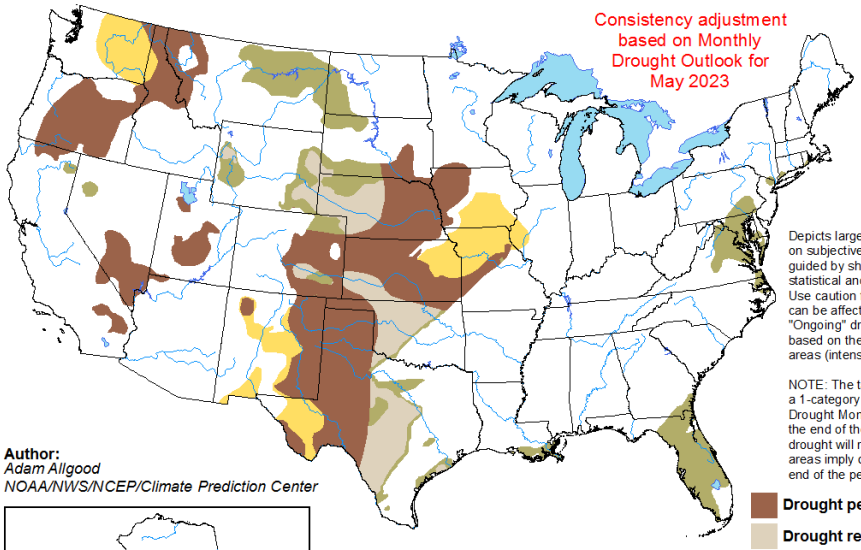
According to the latest U.S. Drought Monitor, as of May 9, 2023, an estimated 1,267,451 people in Oklahoma (52.47% of the state in area) were experiencing drought conditions, including 10.09% of the state in Exceptional Drought (D4), 33.1% in Extreme Drought (D3) or worse, and 48.07% in Severe Drought (D2) or worse.

Drought Probability

U.S. Seasonal Drought Outlook

Drought Tendency During the Valid Period

Valid for May 1 - July 31, 2023
Released April 30, 2023



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).

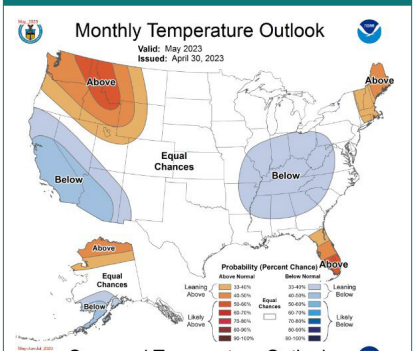
NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

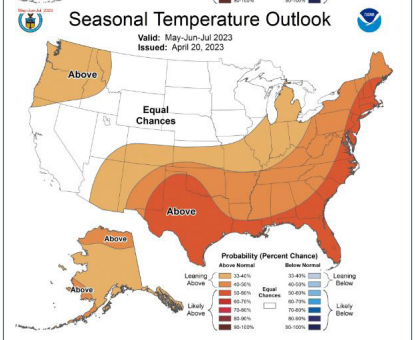
- **Drought persists**
- **Drought remains but improves**
- **Drought removal likely**
- **Drought development likely**

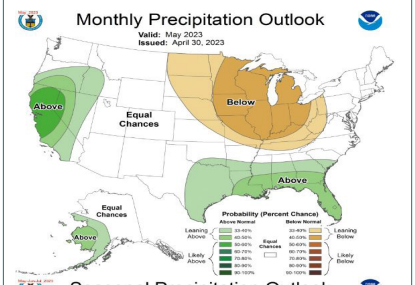
Author:
Adam Allgood
NOAA/NWS/NCEP/Climate Prediction Center

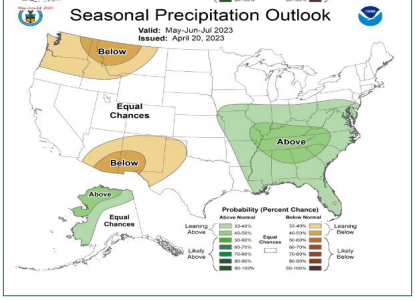
http://go.usa.gov/3eZ73

Monthly/Seasonal Outlook

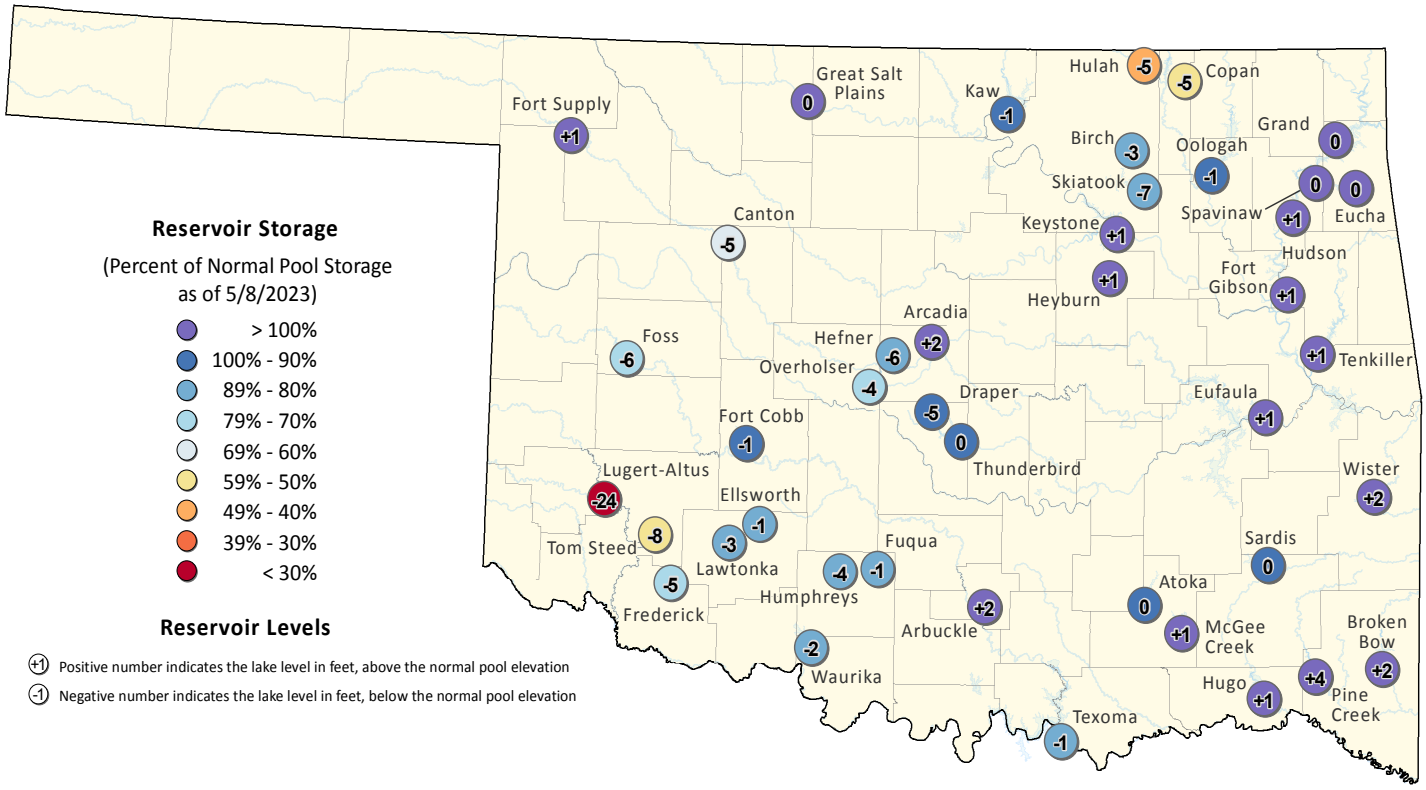








Oklahoma Reservoir Levels and Storage as of 5/8/2023



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