# Oklahoma Water Resources Bulletin
## & Summary of Current Conditions

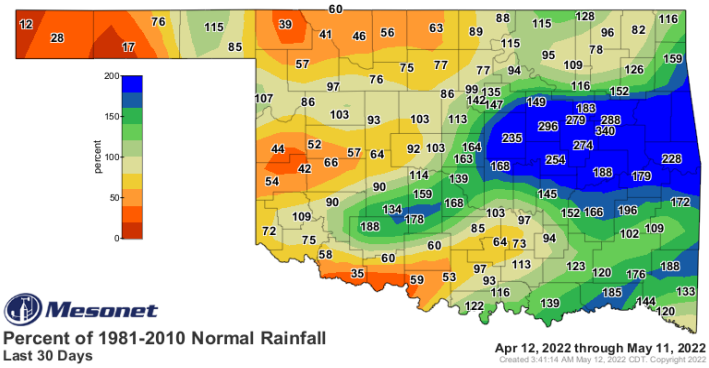
OWRB the water agency

May 12, 2022

# Precipitation

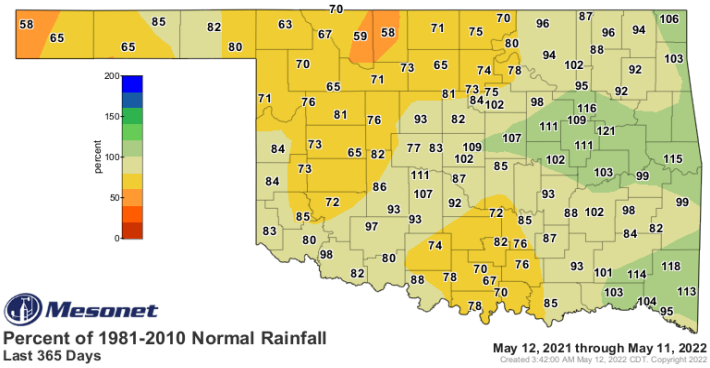
## Statewide Precipitation

| Climate Division | Last 30 Days (April 12, 2022 – May 11, 2022) Total Rainfall (inches) | Departure From Normal (inches) | Percent of Normal | Rank Since 1921 | Last 365 Days (May 12, 2021 – May 11, 2022) Total Rainfall (inches) | Departure From Normal (inches) | Percent of Normal | Rank Since 1921 |
|---|---|---|---|---|---|---|---|---|
| PANHANDLE | 1.20" | -0.70" | 63% | 32nd driest | 14.72" | -5.86" | 72% | 17th driest |
| N. CENTRAL | 2.35" | -0.99" | 70% | 30th driest | 21.58" | -9.84" | 69% | 10th driest |
| NORTHEAST | 5.82" | +1.12" | 124% | 27th wettest | 41.23" | -1.44" | 97% | 43rd wettest |
| W. CENTRAL | 2.04" | -0.79" | 72% | 32nd driest | 22.39" | -6.01" | 79% | 25th driest |
| CENTRAL | 6.06" | +2.06" | 151% | 20th wettest | 35.03" | -2.60" | 93% | 44th wettest |
| E. CENTRAL | 11.19" | +6.36" | 232% | 4th wettest | 48.50" | +2.36" | 105% | 26th wettest |
| SOUTHWEST | 2.91" | -0.30" | 91% | 49th driest | 26.46" | -3.81" | 87% | 36th driest |
| S. CENTRAL | 3.95" | -0.49" | 89% | 50th driest | 31.99" | -8.72" | 79% | 21st driest |
| SOUTHEAST | 7.52" | +2.26" | 143% | 23rd wettest | 51.42" | +0.83" | 102% | 40th wettest |
| **STATEWIDE** | **4.79"** | **+0.95"** | **125%** | **30th wettest** | **32.46"** | **-4.01"** | **89%** | **40th driest** |




Percent of 1981-2010 Normal Rainfall
Last 30 Days

Apr 12, 2022 through May 11, 2022

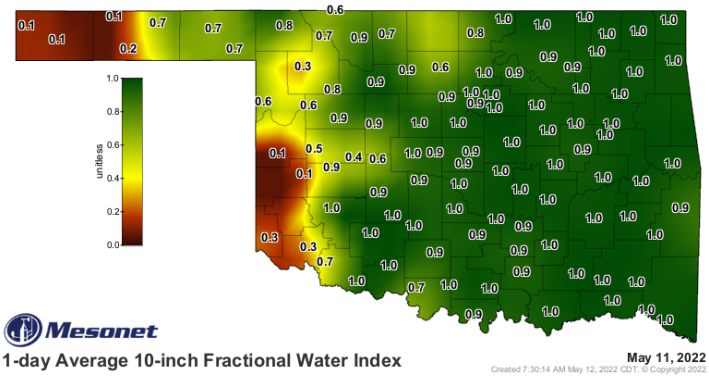



Percent of 1981-2010 Normal Rainfall
Last 365 Days

May 12, 2021 through May 11, 2022

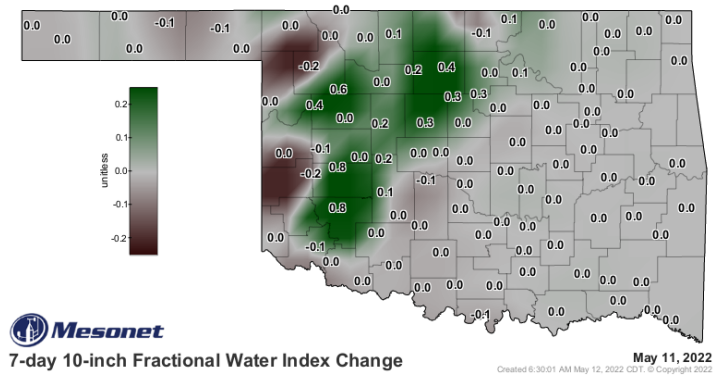
# Soil Moisture

## Fractional Water Index




1-day Average 10-inch Fractional Water Index

May 11, 2022




7-day 10-inch Fractional Water Index Change

May 11, 2022

*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 05/07/22 | Value 04/09 | Value 05/07 | Change in Value |
|---|---|---|---|---|
| NORTHWEST | Severe Drought | -2.69 | -3.15 | 0.46(-) |
| NORTH CENTRAL | Near Normal | -0.74 | -0.14 | 0.6(+) |
| NORTHEAST | Near Normal | -0.16 | 1.79 | 1.95(+) |
| WEST CENTRAL | Moderate Drought | -1.70 | -2.13 | 0.43(-) |
| CENTRAL | Near Normal | 0.27 | 1.49 | 1.22(+) |
| EAST CENTRAL | Very Moist Spell | 1.43 | 3.28 | 1.85(+) |
| SOUTHWEST | Near Normal | -1.63 | -1.54 | 0.09(+) |
| SOUTH CENTRAL | Near Normal | -0.34 | 0.40 | 0.74(+) |
| SOUTHEAST | Unusual Moist Spell | 1.52 | 2.34 | 0.82(+) |

| 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 May 7, 2022, all climate regions are near normal or wetter except the Northwest, which is in Severe Drought, and West Central, which is in Moderate Drought.*

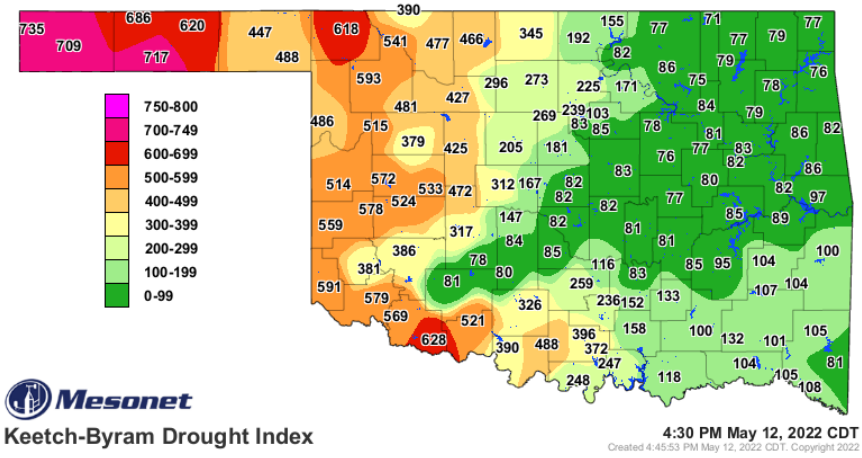
## Standardized Precipitation Index (SPI)
### Through April 2022

| Climate Division | 3-month | 12-month | 24-month |
|---|---|---|---|
| NORTHWEST | Moderately Dry | Moderately Dry | Severely Dry |
| NORTH CENTRAL | Abnormally Dry | Moderately Dry | Abnormally Dry |
| NORTHEAST | Near Normal | Near Normal | Near Normal |
| WEST CENTRAL | Severely Dry | Moderately Dry | Moderately Dry |
| CENTRAL | Near Normal | Near Normal | Near Normal |
| EAST CENTRAL | Abnormally Moist | Near Normal | Abnormally Moist |
| SOUTHWEST | Moderately Dry | Near Normal | Near Normal |
| SOUTH CENTRAL | Near Normal | Near Normal | Near Normal |
| SOUTHEAST | Abnormally Moist | Near Normal | Moderately Moist |

| 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 | +2.0 and above |

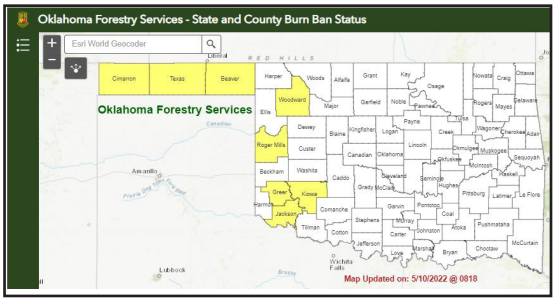
*The SPI provides a comparison of precipitation over several specified periods with totals from the periods for all years in the historical record. Through April 2022, the Northwest, North Central, and West Central regions were below normal moisture for all three periods and the Southwest region was below normal for the 3 month period.*

## Keetch-Byram Drought Fire Index and County Burn Ban Status




*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.*

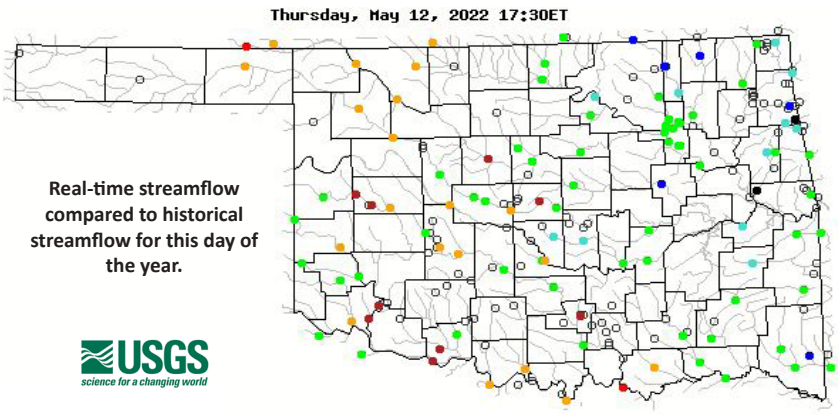
*KBDI values of 600 and above are often associated with more severe drought and increased wildfire occurrence.*




## 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.**

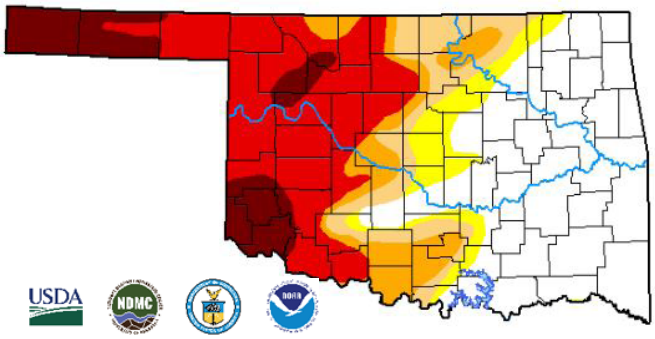
USGS science for a changing world

# Weather/Drought Forecast

## Drought Summary for Oklahoma

*U.S. Drought Monitor*

**Oklahoma**



droughtmonitor.unl.edu

**May 10, 2022**

***(Released Thursday, May 12, 2022)***

**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:
David Simeral
Western Regional Climate Center


**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

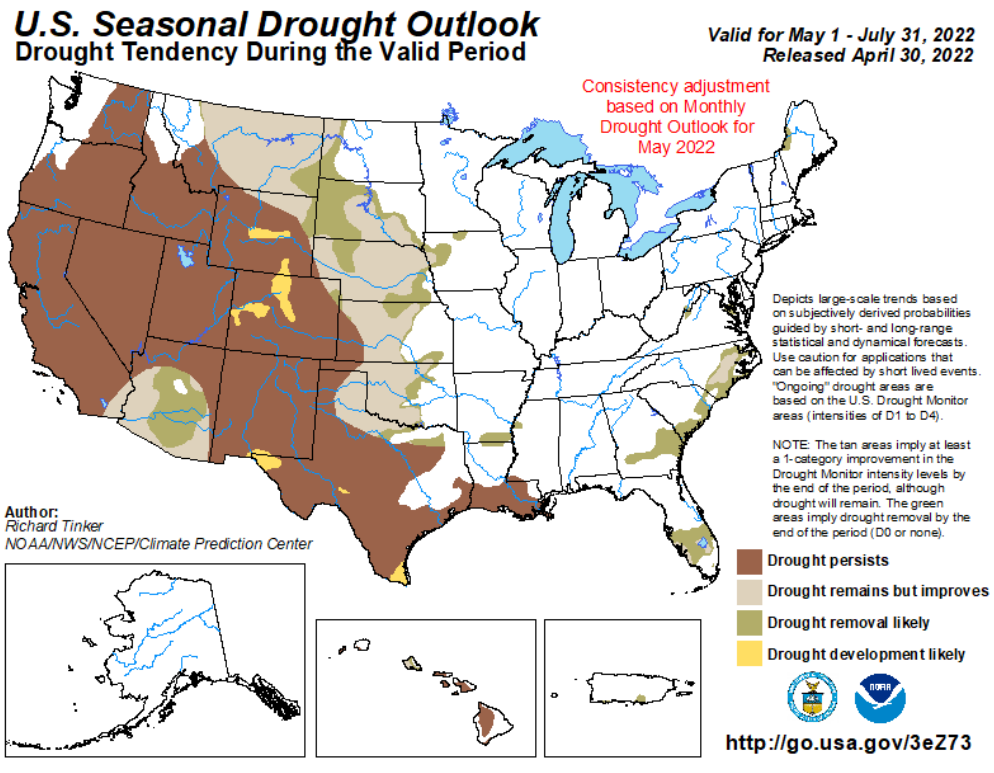
**D4 - Exceptional Drought**
- Ground is cracking; farmers are bailing failed crops or abandoning fields; pastures are bare; land is abandoned
- Cost of hay and water is high and supplies are scarce; producers are liquidating herds
- Burn restrictions increase; fire season is long

*Drought Conditions (percent area)*

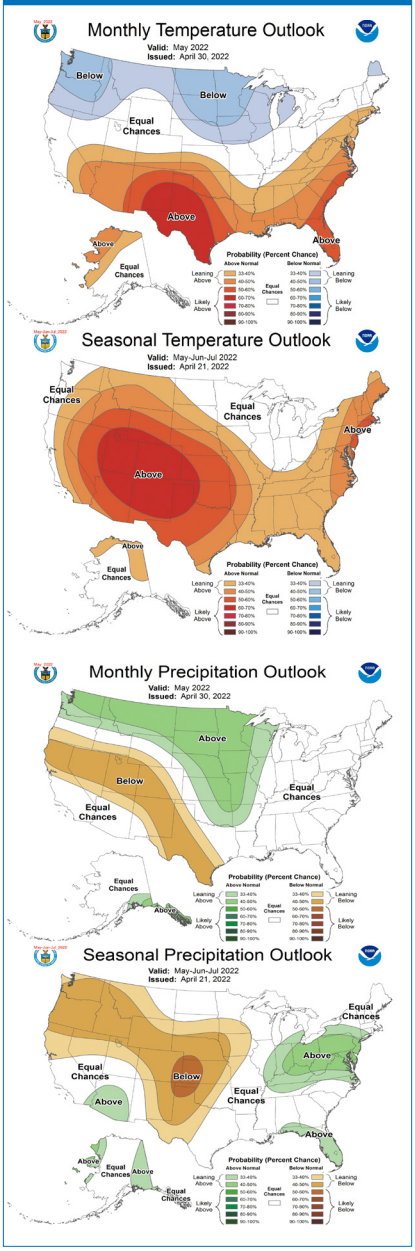
| Week | Date | None | D0-D4 | D1-D4 | D2-D4 | D3-D4 | D4 | DSCI |
|---|---|---|---|---|---|---|---|---|
| Current | 2022-05-10 | 39.71 | 60.29 | 53.54 | 44.86 | 35.88 | 10.45 | 205 |
| Last Week | 2022-05-03 | 22.77 | 77.23 | 65.34 | 55.29 | 39.38 | 10.40 | 248 |
| 3 Months Ago | 2022-02-08 | 8.30 | 91.70 | 85.57 | 74.62 | 48.11 | 2.90 | 303 |
| Start of Calendar Year | 2021-12-28 | 4.92 | 95.08 | 90.17 | 72.51 | 22.62 | 0.00 | 280 |
| Start of Water Year | 2021-09-28 | 6.45 | 93.55 | 73.23 | 23.72 | 2.65 | 0.00 | 193 |
| One Year Ago | 2021-05-11 | 50.82 | 49.18 | 16.05 | 3.02 | 0.08 | 0.00 | 68 |

According to the latest U.S. Drought Monitor, as of May 10, 2022, an estimated 1,038,915 Oklahomans were experiencing drought conditions, with 10.45% of the state in area in Exceptional Drought (D4), the worst category, 35.88% in Extreme Drought (D3-4) or worse, 44.86% in Severe Drought (D2-D4) or worse, and 53.54% in Moderate Drought (D1) or worse.

## Drought Probability



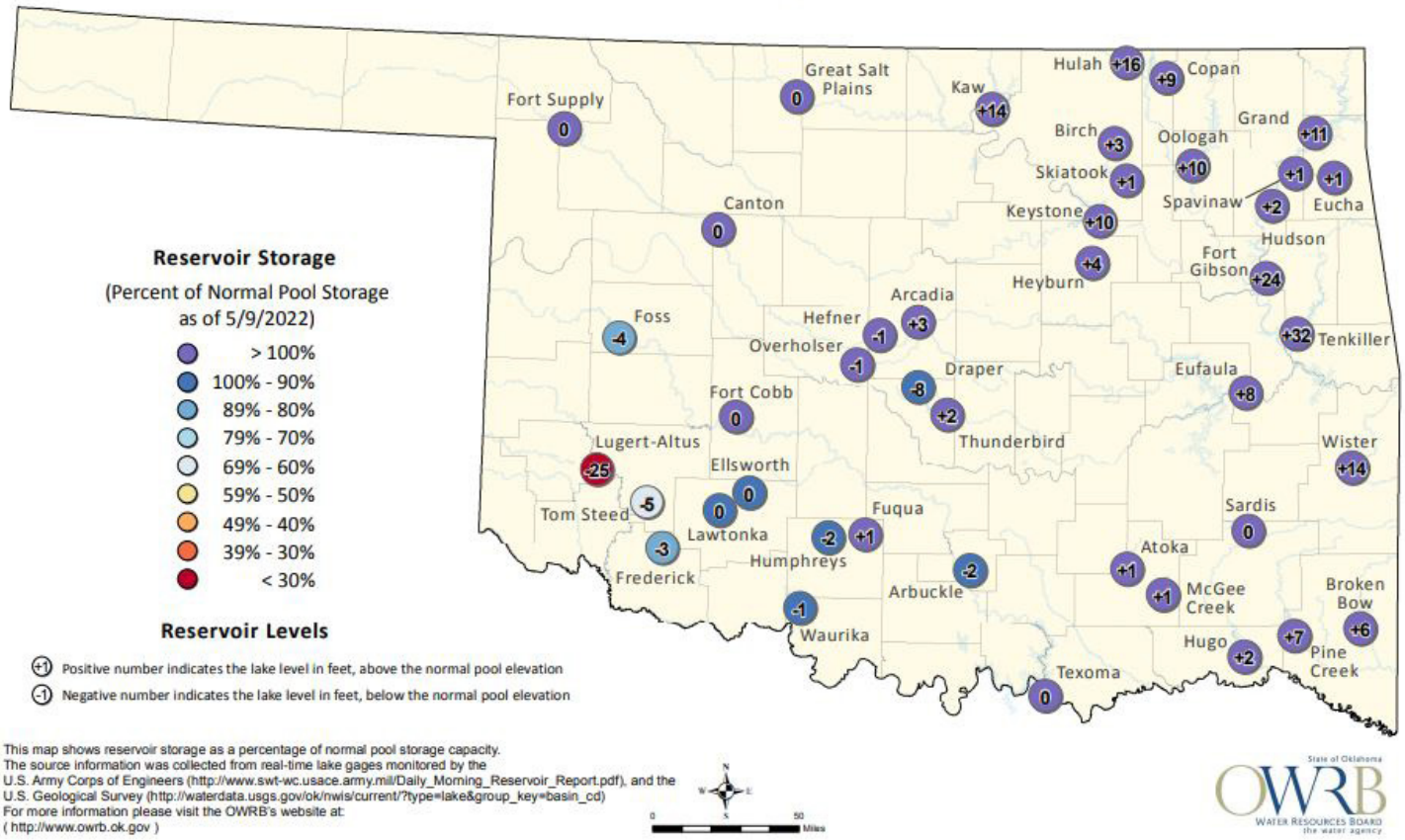

## Monthly/Seasonal Outlook



# Reservoir Storage

## Oklahoma Surface Water Resources

### Reservoir Levels and Storage as of 5/9/2022




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 (http://www.swt-wc.usace.army.mil/Daily_Morning_Reservoir_Report.pdf), and the U.S. Geological Survey (http://waterdata.usgs.gov/ok/nwis/current/?type=lake&group_key=basin_cd)
For more information please visit the OWRB's website at:
( http://www.owrb.ok.gov )