



2024 Preliminary Summer Weather Outlook

Sam Morris

Manager of Load Forecasting and Analysis

Chris Coleman

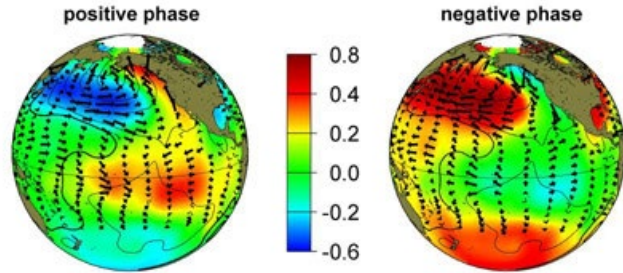
Supervisor of Operational Forecasting

Summer Weatherization Workshop

El Niño/La Niña

2019	0.8	0.8	0.8	0.8	0.7	0.5	0.3	0.1	0.1	0.3	0.5	0.5
2020	0.5	0.6	0.5	0.3	0.0	-0.2	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2
2021	-1.1	-0.9	-0.8	-0.7	-0.5	-0.4	-0.4	-0.5	-0.7	-0.8	-1.0	-1.0
2022	-1.0	-0.9	-1.0	-1.1	-1.0	-0.9	-0.8	-0.9	-1.0	-1.0	-0.9	-0.8
2023	-0.7	-0.4	-0.1	0.1	0.5	0.8	1.1	1.3	1.5	1.8	1.9	2.0
	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ

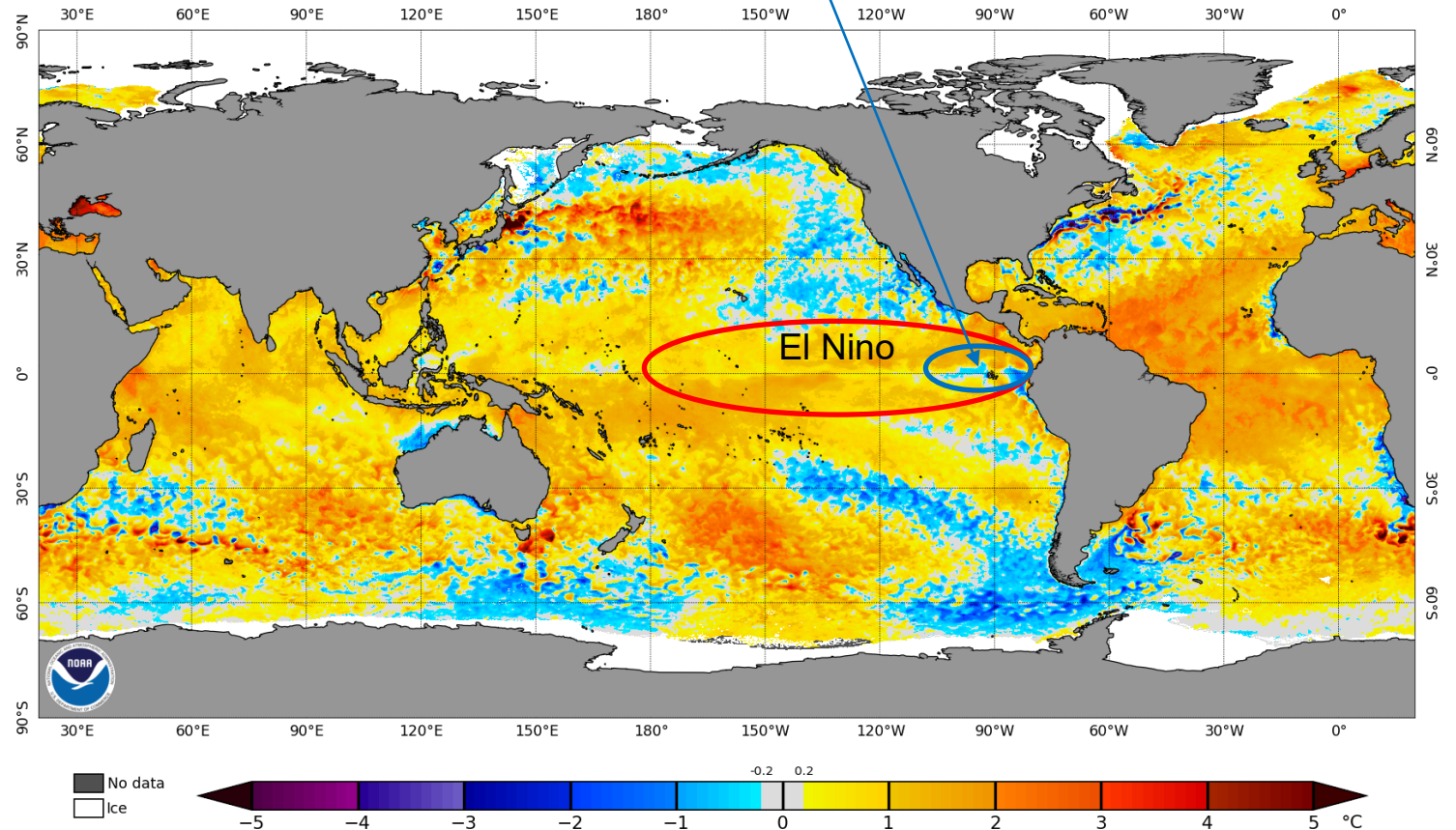
Pacific Decadal Oscillation



- 2023: fast and aggressive turnover from prolonged La Niña to strong El Niño
- 2024: return to La Niña is expected by summer or fall (summer lean)
- A negative PDO better supports La Niña
- La Niña supports drought in Texas, drought supports summer heat

Sign of a decaying El Niño

NOAA Coral Reef Watch Daily 5km SST Anomalies (v3.1) 10 Apr 2024



El Niño/La Niña

- **8 historical strong El Niño events prior to 2023-24**
- 5 became a La Niña no later than ASO (most by mid-to-late-summer)
- Only 1 returned to a second year of El Niño
- 4 historical very strong El Niño events (+2.0 or greater); **ALL 4** transitioned to a La Niña later in the year

2023-24: +2.0°, ?

2015-16: **+2.6°**, La Niña by JAS (25th hottest summer)

2009-10: +1.6°, La Niña by JJA (14th)

1997-98: **+2.3°**, La Niña by JJA (4th)

1991-92: +1.6°, Neutral by JJA (117th Mt Pinatubo)

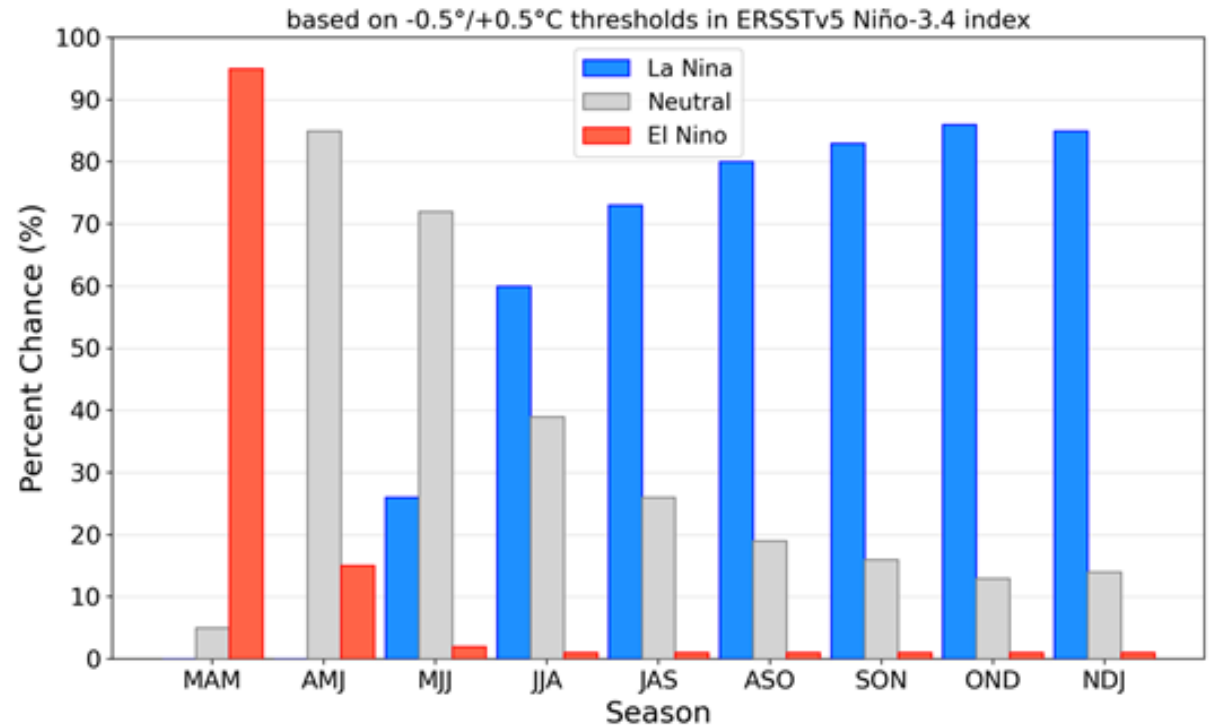
1982-83: **+2.2°**, La Niña by ASO (87th)

1972-73: **+2.1°**, La Niña by AMJ (119th)

1965-66: +1.7°, Neutral by AMJ (101st)

1957-58: +1.8°, Neutral by JAS (then a return to El Niño heading into a second winter) (30th)

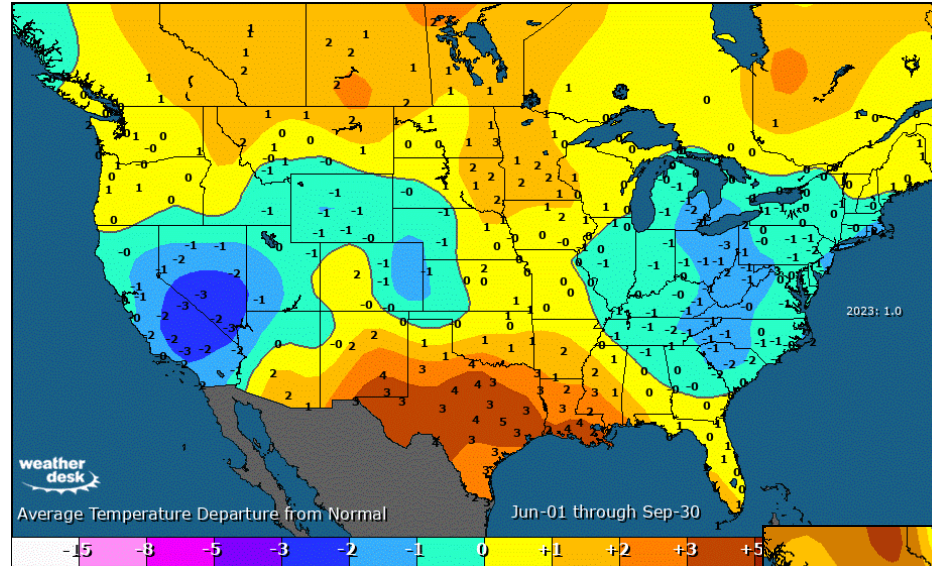
Official NOAA CPC ENSO Probabilities (issued Apr. 2024)



Summer 2023 Review

- **June-September 2023** was the **second** hottest on record for the state of Texas – pushing 2022 down to third. 2011 remains the hottest summer (POR 1895-current)
- **July-September 2023** was **the hottest** on record, easily breaking 2011's record
- Summer 2023 was the **8th driest** on record. 2011 was the 1st driest. Summer 2023 ranks as the 2nd driest since 1956
- Last year, Texas went from the 80th driest April-June (2023) period to a very hot (#2) and dry (#7) summer (June-August)
 - 2011, 2022, and 1998 (the other three top 4 hottest summers) were all preceded by top 7 driest April-June periods
 - A dry spring is typically a good indicator of a hot summer (2023 was not a dry spring)

Departure from Normal Temperature (F)



1	2023	84.6°
2	2011	84.4°
3	2022	83.1°
4	1998	83.0°
5	1980	82.5°
6	1954	82.3°
7	2019	82.3°
8	1934	82.2°
9	1911	82.0°
10	2018	81.9°

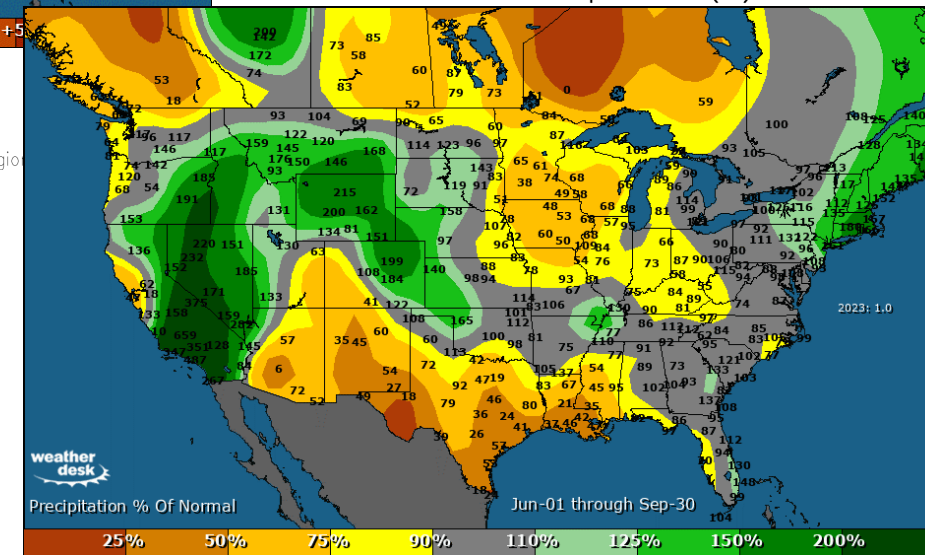
5 of the 10 hottest summers in Texas Have occurred since 2011

Percent of Normal Precipitation (%)

Generated 9/20/2023 at HPRCC using provisional data.

NOAA Region

1	2011	-6.82"
2	1956	-6.59"
3	1954	-5.32"
4	1952	-4.77"
5	1934	-4.41"
6	1910	-4.32"
7	1930	-4.15"
8	2023	-4.11"
9	1947	-4.04"
10	1917	-3.93"



Generated 9/20/2023 at HPRCC using provisional data.

NOAA Regional Climate Centers

Preliminary 2024 Summer Temperature Outlook

Preferred analogs:

2016: 25th hottest summer (129 historical summers)

1954: 6th hottest summer

2010: 14th hottest summer

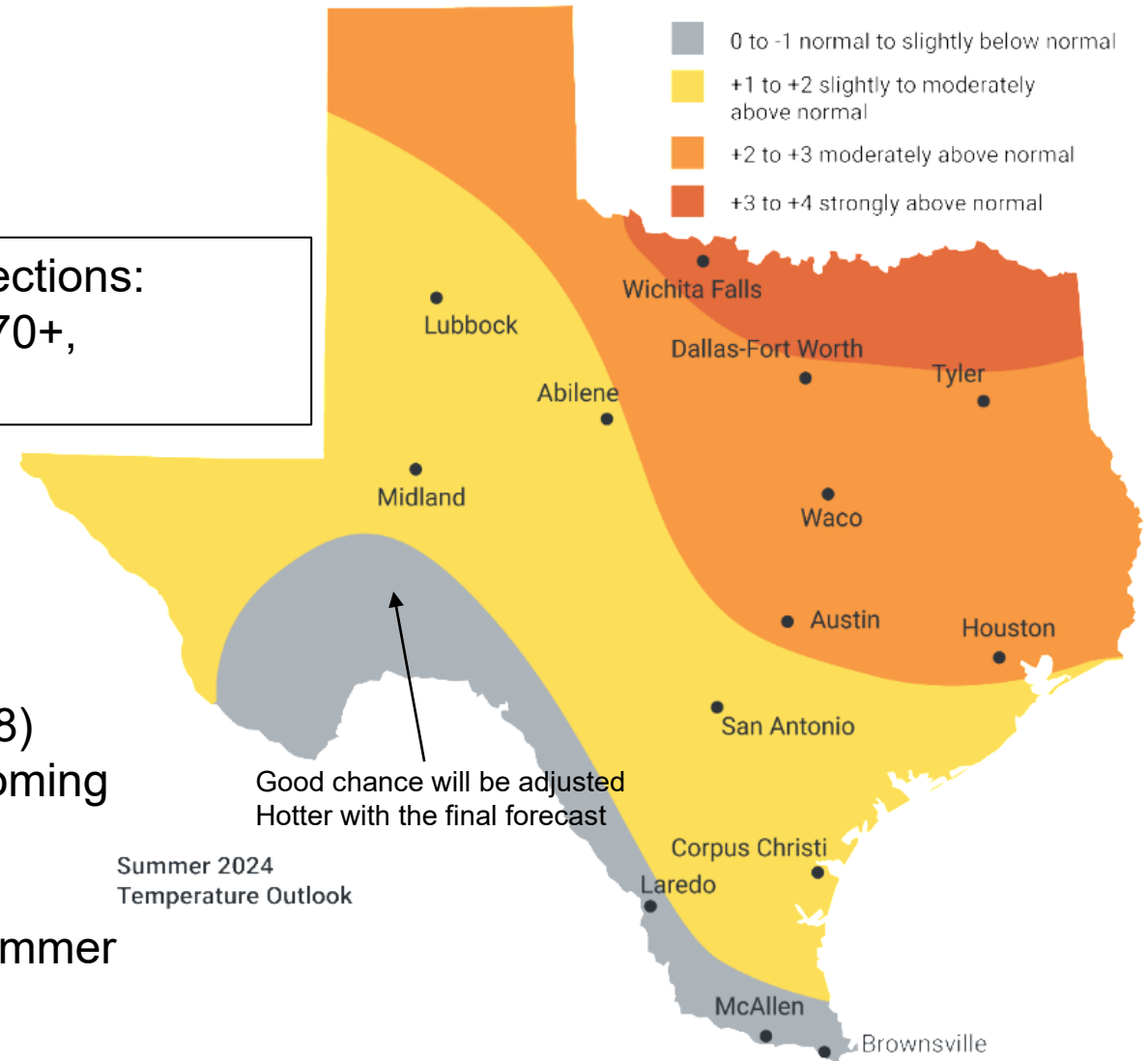
Preliminary 100°-day projections:
Austin 60-90+, Dallas 50-70+,
Houston 30-45+

What could change?

The top analogs listed above (2016 and 1954) were assisted by dry summers

3 of the 11 analogs were both wet and mild (2007, 1973, 1958)
2007 and 1973 were also both wet in the spring. 1958 was coming off the 7th wettest year on record

A cooler/milder summer will likely require a wet spring into summer
Texas is still in a drought

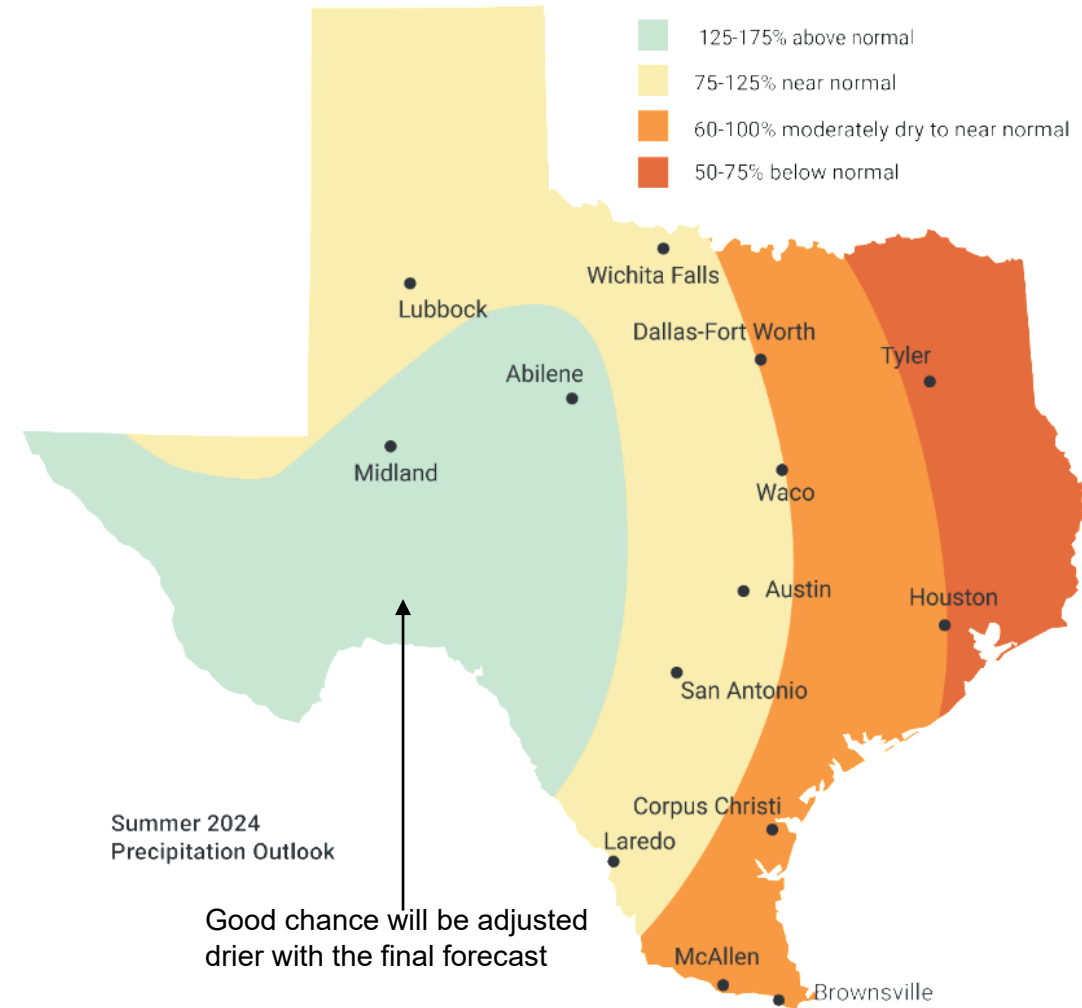


Preliminary 2024 Summer Precipitation Outlook

As with the temperature outlook, rainfall is relying heavily on the historical matches (analog) of 2016, 2010, and 1954

Most of Texas is forecasted to see normal to below normal rainfall this summer

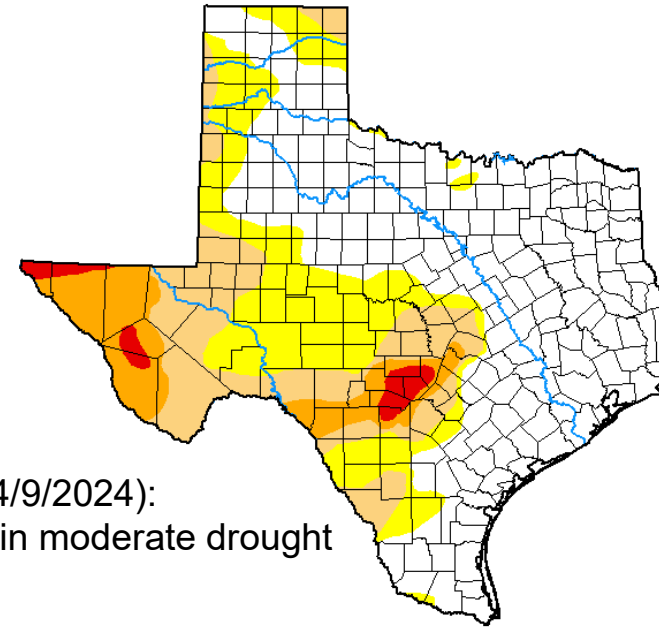
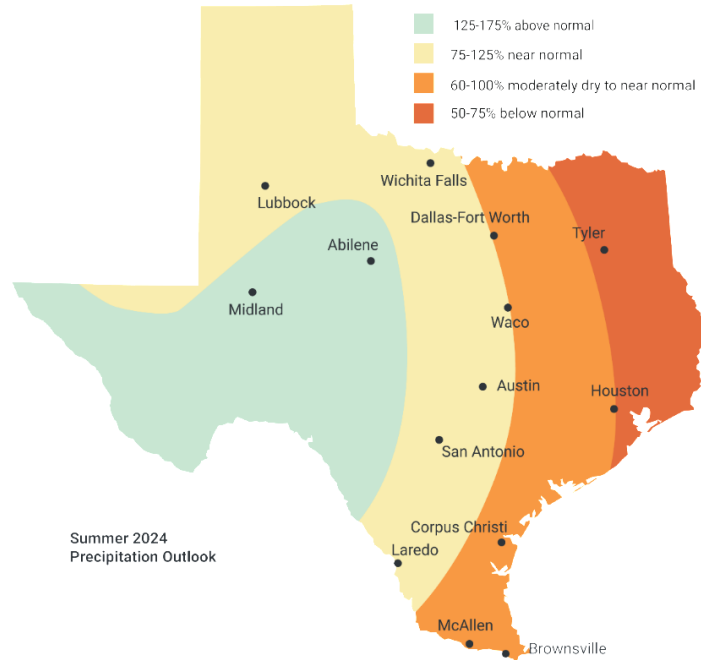
West Texas may trend drier. South Texas may trend wetter (especially with a tropical influence)



Drought Update

U.S. Drought Monitor Texas

April 9, 2024
(Released Thursday, Apr. 11, 2024)
Valid 8 a.m. EDT



Current Drought (as of 4/9/2024):
25% of the state's area in moderate drought
or worse

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	54.63	45.37	25.19	9.85	1.97	0.00
Last Week 04-02-2024	54.66	45.34	25.10	9.85	1.97	0.00
3 Months Ago 01-09-2024	43.51	56.49	29.98	12.72	4.02	0.00
Start of Calendar Year 01-02-2024	39.60	60.40	39.47	17.78	5.68	0.68
Start of Water Year 09-26-2023	3.03	96.97	80.64	59.66	38.06	12.68
One Year Ago 04-11-2023	22.13	77.87	58.63	37.64	16.24	4.07

Intensity:



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:

Brad Pugh
CPC/NOAA



droughtmonitor.unl.edu

The Palmer Drought Severity Index ranks the drought as the 28th worst at this point in the year (1895-current, 129 years) -- worse than the drought monitor map might suggest

While winter precipitation was above normal (6.13"), that's the driest season climatologically in Texas (6.13" is below normal for any non-winter season)

With a transition back to a La Nina, increasing drought is a real possibility this summer



Preliminary 2024 Hurricane Season Forecast

	# named storms	# hurricanes	# of major hurricanes
2016	15	7	4
2010	19	12	5
2007	15	6	2
2005	28	15	7
2003	16	7	3
1973	8	4	1
1964	13	7	5
1958	12	7	3
1954	16	7	3
1953	14	7	3
1952	11	5	2
Average	15.18	7.64	3.45
30-year normal 1991-2020	14	7	3

gulf	texas
named storms	named storms
4	0
6	1
6	1
11	0
6	3
2	1
4	1
3	3
5	1
4	0
1	0
4.73	1.00

Forecast:

18-22+ named storms

7-12 hurricanes

3-6 major hurricanes

4-6 named storms in the Gulf of Mexico

Better-than-average chance for a Texas landfall



High confidence in more total named storms in the Atlantic Basin than the 30-year normal

La Niña better supports an active season than does El Niño – though 2023 (El Niño) was active (20 total named storms -- 4th most but most steered out into the Atlantic, 7 hurricanes, 3 major hurricanes)

Questions?



sam.morris@ercot.com
chris.coleman@ercot.com