Your Presenter

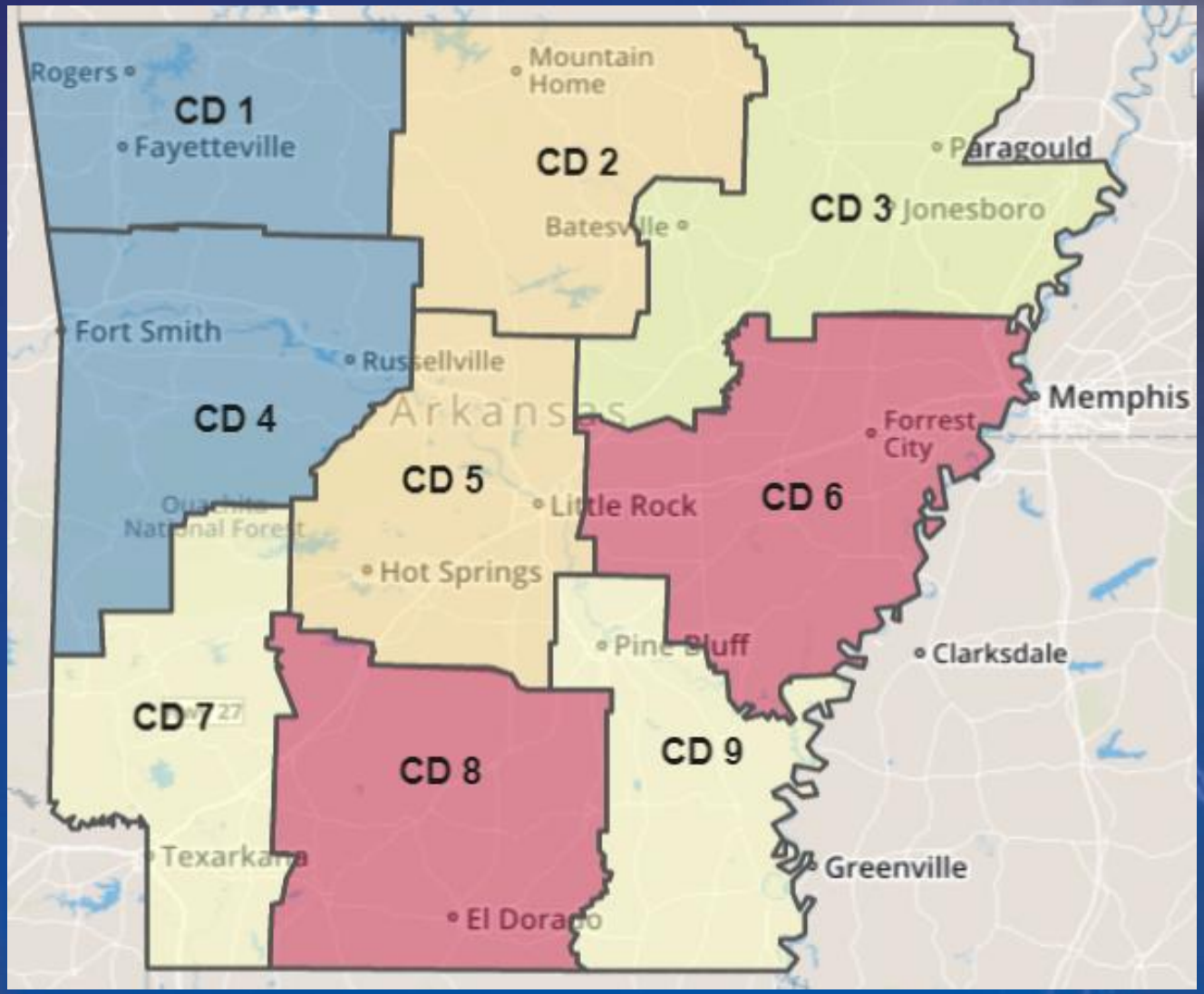
Joe Goudsward
Senior Forecaster/IMET

National Weather Service Forecast Office
North Little Rock, Arkansas
joseph.goudsward@noaa.gov

Today's Presentation

Current conditions and looking ahead

Climate Zones



Precipitation

September 2022

Precipitation in September, 2022				
Site	Amount	Normal	+/-	% of Normal
Fayetteville (NW AR)	1.28	4.26	-2.98	30%
Harrison (NC AR)	1.16	4.06	-2.90	29%
Jonesboro (NE AR)	0.35	3.30	-2.95	11%
Fort Smith (WC AR)	0.96	4.04	-3.08	24%
Little Rock (C AR)	0.63	3.01	-2.38	21%
West Memphis (EC AR)	1.32	3.05	-1.73	43%
Texarkana (SW AR)	1.50	3.60	-2.10	42%
El Dorado (SC AR)	1.85	3.23	-1.38	57%
Pine Bluff (SE AR)	1.40	3.09	-1.69	45%

The statewide average was 1.24” which was 2.35” below average. This was the 10th driest September on record, going back to 1895.

Precipitation

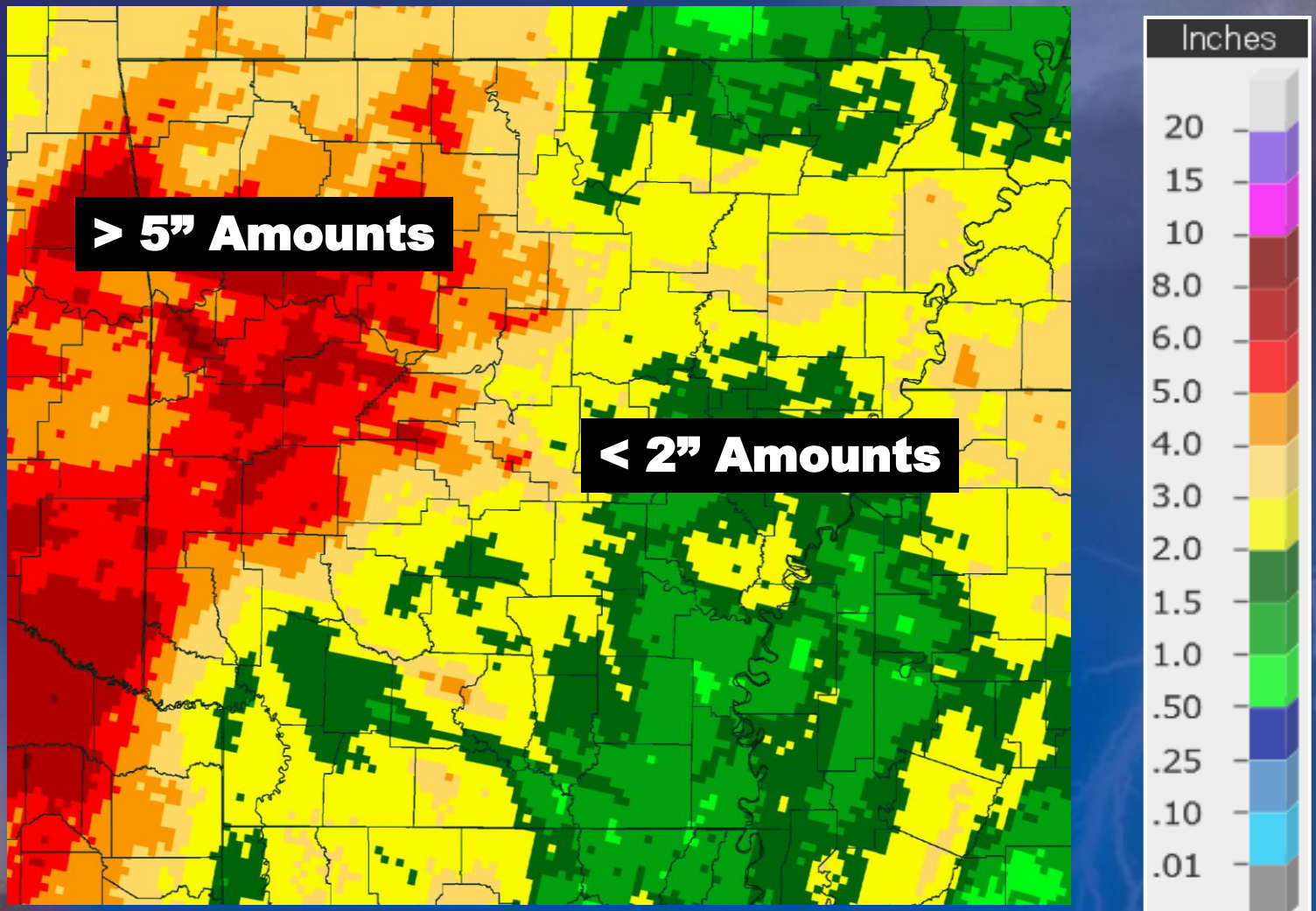
October 2022

Precipitation in October, 2022				
Site	Amount	Normal	+/-	% of Normal
Fayetteville (NW AR)	3.21	4.48	-1.27	72%
Harrison (NC AR)	4.31	3.81	+0.50	113%
Jonesboro (NE AR)	2.29	3.81	-1.52	60%
Fort Smith (WC AR)	6.28	4.42	+1.86	142%
Little Rock (C AR)	2.22	4.47	-2.25	50%
West Memphis (EC AR)	3.43	4.09	-0.66	84%
Texarkana (SW AR)	1.48	4.51	-3.03	33%
El Dorado (SC AR)	3.94	4.58	-0.64	86%
Pine Bluff (SE AR)	2.02	4.58	-2.56	44%

More than 5” of rain fell across parts of western Arkansas, with less than 2” in parts of the south/east.

Observed Precipitation

October 2022



Precipitation

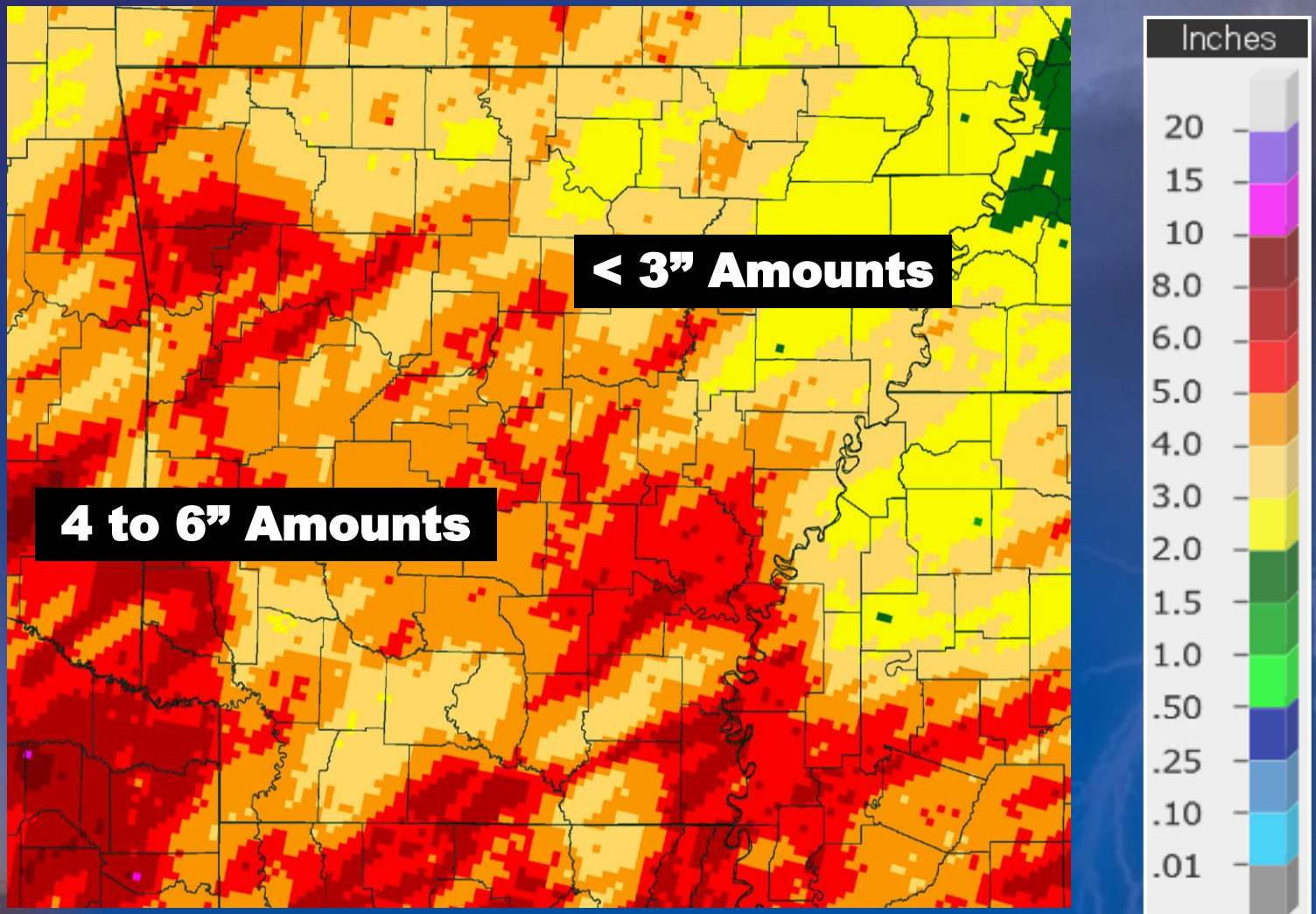
November 2022

Precipitation in November, 2022				
Site	Amount	Normal	+/-	% of Normal
Fayetteville (NW AR)	4.71	3.68	+1.03	128%
Harrison (NC AR)	4.63	3.96	+0.67	117%
Jonesboro (NE AR)	2.51	4.40	-1.89	57%
Fort Smith (WC AR)	4.53	3.85	+0.68	118%
Little Rock (C AR)	4.39	4.72	-0.33	93%
West Memphis (EC AR)	3.57	4.50	-0.93	79%
Texarkana (SW AR)	4.40	3.91	+0.49	113%
El Dorado (SC AR)	4.72	3.83	+0.89	123%
Pine Bluff (SE AR)	5.37	3.97	+1.40	135%

Beneficial rain occurred in southern and western Arkansas, with widespread four to six inch amounts. It was a drier scenario farther north/east, with less than three inches of precipitation common.

Observed Precipitation

November 2022



Precipitation

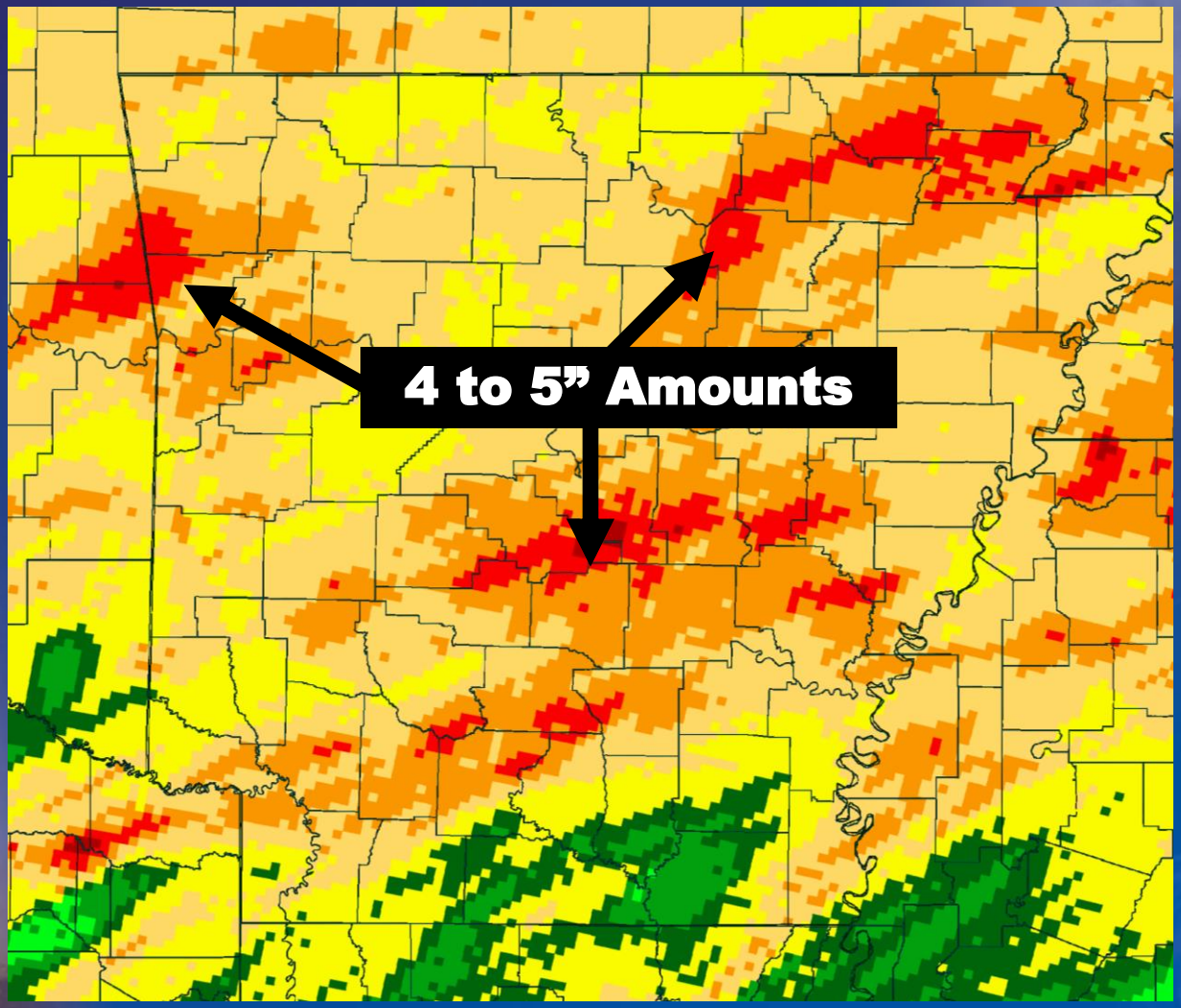
2022 through November

Precipitation in 2022 (Through November)				
Site	Amount	Normal	+/-	% of Normal
Fayetteville (NW AR)	38.32	43.89	-5.57	87%
Harrison (NC AR)	40.08	41.56	-1.48	96%
Jonesboro (NE AR)	41.16	44.06	-2.90	93%
Fort Smith (WC AR)	52.05	43.86	+8.19	119%
Little Rock (C AR)	42.13	45.34	-3.21	93%
West Memphis (EC AR)	49.20	44.63	+4.57	110%
Texarkana (SW AR)	39.70	44.19	-4.49	90%
El Dorado (SC AR)	46.74	46.51	+0.23	100%
Pine Bluff (SE AR)	40.67	45.51	-4.84	89%

For the year more areas were dry than wet. Precipitation deficits exceeded four inches in spots. The wettest conditions existed from west central into central and northeast Arkansas.

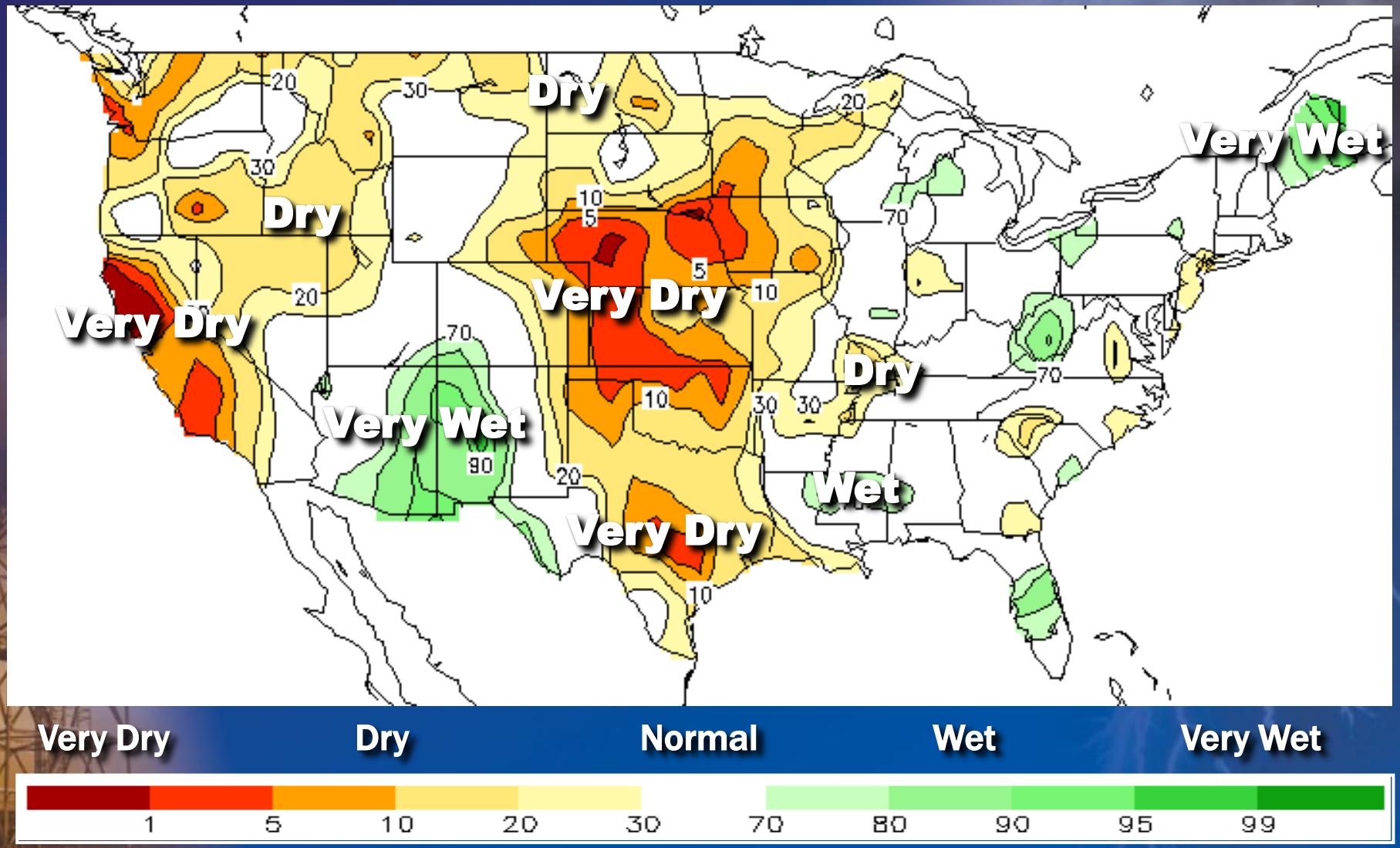
Observed Precipitation

Through December 13th, 2022



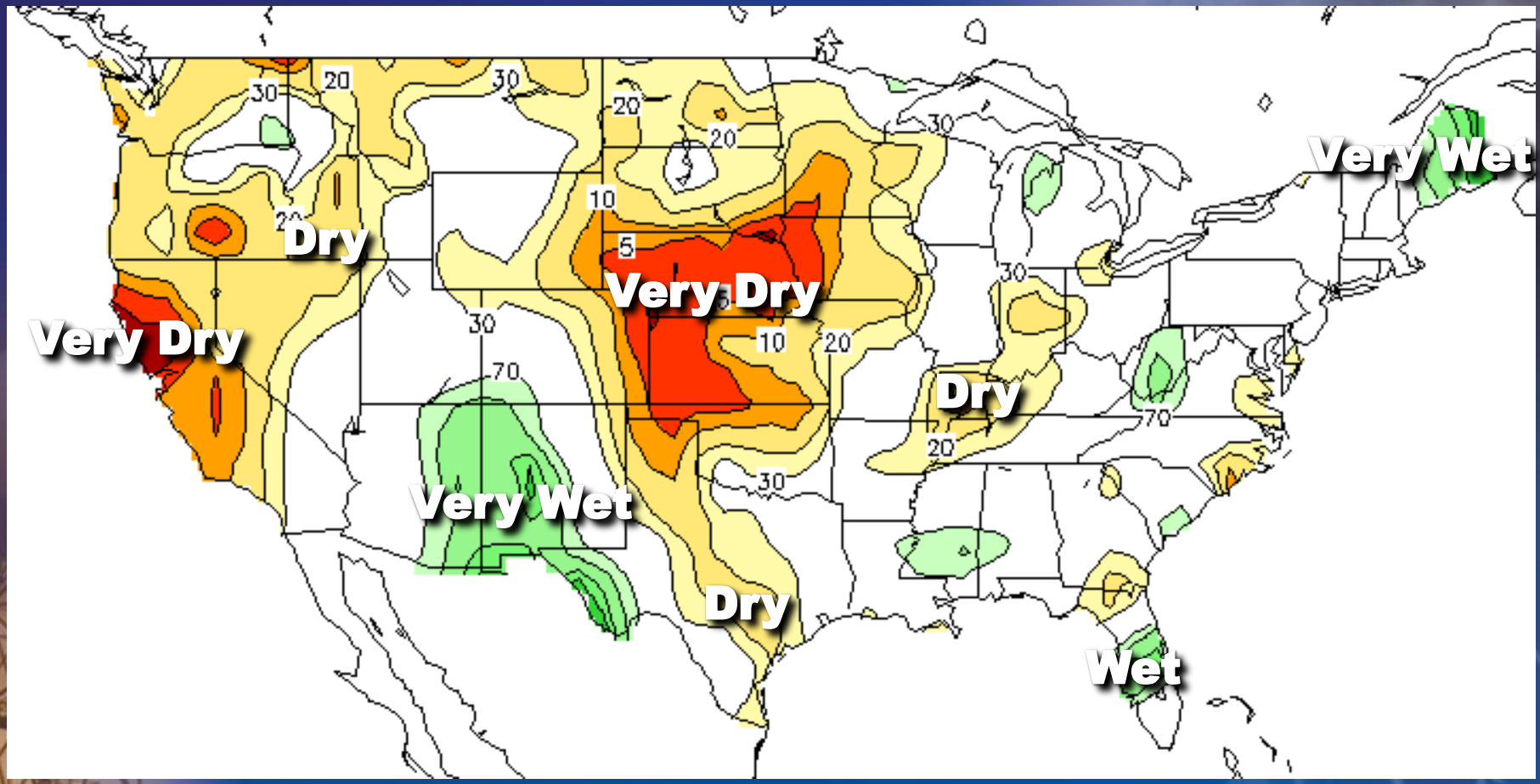
Soil Moisture

October 31st, 2022



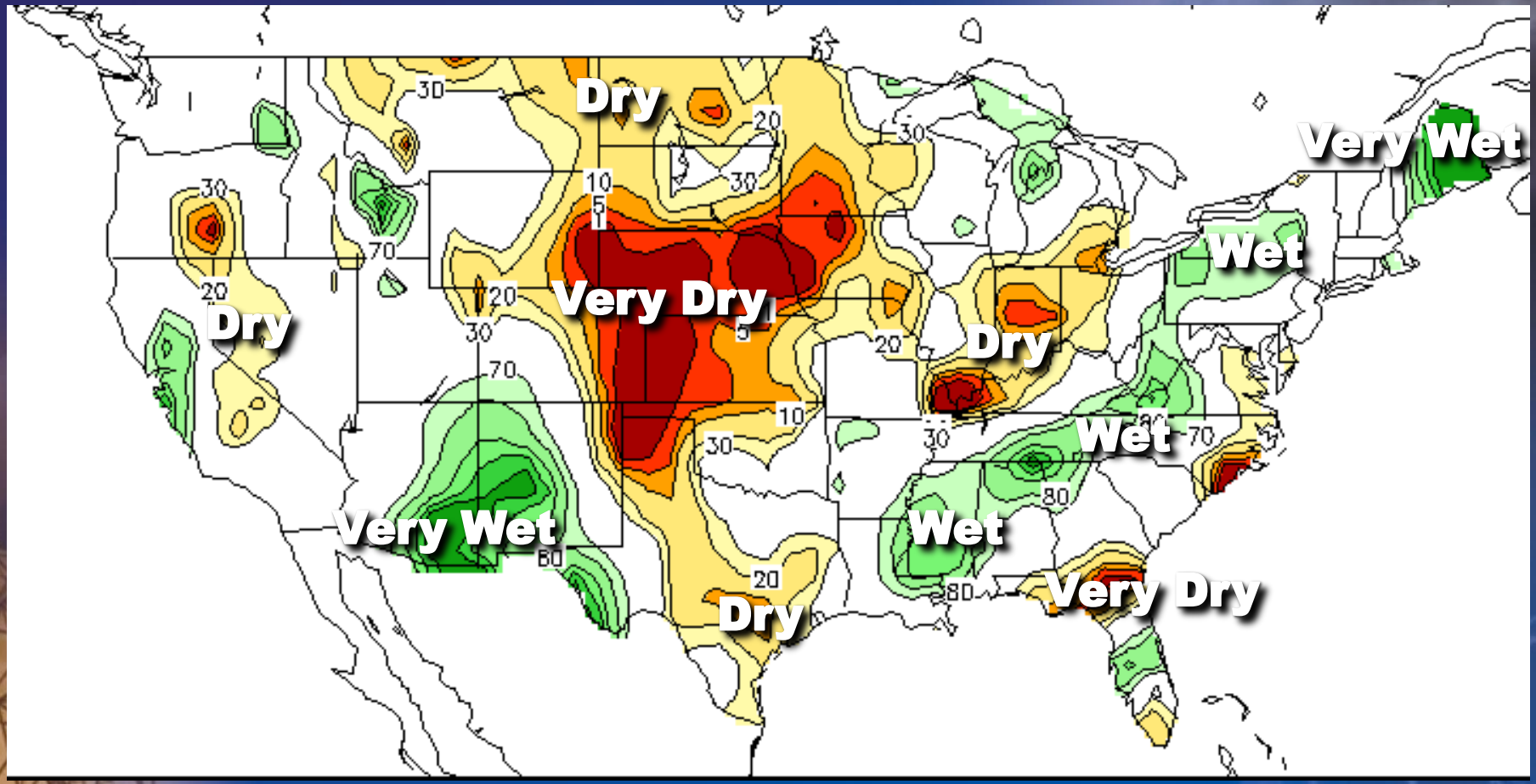
Soil Moisture

November 30th, 2022



Soil Moisture

December 14th



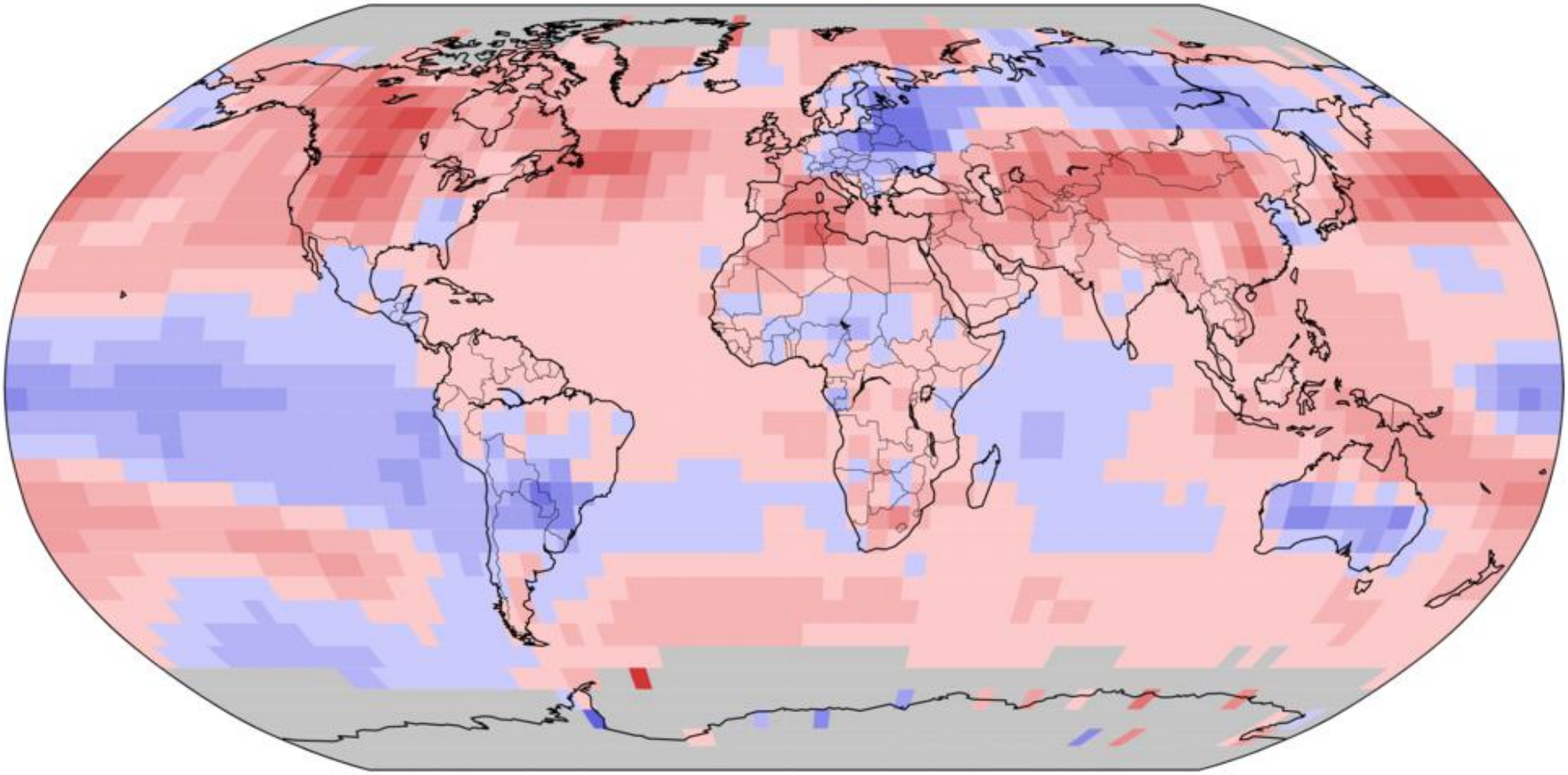
Very Dry | Dry | Normal | Wet | Very Wet

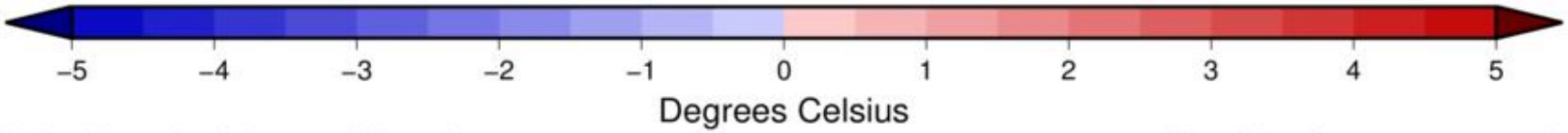
1 5 10 20 30 70 80 90 95 99

Land & Ocean Temperature Departure from Average Sep 2022

(with respect to a 1991–2020 base period)

Data Source: NOAAGlobalTemp v5.0.0–20221008





National Centers for Environmental Information

GHCNM v4.0.1.20221006.qfe

Please Note: Gray areas represent missing data

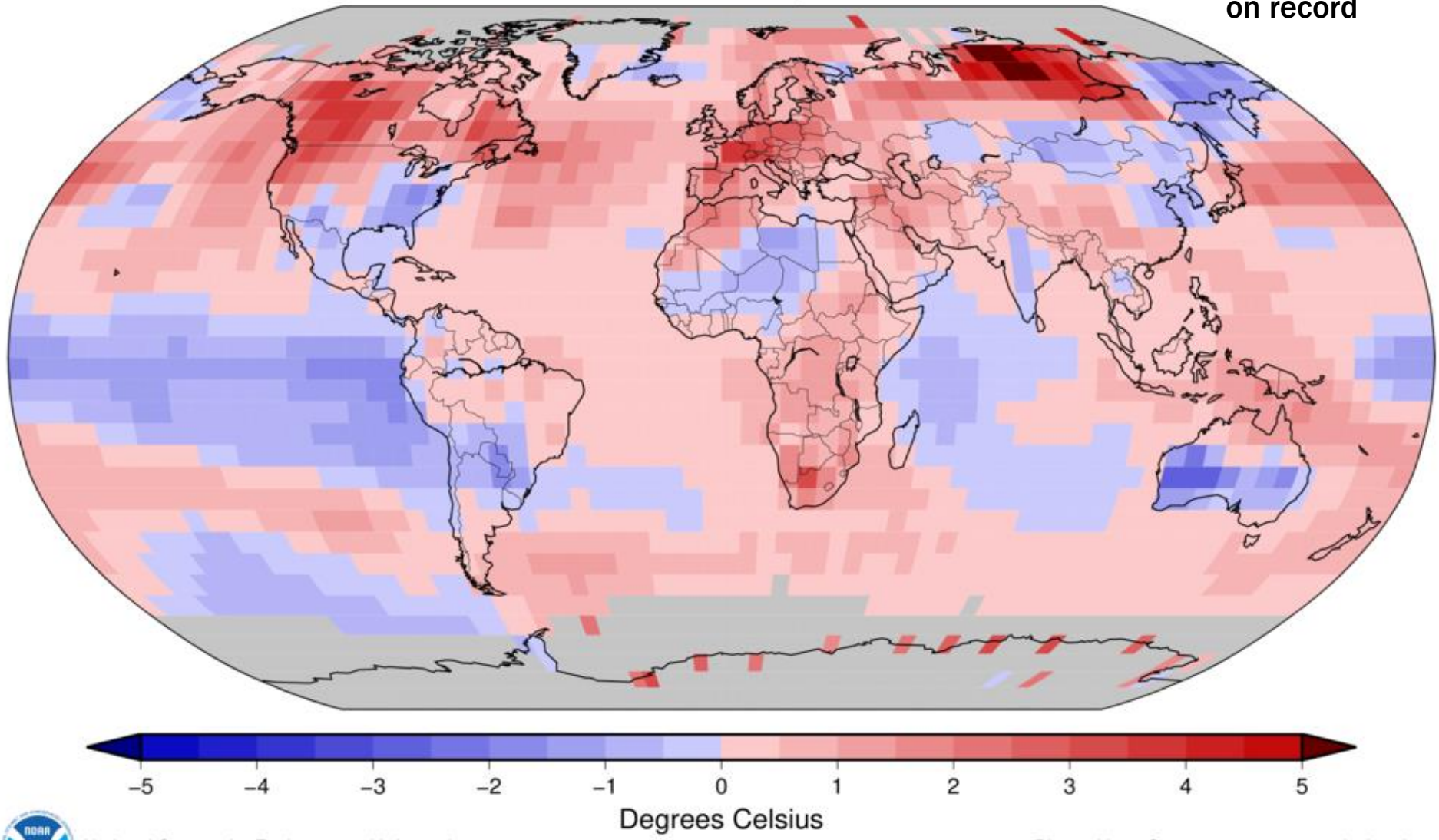
Map Projection: Robinson

Land & Ocean Temperature Departure from Average Oct 2022

(with respect to a 1991–2020 base period)

Data Source: NOAAGlobalTemp v5.0.0–20221108

4th warmest on record



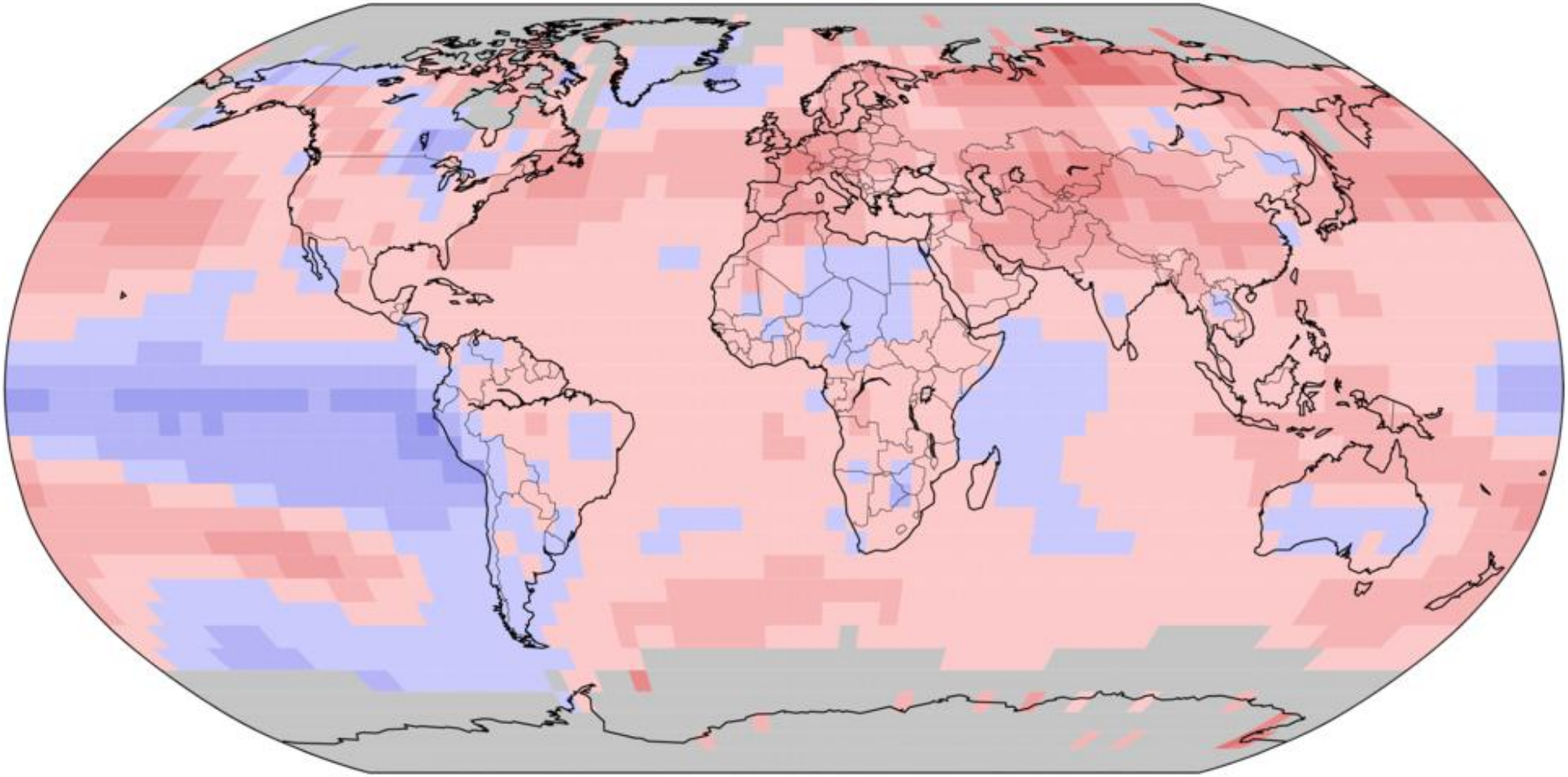
National Centers for Environmental Information
GHCNM v4.0.1.20221106.qfe

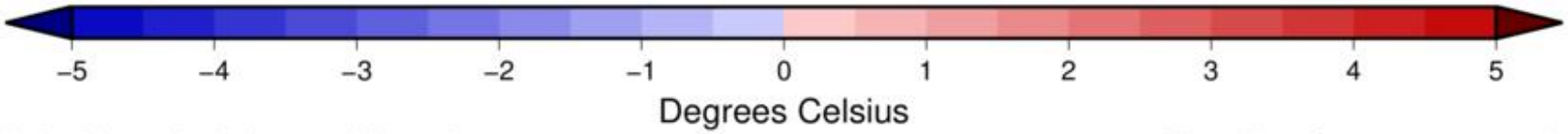
Please Note: Gray areas represent missing data
Map Projection: Robinson

Land & Ocean Temperature Departure from Average Jan–Oct 2022

(with respect to a 1991–2020 base period)

Data Source: NOAAGlobalTemp v5.0.0–20221108



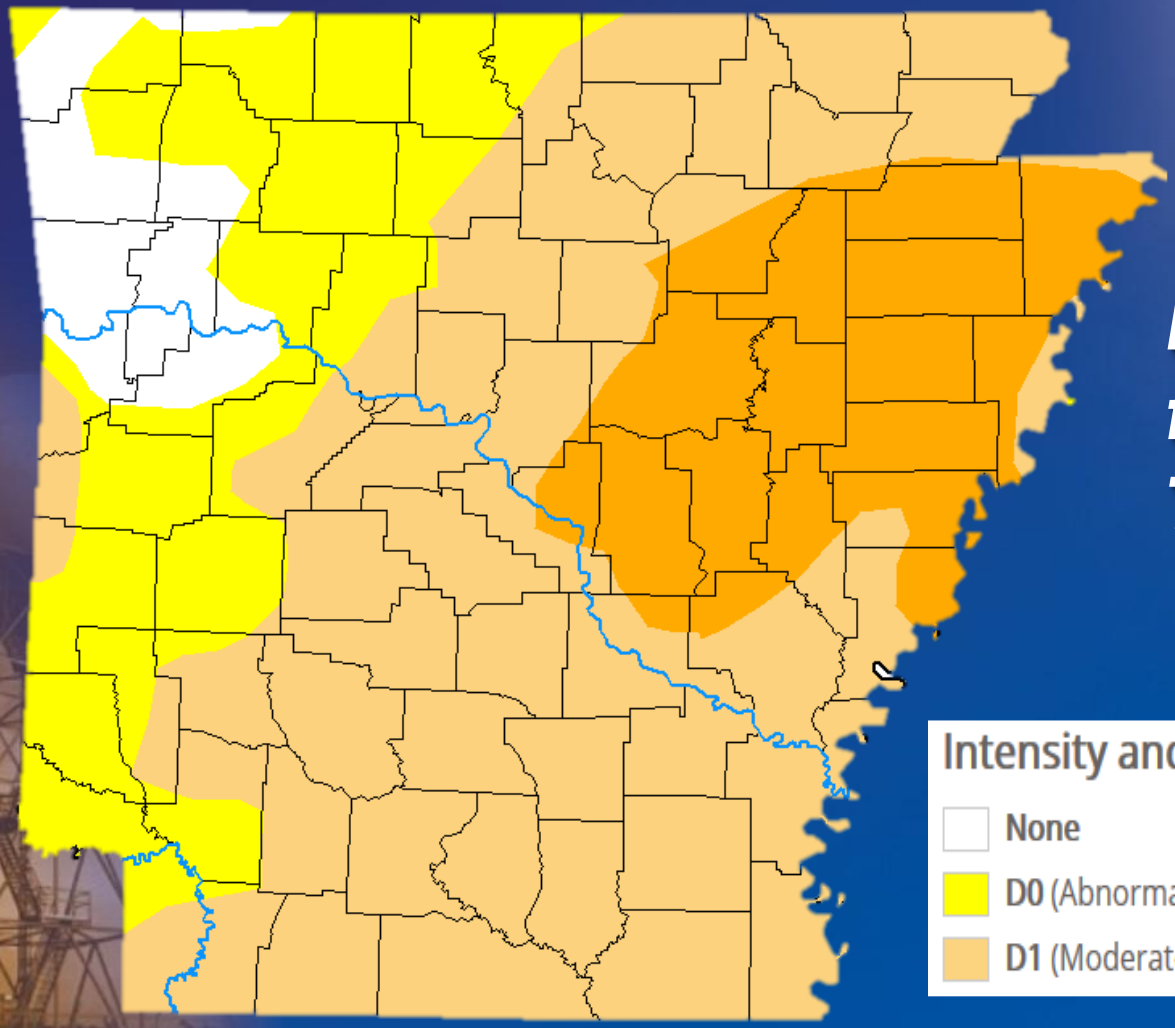


National Centers for Environmental Information
GHCNM v4.0.1.20221106.qfe

Please Note: Gray areas represent missing data
Map Projection: Robinson

Drought Monitor

December 13th , 2022



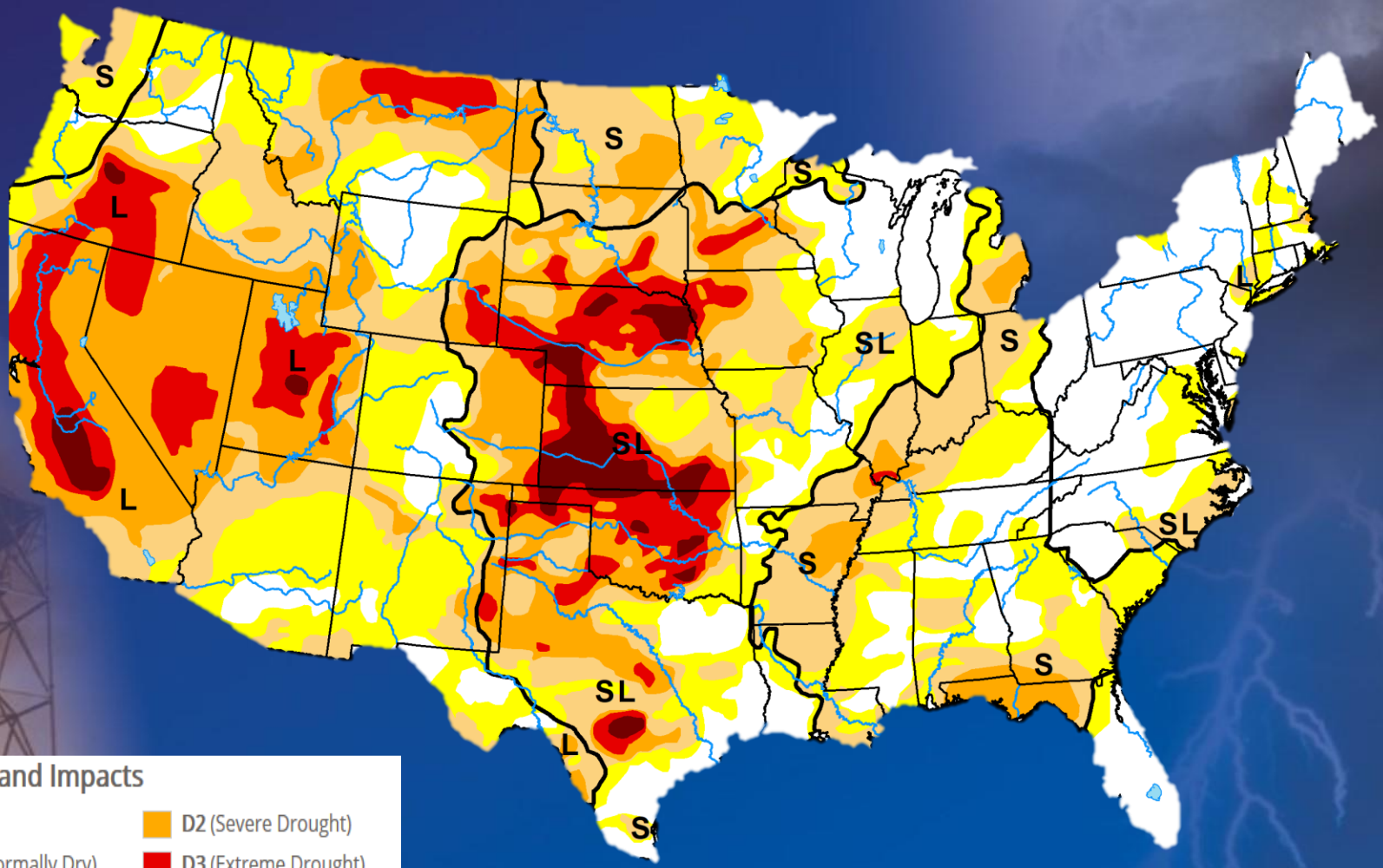
Does not account for the heavy rain Tuesday.

Intensity and Impacts

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

Drought Monitor

December 13th , 2022

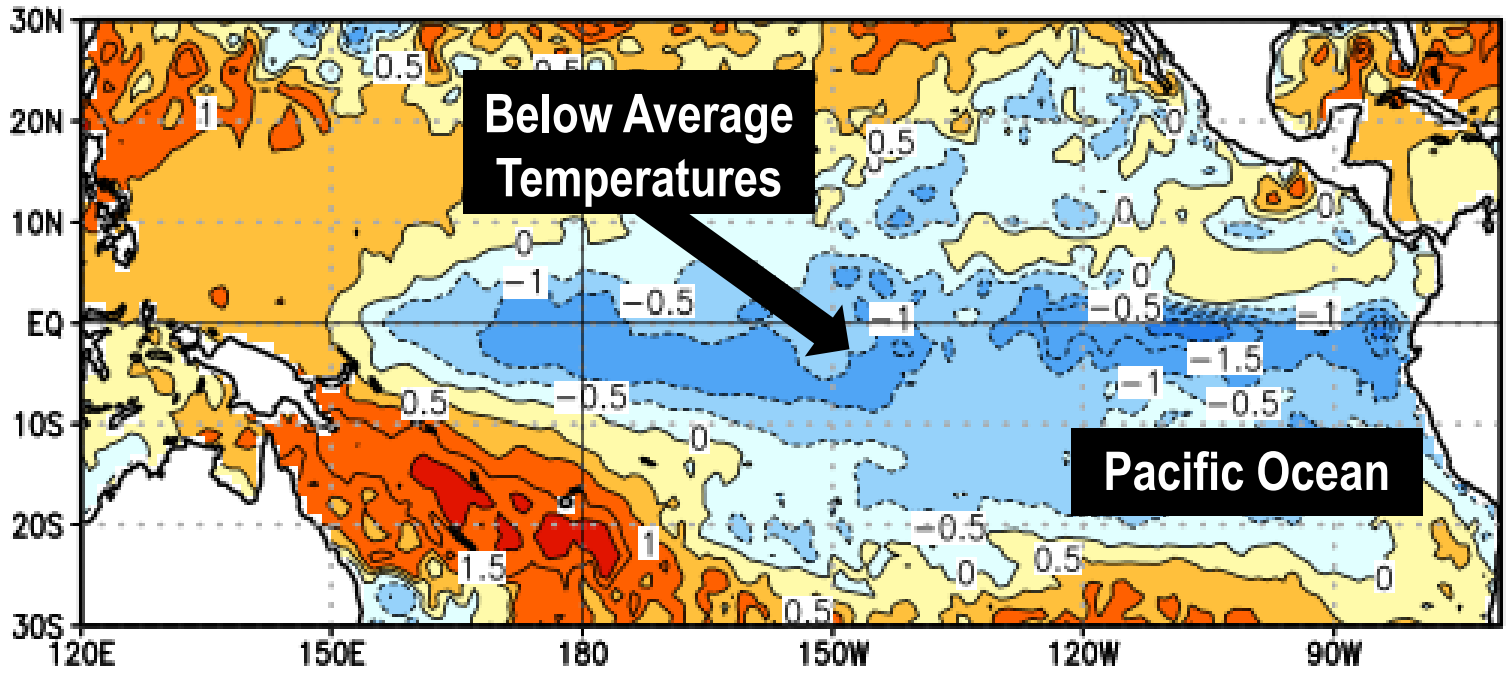


Intensity and Impacts

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

Ocean Temperatures

Mid November through Mid December



Verdict: Clearly La Niña

The La Niña "Triple Dip"

- The current La Niña, while relatively weak, is unusually prolonged and has returned for its third consecutive northern hemispheric winter.
- Other triple dips (since reliable records began in 1950) have spanned the years 1998 - 2001, 1973 - 1976 & 1954 - 1956.
- A La Niña advisory is in effect as equatorial sea surface temperatures are below average for most of the Pacific Ocean.

The La Niña "Triple Dip"

- La Niña is expected to continue through the winter, with equal chances of La Niña and ENSO-neutral during January - March 2023. In February - April 2023, there is a 71% chance of ENSO neutral conditions.
- La Niña is characterized by a five consecutive 3-month running mean of sea surface temperature (SST) anomalies that is above below the threshold of -0.5°C.

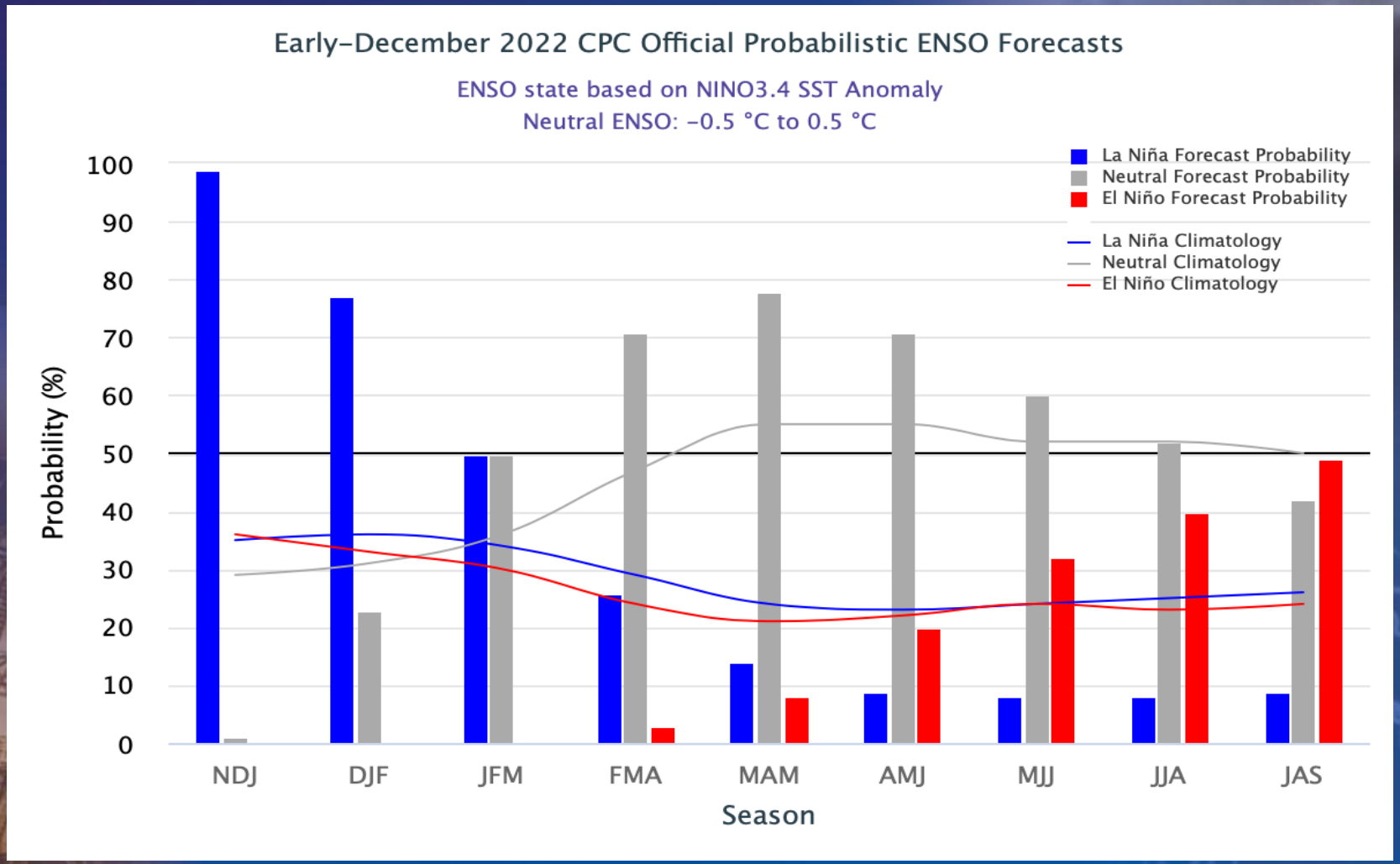
The Cause?

A look at recent El Niño/La Niña Years

Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2010	1.5	1.2	0.8	0.4	-0.2	-0.7	-1.0	-1.3	-1.6	-1.6	-1.6	-1.6
2011	-1.4	-1.2	-0.9	-0.7	-0.6	-0.4	-0.5	-0.6	-0.8	-1.0	-1.1	-1.0
2012	-0.9	-0.7	-0.6	-0.5	-0.3	0.0	0.2	0.4	0.4	0.3	0.1	-0.2
2013	-0.4	-0.4	-0.3	-0.3	-0.4	-0.4	-0.4	-0.3	-0.3	-0.2	-0.2	-0.3
2014	-0.4	-0.5	-0.3	0.0	0.2	0.2	0.0	0.1	0.2	0.5	0.6	0.7
2015	0.5	0.5	0.5	0.7	0.9	1.2	1.5	1.9	2.2	2.4	2.6	2.6
2016	2.5	2.1	1.6	0.9	0.4	-0.1	-0.4	-0.5	-0.6	-0.7	-0.7	-0.6
2017	-0.3	-0.2	0.1	0.2	0.3	0.3	0.1	-0.1	-0.4	-0.7	-0.8	-1.0
2018	-0.9	-0.9	-0.7	-0.5	-0.2	0.0	0.1	0.2	0.5	0.8	0.9	0.8
2019	0.7	0.7	0.7	0.7	0.5	0.5	0.3	0.1	0.2	0.3	0.5	0.5
2020	0.5	0.5	0.4	0.2	-0.1	-0.3	-0.4	-0.6	-0.9	-1.2	-1.3	-1.2
2021	-1.0	-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		

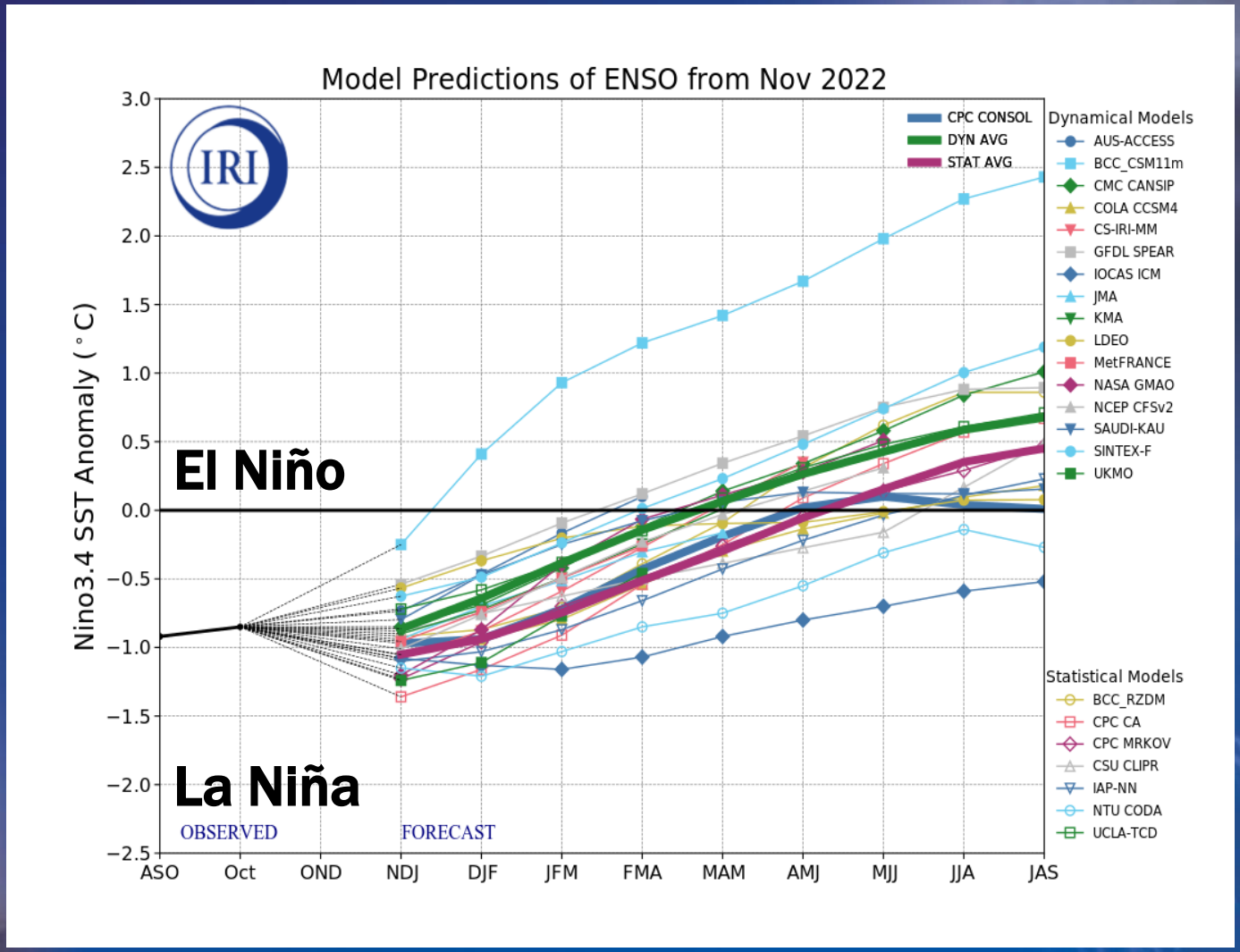
Looking Ahead

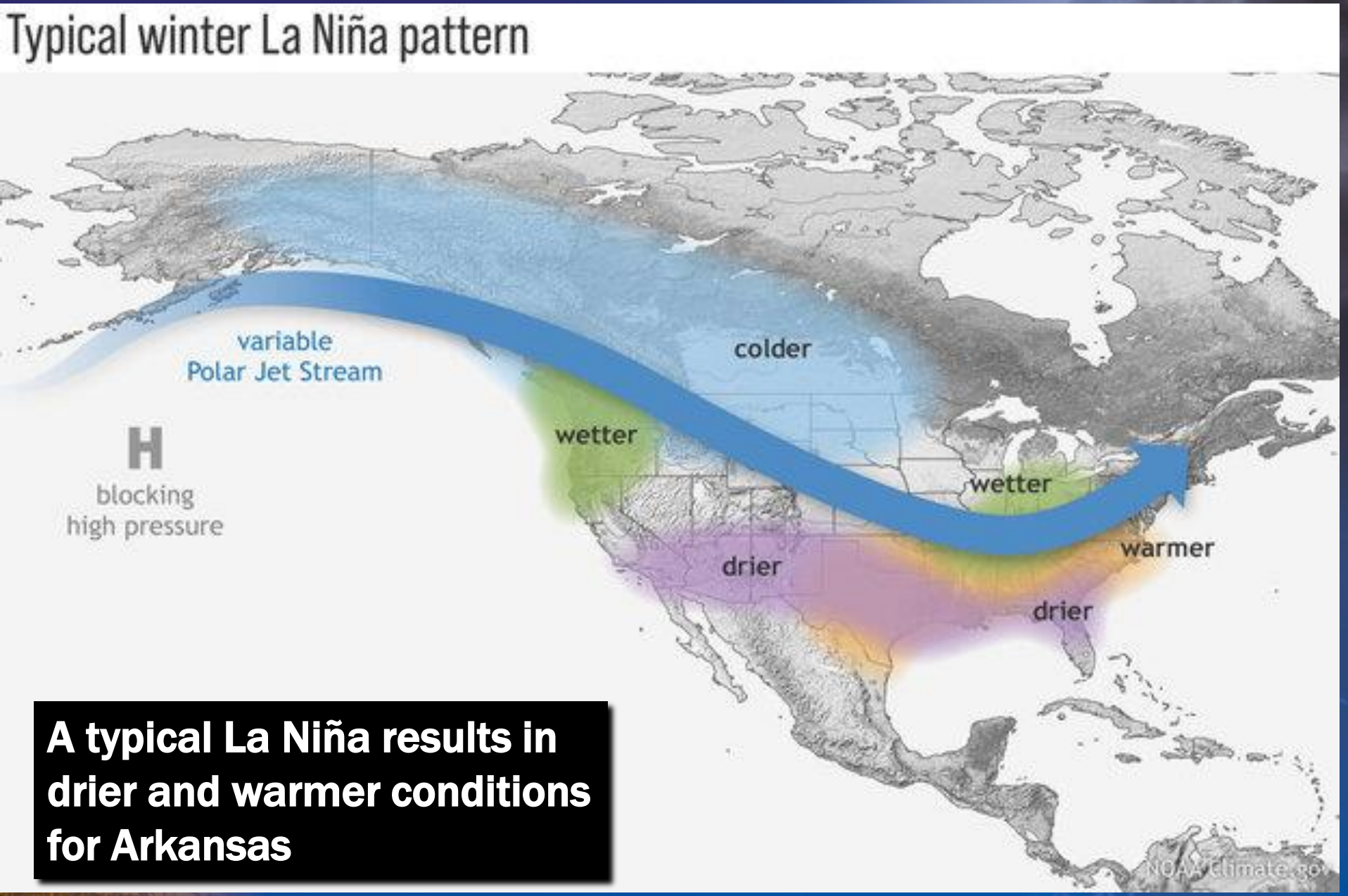
La Niña Persisting Through 2022



Looking Ahead

La Niña Persisting into 2023

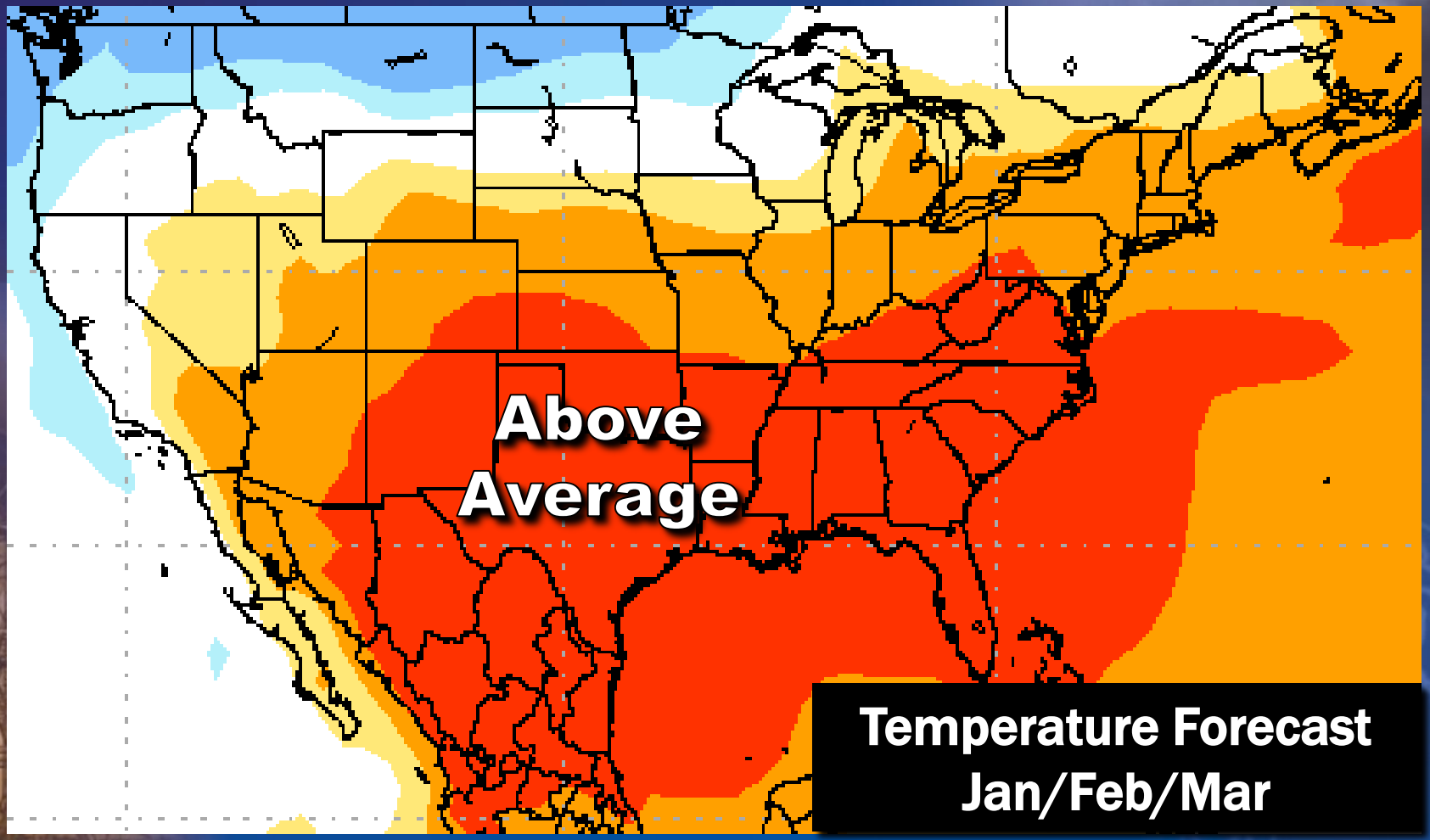




A typical La Niña results in drier and warmer conditions for Arkansas

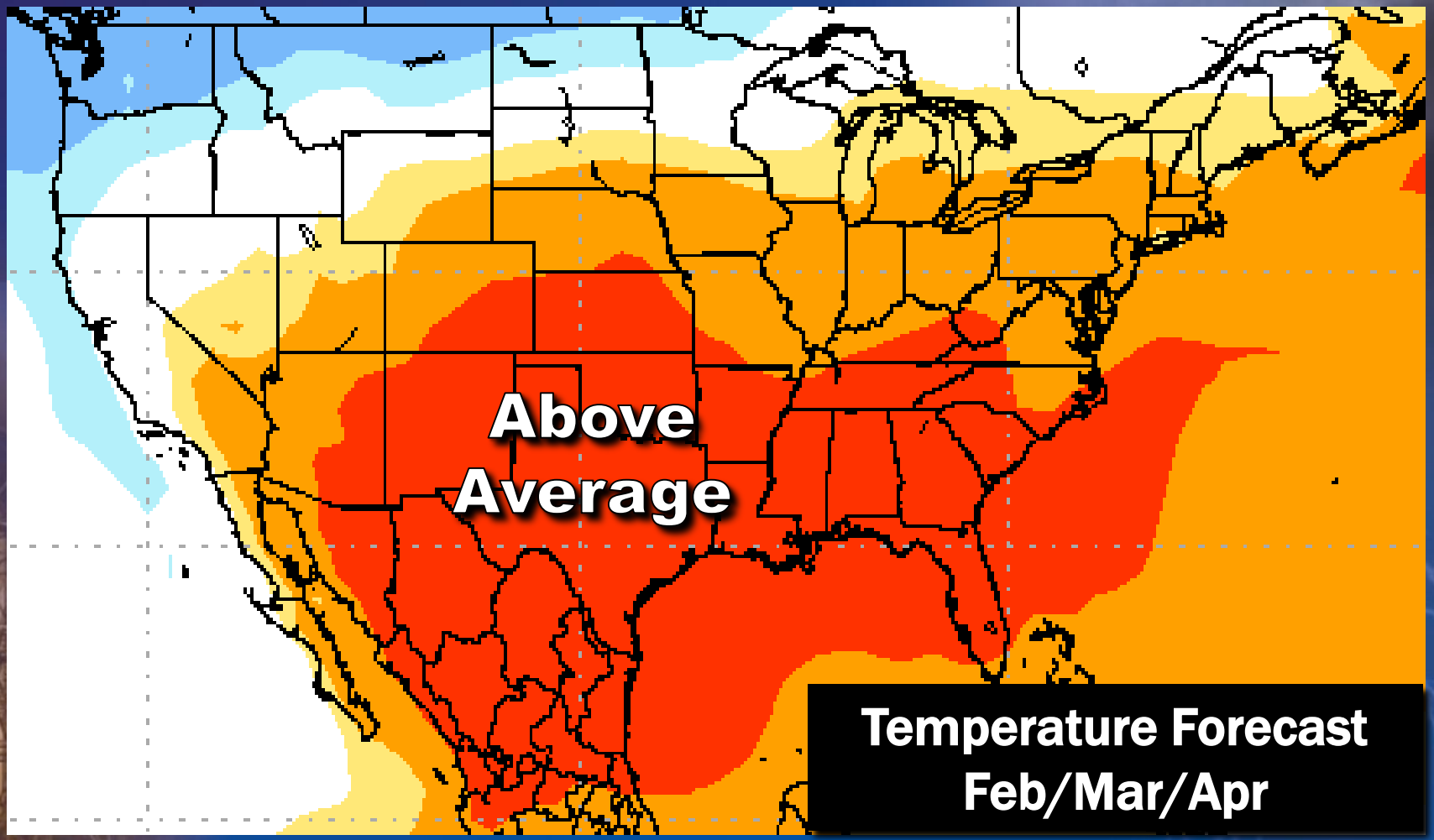
Looking Ahead

NMME (North American Multi Model Ensemble)



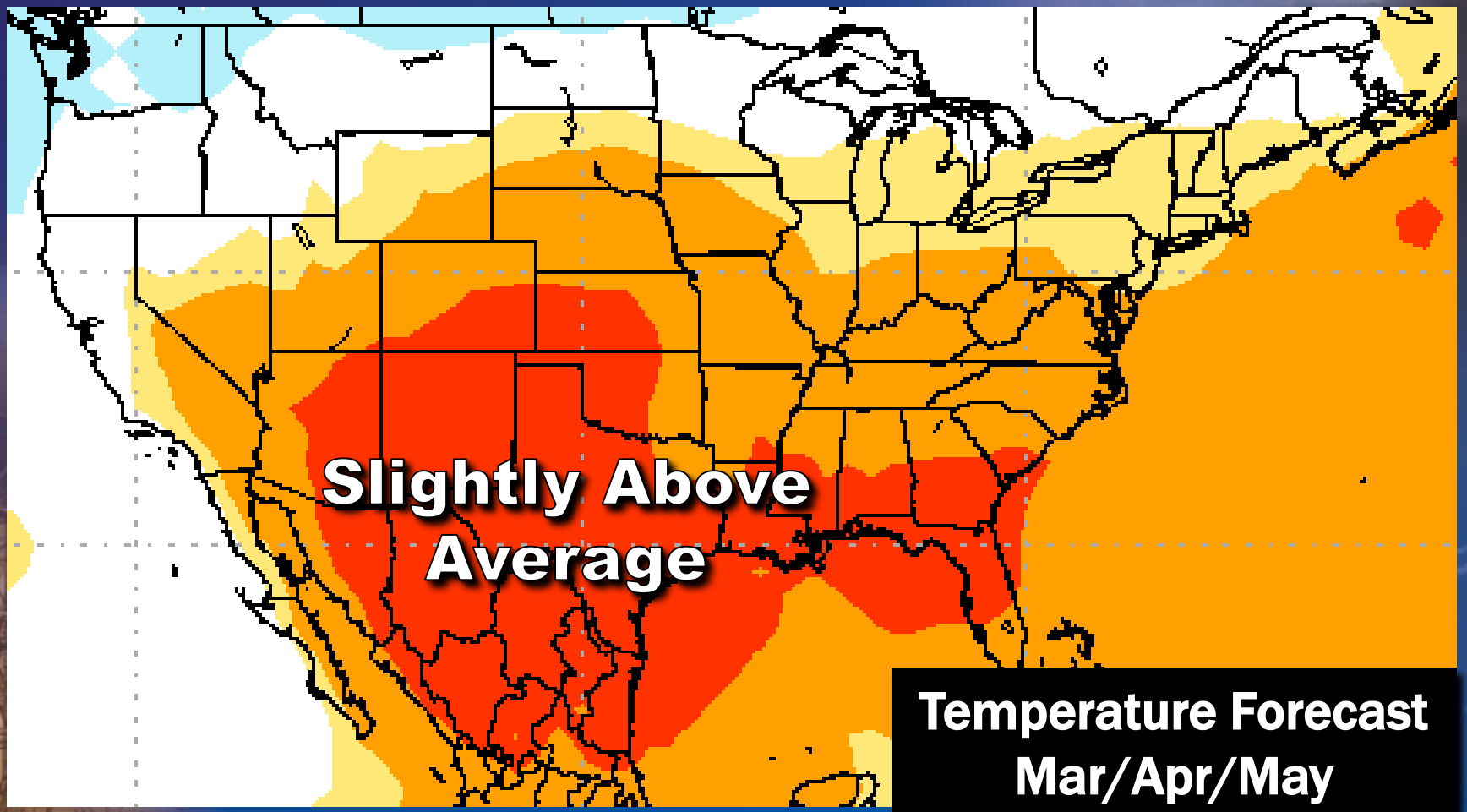
Looking Ahead

NMME (North American Multi Model Ensemble)



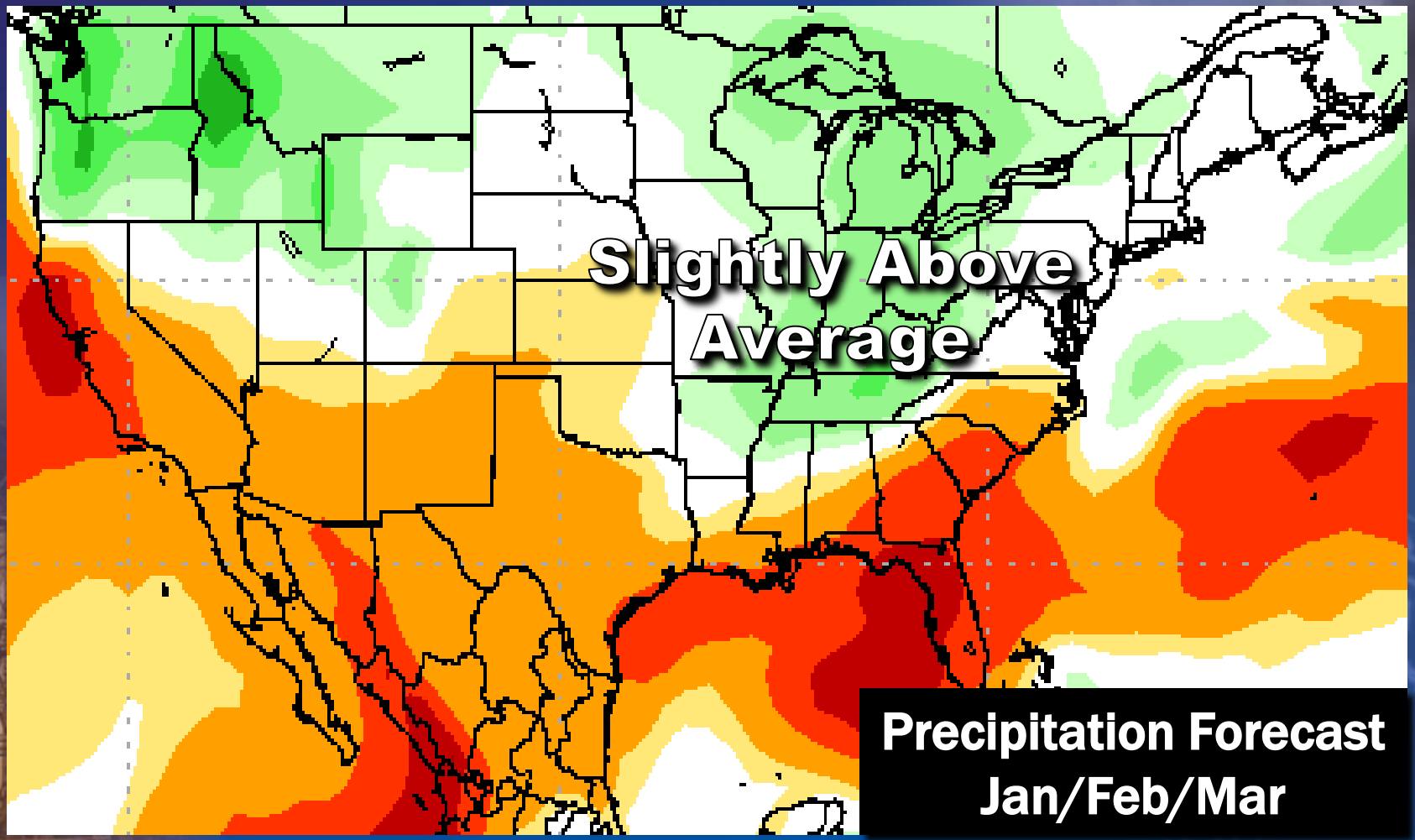
Looking Ahead

NMME (North American Multi Model Ensemble)



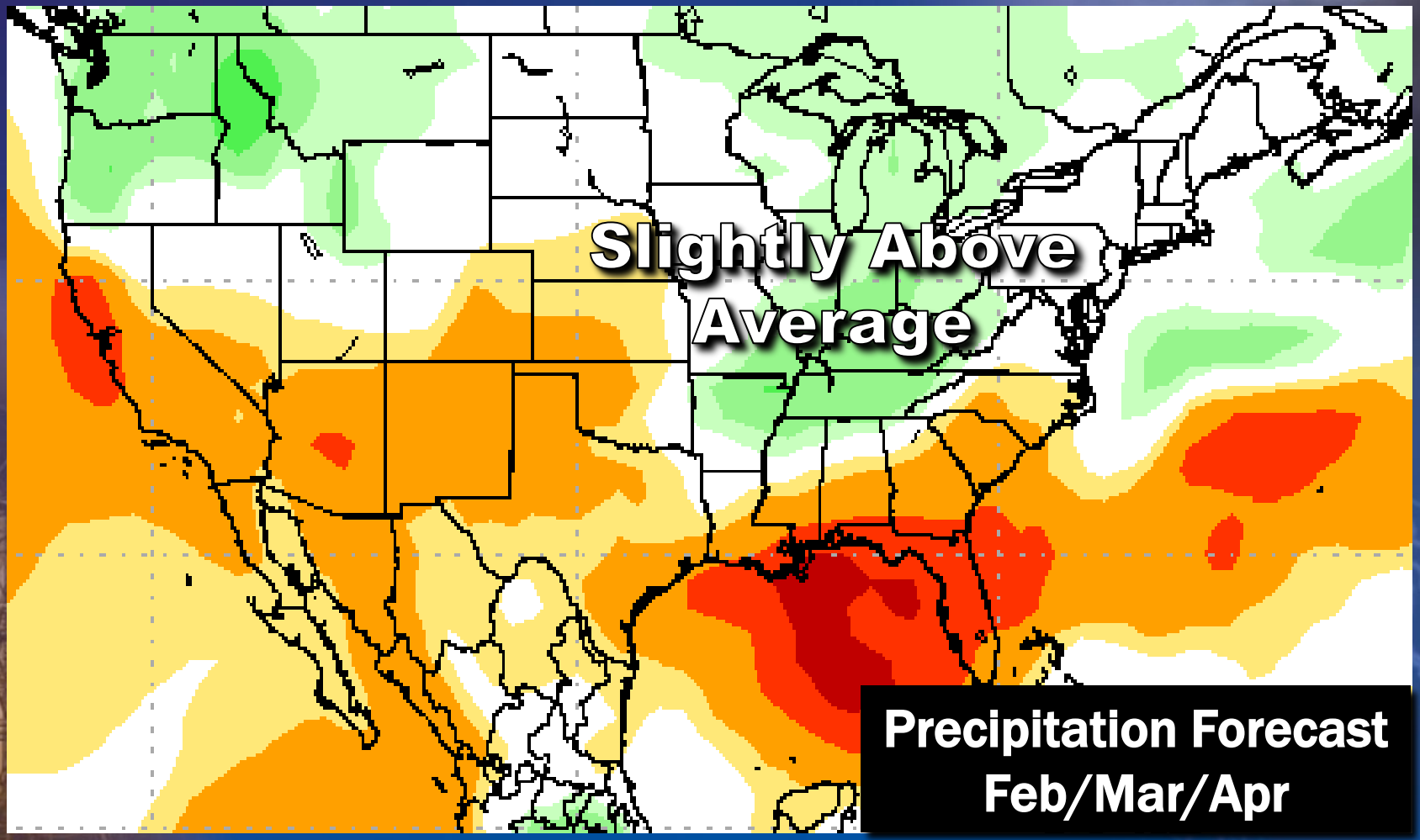
Looking Ahead

NMME (North American Multi Model Ensemble)



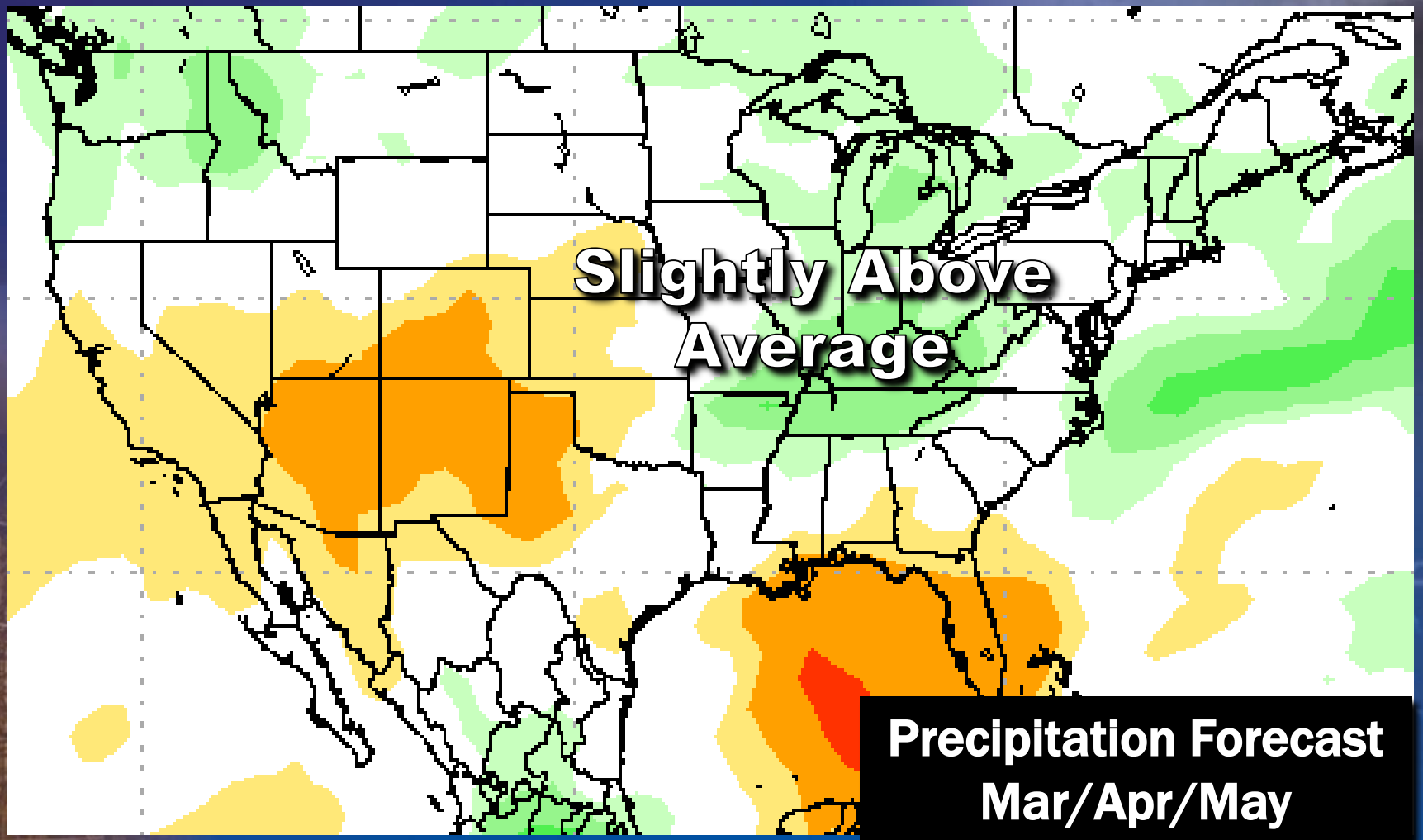
Looking Ahead

NMME (North American Multi Model Ensemble)

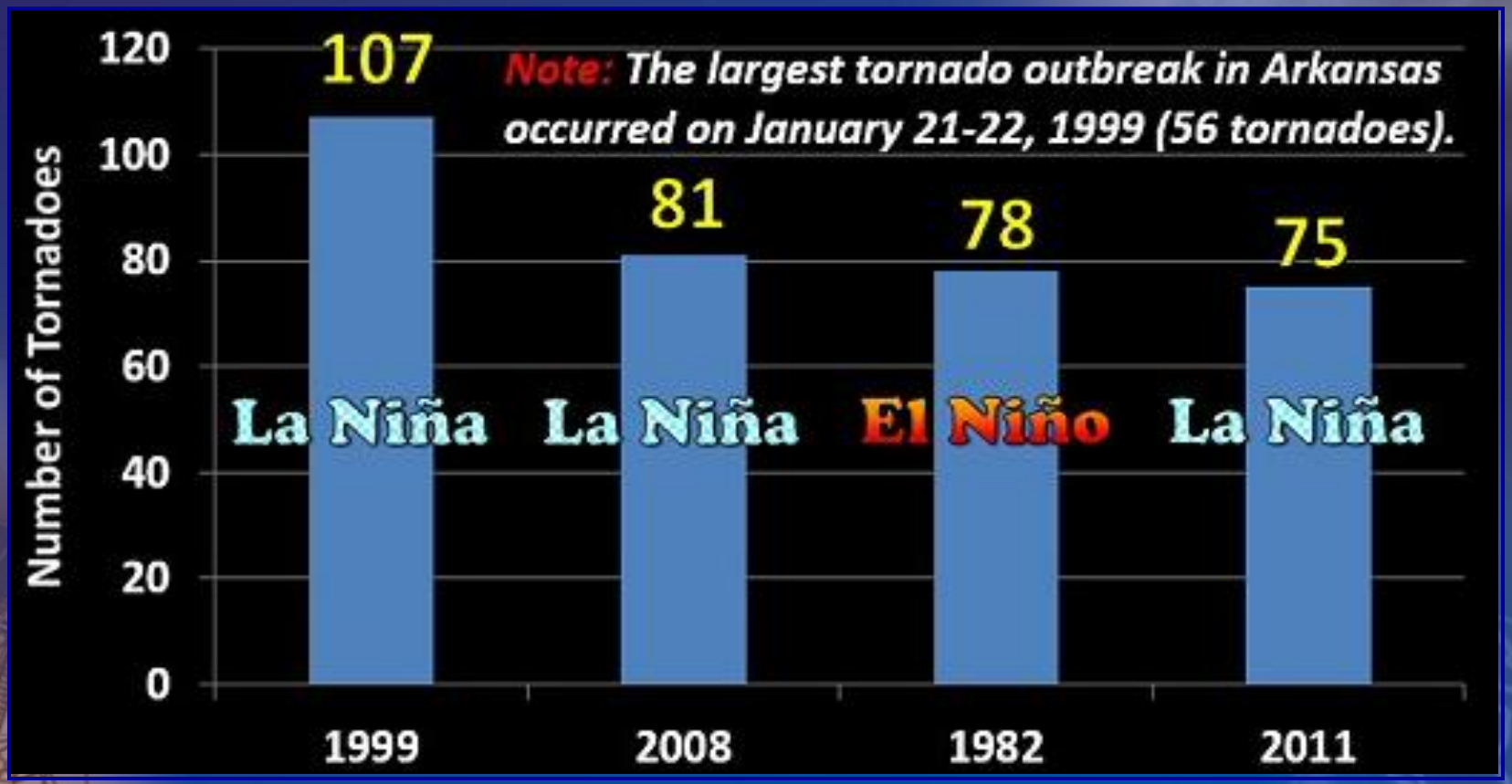


Looking Ahead

NMME (North American Multi Model Ensemble)

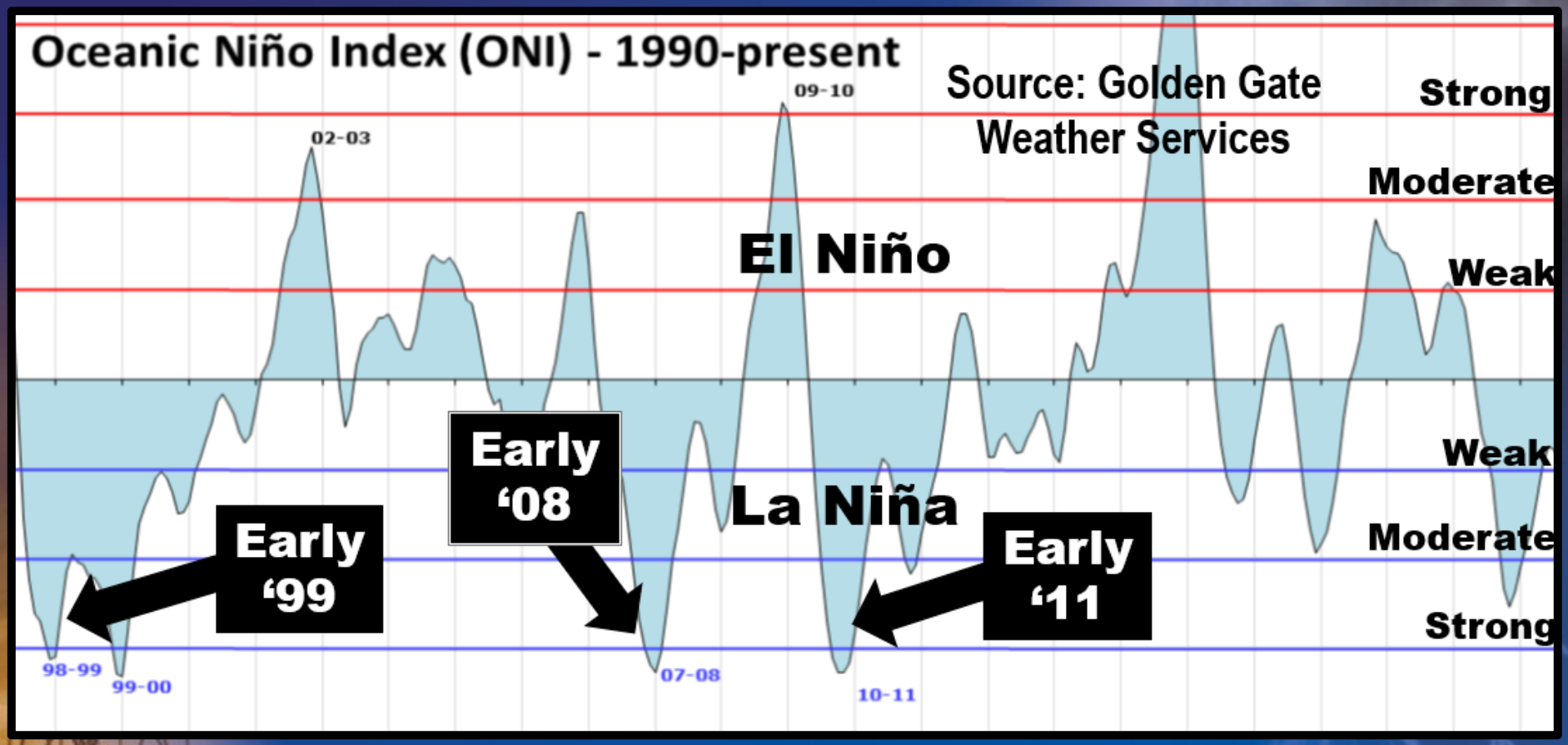


La Niña Extremes



Big severe weather events, and memorable/historic winter episodes (like in February 2021) tend to be more likely when La Niña is present.

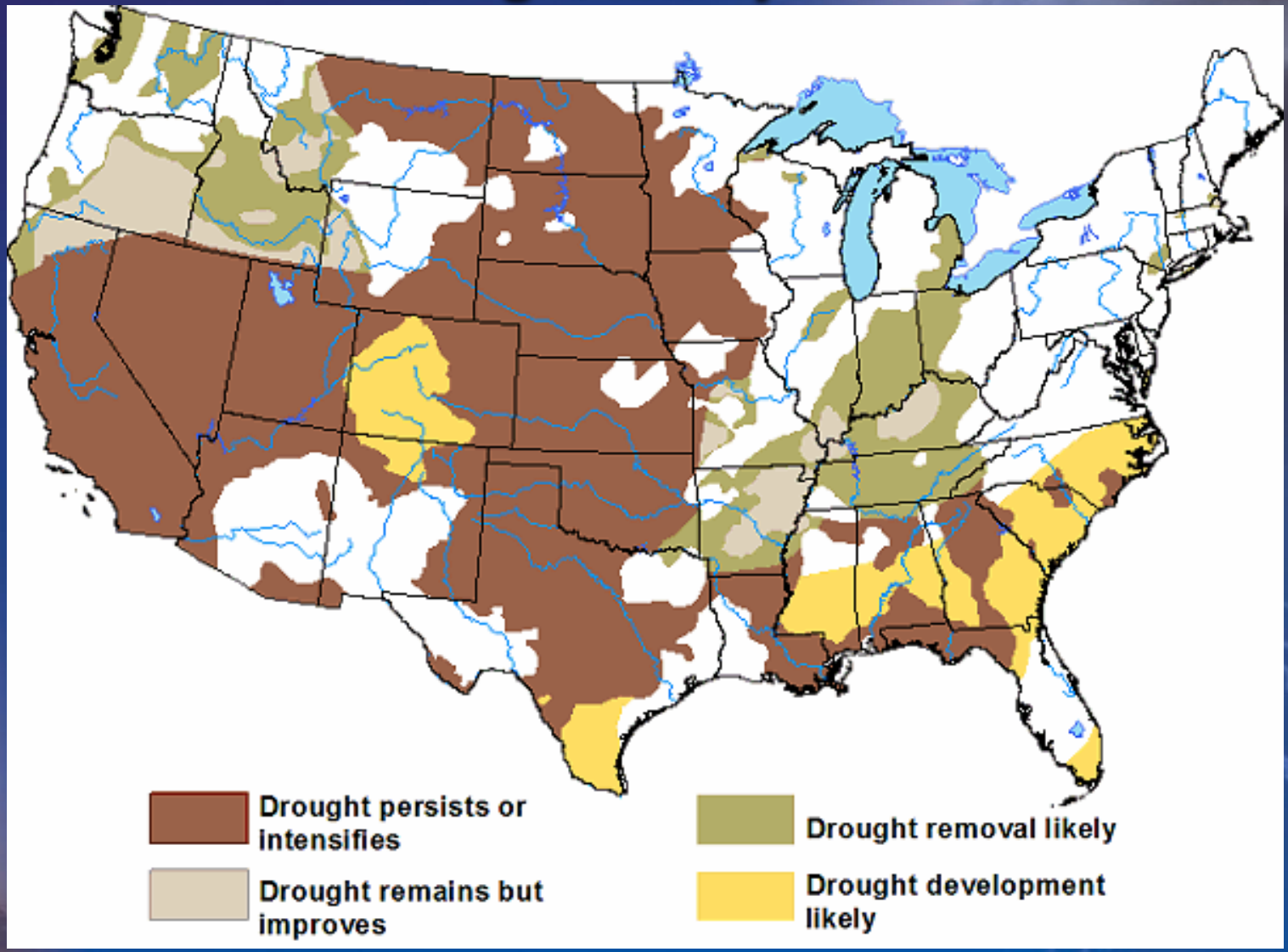
Strength matters !



In the most recent extreme years (1999, 2008, and 2011), a strong La Niña was noted. This does not appear to be the case this time.

Drought Outlook

Through February 2023



Looking Ahead

- A warmer than average winter is favored in Arkansas given La Niña conditions with large variabilities in temperature expected.

- With La Niña in place, below average precipitation is typical across the Mid South. However, an active pattern has setting up to begin winter, and long-term data is showing at/above normal precipitation. Given this, and declining ground water usage as vegetation goes dormant, the drought may be erased in parts of the state.

Looking Ahead

- While extreme events (e.g., historic winter storms/ tornado outbreaks) are more likely during La Niña years, the confidence in such events is lowered as La Niña slowly wanes.

Social Media

We are on Facebook at
www.facebook.com/US.NationalWeatherService.LittleRock.gov

Follow us on twitter at
www.Twitter.com/NWSLittleRock

Contact info

Joe Goudsward

E-mail: Joseph.Goudsward@noaa.gov

501–834 -0308 (answered 24 / 7)

On the web:

http://www.weather.gov/lzk/drought.htm