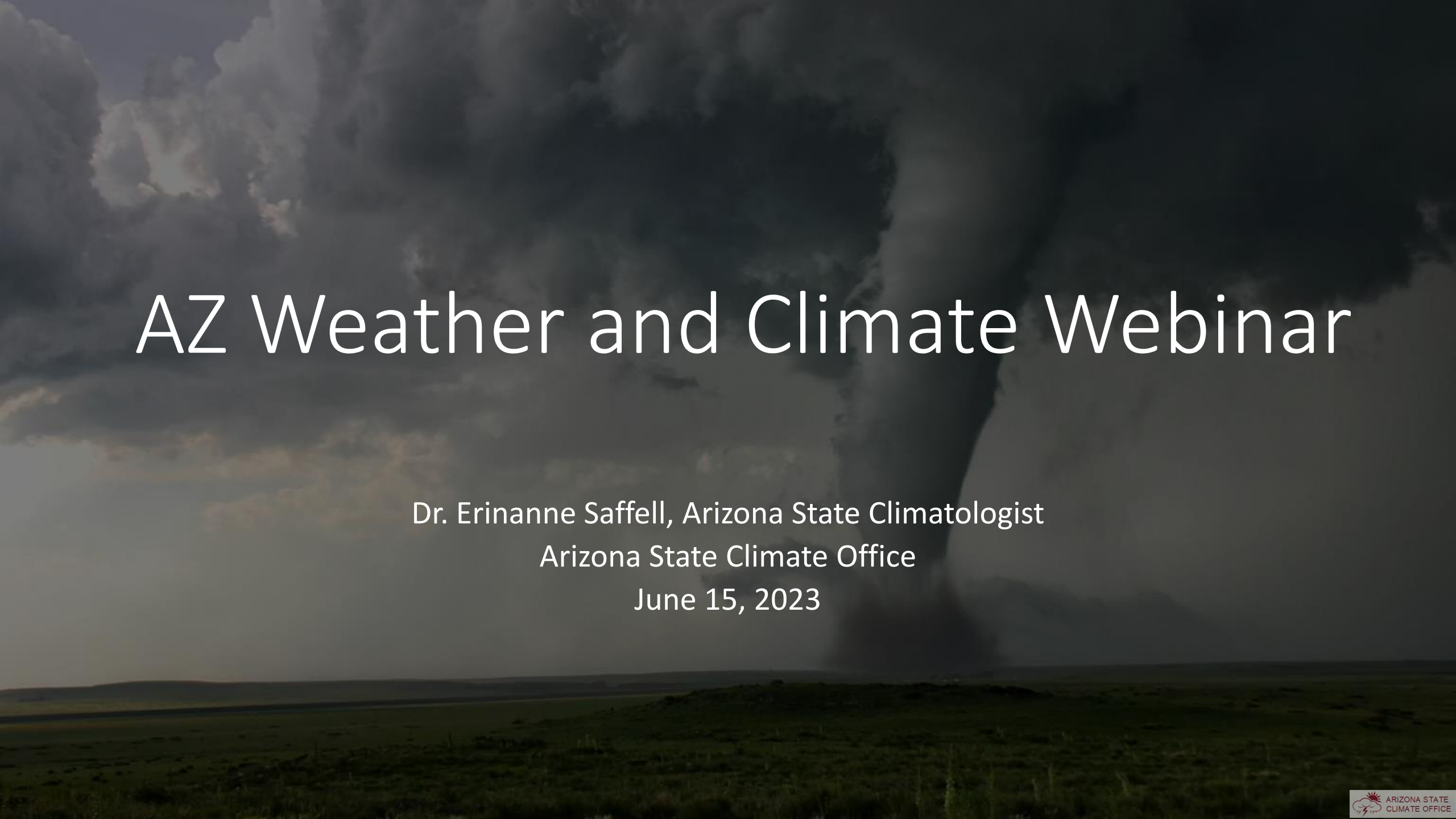

AZ Weather and Climate Webinar

Dr. Erinanne Saffell, Arizona State Climatologist
Arizona State Climate Office
June 15, 2023

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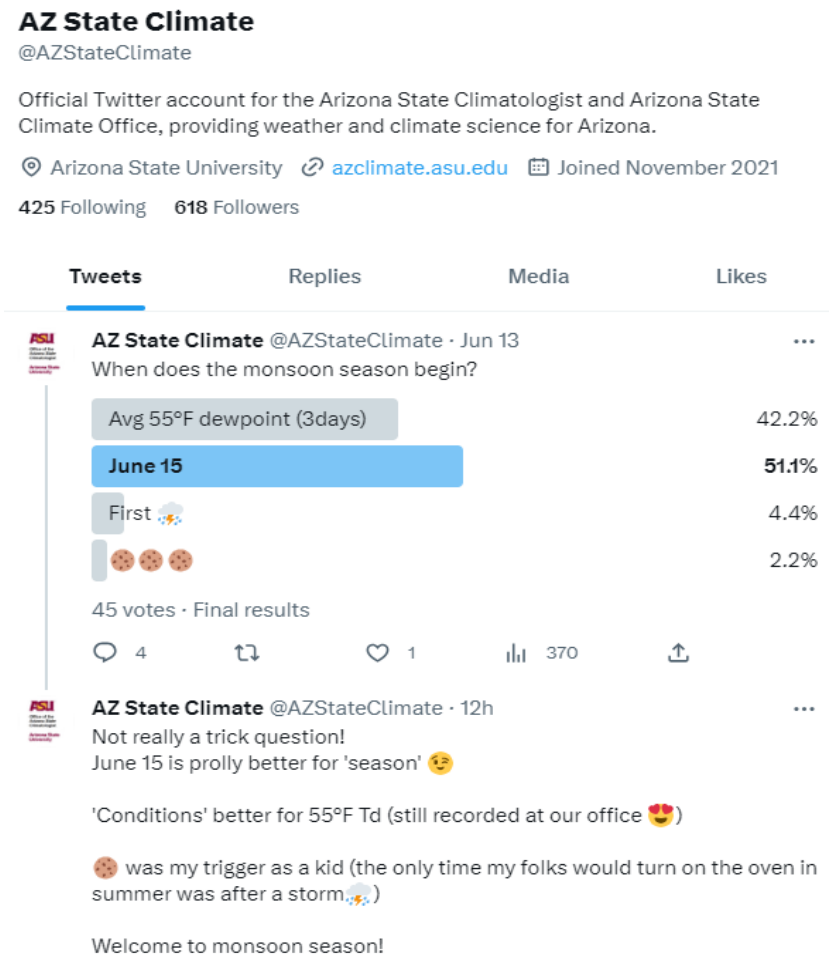
Monsoon “season” or “conditions”



AZ State Climate
@AZStateClimate

Official Twitter account for the Arizona State Climatologist and Arizona State Climate Office, providing weather and climate science for Arizona.

Arizona State University azclimate.asu.edu Joined November 2021

425 Following **618** Followers

Tweets Replies Media Likes

AZ State Climate @AZStateClimate · Jun 13

When does the monsoon season begin?

Avg 55°F dewpoint (3days)	42.2%
June 15	**51.1%**
First ⛈️	4.4%
🍪🍪🍪	2.2%

45 votes · Final results

4 1 370

AZ State Climate @AZStateClimate · 12h

Not really a trick question!
June 15 is prolly better for 'season' 😉

'Conditions' better for 55°F Td (still recorded at our office 😍)

🍪 was my trigger as a kid (the only time my folks would turn on the oven in summer was after a storm⛈️)

Welcome to monsoon season!

- Dew point (T_d): temperature where dew forms
- 55°F T_d roughly 1” precipitable water (Phoenix)
- 3 days average 55°F for monsoon setup (Phoenix)
- 2008: June 15-Sept 30 season

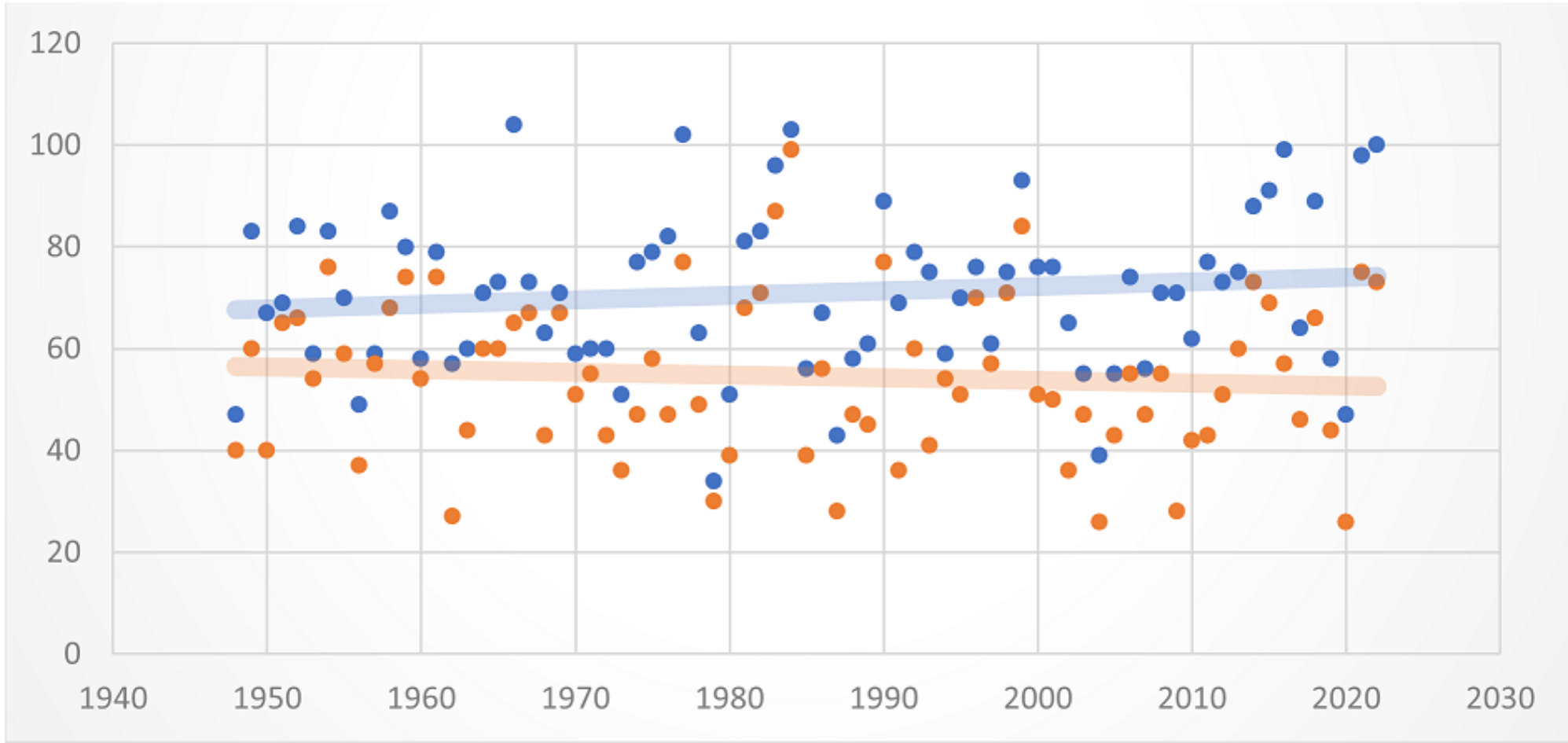
Legacy monsoon statistics for Phoenix 1948-2022

Overall length of the monsoon has stayed roughly the same (71 days)

(number of days from first 55°F/3days to the last 55°F dew point)

Overall number of "burst/active" days has stayed roughly the same (55 days)

(number of days with dew point 55°F or higher)



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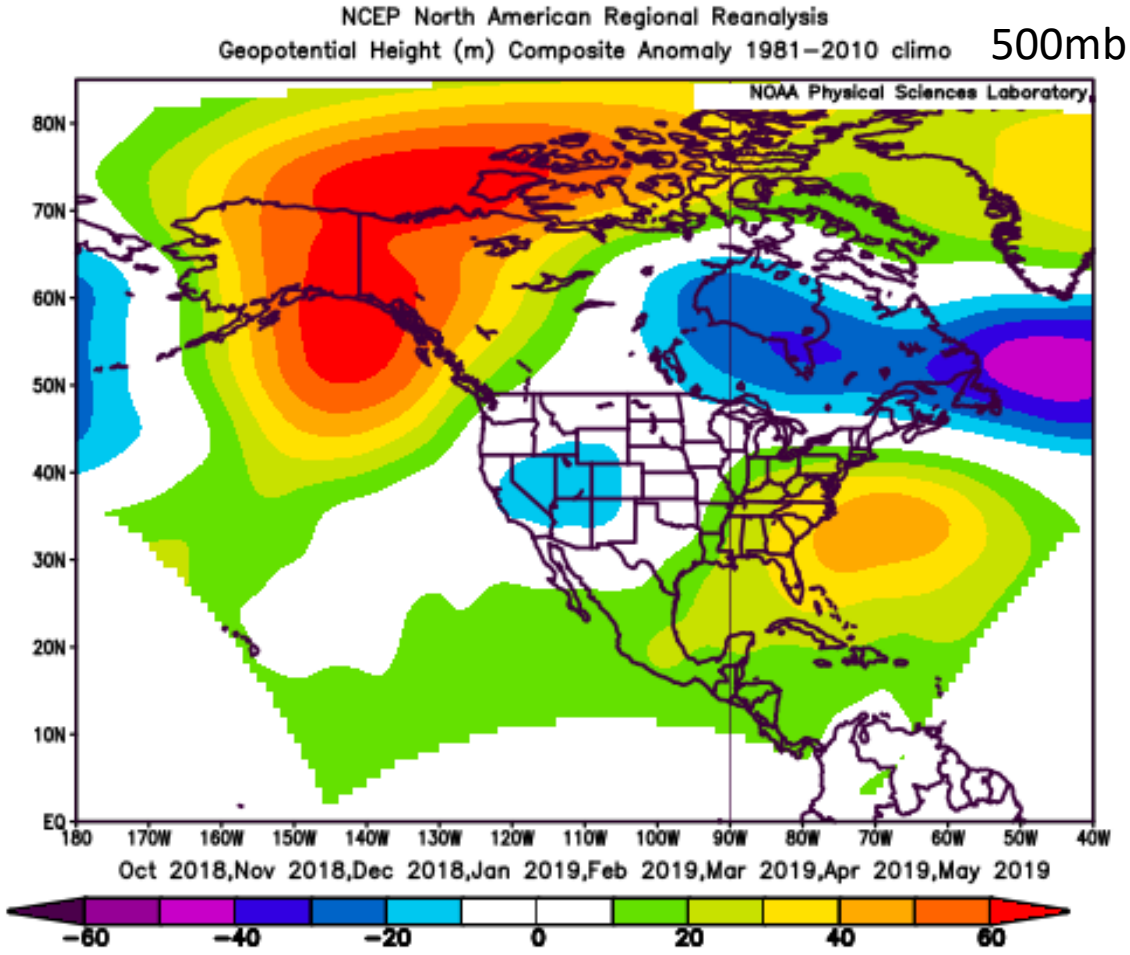
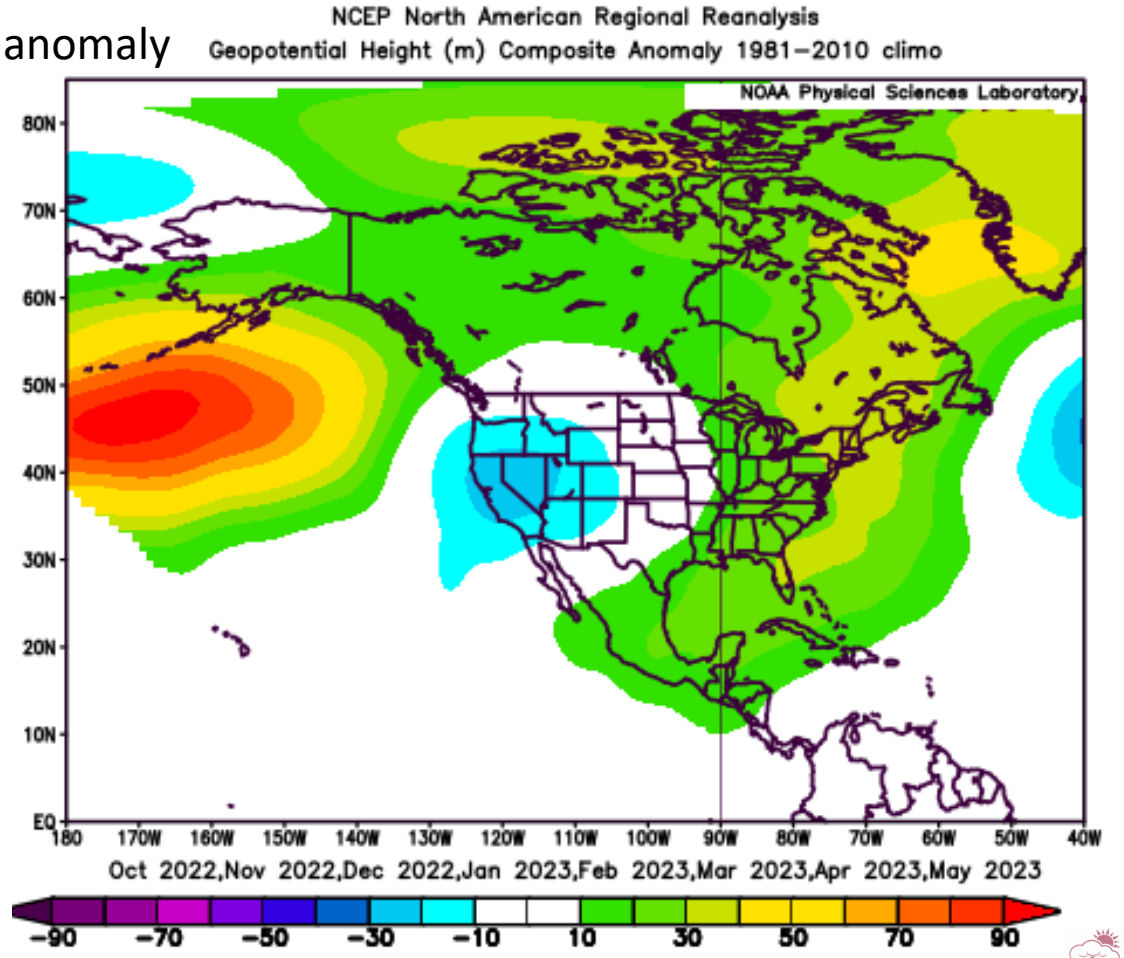
Similar blocking/troughing 2018-19 and 2022-23

Oct 2018- May 2019



500mb ht anomaly

Oct 2022- May 2023



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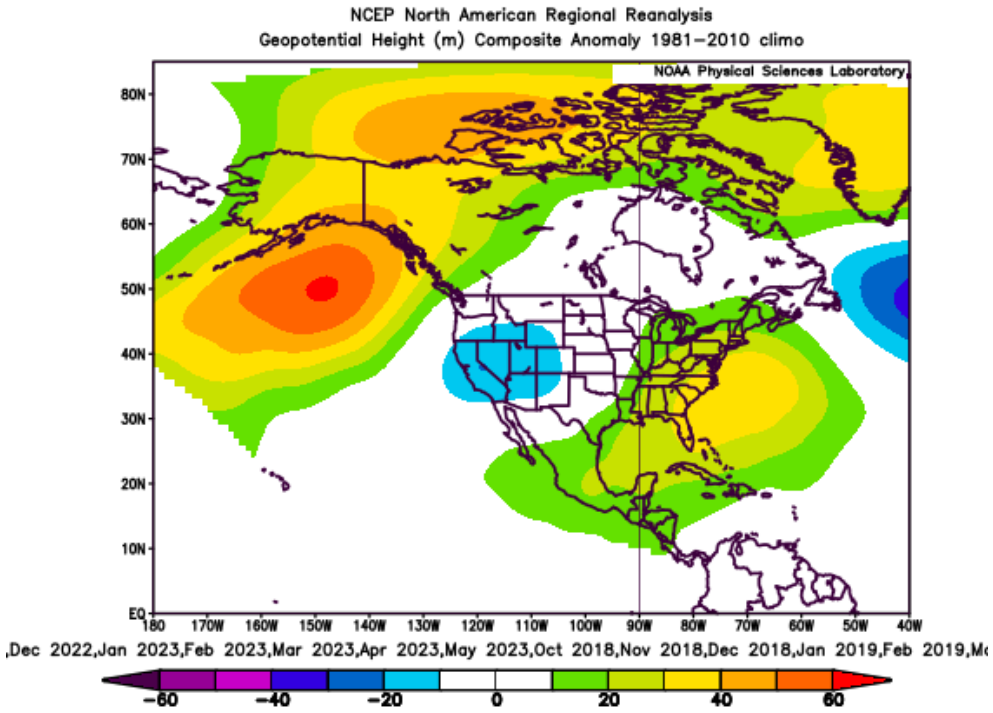
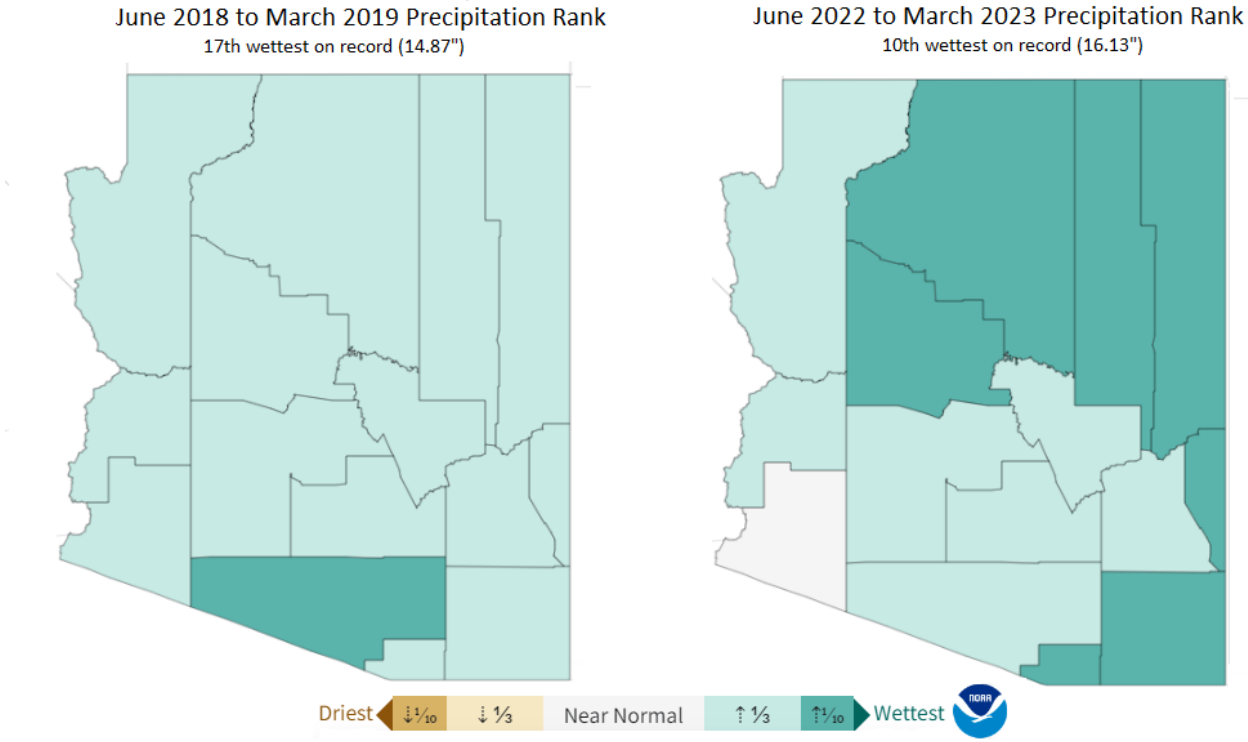
Analog: both wet summers then wet winters

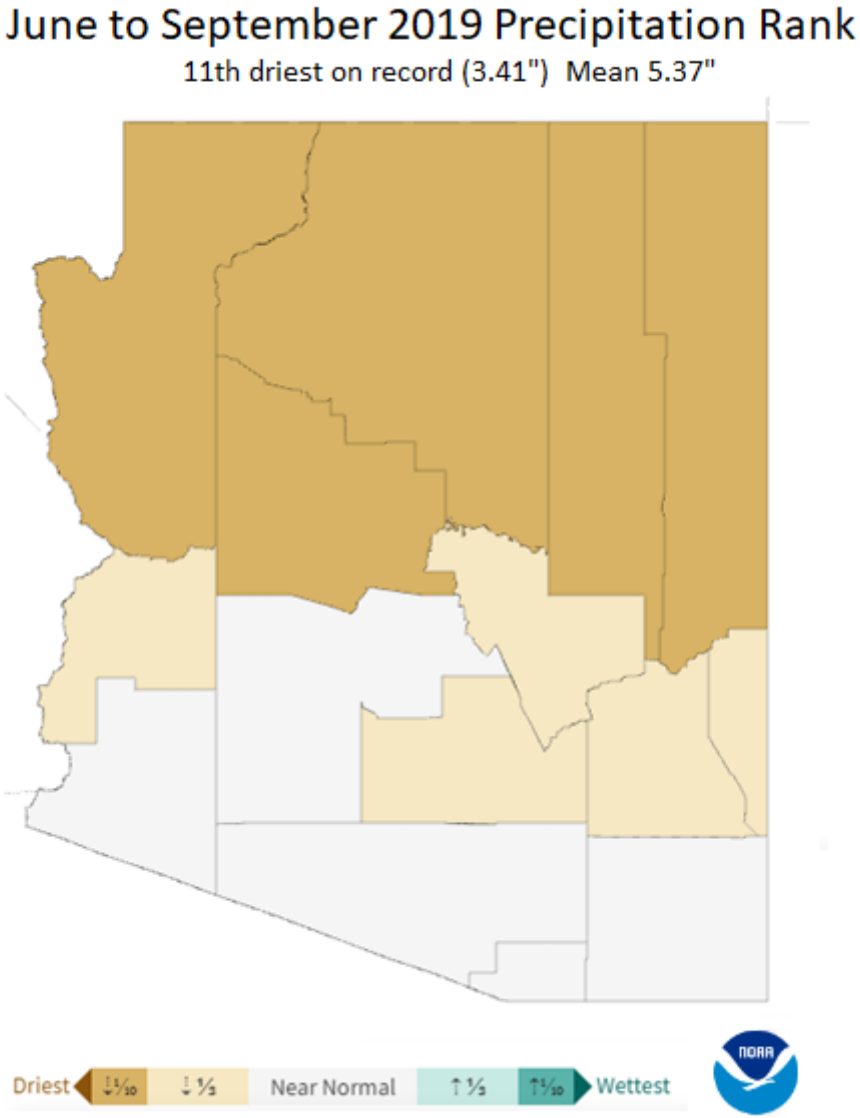
500mb ht anomaly 2018-19 and 2022-23



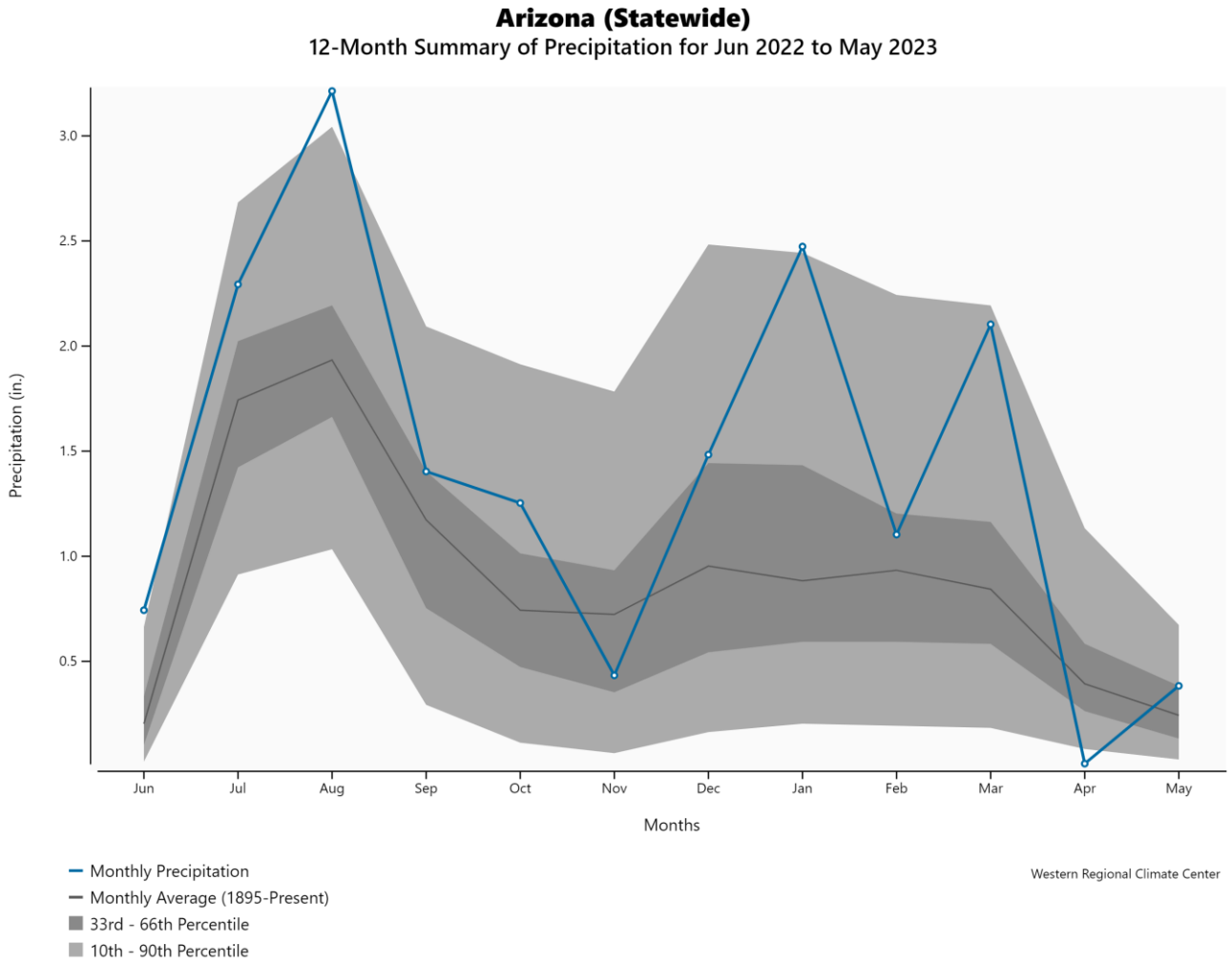


Monsoon 2019 was dry

(not a forecast!)

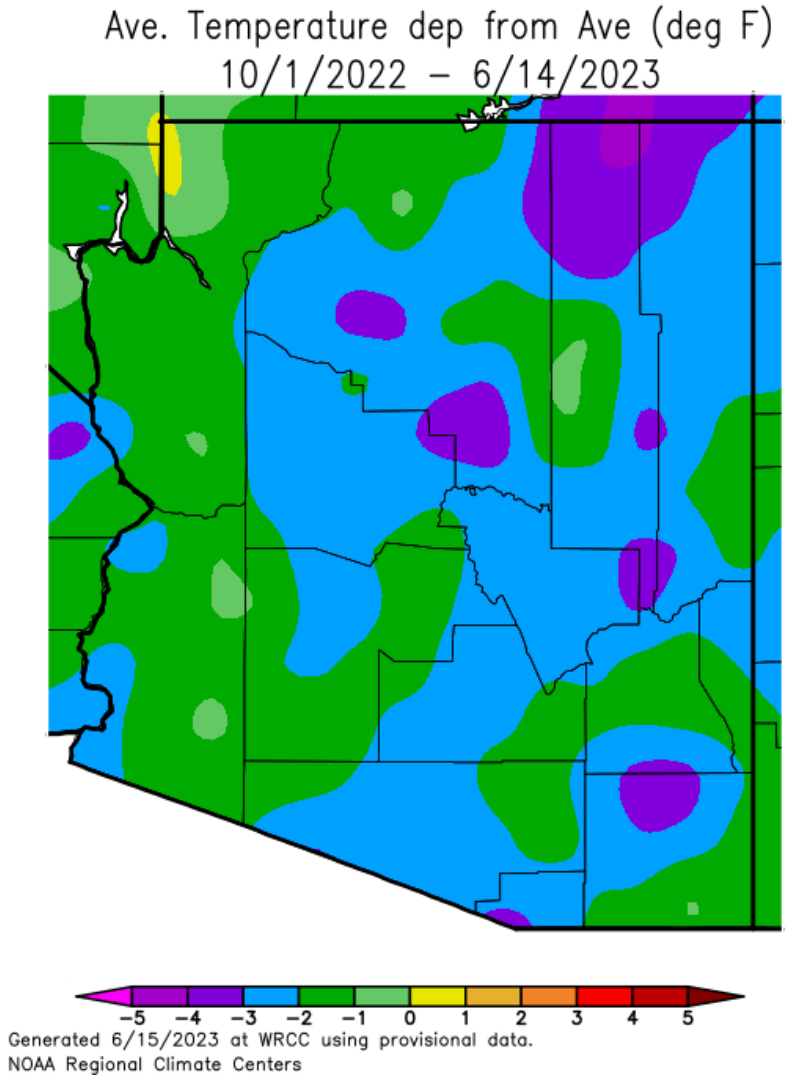


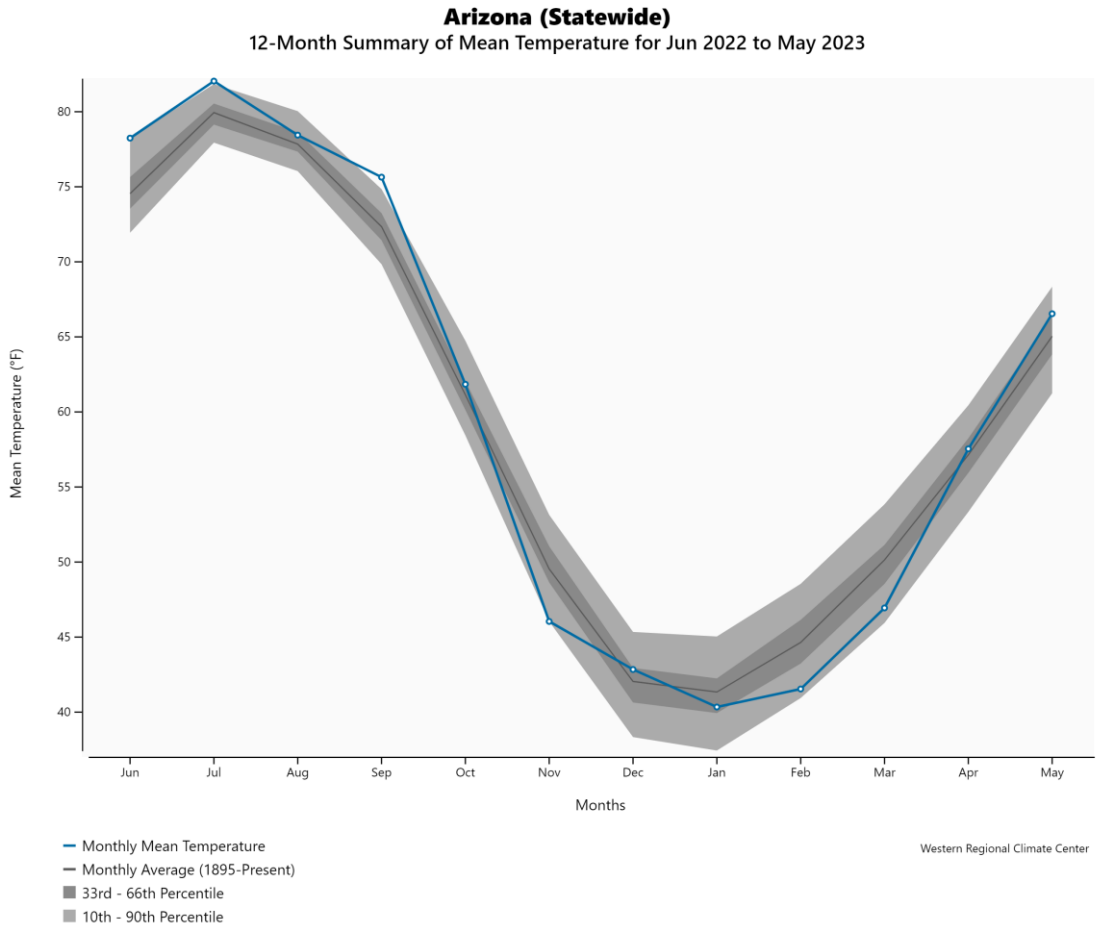
Past 12 months mostly above avg precipitation



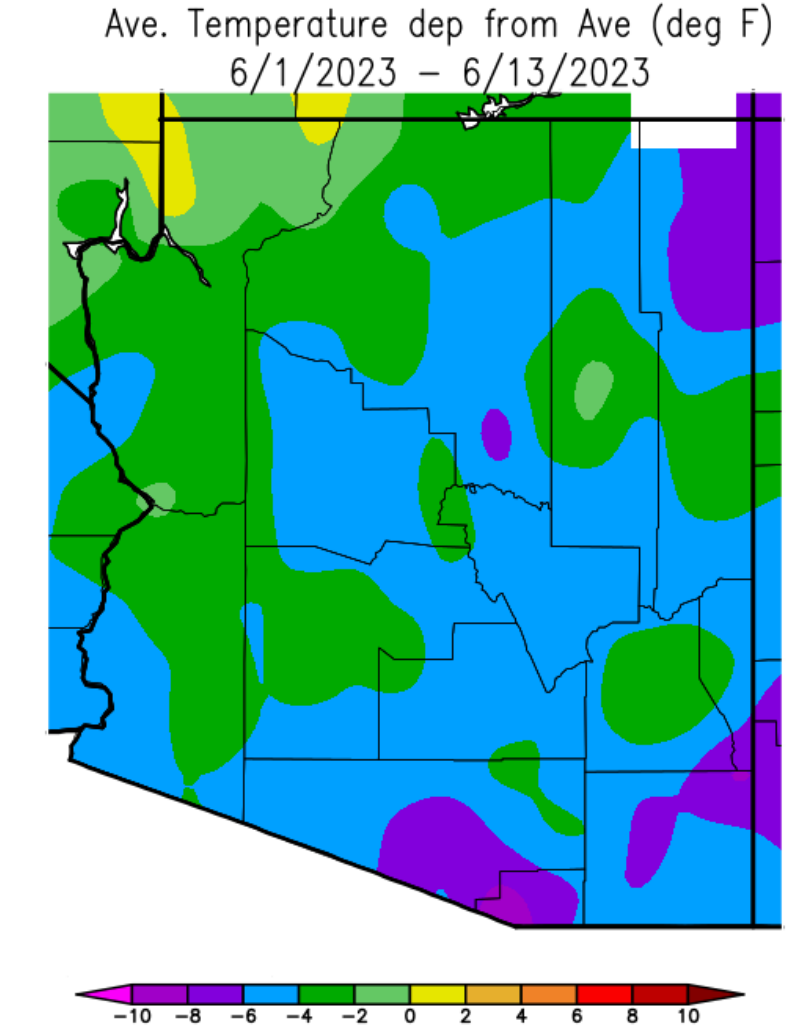
Water Year (Oct-May)	Calendar Year (Jan-May)	Winter (Dec-Mar)
8.92”	5.81”	6.84”
27th wettest	23rd wettest	19th wettest
(needs 3.34”)	(needs 6.45”)	

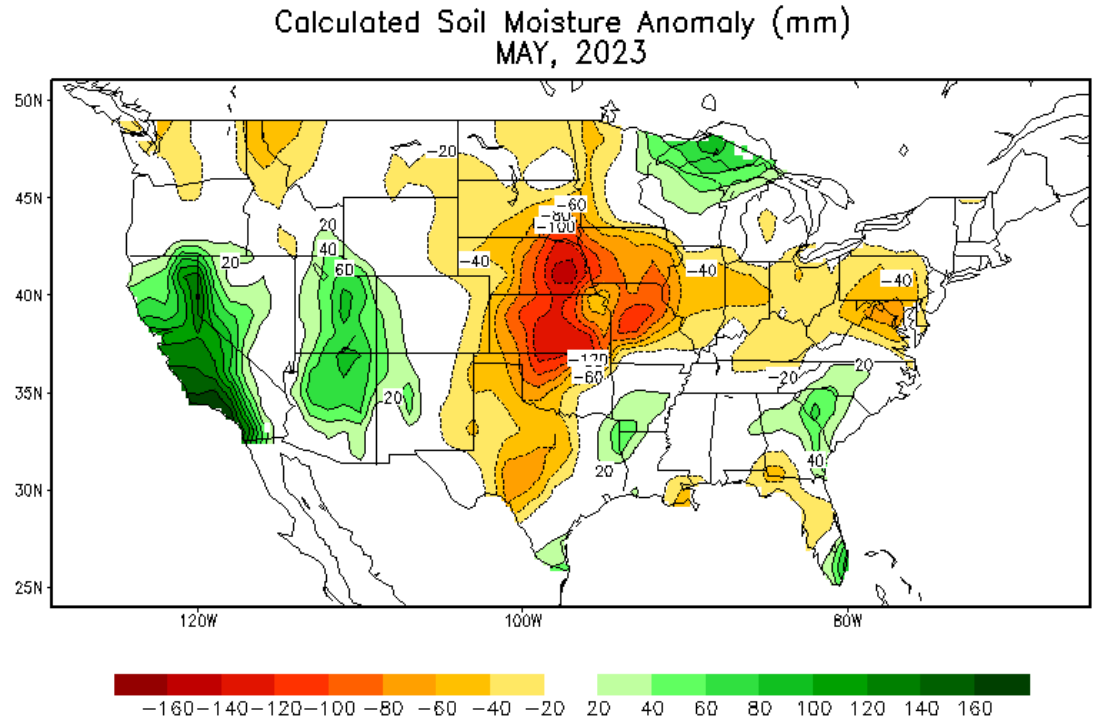
Statewide temps average/below since October





June has been colder than normal





Soil moisture above average through May

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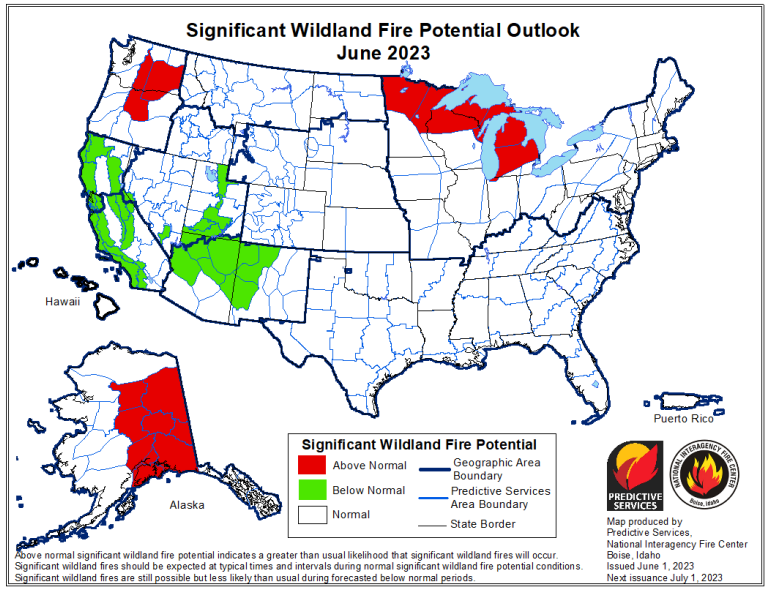
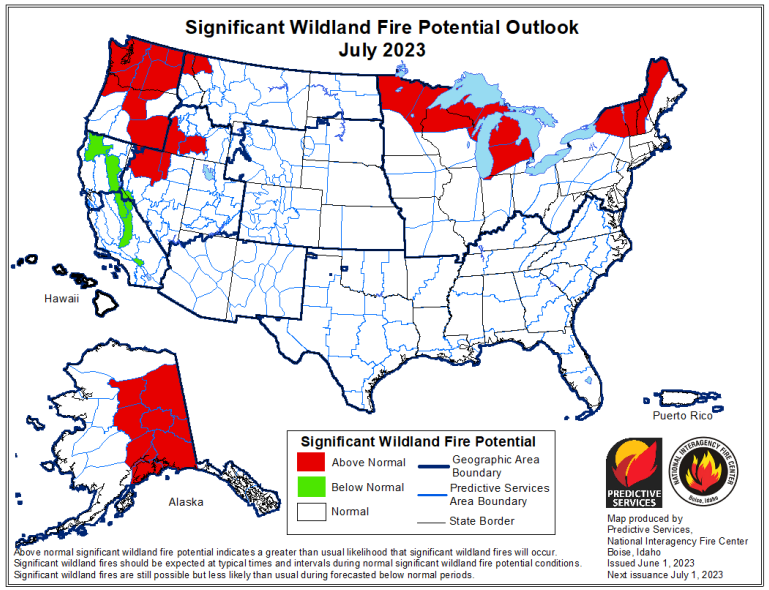
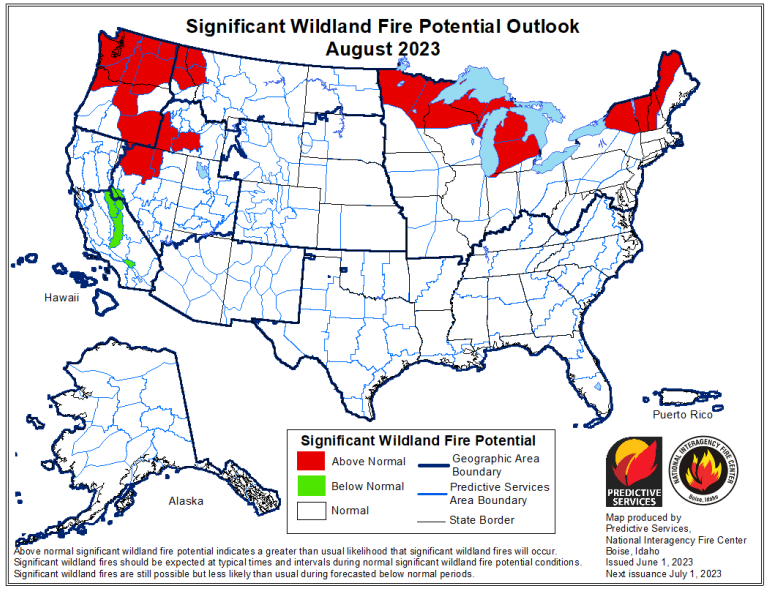
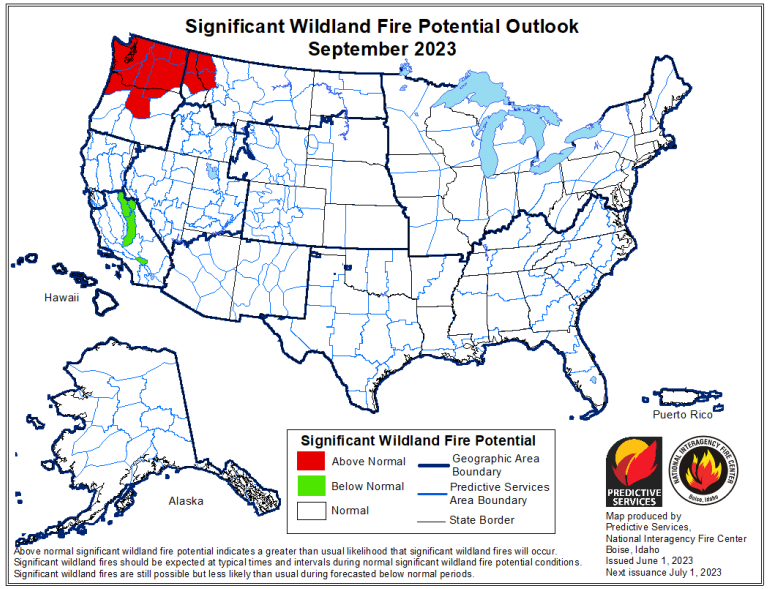
Wildfire outlook through Sept is “normal”









“Normal” outlook for AZ means there is wildfire potential

Smoke Plume Forecast: 6/15/2023

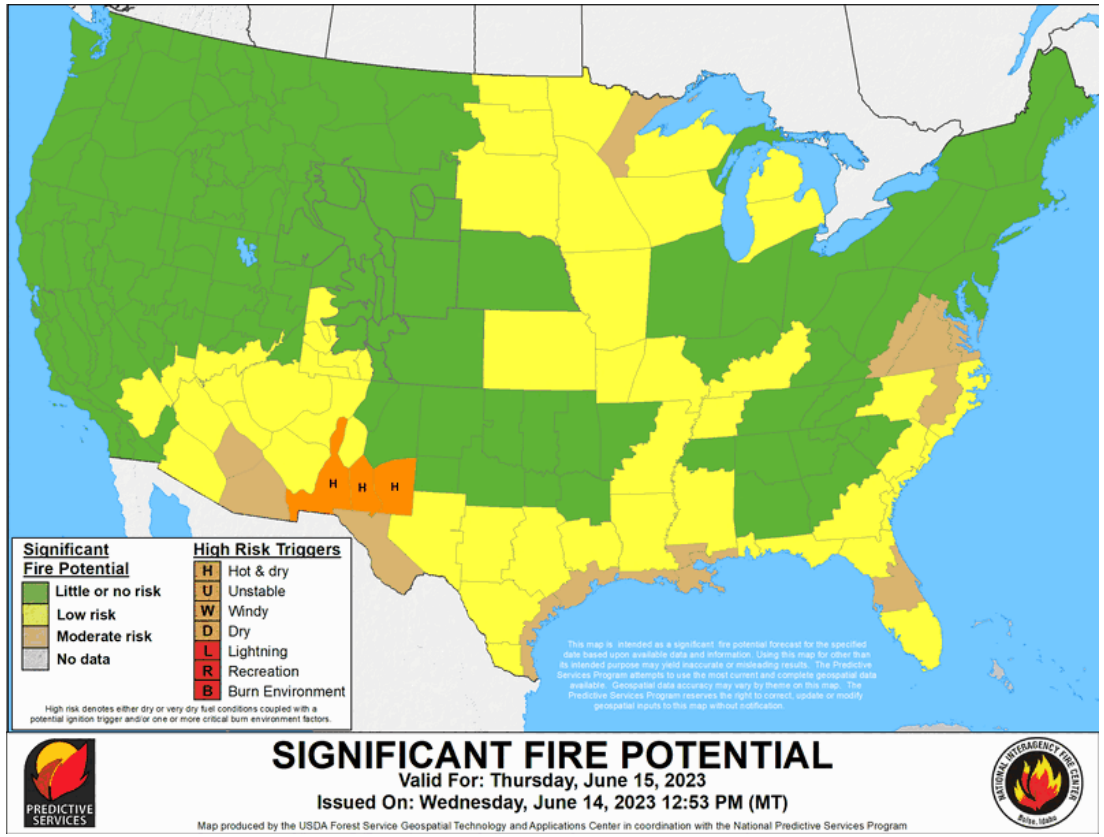
Map updated: 6/15/2023 - 8:48 AM (Click fire icon/name to view full forecast)

About The Wildfire Smoke Forecasts

ADEQ provides wildfire smoke forecasts when Arizona wildfires have the potential for extended air quality impacts as determined in coordination with Federal/State Land Managers.

ADEQ's smoke forecasts typically are not provided for wildfires that are shorter in duration or which occur in remote locations, away from populated areas.

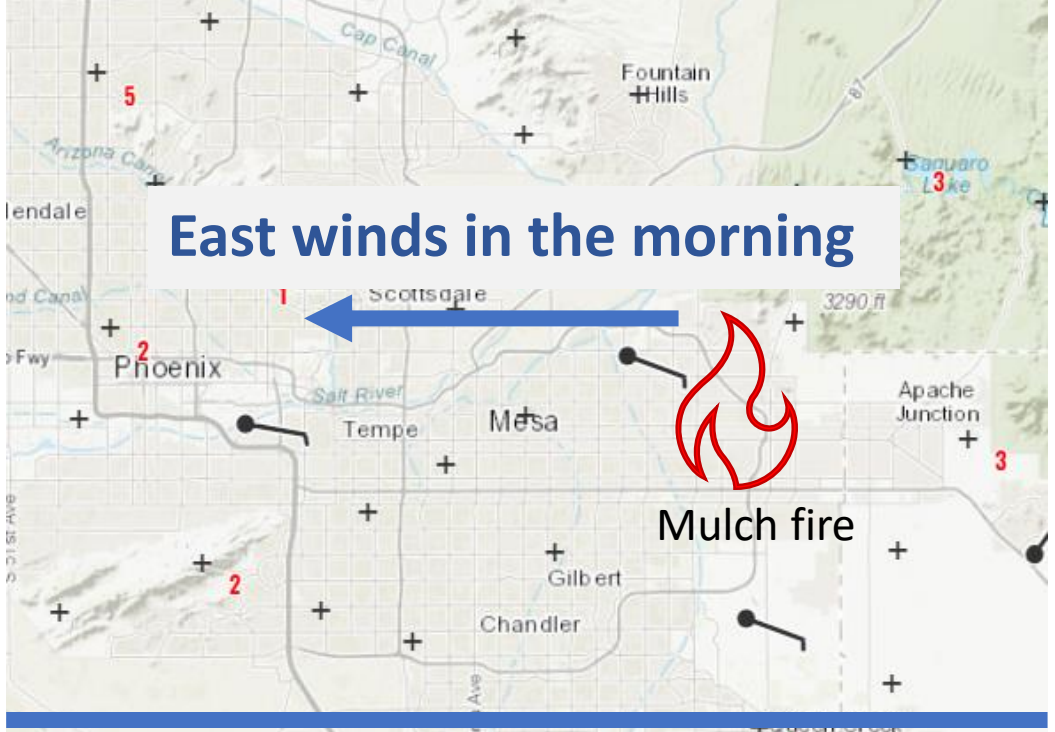
Lightning caused on May 21

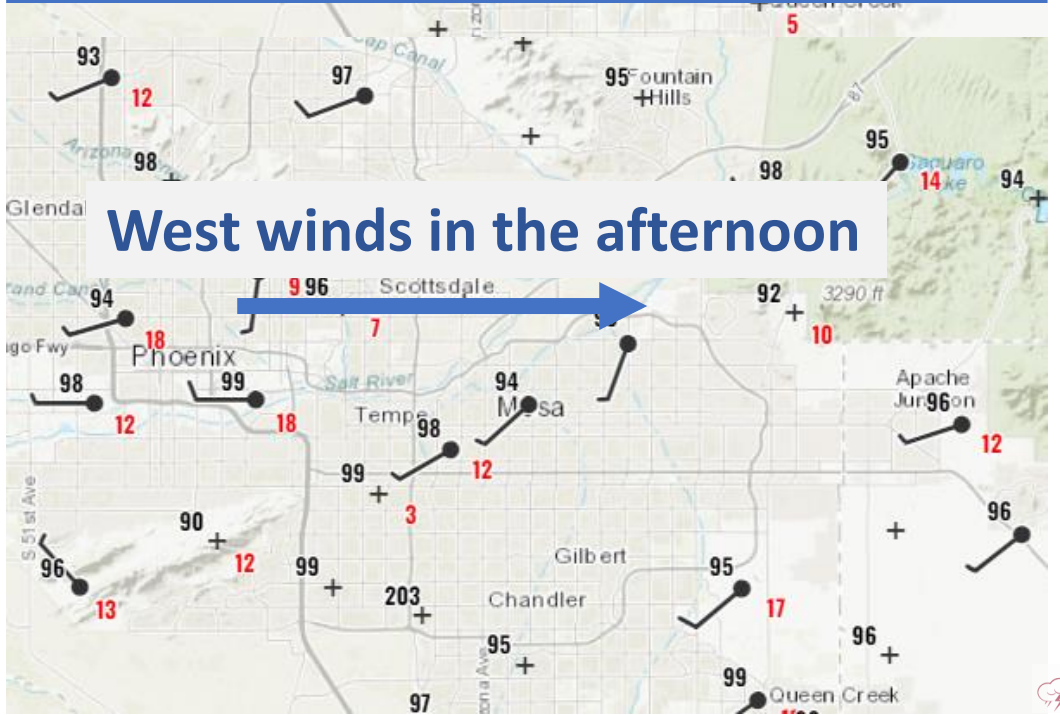


ADEQ
Arizona Department of Environmental Quality

Approved Daily Burns 2023-06-01

Burn Number	Burn Name	Ignition Date	Approved Acres
A1S222B	Flagstaff WUI	2023-06-01	600
A1S222B	Flagstaff WUI	2023-06-01	400
ASF0773B	Lakeside East Broadcast	2023-06-01	2000
COF735B	SAWMILL	2023-06-01	3000
KNF0130B	Kendrick	2023-06-01	1529





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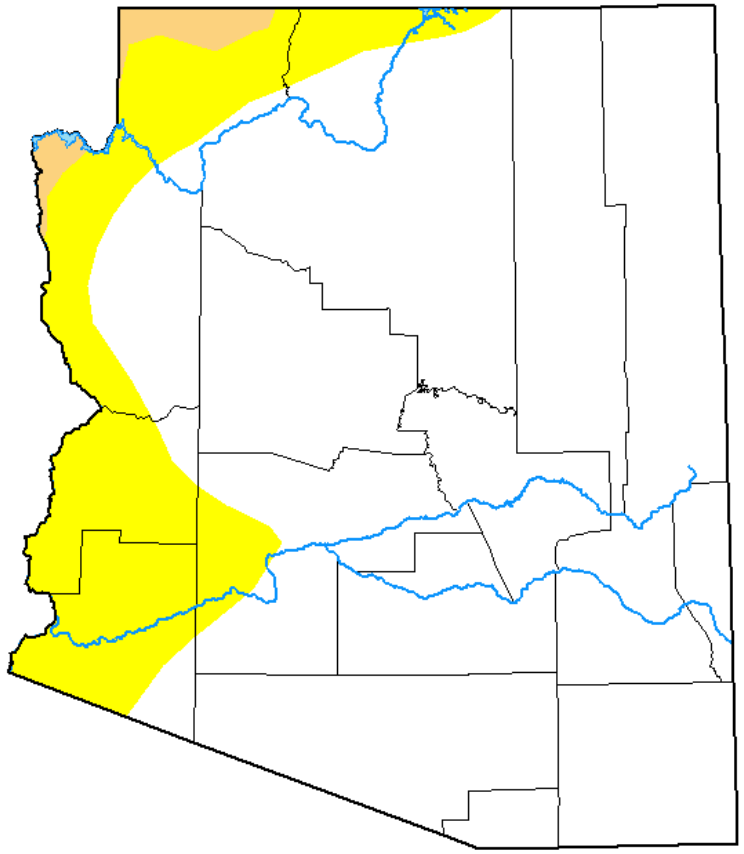
No changes in short-term drought since April

U.S. Drought Monitor

Arizona



June 13, 2023

(Released Thursday, Jun. 15, 2023)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	82.08	17.92	1.46	0.00	0.00	0.00
Last Week *06-06-2023*	82.08	17.92	1.46	0.00	0.00	0.00
3 Months Ago *03-14-2023*	70.99	29.01	9.11	0.03	0.00	0.00
Start of Calendar Year *01-03-2023*	12.40	87.60	38.94	7.85	0.00	0.00
Start of Water Year *09-27-2022*	0.00	100.00	56.72	18.47	0.00	0.00
One Year Ago *06-14-2022*	0.00	100.00	98.48	77.90	26.77	3.01

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. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

Adam Hartman
NOAA/NWS/NCEP/CPC

droughtmonitor.unl.edu

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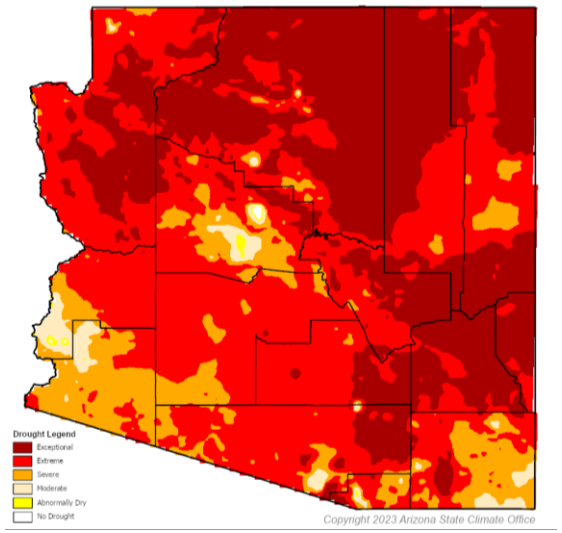
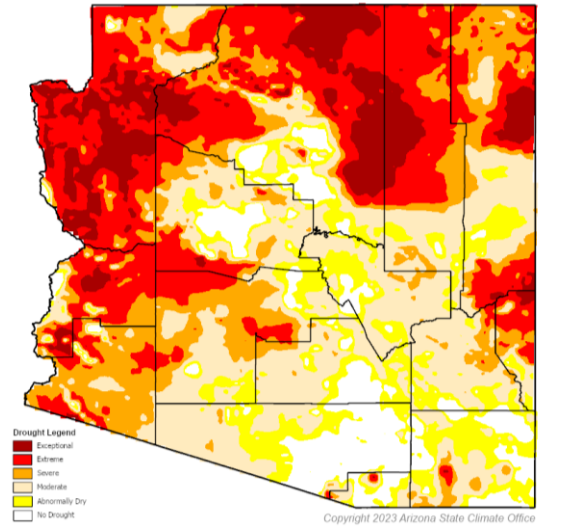
Long-term drought much better in 2023

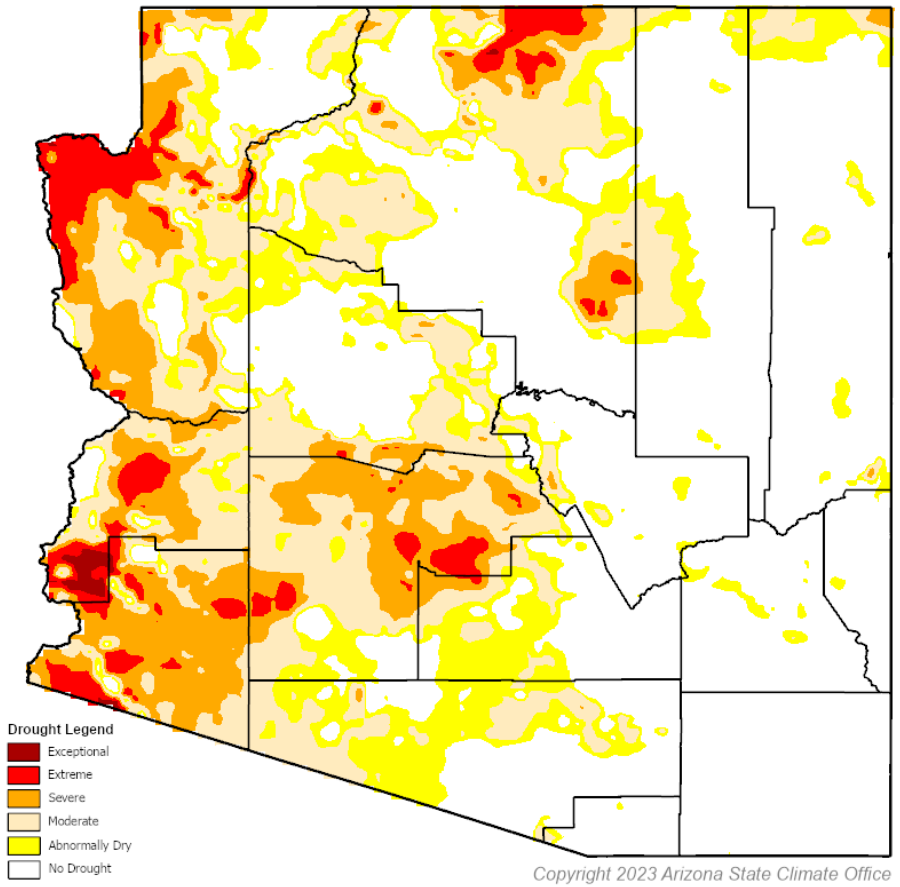
May 2021



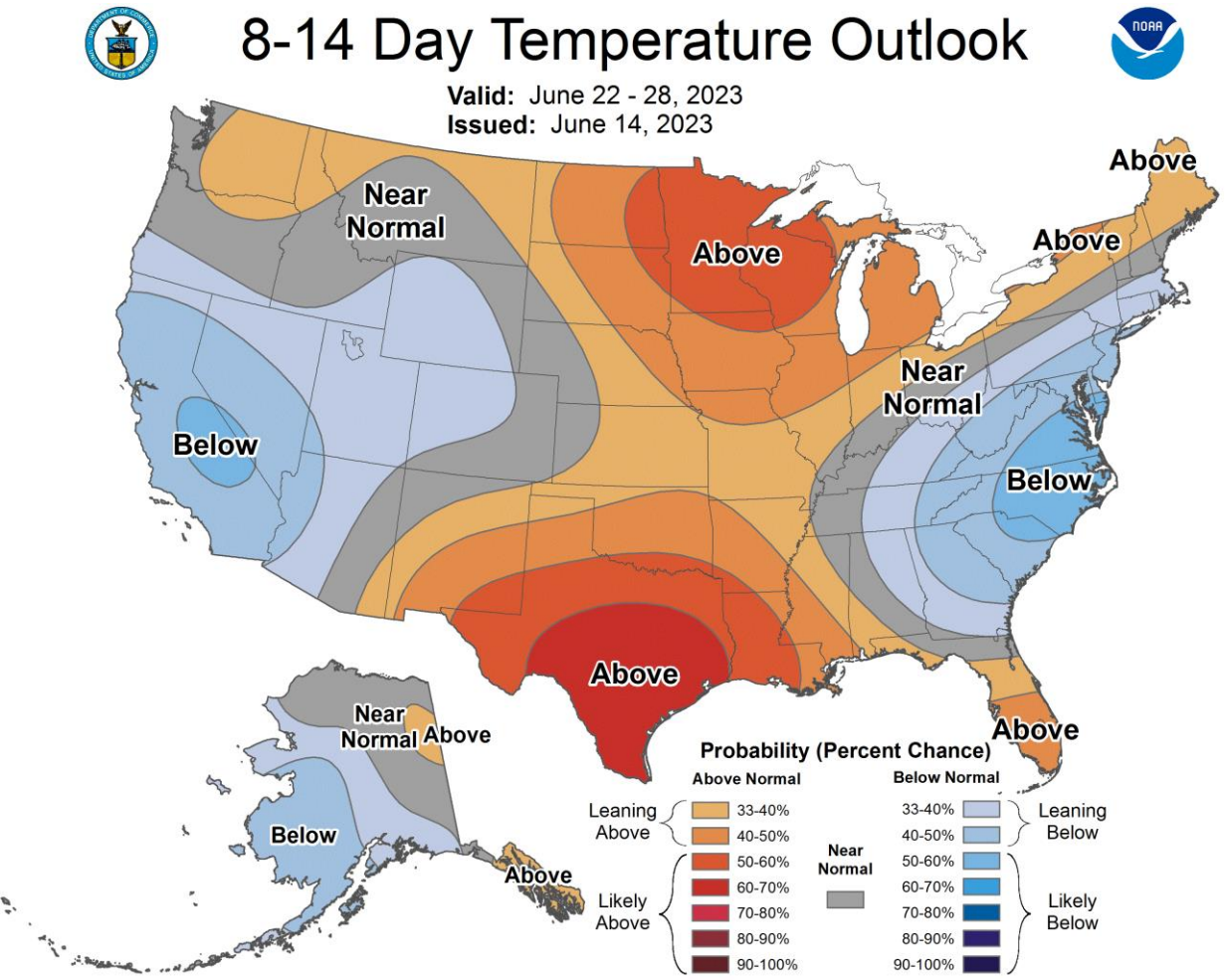
May 2022

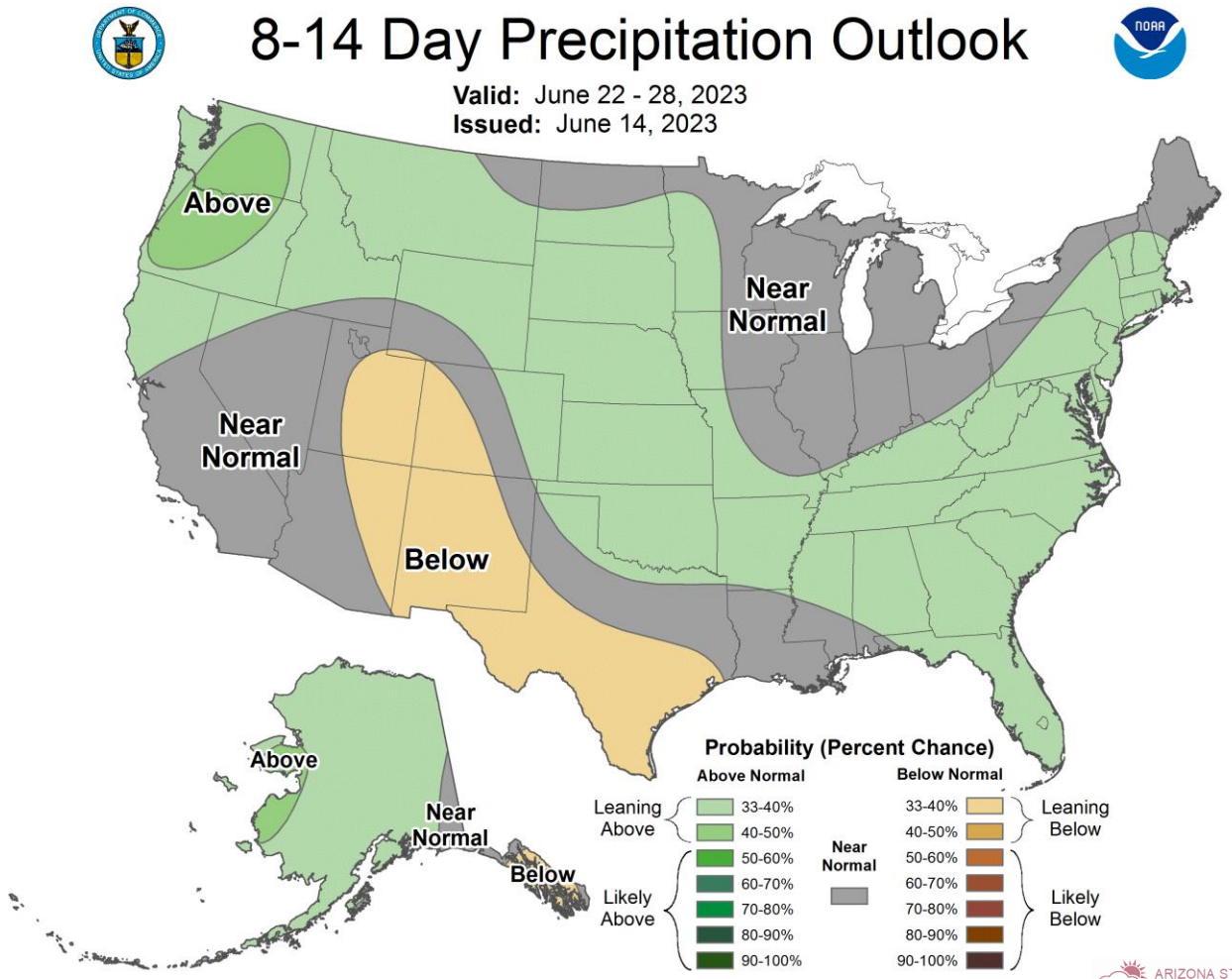


May 2023



June expected to remain cooler





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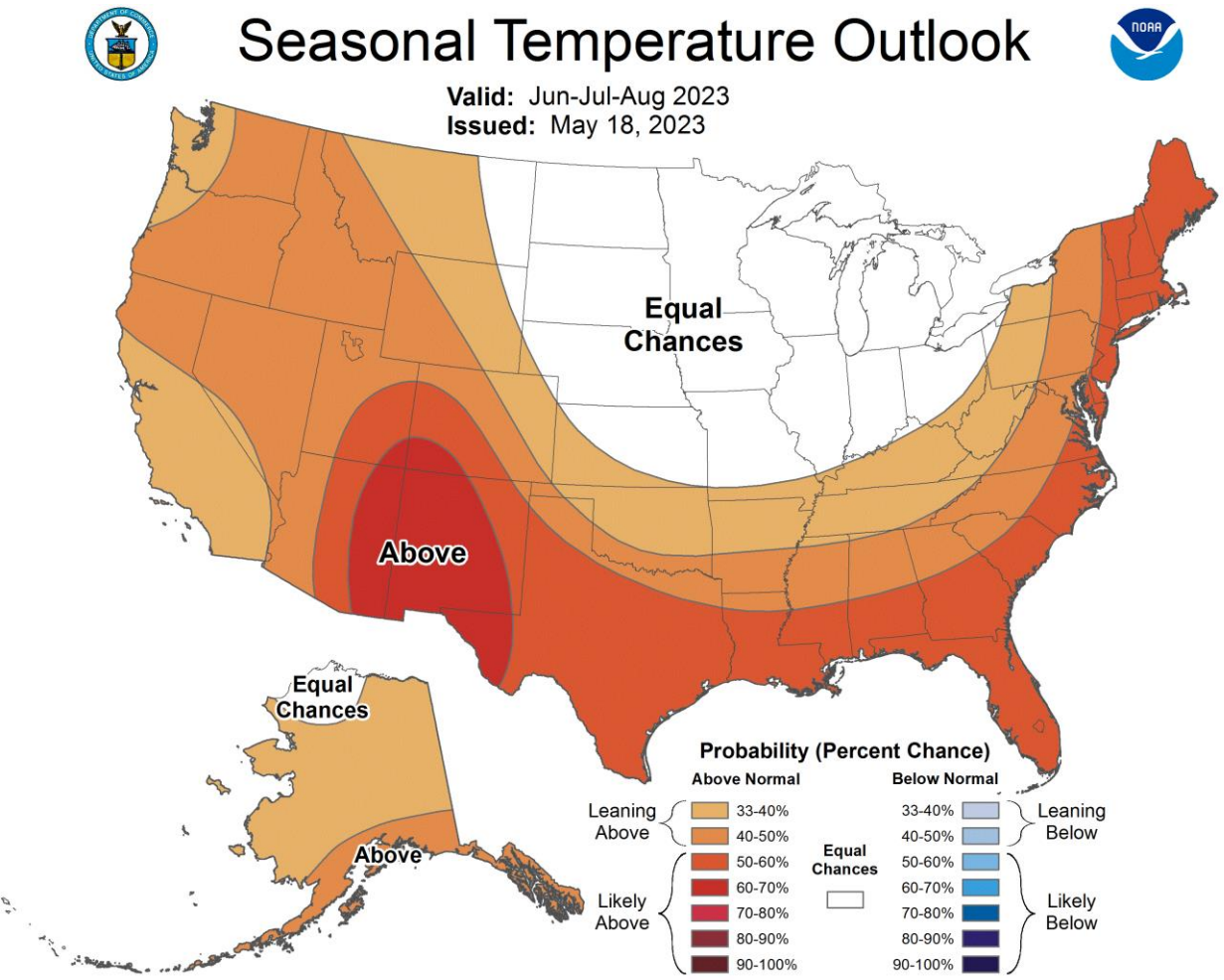
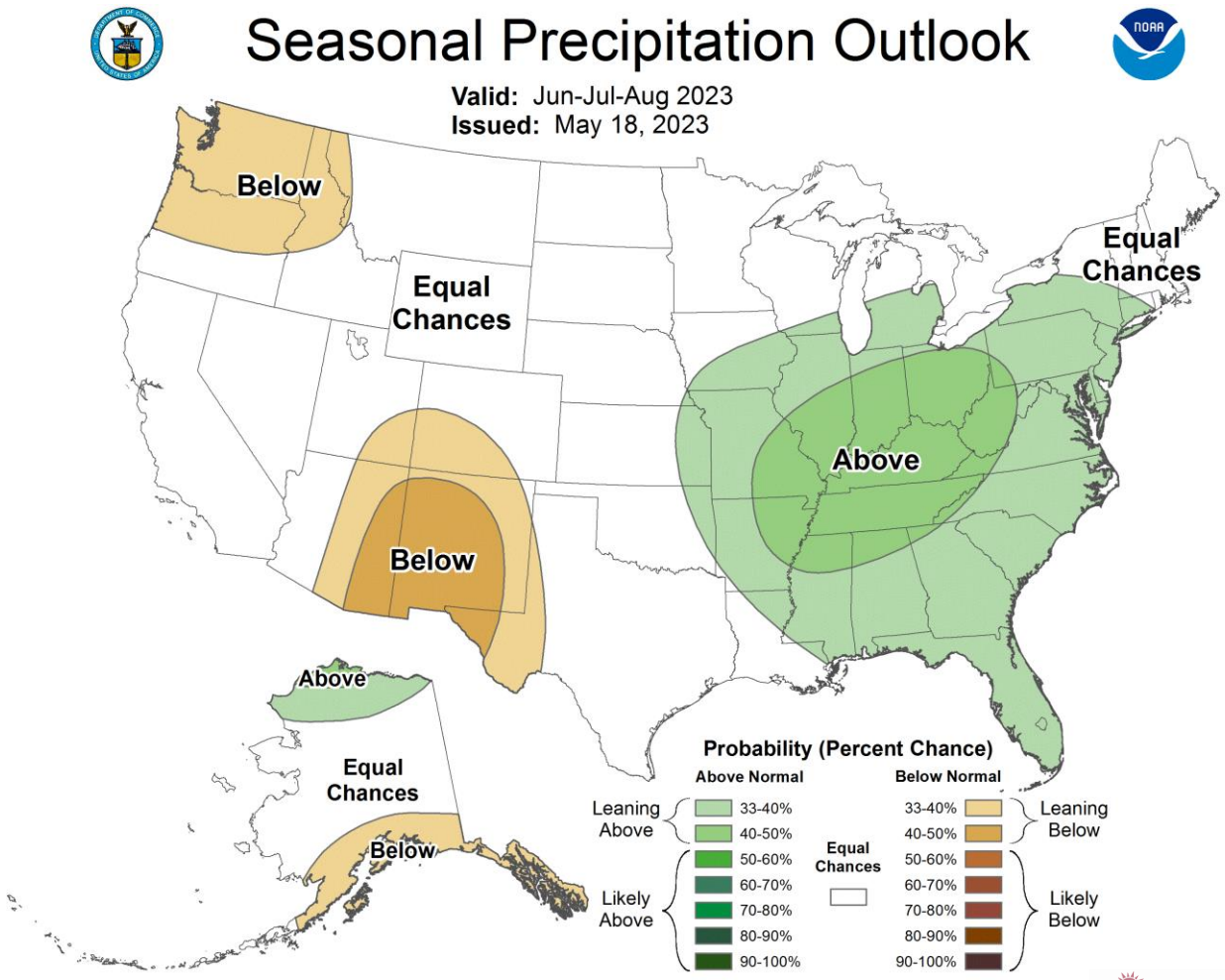
Still uncertain monsoon/delayed





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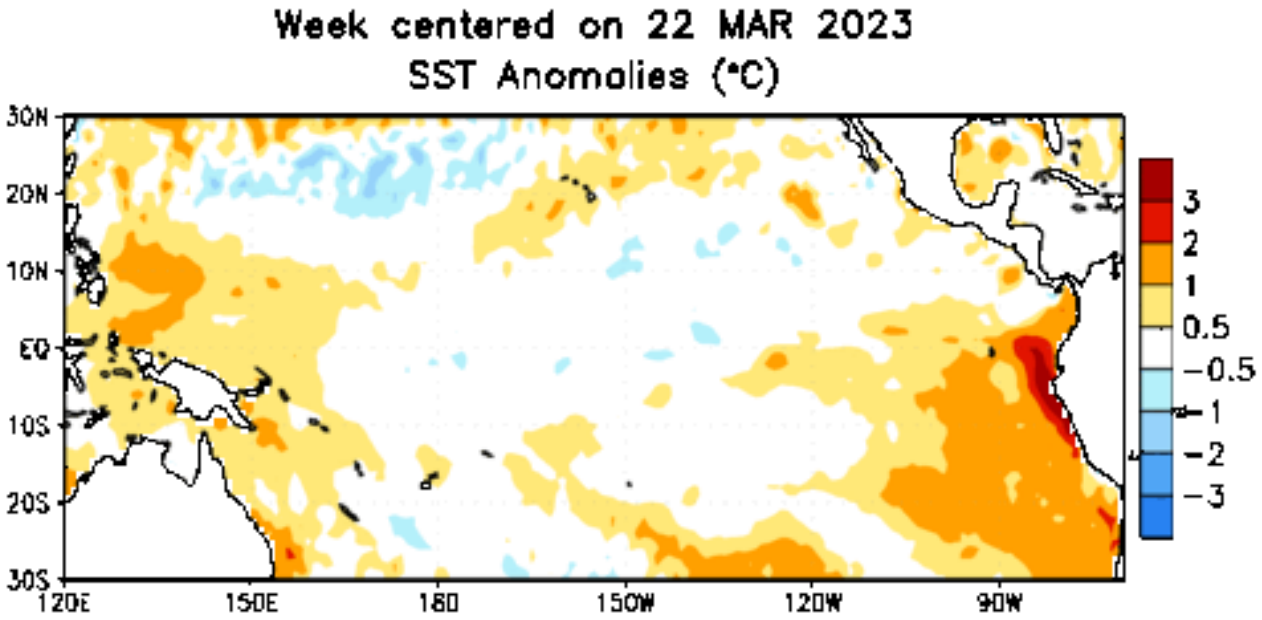
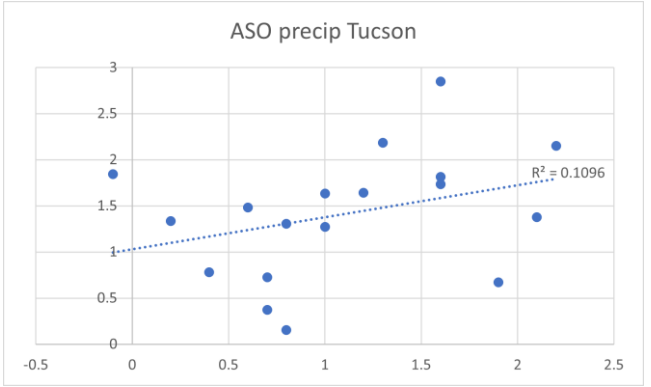
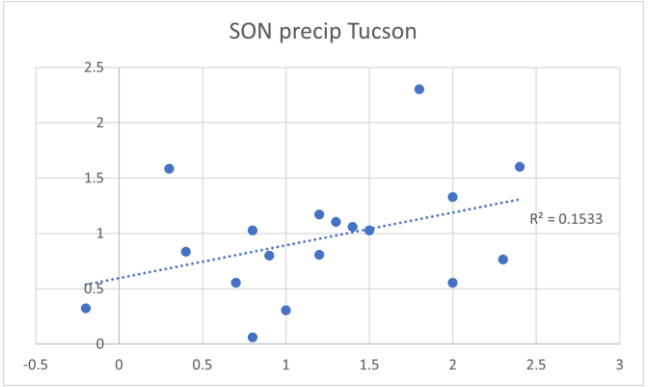
El Nino and Monsoon? Not really…



El Nino conditions are present and expect to gradually strengthen in winter

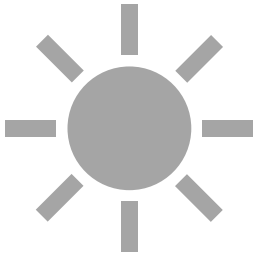




El Nino might slightly increase fall precipitation in Tucson, but relationship is not statistically significant

Summary

Statewide still cooler which helps soil moisture conditions



Water year: additional 3.34” this summer to be “average” 12.26”

El Nino to strengthen toward winter

Thank you!

Erinanne Saffell, Ph.D.

Arizona State Climatologist

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