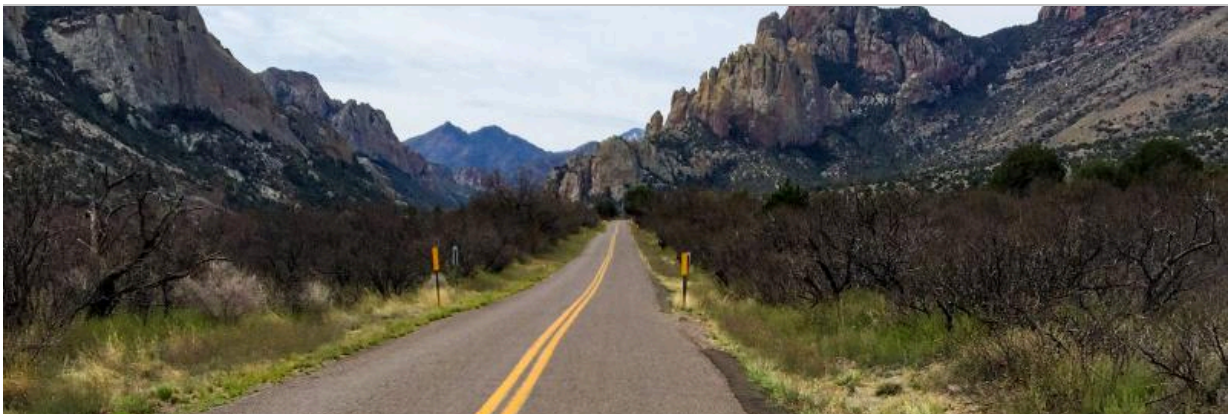


April 2025: Southwest Climate Outlook

Stacie Reece
May 1, 2025

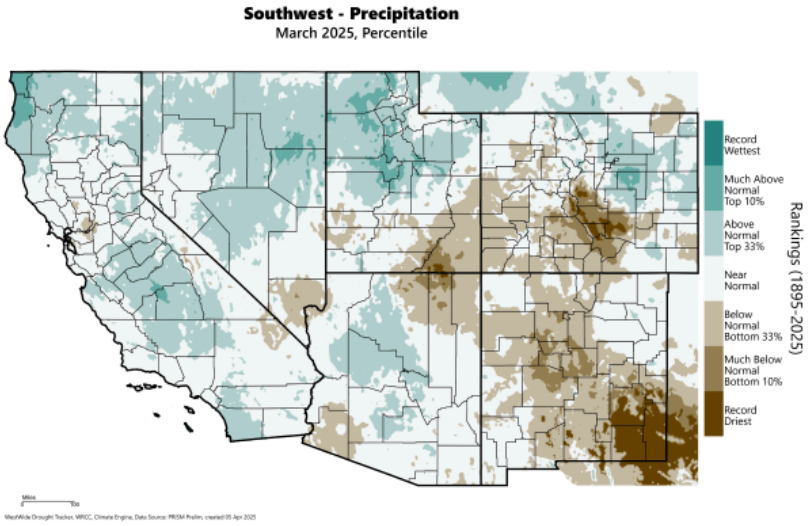
https://climas.arizona.edu/

The Southwest Climate Outlook is published by the Climate Assessment for the Southwest (CLIMAS), with support from University of Arizona Cooperative Extension, and the New Mexico State Climate office.

Questions/Contact: Stacie Reece, sreece@arizona.edu

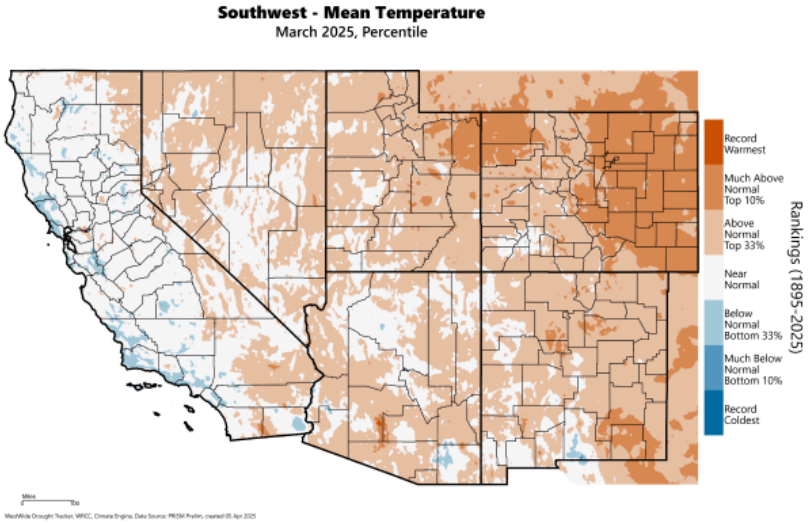
Precipitation and Temperature

March precipitation was below normal across much of New Mexico, with areas of southeastern New Mexico having the driest March on record. In Arizona, precipitation was near normal for much of the state, ranging into above normal for parts of central and northern Arizona, and below normal in the southwest and northeast of the state.



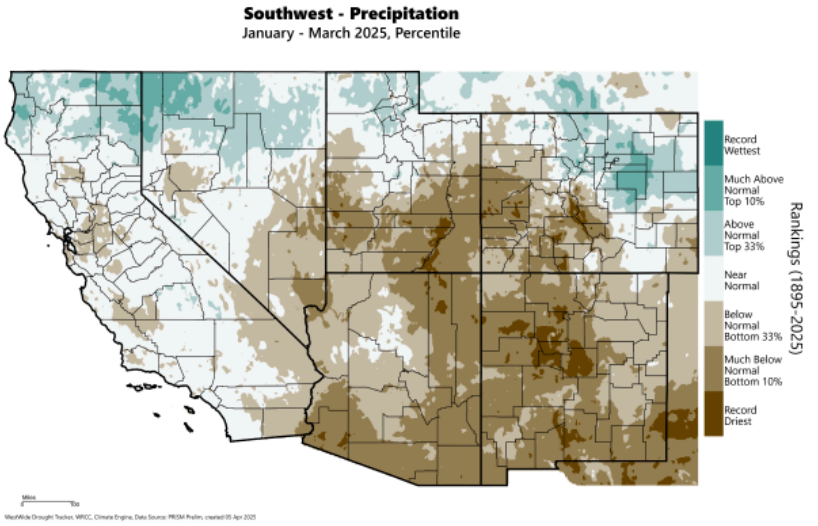
Source: WestWide Drought Tracker

March temperatures were generally above normal to near normal across Arizona and New Mexico.



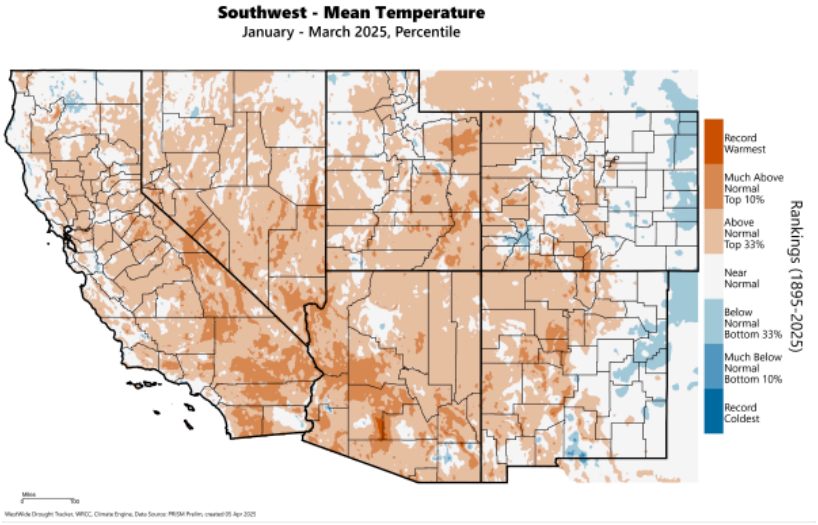
Source: WestWide Drought Tracker

January – March 3-month precipitation totals ranked as below normal or much-below normal across Arizona and New Mexico. It was the driest January – March season on record for some areas scattered across the region.



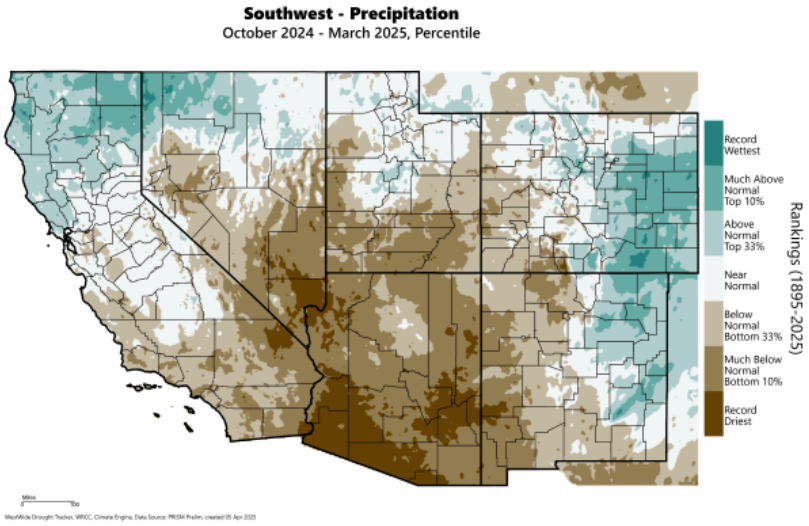
Source: WestWide Drought Tracker

January – March three-month average temperatures were above normal across Arizona and much of New Mexico, much-above normal for areas of central and western Arizona, and near normal to below normal for eastern New Mexico.



Source: WestWide Drought Tracker

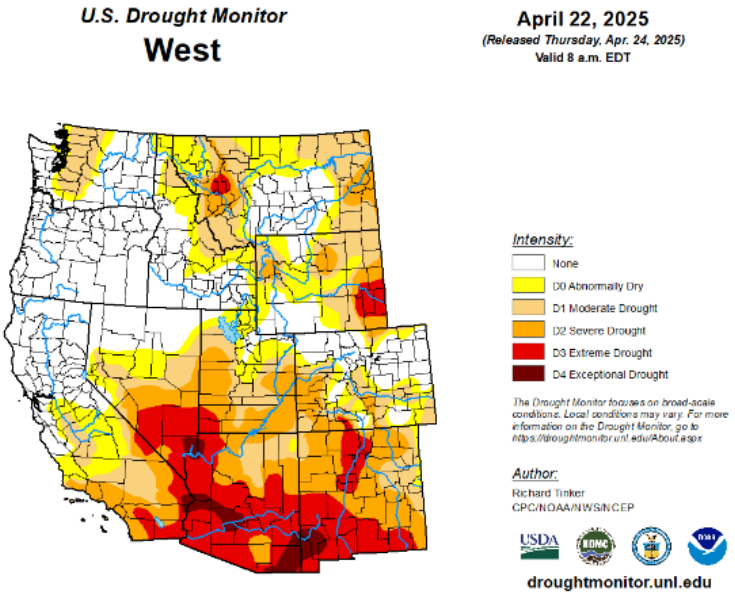
Precipitation totals for the 2025 water year so far (October 2024 – March 2025) rank below normal to much-below normal across Arizona and much of New Mexico, and for areas of southern and western Arizona it was the driest October – March on record. For eastern New Mexico, the season ranks as either near normal, above normal, or much-above normal.



Source: WestWide Drought Tracker

Drought

Drought conditions currently affect nearly all of Arizona and New Mexico, with the worst conditions, Extreme (D3) or Exceptional (D4) drought, extending across western, central, and southern Arizona into southern New Mexico and throughout the Rio Grande Basin. Severe (D2) drought or worse affects an area comprising 89% of Arizona and 85% of New Mexico.



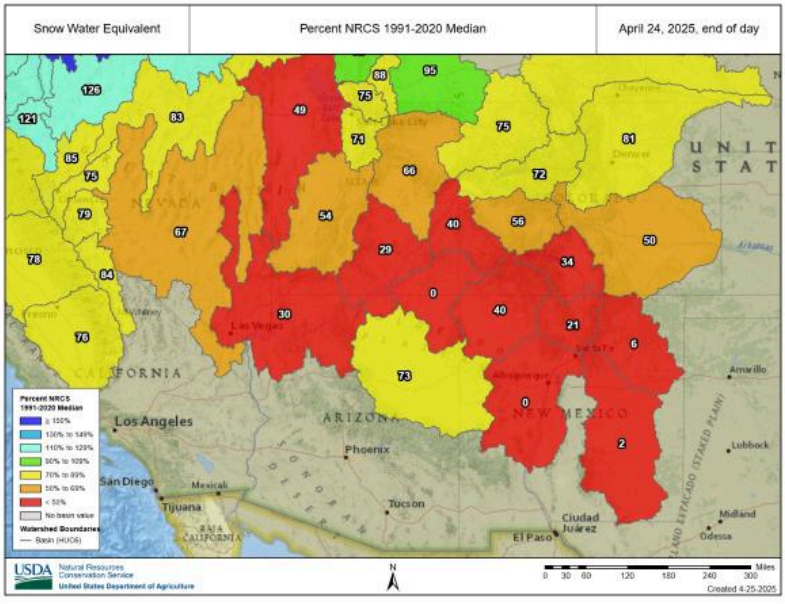
Source: U.S. Drought Monitor

New Mexico

Arizona

Snowpack & Streamflow

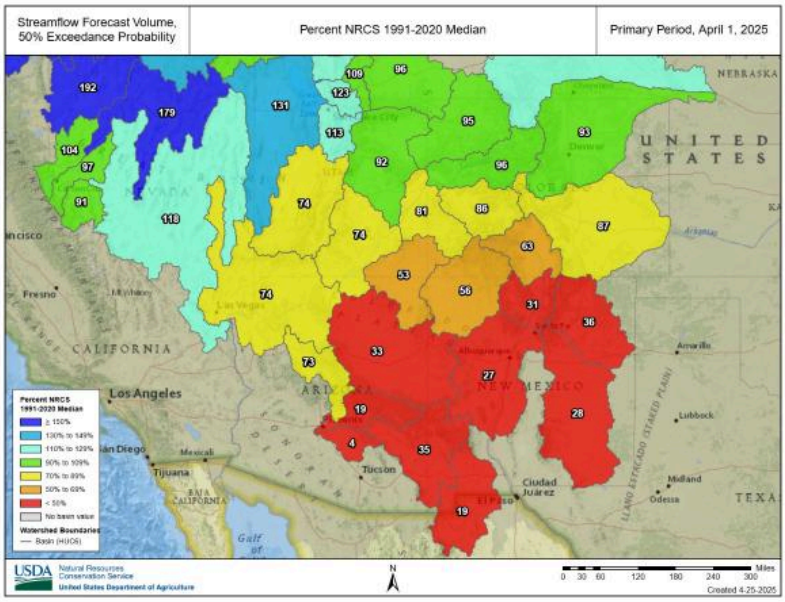
Snow water storage is much below normal across Arizona and New Mexico. The 73% of normal value shown for the Little Colorado River basin is based on only one station's measurements of snow water equivalent (SWE)--Snowslide Canyon above Flagstaff, AZ, where snowfall events over the past two months have pushed SWE values to near normal at times. Basin SWE estimates in New Mexico derive from stations in the Sangre de Cristo and southern San Juan Mountains, which have been consistently well-below normal SWE since early in the season, due both to snowfall deficits and to above normal temperatures.



USDA-NRCS: National Water and Climate Center

Streamflow forecasts generally predict below normal or much-below normal flows for basins of Arizona and New

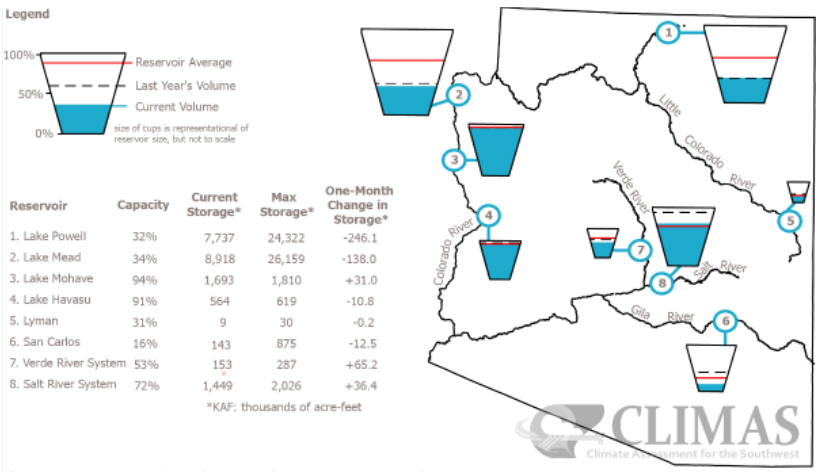
Mexico, ranging from a projected 73% of normal for the Verde River to 4% of normal for the middle Gila. Upper Colorado River Basin streamflow forecasts aggregate to 85% of normal. Middle Rio Grande flows are expected to be 31% of normal.



USDA-NRCS: National Water and Climate Center

Water Supply

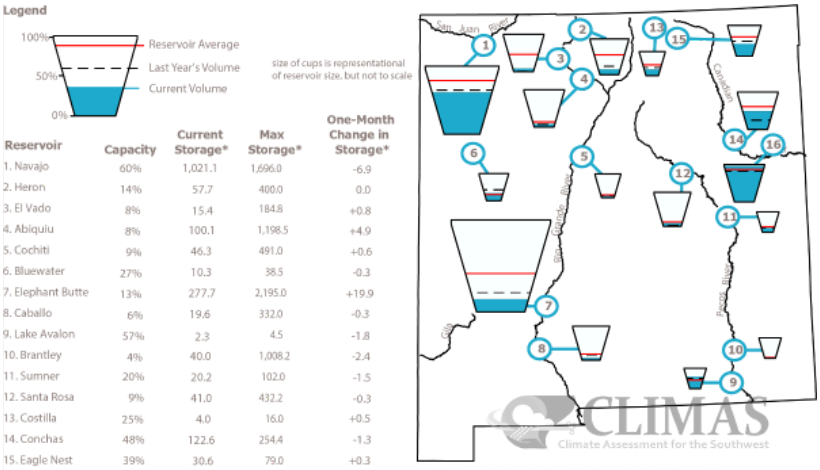
Reservoir storage in Arizona and New Mexico is generally down compared to last year. Lake Mead and Lake Powell levels remain much below long-term average because of decades of long-term decline. New Mexico reservoirs in the eastern part of the state are, in some cases, at levels above last years' and above the long-term average, but elsewhere in the state reservoirs are down over last year and well short of long-term average.



Reservoir	Capacity	Current Storage*	Max Storage*	One-Month Change in Storage*
1. Lake Powell	32%	7,737	24,322	-246.1
2. Lake Mead	34%	8,918	26,159	-138.0
3. Lake Mohave	94%	1,693	1,810	+31.0
4. Lake Havasu	91%	564	619	-10.8
5. Lyman	31%	9	30	-0.2
6. San Carlos	16%	143	875	-12.5
7. Verde River System	53%	153	287	+65.2
8. Salt River System	72%	1,449	2,026	+36.4

*KAF: thousands of acre-feet

Figure 1. Arizona reservoir volumes for the end of March 2025 as a percent of capacity. The map depicts the average volume and last year's storage for each reservoir. The table also lists current and maximum storage, and change in storage since last month.



Reservoir	Capacity	Current Storage*	Max Storage*	One-Month Change in Storage*
1. Navajo	60%	1,021.1	1,696.0	-6.9
2. Heron	14%	57.7	400.0	0.0
3. El Vado	8%	15.4	184.8	+0.8
4. Abiquiu	8%	100.1	1,198.5	+4.9
5. Cochiti	9%	46.3	491.0	+0.6
6. Bluewater	27%	10.3	38.5	-0.3
7. Elephant Butte	13%	277.7	2,195.0	+19.9
8. Caballo	6%	19.6	332.0	-0.3
9. Lake Avalon	57%	2.3	4.5	-1.8
10. Brantley	4%	40.0	1,008.2	-2.4
11. Sumner	20%	20.2	102.0	-1.5
12. Santa Rosa	9%	41.0	432.2	-0.3
13. Costilla	25%	4.0	16.0	+0.5
14. Conchas	48%	122.6	254.4	-1.3
15. Eagle Nest	39%	30.6	79.0	+0.3
16. Ute Reservoir	94%	187.5	200	+26.3

* in KAF = thousands of acre-feet, ** = missing/incomplete data this/last month

Figure 2. New Mexico reservoir volumes for end of March 2025 as a percent of capacity. The map depicts the average volume and last year's storage for each reservoir. The table also lists current and maximum storage, and change in storage since last month.

The map gives a representation of current storage for reservoirs in Arizona and New Mexico. Reservoir locations are numbered within the blue circles on the map, corresponding to the reservoirs listed in the table. The cup next to each reservoir shows the current storage (blue fill) as a percent of total capacity. Note that while the size of each cup varies with the size of the reservoir, these are representational and not to scale. Each cup also represents last year's storage (dotted line) and the 1991–2020 reservoir average (red line). The table details more exactly the current capacity (listed as a percent of maximum storage). Current and maximum storage are given in thousands of acre-feet for each reservoir. One acre-foot is the volume of water sufficient to cover an acre of land to a depth of 1 foot (approximately 325,851 gallons). On average, 1 acre-foot of water is enough to meet the demands of four people for a year. The last column of the table lists an increase or decrease in storage since last month. A line indicates no change. These data are based on reservoir reports updated monthly by the Natural

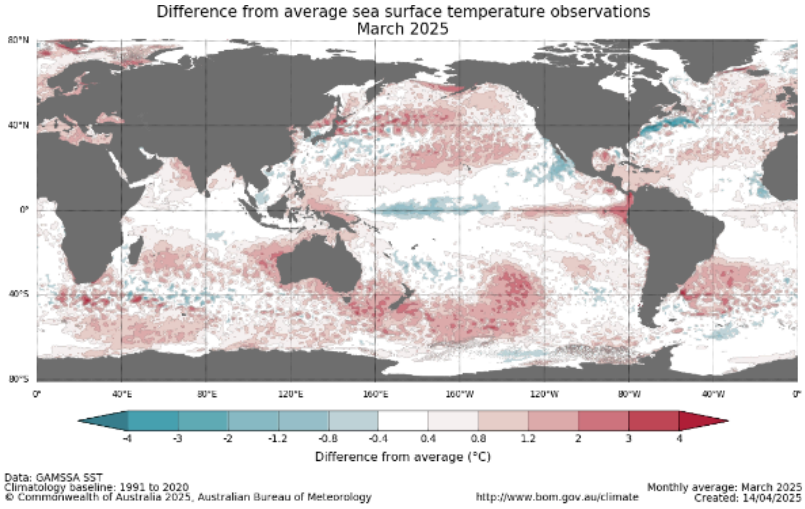
Resources Conservation Service - National Water and Climate Center (USDA)

.

BOR: New Mexico Dashboard

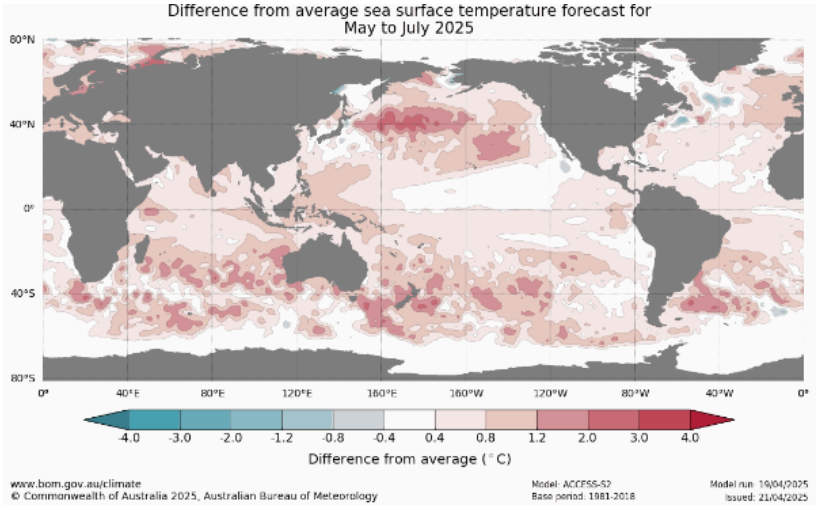
ENSO Tracker

March sea surface temperatures (SSTs) were cooler than average in the central equatorial Pacific and warmer than average in the western equatorial Pacific, in a La Niña-like pattern that has persisted the past several months. Warmer than average SSTs were also present in the eastern equatorial Pacific.



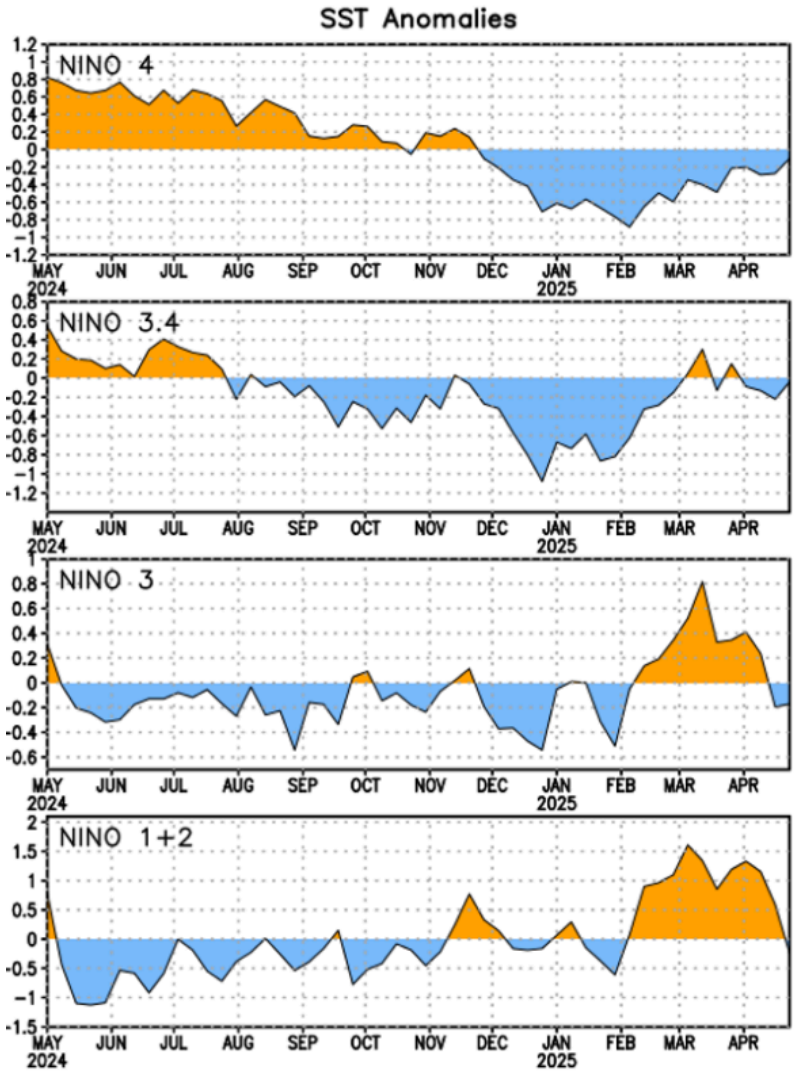
Source: Australian Bureau of Meteorology

Seasonal forecasts of SSTs and ENSO vary from model to model; the Australian model SST forecast for May – July has warmer than average SSTs in the central and eastern equatorial Pacific—a condition consistent with El Niño if SSTs are sufficiently warm—but the forecast also has warmer than average SSTs in the western equatorial Pacific, which is a condition more consistent with La Niña. Overall, this model forecast does not strongly indicate either a La Niña or El Niño pattern. Moreover, forecasts from individual models should be evaluated in the context of their agreement or disagreement with multiple other models.



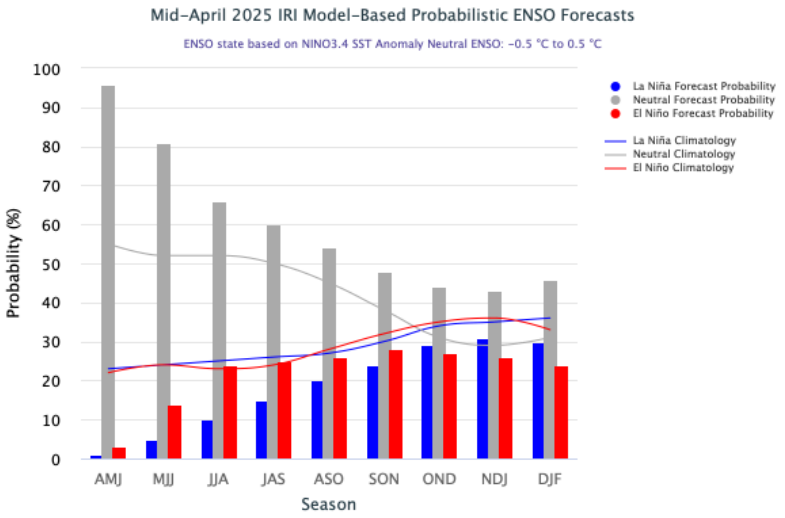
Source: Australian Bureau of Meteorology

Weekly observations of SSTs within the primary ENSO monitoring region Nino 3.4 have been near normal—within 0.5°C of average, indicative of ENSO-neutral conditions—since mid-February. SSTs have been more persistently cooler-than-average in the Nino 4 region, which is centered to the west in the central equatorial Pacific. SSTs in the eastern Pacific regions Nino 3 and Nino 1+2 have been warmer than average in the past few months, but most recent observations have been more neutral.



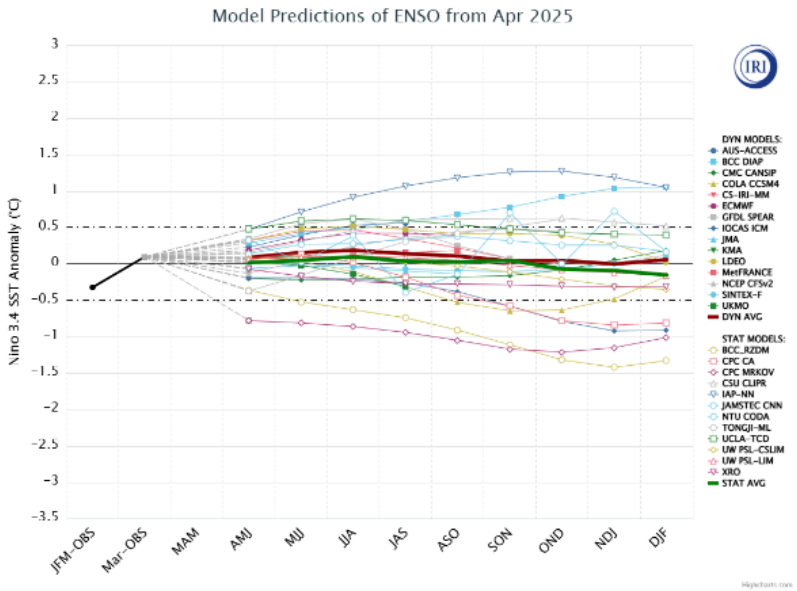
Source: Climate Prediction Center (NOAA)

ENSO forecast models generally agree that ENSO-neutral conditions will prevail through the spring and summer; the agreement indicates an over 90% probability Nino 3.4 SSTs will be in the ENSO-neutral range, averaged over the April – June forecast window. Further out, in the October – December forecast window, when ENSO has more consequence for seasonal climate in the Southwest, there is greater disagreement among model predictions—ENSO-neutral is still indicated as more likely than El Niño or La Niña, but with a probability of less than 50%.



Source: The International Research Institute for Climate and Society, Columbia University Climate School

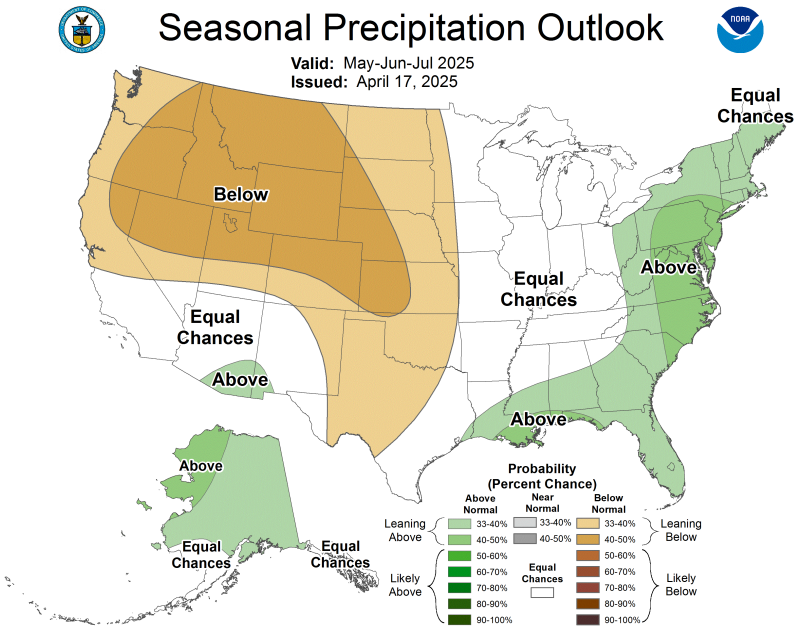
The uncertainty in the probabilistic ENSO forecast comes directly from the spread of the individual model predictions. The forecast is more certain for forecast windows where the spread among models is tight, like the April – June forecast where nearly all model predictions fall in the ENSO-neutral range of Nino 3.4 SSTs within 0.5°C of average. For the much-less-certain October – December forecast, the spread among models includes models that predict El Niño SSTs, La Niña SSTs, and a range of ENSO-neutral values in between.



Source: The International Research Institute for Climate and Society, Columbia University Climate School

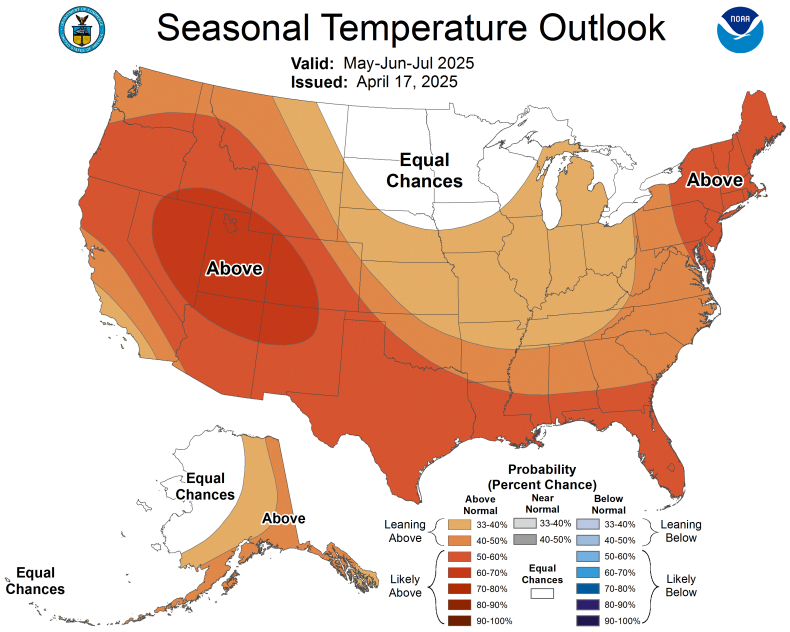
Seasonal Forecasts

The May – July seasonal precipitation forecast gives equal chances of above normal, below normal, or near normal precipitation for an area that includes most of Arizona and New Mexico. The forecast *leans* toward (33 – 40% chance) above normal precipitation for parts of southwest New Mexico and southeast Arizona and leans toward below normal precipitation for an area that includes parts of eastern New Mexico.



Source: Climate Prediction Center (NOAA)

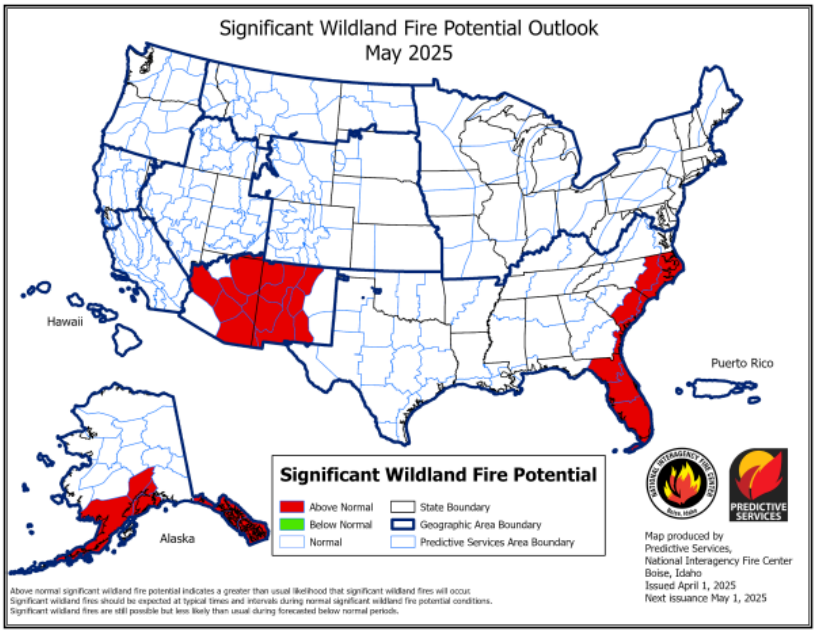
The May – July seasonal temperature forecast says above normal temperatures are *likely* (50 – 70% chance) for an area that includes Arizona and New Mexico.



Source: Climate Prediction Center (NOAA)

Wildfire

The potential for significant wildland fire will be elevated for much of Arizona and New Mexico in the coming months. In May the elevated fire potential is expected across all regions of Arizona and New Mexico except for eastern New Mexico, the southwest deserts of Arizona, and northwest Arizona. In June the elevated potential is expected to affect northwest Arizona as well.



Source: National Interagency Coordination Center

Source: National Interagency Coordination Center

Southwest Climate Podcast

March 2025 SW Climate Podcast – March Toward Heat

Recorded 3/28/2025, Aired 4/1/2025

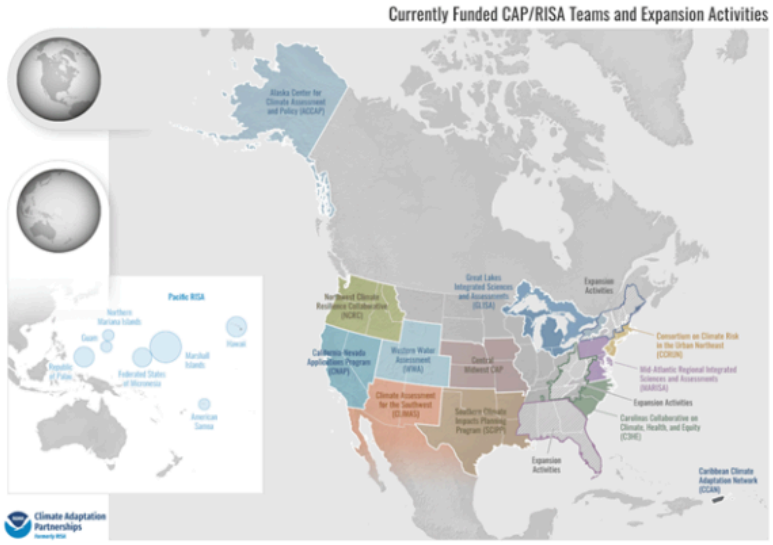
For this month's Southwest Climate Podcast hosts Zack Guido and Mike Crimmins deliver a fully robust episode. They

review the abysmal winter season, breeze through our 'meh' March, cover the snowpack conditions and drought situation - which all could lead up to a potentially active fire hazard season. Stick around for the deep dive into the Pacific Decadal Oscillation (PDO) and what to expect for the seasonal forecasts into the monsoon season.

Listen Here

About CLIMAS

The Climate Assessment for the Southwest (CLIMAS) program was established in 1998 as part of the National Oceanic and Atmospheric Administration's Climate Adaptation Partnerships (CAP) Program (formerly known as Regional Integrated Sciences and Assessments, or RISA). CLIMAS—housed at the University of Arizona's Institute of the Environment—is a collaboration between the University of Arizona and New Mexico State University. The CLIMAS team is made up of experts from a variety of social, physical, and natural sciences who work with partners across the Southwest to develop sustainable answers to regional climate challenges.



Learn more about the NOAA CAP program here

Disclaimer

This packet contains official and non-official forecasts, as well as other information. While we make every effort to verify this information, please understand that we do not warrant the accuracy of any of these materials. The user assumes the entire risk related to the use of this data. CLIMAS, and UA Cooperative Extension disclaim any and all warranties, whether expressed or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose. In no event will CLIMAS, UA Cooperative Extension, or The University of Arizona be liable to you or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of this data.

Southwest Climate Outlook contributors: Mike Crimmins & Matt Meko