



March 2024: Southwest Climate Outlook

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March 29, 2024



<https://climas.arizona.edu/>

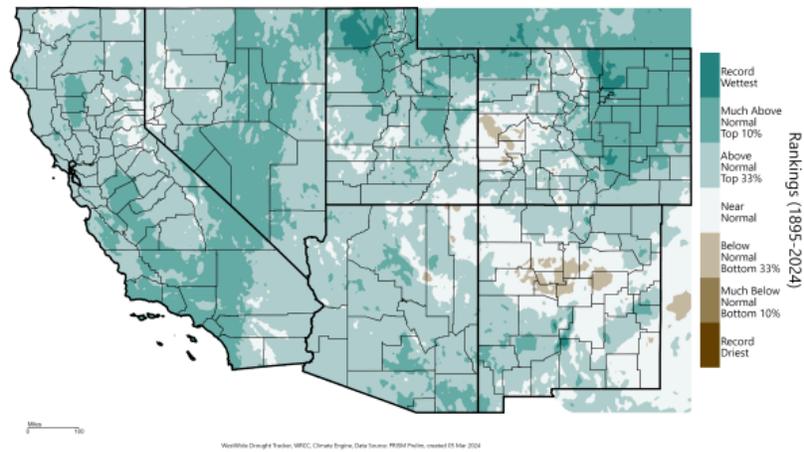
The Southwest Climate Outlook is published by the Climate Assessment for the Southwest (CLIMAS), with support from University of Arizona Cooperative Extension, and the New Mexico State Climate office.

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Precipitation and Temperature

February precipitation was above normal for much of Arizona and New Mexico, except for areas of central New Mexico where precipitation was near-to-below normal.

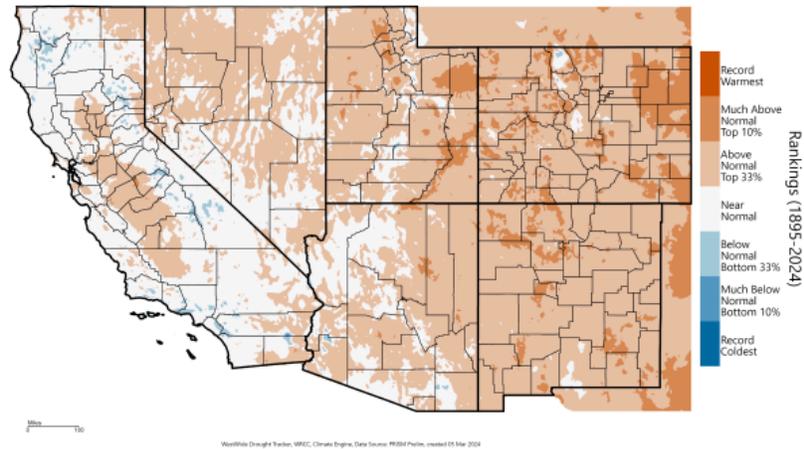
Southwest - Precipitation
February 2024, Percentile



Source: [WestWide Drought Tracker](#)

February temperatures were near-to-above normal in Arizona and almost uniformly above normal across New Mexico.

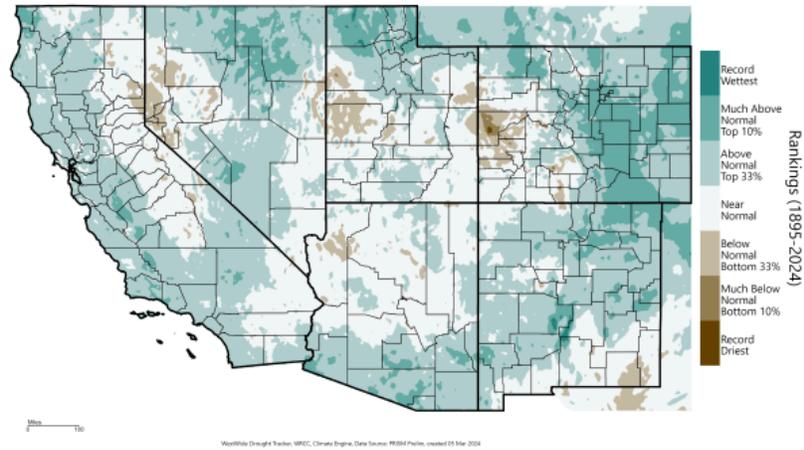
Southwest - Mean Temperature
February 2024, Percentile



Source: [WestWide Drought Tracker](#)

December – February 3-month precipitation totals were above normal for southern Arizona and most parts of New Mexico, and near-to-below normal for northern Arizona and southeastern New Mexico.

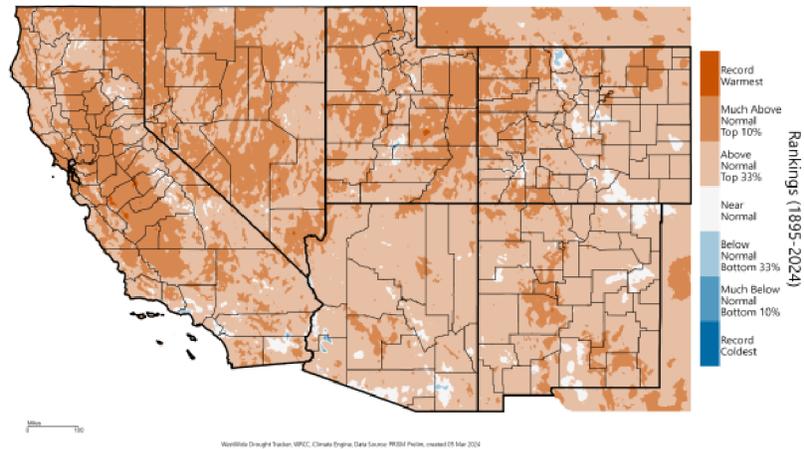
Southwest - Precipitation
December 2023 - February 2024, Percentile



Source: [WestWide Drought Tracker](#)

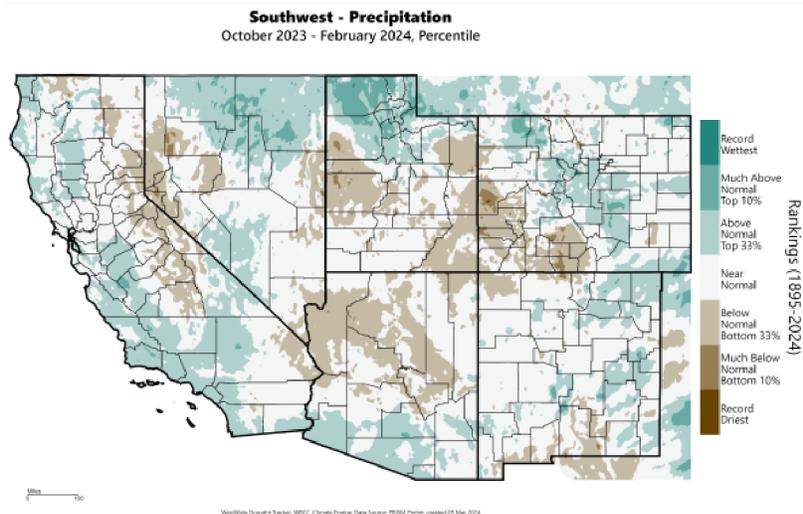
December – February temperatures averaged above normal across Arizona and New Mexico.

Southwest - Mean Temperature
December 2023 - February 2024, Percentile



Source: [WestWide Drought Tracker](#)

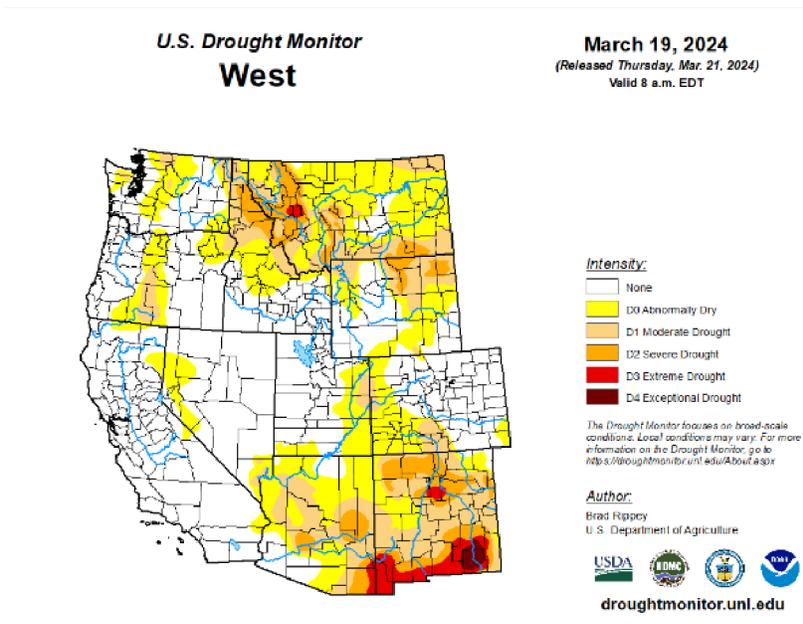
Water Year so-far (October 2023 – February 2024) precipitation totals range from below normal in parts of northern Arizona and southern New Mexico to above normal in parts of southern Arizona and eastern New Mexico. Many areas remain close to normal for Water Year precipitation.



Source: [WestWide Drought Tracker](#)

Drought

Drought conditions are affecting large parts of Arizona and New Mexico, most acutely in southern New Mexico, where 19% of the state's area has been classified under Extreme (D3) or Exceptional (D4) drought conditions. An additional two-thirds of New Mexico and 40% of Arizona is classified under Moderate (D1) or Severe (D2) drought. Conditions are Abnormally Dry (D0) for another 40% of Arizona and the remaining portions of New Mexico, making elevated drought risk a near universal concern across the region as we enter the warmer months.



Source: [U.S. Drought Monitor](#)

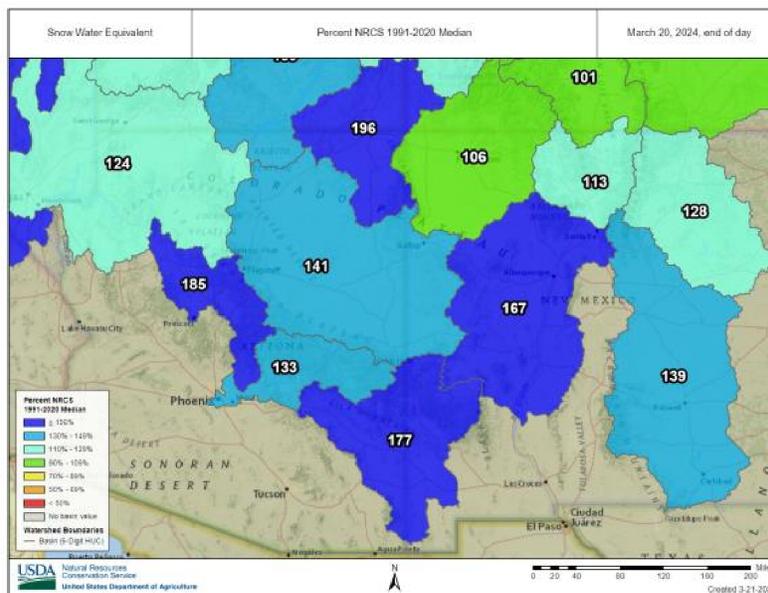
NIDIS Improved and Expanded State Pages on Drought.Gov

Arizona

New Mexico

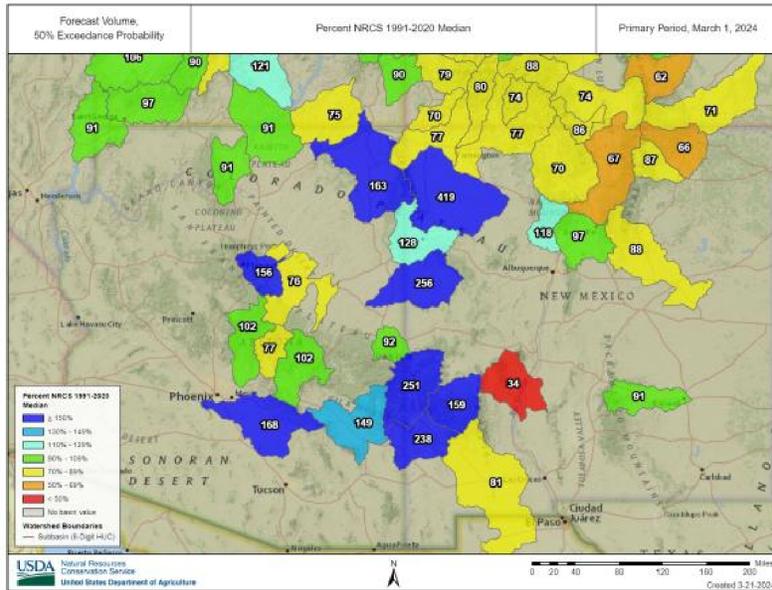
Snowpack & Streamflow

Basin-average estimates of snowpack as of March 20 are near or above normal across the Southwest thanks in part to a few recent storm systems.



[USDA-NRCS: National Water and Climate Center](#)

Spring streamflow forecasts vary from much-above normal to much-below normal. These forecasts are based in part on snowpack, but this forecast does not account for snow accumulated after March 1, which likely explains some of the discrepancies versus the above snowpack values. Upper and Lower Colorado River Basin forecasts are for near normal flow (94% of median). Rio Grande streamflow is forecast to be below normal (75% median).



USDA-NRCS: National Water and Climate Center

Water Supply

Reservoirs in Arizona and most of the reservoirs in New Mexico are at levels near or above last year's values. For Lakes Mead, Powell, and nearly all of New Mexico's reservoirs, that is still below the long-term average storage for this time of year. Note that low levels at El Vado reservoir are because of ongoing dam repairs.

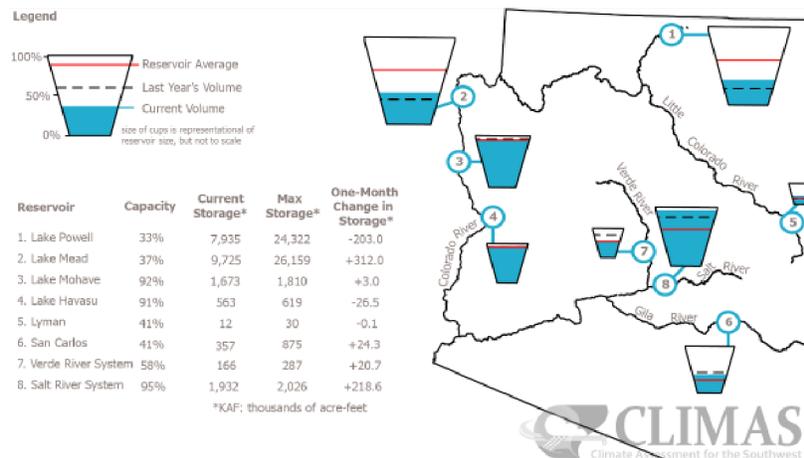


Figure 1. Arizona reservoir volumes for the end of February 2024 as a percent of capacity. The map depicts the average volume and last year's storage for each reservoir. The table also lists current and maximum storage, and change in storage since last month.

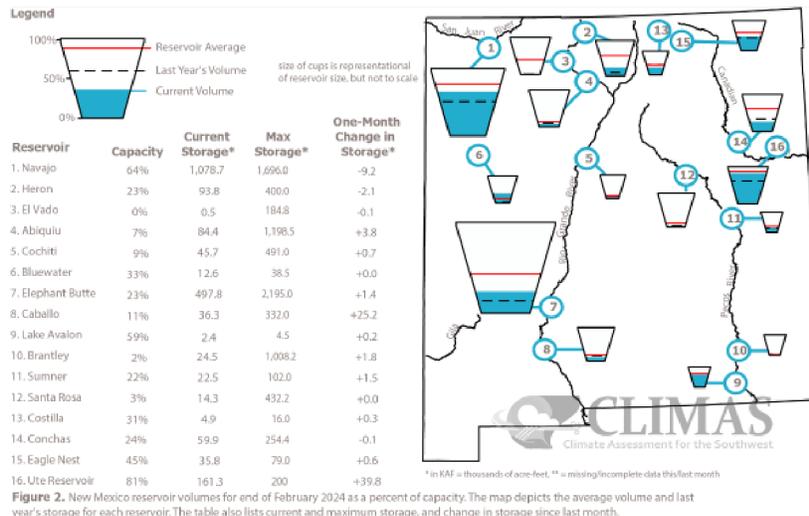


Figure 2. New Mexico reservoir volumes for end of February 2024 as a percent of capacity. The map depicts the average volume and last year's storage for each reservoir. The table also lists current and maximum storage, and change in storage since last month.

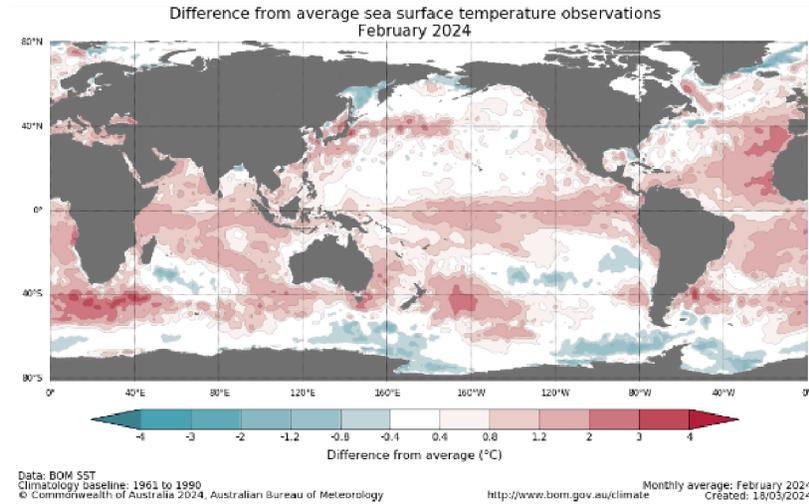
The map gives a representation of current storage for reservoirs in Arizona and New Mexico. Reservoir locations are numbered within the blue circles on the map, corresponding to the reservoirs listed in the table. The cup next to each reservoir shows the current storage (blue fill) as a percent of total 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 \(USDA\)](#)

BOM: New Mexico Dashboard

ENSO Tracker

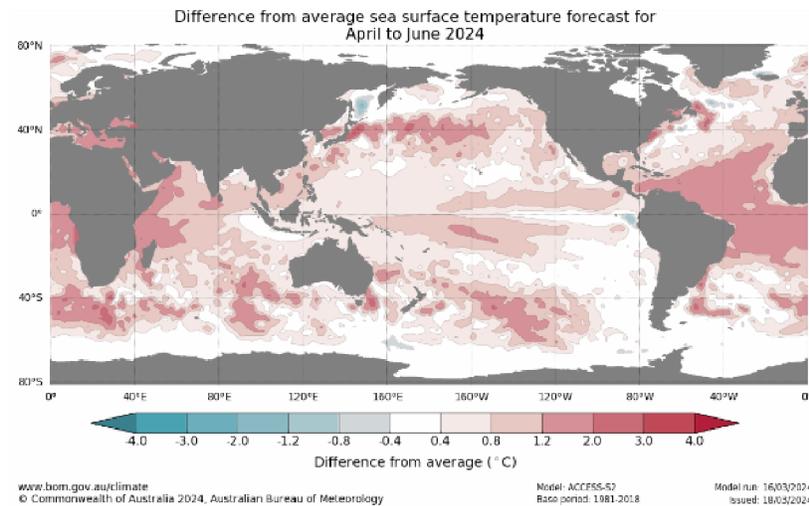
February sea surface temperatures (SSTs) featured lingering El-Niño warm anomalies along the equatorial central and eastern Pacific. There was some indication of an erosion of the

warm water region in the far eastern Pacific where regions of near-normal SSTs had formed.



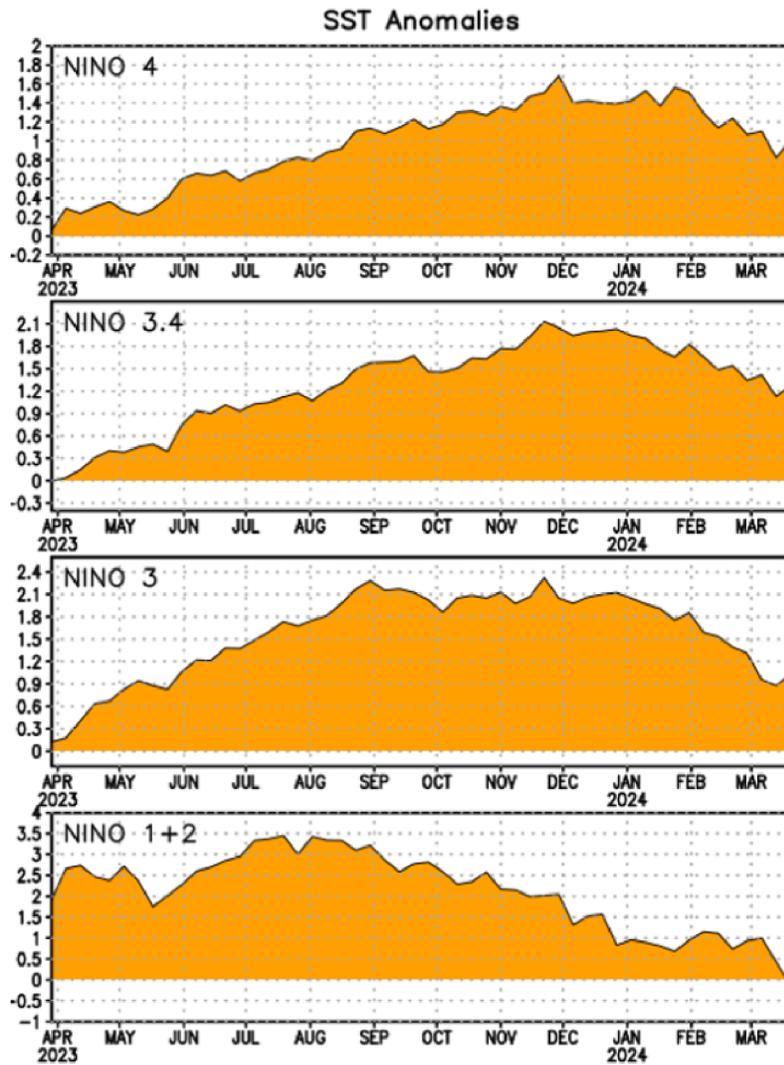
Source: [Australian Bureau of Meteorology](http://www.bom.gov.au/climate)

The forecast for April – June SSTs shows eastern Pacific equatorial SSTs near normal and a cool-anomaly area in the coastal region, consistent with the early signs of a transition toward a La-Niña state.



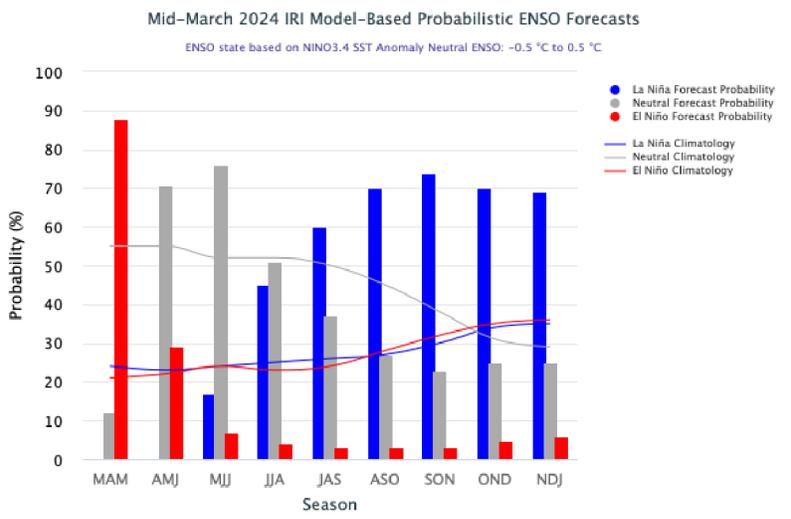
Source: [Australian Bureau of Meteorology](http://www.bom.gov.au/climate)

February and March saw consistent declines in SST anomalies among the ENSO diagnostic regions. The coastal Niño 1+2 region has crossed the zero line with a most recent weekly departure of -0.1°C . The other regions remain El Niño-like with most recent departures around $+1^{\circ}\text{C}$.



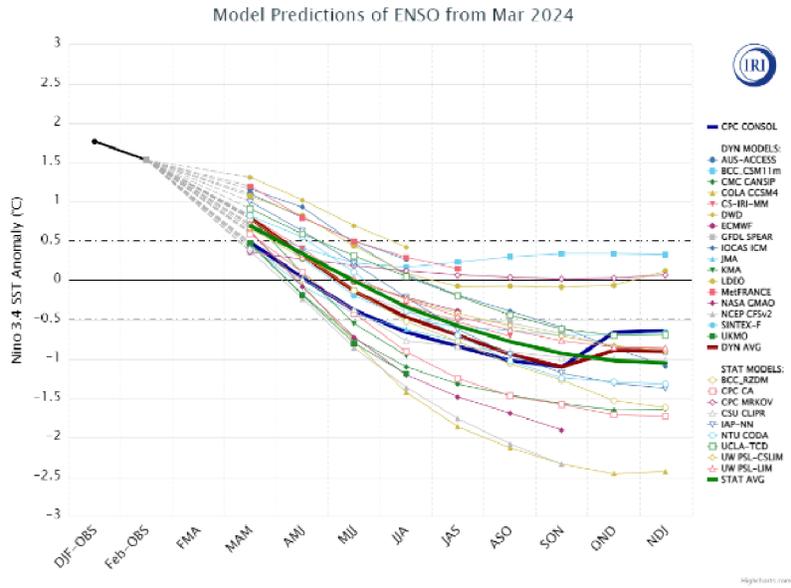
Source: [Climate Prediction Center \(NOAA\)](https://www.cpc.ncep.noaa.gov)

ENSO forecast models have for months favored an erosion of El Niño conditions in spring and subsequent emergence of La Niña conditions. Recent odds strongly favor ENSO neutral conditions for April – July, with La Niña SSTs likely in place for August – October and remaining through the end of the year.



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

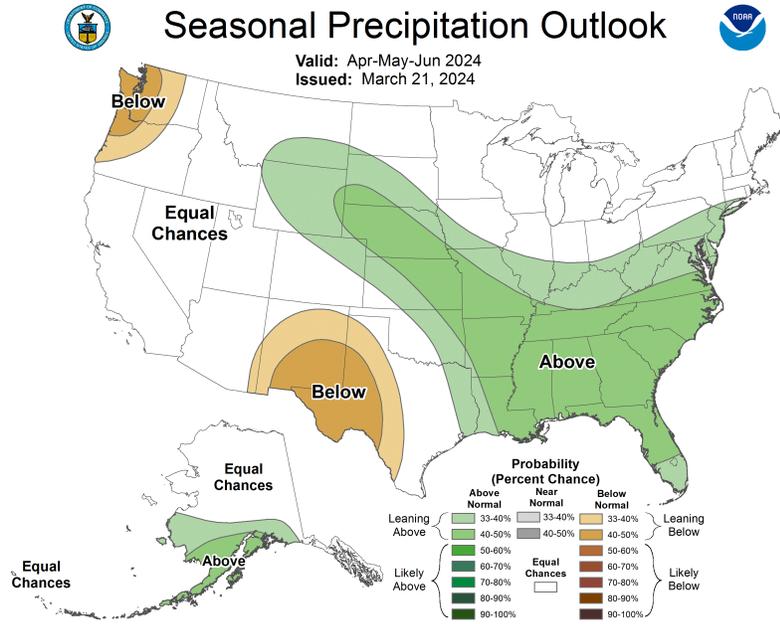
ENSO forecast models vary regarding the strength of the expected La Niña event, but most predictions fall in the range of -0.5°C to -1.5°C Niño 3.4 SST anomaly, with model averages around -1°C , or a moderate-strength La Niña event. A few models predict no La Niña at all, but rather an ENSO-neutral state through year-end. There is also an outlier model predicting a very strong La Niña with a peak SST anomaly near -2.5°C .



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

Seasonal Forecasts

The April – June seasonal precipitation forecast leans toward below normal precipitation for much of New Mexico, but gives Arizona equal chances of below normal, near normal, or above normal precipitation.



Source: Climate Prediction Center (NOAA)

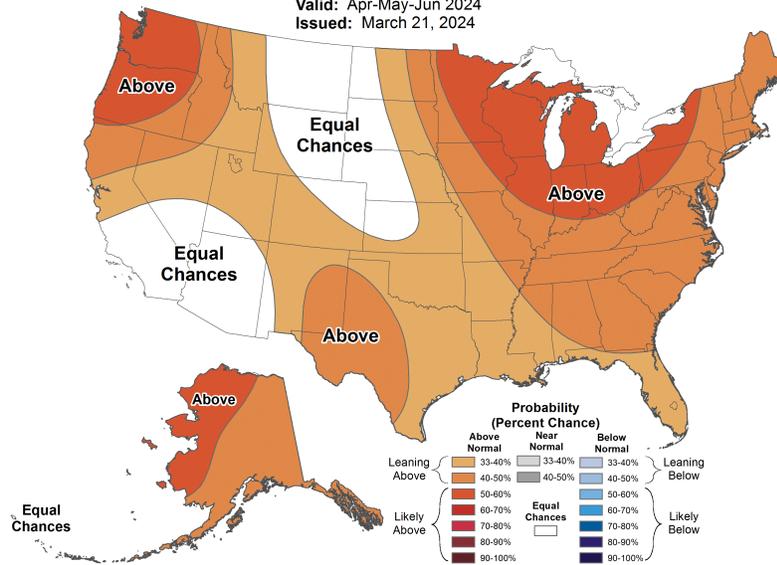
The April – June seasonal temperature forecast gives Arizona equal chances of below normal, near normal, or above normal temperatures, but leans toward above normal temperatures for New Mexico.



Seasonal Temperature Outlook



Valid: Apr-May-Jun 2024
Issued: March 21, 2024



Source: [Climate Prediction Center \(NOAA\)](#)

Southwest Climate Podcast

-->March Pod will be posted next week!

February 2024 - El Niño's Getting Late



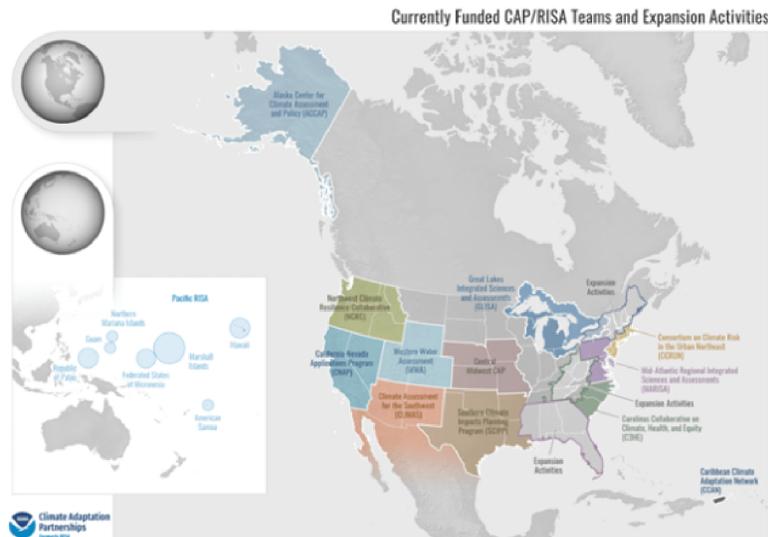
It's the new year and Zack Guido and Mike Crimmins are back to give the lowdown on what's happening in regards to the Southwest Climate in this month's Podcast. They cover this past winter's three-month pattern and overall conditions. Then they get global with the current state of El Niño and its influence on atmospheric rivers and other precip events seen in the first half of February. There's a quick look at the resulting snowpack - which is an

important feature of the west's water supply. And finally they round it out with a look to the rest of the month which may or may not be the rally we need for a typical wet El Niño before La Niña comes back around.

[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

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