

# **SPOTTER NEWSLETTER**

#### NWS PHOENIX SKYWARN NEWSLETTER

FEBRUARY 2024



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#### December - January Review

Two-thirds of meteorological winter (December -February) is complete. Regionally, there were some big differences between December and January in terms of both temperature and precipitation. We'll take a look at some regional maps of precipitation and temperature to get a sense of how things played out with respect to average. We'll also look at maps of the drought status to see how that changed and get an El Nino update.

#### December - January Review (Cont.)

In an arid region, precipitation is always a topic of keen interest. The two maps side by side are observed precipitation for December (left) and January (right). Notice how much drier December is over much of northern AZ, southeast CA, and southern NV compared to January. But, portions of southern AZ fared well. At the bottom is a map showing percent of normal for a 60 day period ending the morning of February 1st. Overall, you can see how relatively dry the region has been with notable exceptions over southwest and northeast AZ and far southeast CA.

> 20 15 10 8.0 6.0 5.0 4.0 3.0 2.0

1.5 1.0 .50 .25 .10

**December 2023 Observed Precipitation** 



January 2024 Observed Precipitation



#### Percent of Normal for 60 day period ending 2/1/24



### December - January Review

Now we'll look at at temperatures. The maps side by side are showing how the monthly mean temperature departed from average. At left is December at the County level. At right is a higher resolution map for January. Notice how prevalent above normal was in December with January being the reverse of that for most places. The bottom map shows the departures for a 60 day period ending February 6th. The net result leans toward above normal for most places (more distinctly over the northern half of the region).





#### Departure from Normal for 60 day period ending 2/6/24



#### Drought Status

The preceding precipitation maps showed a mixed bag on precipitation outcomes the past two months but with most places below normal. How has that affected drought conditions? The maps side by side show you the drought status reflecting both short and long term conditions. On the left is the situation as of Nov 28th and the right side shows conditions as of January 30th. Most places started off at a deficit due to the weak Monsoon. Two months later, some places have declined by two categories while some others have improved by two categories with a lot of areas in between. This is illustrated by the bottom map which shows the changes in drought category for an 8 week period ending January 30th.





### El Nino Update

You've been hearing about El Nino for several months now. To review, El Nino has to do with above normal water temperatures in the tropical Pacific. With prolonged excess warmth in the water, that tends to generate large areas of recurring showers and thunderstorms over those waters during the course of many weeks and months. That leads to the *potential* to influence storm track patterns. *If* the storm track is altered frequently enough and in the right way, our region can see above normal precipitation on a seasonal time scale - typically most noticeable in Winter. The reverse of that is La Nina. Collectively, they are referred to as ENSO. Learn more <u>here</u>. Of note, El Nino isn't the sole driver of how weather systems behave.



The map at left shows how sea surface temperatures from late January compared to the long term average for the same time of year. The shaded rectangle is over a key zone (Nino 3.4) that is tracked closely due to it's influence on U.S weather during El Nino episodes. Learn more <u>here</u>.

The graph at right shows a year long history of the sea surface temperatures for the Nino 3.4 region. The oceanic part of El Nino is established when the departure from average is at least +0.5 C and lasts for several months consecutively. Learn more <u>here</u>.



### El Nino Update - Continued

One of the ways the atmospheric aspect of El Nino is tracked is by looking at anomalies in Outgoing Longwave Radiation (OLR). This is derived from satellite data which is measuring atmospheric warmth. The colder the values, the taller the cloud tops (i.e thunderstorms) and more persistent the activity is. In the map below, the horizontal band of cooler values just north of the equator indicate the presence of persistent deep/tall cloud formations.



What is the forecast for El Nino in the coming months? In short, El Niño is expected to continue for the next few months, with ENSO-neutral (neither El Nino nor La Nina conditions) favored during April-June 2024. After that, probabilities for La Nina trend upward. Below is a bar chart showing the probabilities for El Nino, La Nina, and Neutral conditions through late Summer/early Fall. For reference, JFM = Jan-Feb-Mar; FMA= Feb-Mar-Apr, etc.



# El Nino Update - Continued

So, what is the temperature and precipitation outlook for the next few months? For the Desert Southwest overall, there isn't a clear cut signal for the combined February through April time frame. El Nino isn't the only factor governing the storm systems and there are indications of it beginning to weaken.



The maps at left are from the National Weather Service's Climate Prediction Center. They are showing the most likely outcome for the three month period when taken as one lump sum so to speak. The shading depicts the most likely of 3 scenarios: Above Normal, Below Normal, and Near Normal. Where there isn't any shading, there aren't any clear indicators of a more likely outcome which means each of those three scenarios is just as likely as the other ("Equal Chances"). In other words, 'anything goes.' Of note, this is not the same thing as forecasting 'around average.'

Perhaps a more useful way thinking about the forecast is as a pie chart. For any given location, there are 3 pieces of pie: Above Normal, Below Normal, and Near Normal. The size of each piece corresponds to the likelihood of occurrence. At right, the top chart is for Phoenix (Equal Chances). The bottom chart is for El Centro, CA. Notice how Above Normal is only modestly larger.



# Spotter Reports

Though a weather system may not bring much in the way of thunderstorms, it can still lead to other hazards. See below for a review of reporting criteria and methods.

#### **Reporting Criteria:** Tornado Funnel Cloud • Storm Damage (broken tree limbs, shingles off roofs, etc.) • Flooding (streets, running washes, etc.) Low Visibility - less than 1 mile due to dust, sand, fog, etc. (not rain though) Rotating Wall Cloud Heavy Rainfall - measured $\frac{1}{2}$ inch or more accumulation in 30 min. or less • Hail (diameter of largest stone - any size) Snow (accumulating or not) **Reporting Methods (for trained Spotters only):** Web: <u>https://inws.ncep.noaa.gov/report/</u> • Email: psr.spotters@noaa.gov Voice Hotline (unlisted – just for Spotters): 1-800-697-0655 HAM Radio NET Sector 2 - Maricopa and Pinal Counties: 443.050 MHz (PL 100.0) Sector 6 - Southern Gila County: 147.200 MHz (PL 162.2) <u>Sector 7</u> - Yuma County: 146.780 MHz (PL 103.5) Sector 8 - Imperial County: 146.670 MHz (PL 103.5)

<u>Sector 9</u> – La Paz County and Blythe: 145.310 (PL 107.2) and 147.06 (PL 203.5

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#### FORGOT YOUR SPOTTER ID?

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#### <u>AUSTIN.JAMISON@NOAA.GOV</u>

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