

## **Winter 2023-24 Weather Outlook (December-February)**

Last winter was the 6<sup>th</sup> warmest winter on record for Texas, dating back to 1895. It was also the 2<sup>nd</sup> warmest winter in the past 23 years (behind only the winter of 2016-17). However, last winter also featured an extreme cold period in the days leading up to the Christmas holiday. In fact, it was the second coldest period for the ERCOT region since December 1989 – behind only the winter extreme of February 2021. The winter of 2020-21 was running warmer-than-normal until the extreme cold hit in mid-February. An extreme cold period is not necessarily indicative of the winter as a whole. On the flip side, the majority of cold winters in Texas have not featured temperatures as cold as the periods mentioned above. Most times, winters that are below normal are so due to frequent cold fronts and lack of sustained warm periods.

The point of the above statements is that a seasonal forecast will not capture periods of extreme weather. This is especially the case in the winter season, which is the most changeable of all seasons. Every winter has the potential to produce a period of extreme cold, and that's the approach that should be taken.

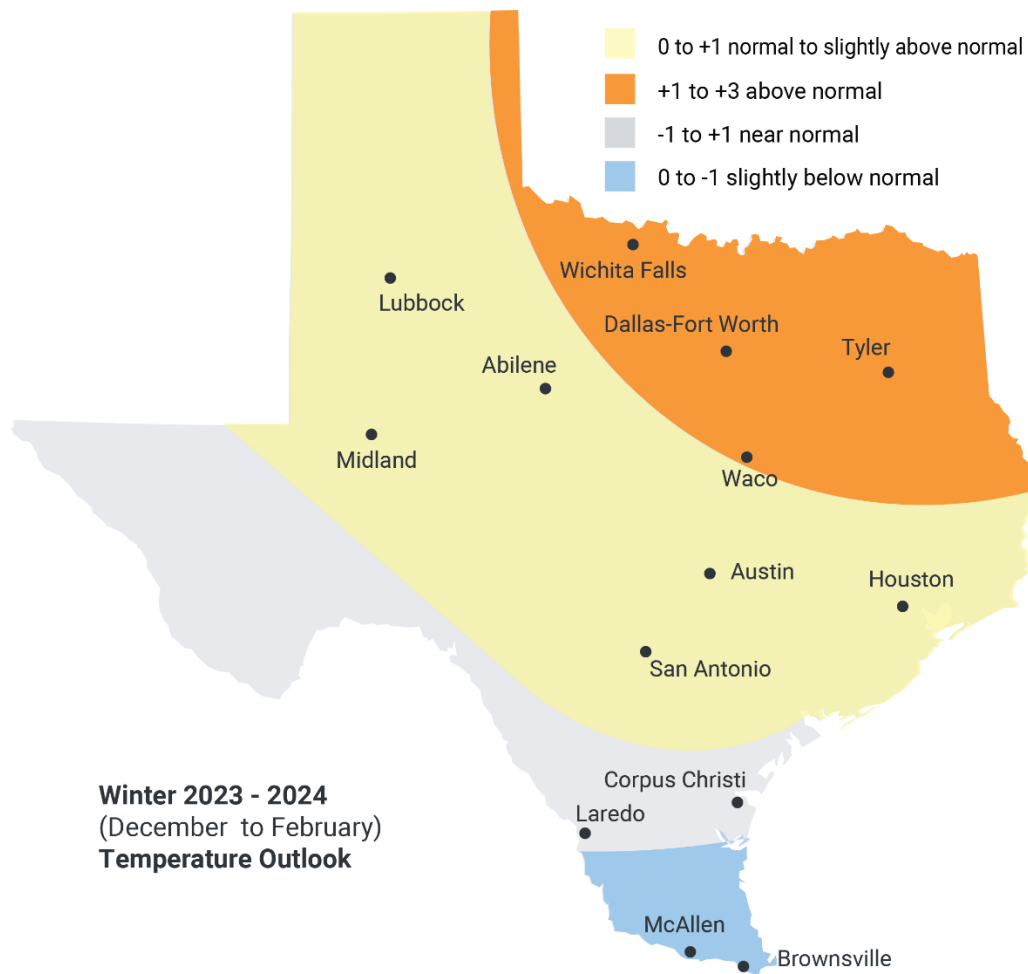
### **El Niño**

A strong El Niño has been in place since spring and will continue through the winter season. However, no two El Niños are alike, and not all El Niños result in the perceived impacts for Texas (cold and wet).

The three strongest El Niños on record occurred during the 1982-83, 1997-98, and 2015-16 winters. If the current El Niño has any similarity with one of those three, it's currently most similar to the 2015-16 event (though still far from a good match).

The current El Niño has not yet had the typical impacts globally that are expected with strong El Niños. It has thus far been overpowered with some very unusual ocean cycles. Of greatest significance is a strongly negative Pacific Decadal Oscillation (PDO), which rarely supports an El Niño – especially a strong El Niño. A negative PDO is a cool phase across the North Pacific, which best supports La Niñas, as has been the case the past three winters. None of the three strongest El Niños on record (listed above) occurred during a negative PDO.

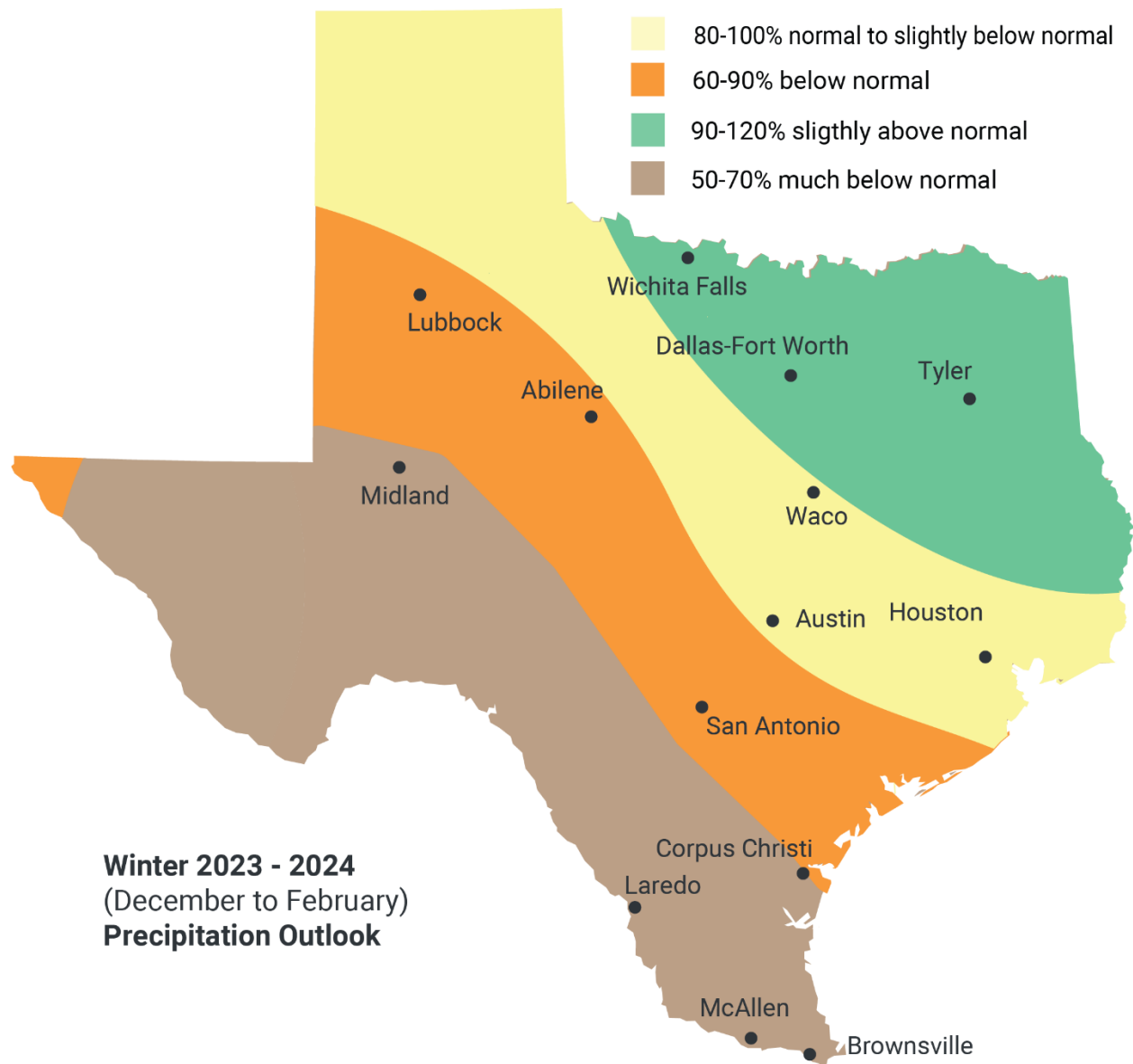
The main takeaway is that the climate drivers of the 2023 weather patterns are highly unusual (including others not discussed), leaving very little historical comparison. As a result, the 2023-24 winter forecast is significantly lower in forecast confidence than typical. While this winter may ultimately result in typical weather impacts from most strong El Niño events, 2023 in general has been very atypical and an atypical winter could very well be the result.



### Winter 2023-24 Temperature Outlook:

The forecast for this winter is for mostly above normal temperatures across Texas. If any region is to come in below normal, the best bet is with South Texas. Above normal is most likely over North Texas.

While the mostly mild forecast is for the winter season as a whole, expect some cold, below normal periods to impact the ERCOT region. Mid-to-late winter has more support for cold outbreaks than December, with a bit of a lean toward keeping an eye on January. With this very unusual pattern, the polar vortex has greater-than-average potential for impacts to Texas this winter and thus, a period of cold extremes is certainly possible.



#### Winter 2023-24 Precipitation Outlook:

While a wet winter for Texas is frequently associated with an El Niño, as noted, not all El Niño winters are wet. In fact, the last strong El Niño during the winter of 2015-16 was drier-than-normal across the majority of Texas. This winter's forecast is similar to 2015-16. The best opportunity for a wetter-than-normal winter will be across much of North and East Texas. South and Far West Texas has the highest potential for a dry winter. While the unusual patterns this year does provide less-than-ideal forecast confidence, there is a lack of support currently for a widespread wet winter across the state.

This mostly drier-than-normal forecast also indicates the drought could very well still be in place for large portions of Texas as winter draws to a close. That said, the El Niño should still linger into spring (though weaker) and better rain chances may come then.

A long-range forecast does not capture well frozen precipitation chances for Texas, as it relies on cold temperatures to align with precipitation opportunities (best captured in the shorter-range). However, there are early indications the Panhandle especially could be more prone than typical to snow and ice this winter.

### **Final Thoughts:**

The 2015-16 has been mentioned as a historical comparison for the winter 2023-24. It is far from ideal, but that winter overall has more in common with current conditions than all other historical El Niño years.

Given that this year has yet to fully link to the current strong El Niño, it's important to note that the climate drivers from a year ago are still very similar to current conditions – minus the El Niño. In fact, no year dating back to 1950 is more similar. Thus, the winters of 2022-23 and 2015-16 are most taken into consideration with the weather outlook for the winter of 2023-24. However, there is plenty of justification for some significant deviations at times.