

# 2019 Late Summer Fire Potential Outlook

Texas A&M Forest Service  
Predictive Services  
June 21<sup>st</sup> 2019

**The August 2018 Walker West Fire**  
Photo by Luke Kanclerz

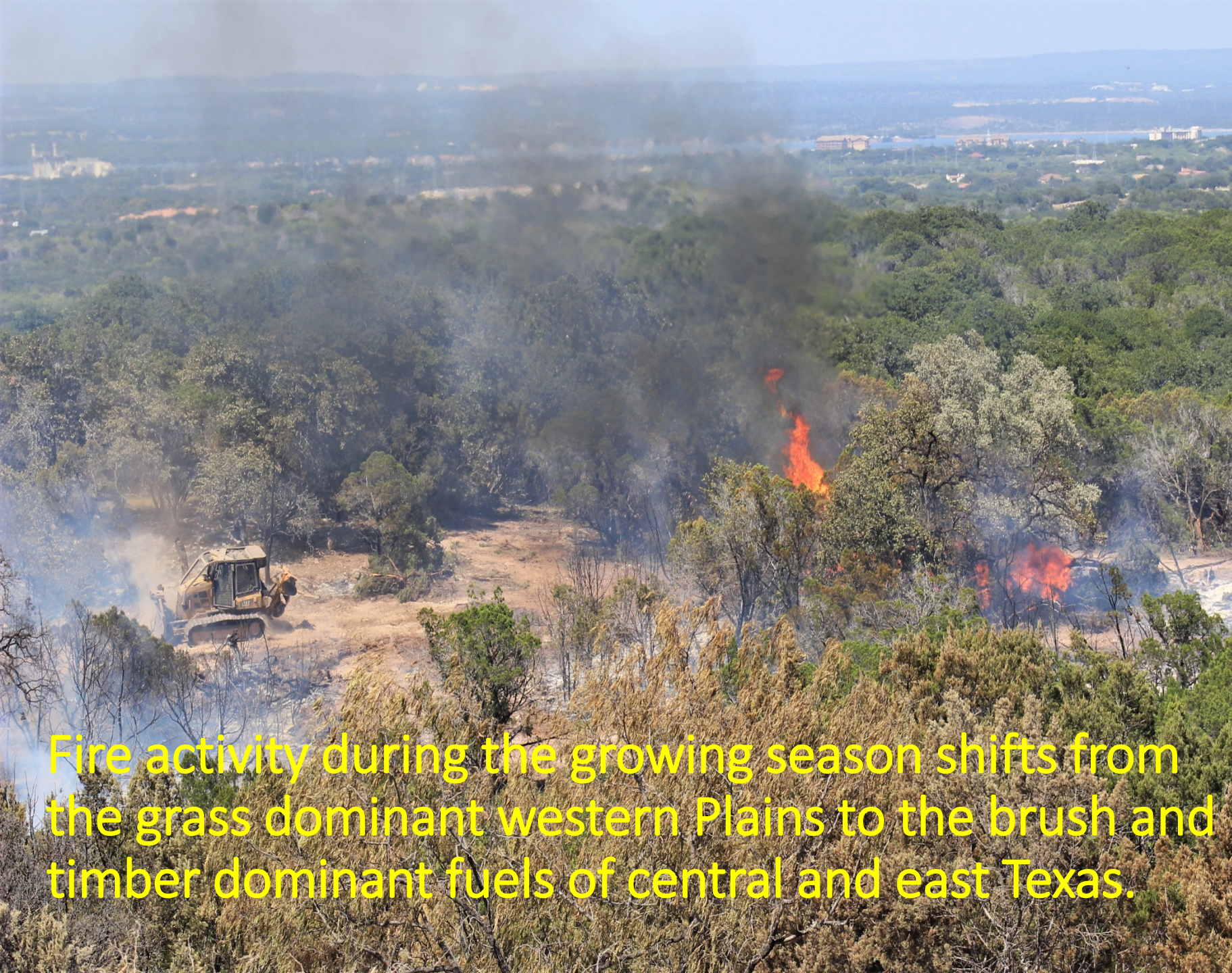




Summer fire activity in Texas can occur anywhere in the state but is typically associated with the brush and timber fuel types found in the eastern two thirds of the state. Summer temperatures increase the drying potential in both live and dead fuels during the July through September period. Three to four weeks without rainfall or rainfall amounts less than 25% of normal will dry out surface fuel beds and provide available fuel for moderate to high initial attack activity. Four to six weeks with less than 25% of normal rainfall will dry out canopy fuels and increase the potential for crown fire activity in the Pine, Oak, and Juniper canopies. Crown fire activity will increase a fire's resistance to control and increase the potential for a significant fire in high risk fuel types. Another byproduct of extended drying is low moisture levels in the heavy dead fuels which translates into increased resource commitment to mop up and control efforts.

The good news is that outside of a relatively small area in south Texas there is no pre-existing dryness going into the summer drying season. Any dryness that does emerge, will build in front of us. One complication of tracking dryness in the summer is that rainfall patterns tend to be scattered instead of widespread. Scattered rainfall patterns create a mosaic of fuel dryness across the landscape. The drought maps and percent of normal rainfall maps from the Texas State Climatologist <http://climatexas.tamu.edu/drought/maps/index.html> provide gridded views of rainfall anomalies that can add value to the fire danger products produced by the Texas A&M Forest Service.





Fire activity during the growing season shifts from the grass dominant western Plains to the brush and timber dominant fuels of central and east Texas.

Summer fires are generally associated with extended drying in brush and timber fuels. Drought and 30 day percent of normal rainfall below 25% are good indicators for receptive fuel beds during the summer months.

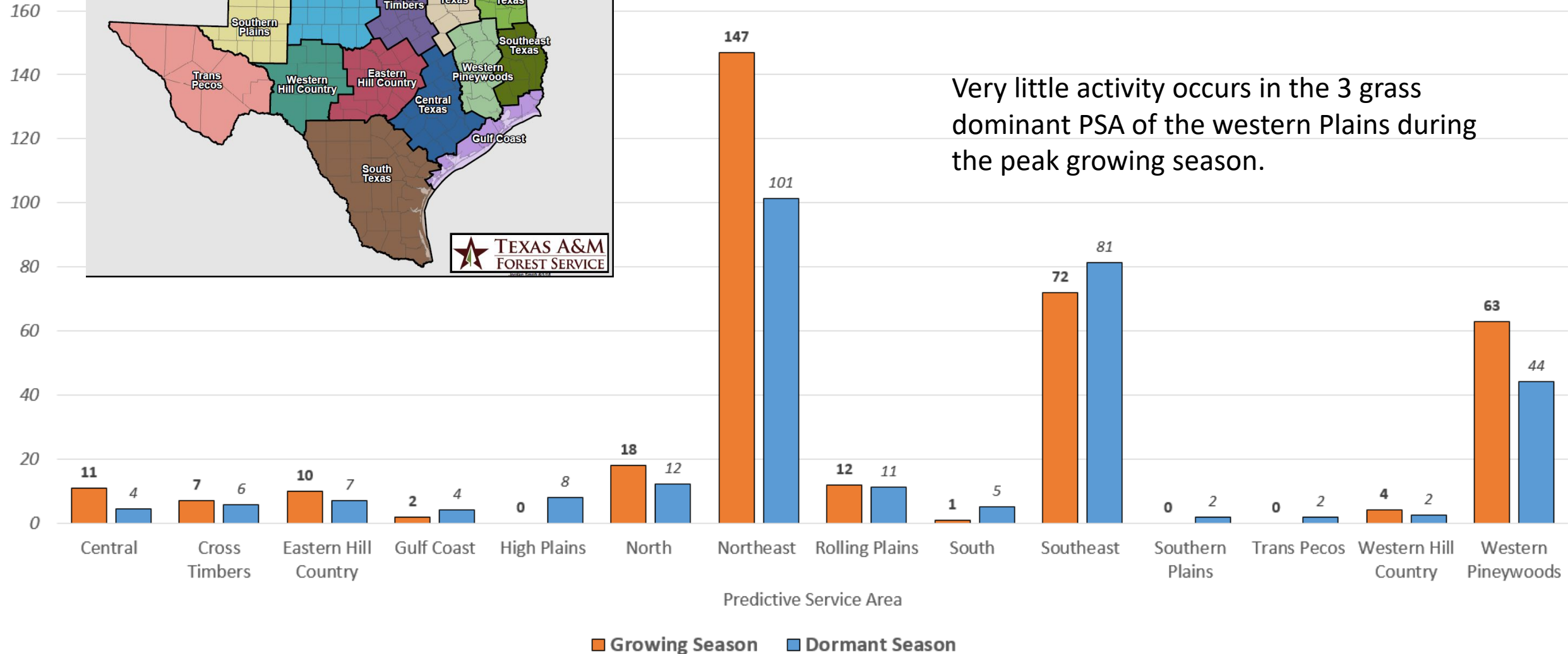
There are few high wind events during the growing season. As a result, growing season fires tend to be smaller than the wind driven grass fires experienced during the dormant season. Growing season fires are generally more persistent and require a longer resource commitment to complete mop up and control activities.

**The July 2018 Smith West Fire**  
Photo by Brad Smith

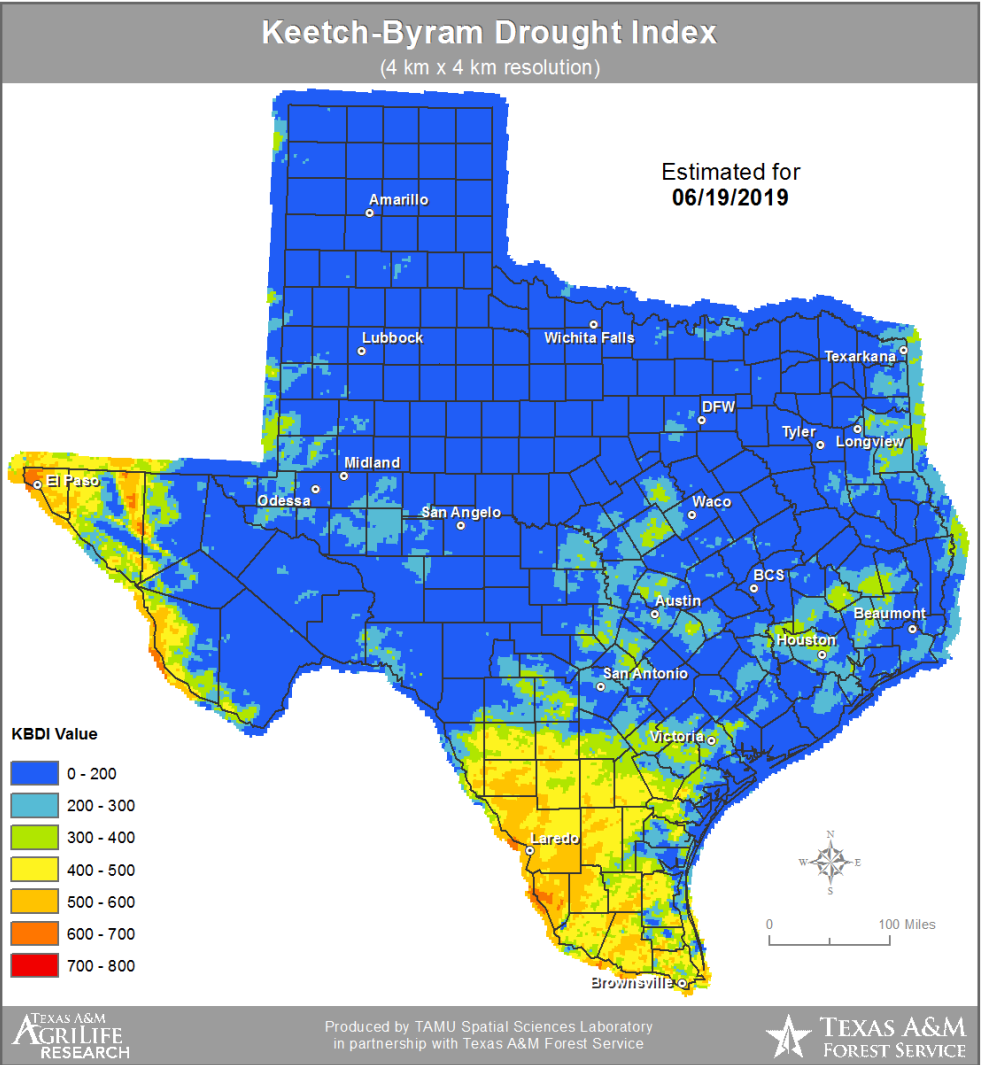
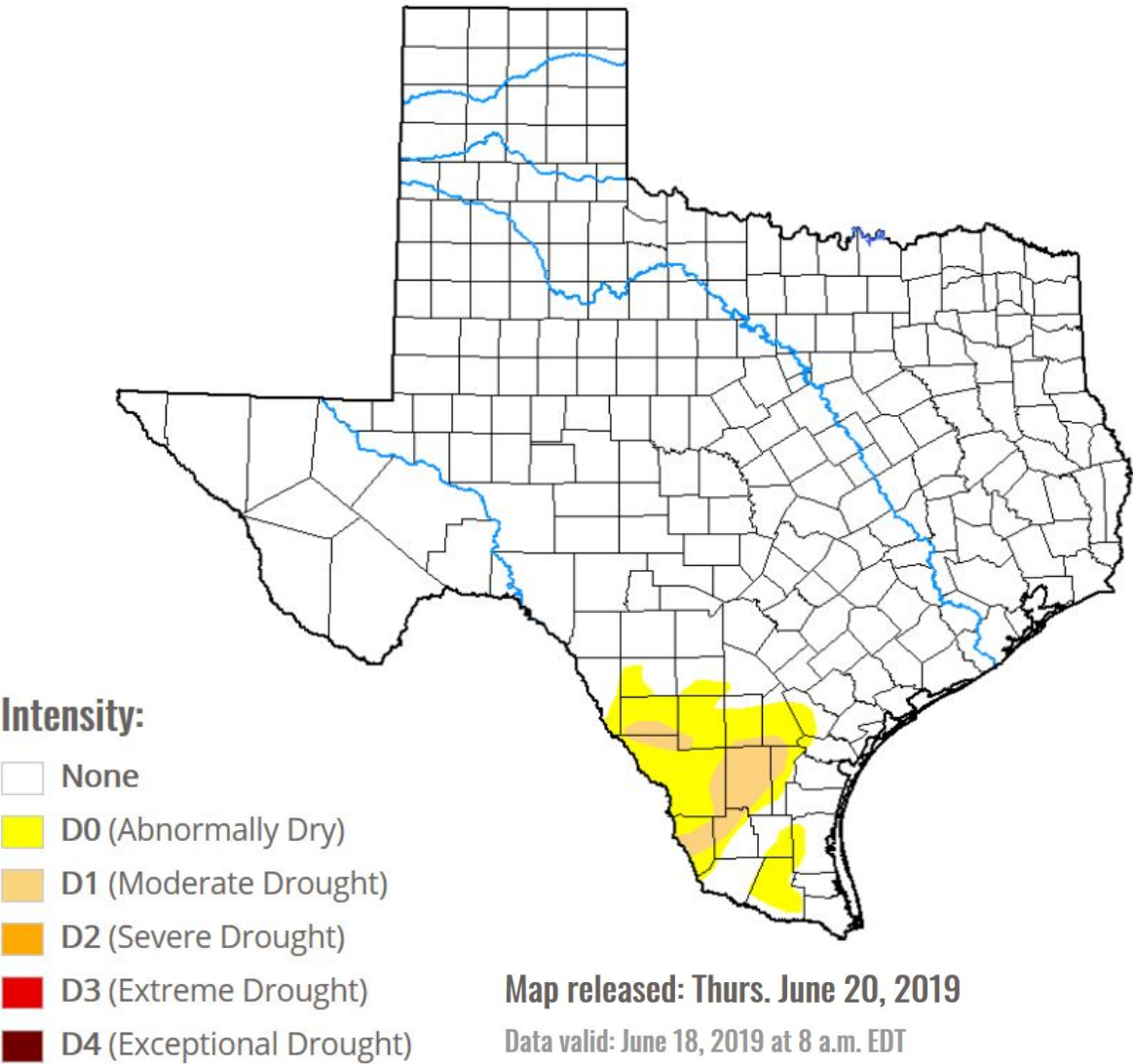


# Comparison of Peak Growing Season (Summer) and Peak Dormant Season (Winter) normal fire activity

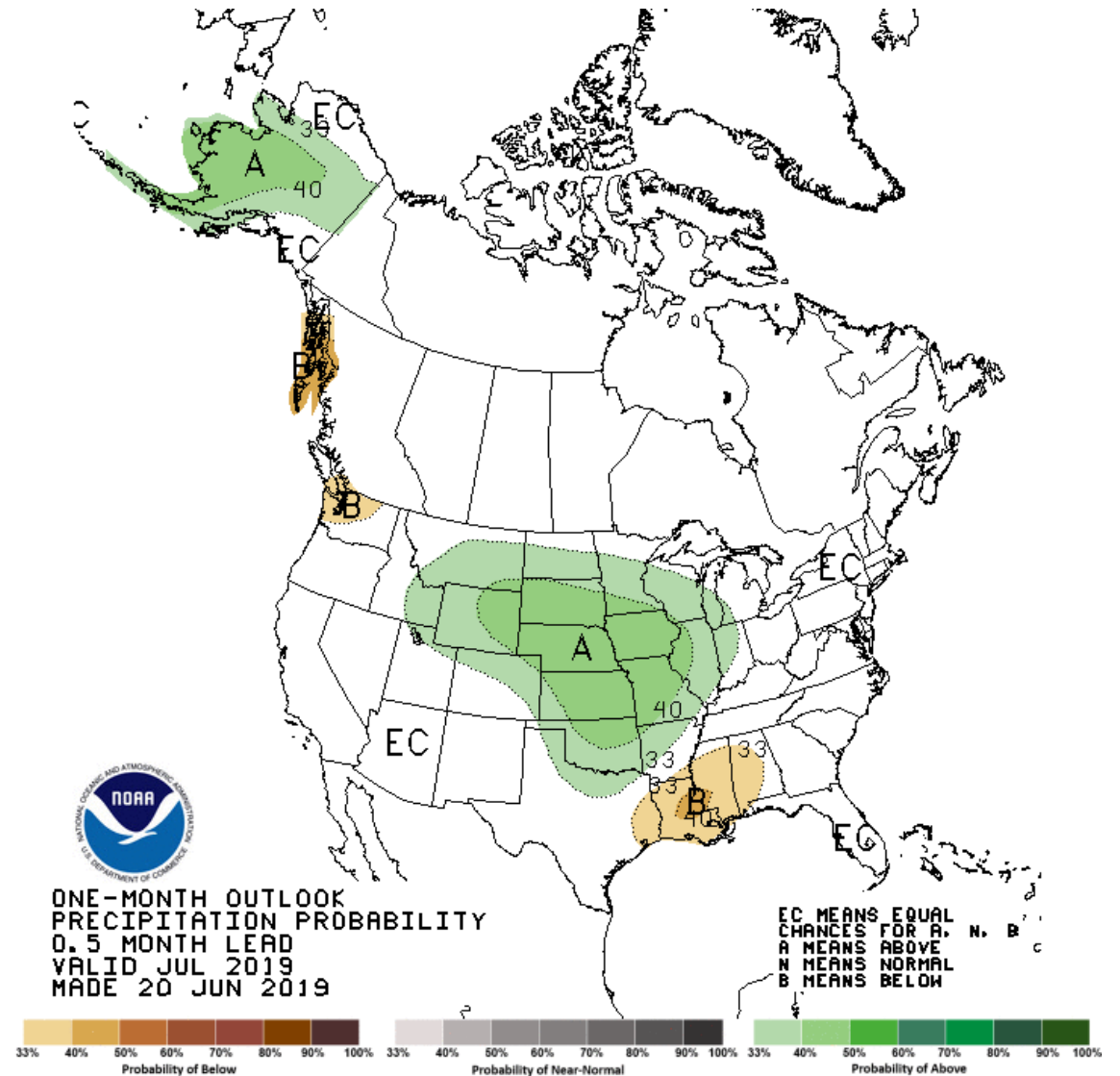
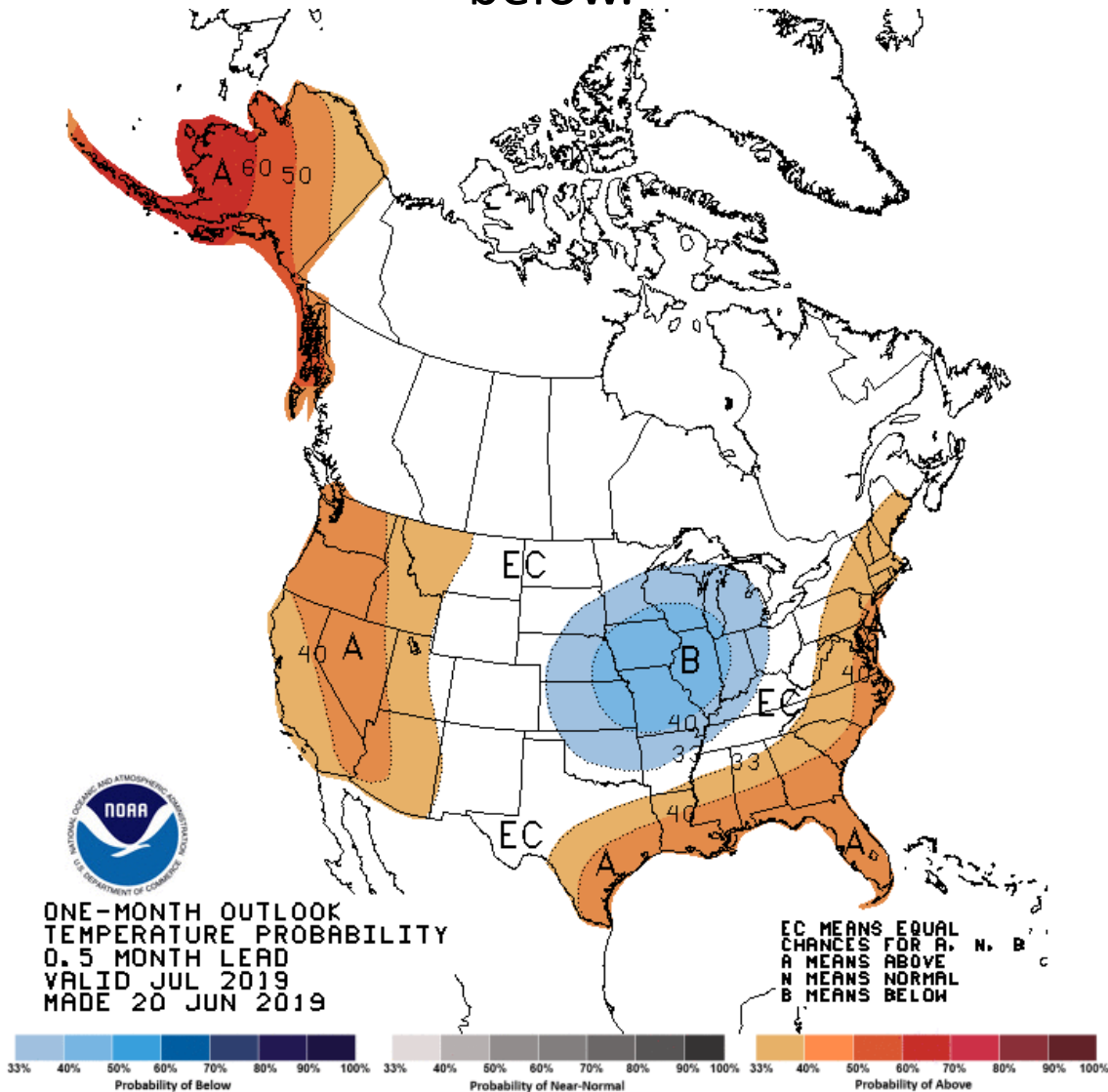
Fires



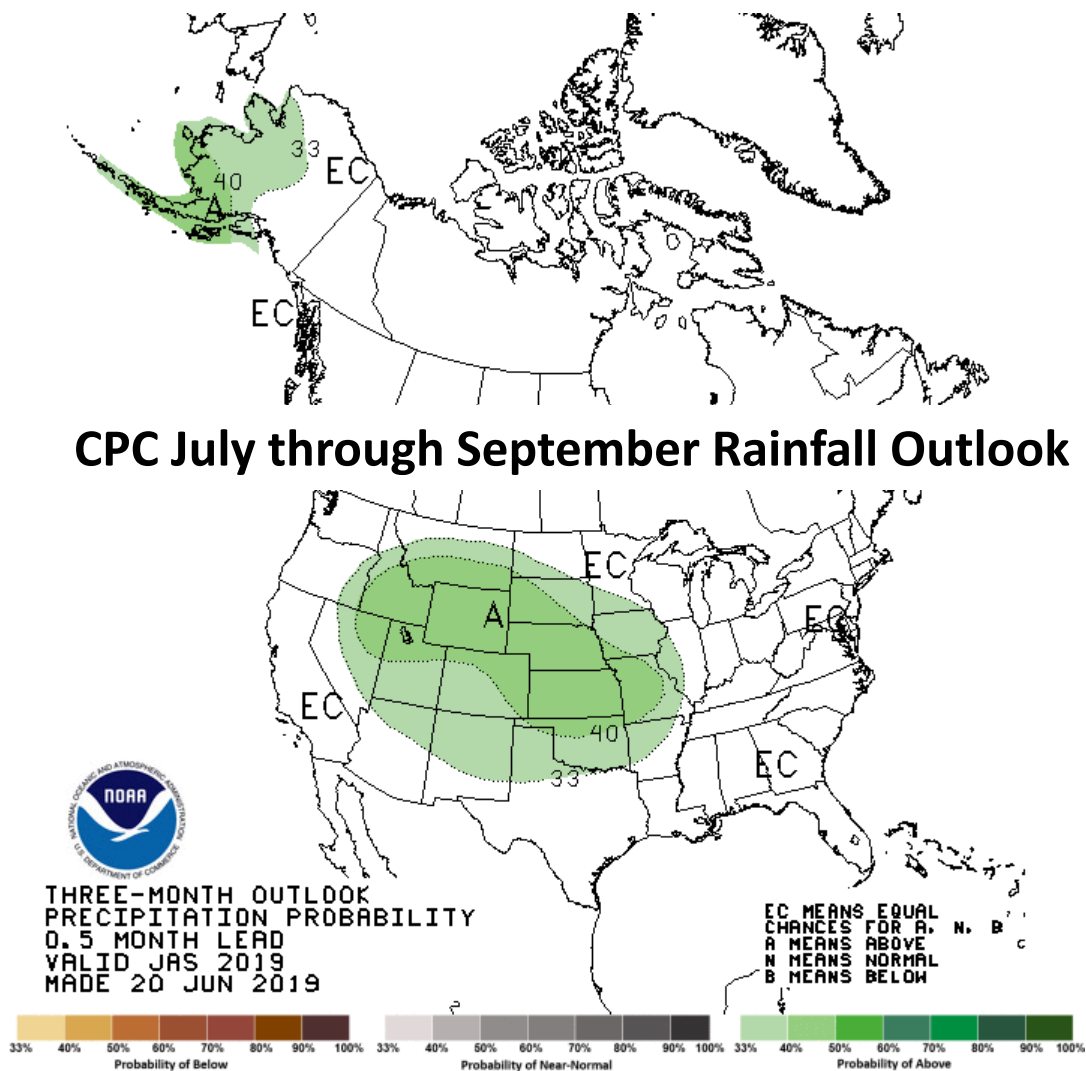
The U.S Drought Monitor and Texas KBDI maps agree that there is very little drought in the state. 10-25% of normal rainfall deficits over the last 30 days align well with the moderate drought areas in south Texas.



The latest Climate Prediction Center temperature and precipitation outlooks for **July** are shown below.



The Climate Prediction Center's (CPC) 3 month rainfall outlook and seasonal drought outlook provide a mixed message in South Texas where drought development is likely with equal chances for rainfall.



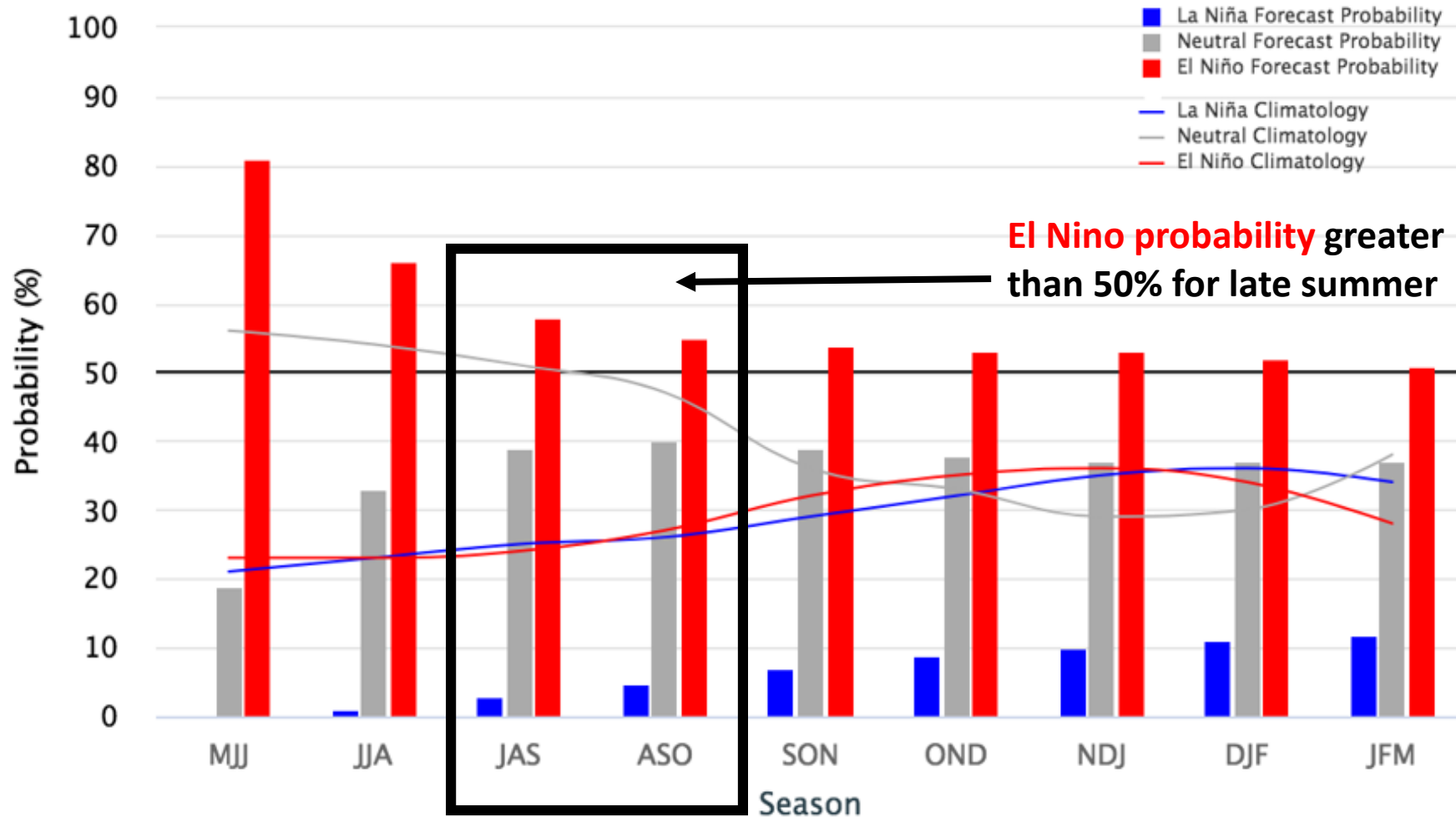
**U.S. Seasonal Drought Outlook**  
Drought Tendency During the Valid Period

Valid for June 20 - September 30, 2019  
Released June 20



## Early-June 2019 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly  
Neutral ENSO:  $-0.5^{\circ}\text{C}$  to  $0.5^{\circ}\text{C}$



The ENSO state is generally considered a better indicator for winter seasonal weather than summer seasonal weather.

However, below normal rainfall during the late summer period has been linked to El Niño conditions.

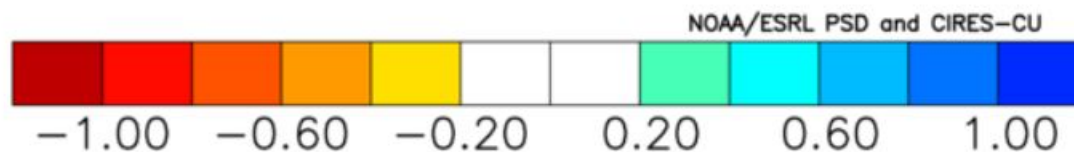
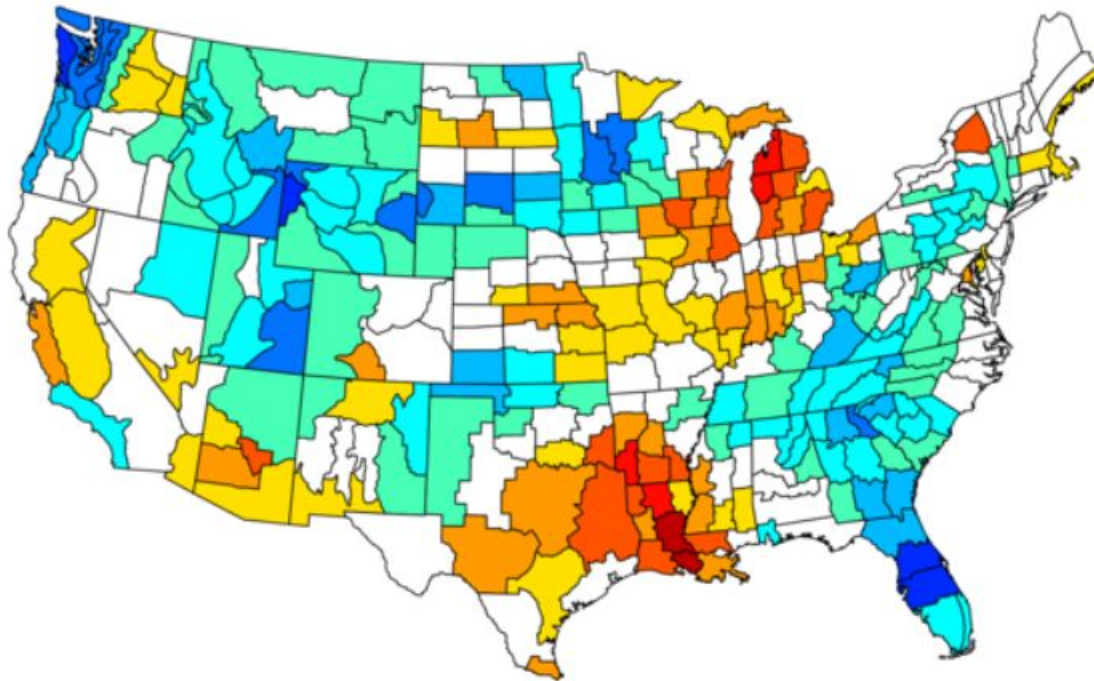
1997, 2002, 2004 and 2015 all observed El Niño conditions during the July, August and September period.

The current ENSO forecast shows a greater than 50% chance for El Niño conditions for the July thru September period.



# July through September Precipitation Anomalies with Previous El Nino's

NOAA/NCEI Climate Division Composite Standardized Precipitation Anomalies  
Jul to Sep 1997,2002,2004,2015  
Versus 1981–2010 Longterm Average



The four analog years included here registered weak to strong El Nino conditions for the July through September period.

The composite precipitation anomalies for the four analog years indicate below normal precipitation for north, east and central Texas.

Yellow to red colors indicate below normal precipitation anomalies.

# Final Thoughts

- The Eastern and Western Hill Country, Central Texas, Western Pineywoods, and Southeast Texas are more likely to experience above normal fire activity from July through September based on precipitation anomalies from analog years, temperature and precipitation outlooks for July along with climate forecasts that include extended high pressure ridging over the state for much of the outlook period.
- These weather and climate outlooks could provide the 3 to 6 weeks of summer drying needed to produce normal to above normal fire activity.
- Outlooks as this are flawed and imprecise. Fire activity during the summer builds over time. Stay current with the drying trends and fire activity trends in your response area as the summer unfolds to gauge initial attack potential.
- Track canopy fuel moistures and crown fire activity to gauge significant fire potential.