2023 Texas Dormant Wildfire Season Expected to be Normal to Below Normal

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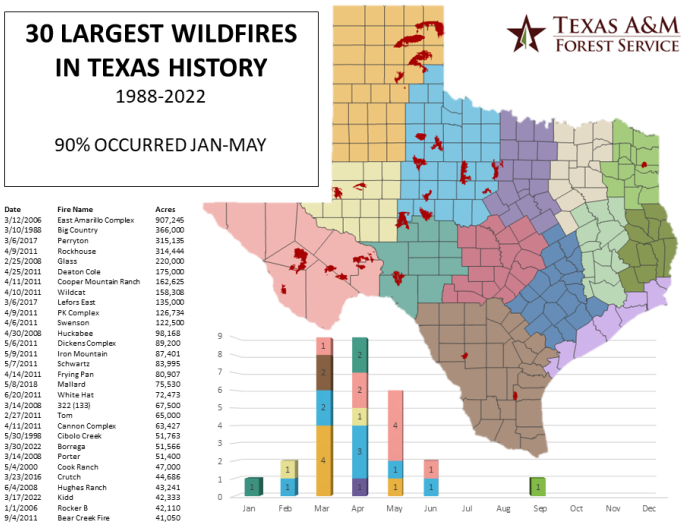
Texas A&M Forest Service Predictive Services Department

Background: Since 1988, 90% of the 30 largest wildfires in Texas history have occurred between January and May, primarily in the grass dominant Texas Plains.

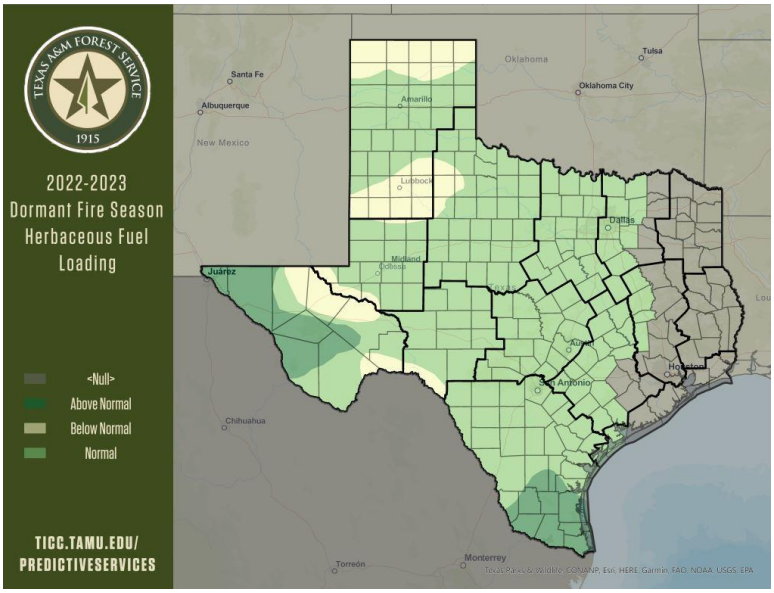
Factors that drive the dormant wildfire season in Texas are grass fuel loading produced during the previous growing season, current and forecast drought conditions along with seasonal temperature and precipitation trends. The intent of this outlook is to provide general awareness of broad environmental conditions and the potential impact these conditions could have on wildfire activity across Texas through the spring of 2023.



Date	Fire Name	Acres
3/12/2006	East Amarillo Complex	907,245
3/10/1988	Big Country	366,000
3/6/2017	Perryton	315,135
4/9/2011	Rockhouse	314,444
2/25/2008	Glass	220,000
4/25/2011	Deaton Cole	175,000
4/11/2011	Cooper Mountain Ranch	162,625
4/10/2011	Wildcat	158,308
3/6/2017	Lefors East	135,000
4/9/2011	PK Complex	126,734
4/6/2011	Swenson	122,500
4/30/2008	Huckabee	98,168
5/6/2011	Dickens Complex	89,200
5/9/2011	Iron Mountain	87,401
5/7/2011	Schwartz	83,995
4/14/2011	Frying Pan	80,907
5/8/2018	Mallard	75,530
6/20/2011	White Hat	72,473
3/14/2008	322 (133)	67,500
2/27/2011	Tom	65,000
4/11/2011	Cannon Complex	63,427
5/30/1998	Cibolo Creek	51,763
3/30/2022	Borrega	51,566
3/14/2008	Porter	51,400
5/4/2000	Cook Ranch	47,000
3/23/2016	Crutch	44,686
6/4/2008	Hughes Ranch	43,241
3/17/2022	Kidd	42,333
1/1/2006	Rocker B	42,110
9/4/2011	Bear Creek Fire	41,050

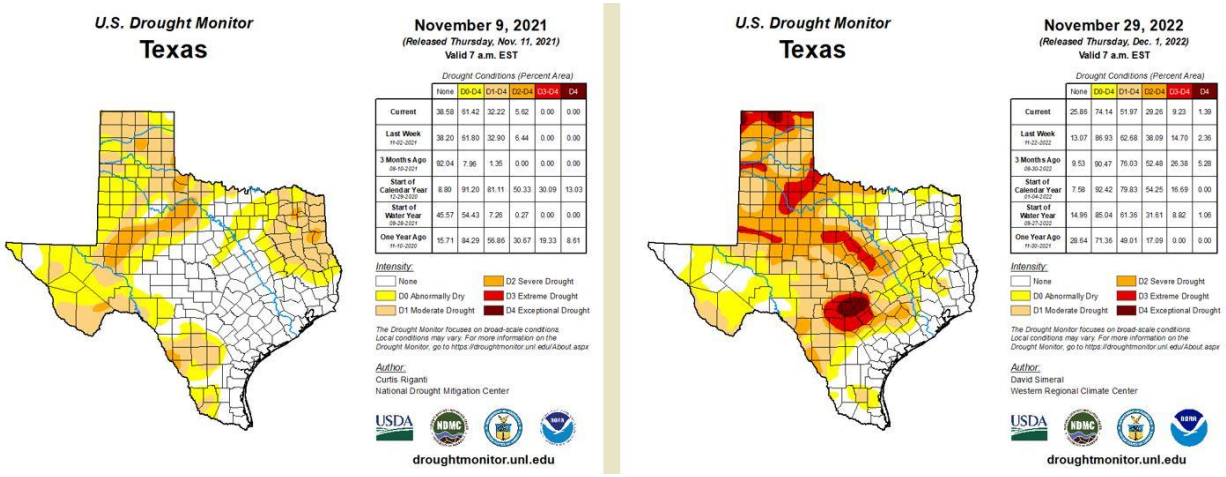
Analysis: Normal to below normal wildfire activity is expected across Texas for the 2023 dormant fire season. Fall 2022 field observations of grass loading reveal normal to below normal grass loading for the Texas Plains and Hill Country.

Persistent drought limited growing season grass production between May and September 2022. Livestock grazing reduces the amount of grass that was produced during the growing season. There are few if any objective measures of grass loading reduction from livestock grazing on a regional scale. Observations reveal the impacts of grazing and we have learned from past years that grazing impacts are more pronounced in years with poor growing season grass production.



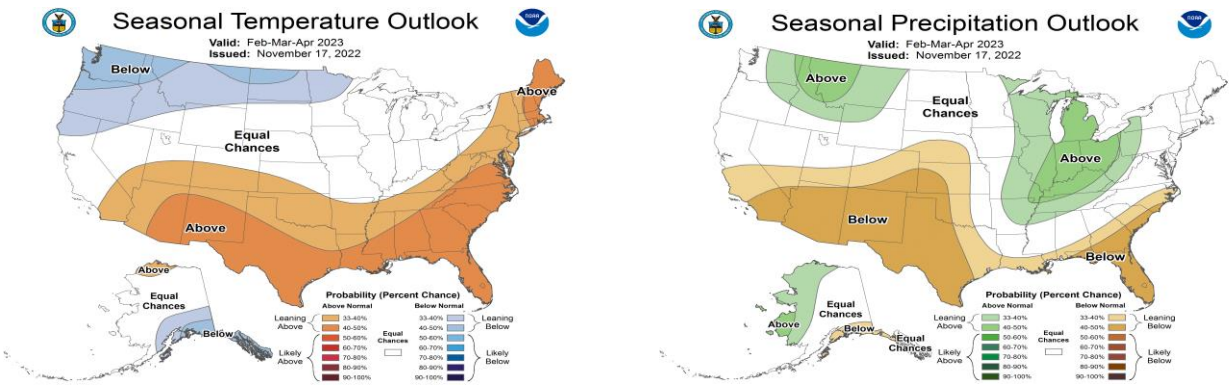
Normal to below normal grass loading does not support large fire development without the presence of critical fuel dryness and critical to extreme fire weather. The forecast for a normal to below normal 2023 dormant fire season is heavily weighted to the reduced amount of grass on the landscape this year. Above normal grass loading in the higher elevations of the Trans Pecos could support above normal fire activity in April and May when dry lightning activity is most common. Another area of above normal grass loading in South Texas may support large fire occurrence in March if grasses have been freeze cured. March is the peak month for post frontal conditions moving through deep South Texas. Strong north winds and low relative humidity in the post frontal environment can act as a fire weather trigger for large fire development.

Emerging drought following a wetter than normal growing season has produced the most active dormant fire seasons in past years. Emerging drought was the case for the 2006, 2008, 2011 and 2022 above normal dormant fire seasons. Persistent drought will limit grass production through the growing season which reduces the chances of an above normal dormant fire season.



Above is a side by side comparison of drought conditions from November 2021 and November 2022. Drought development began in late August of 2021 and continued through the summer of 2022. Persistent drought remains in Texas with some slight improvements since the middle of October. Persistent drought is not a strong signal for an above normal dormant fire season.

Seasonal temperature and precipitation forecasts from the Climate Prediction Center (CPC) for February, March and April are heavily weighted to the current La Nina weather pattern.



La Nina conditions typically produce warmer and drier conditions in Texas during the dormant fire season. This was certainly the case during the 2022 dormant fire season which produced above normal fire activity with La Nina conditions in place.

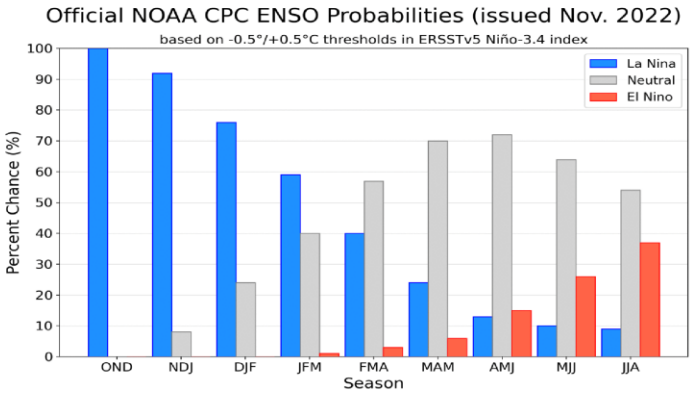


Figure 7. Official ENSO probabilities for the Niño 3.4 sea surface temperature index (5°N-5°S, 120°W-170°W). Figure updated 10 November 2022.

There are two considerations that inject some uncertainty into the CPC warmer and drier La Nina scenario for the Texas dormant fire season. The CPC probability forecast above indicates decreasing probabilities for La Nina continuing into March as La Nina is expected to transition to Neutral conditions. Above normal dormant fire seasons, such as last year, experience La Nina conditions through late spring or early summer. Another La Nina inconsistency this year has been the normal to wetter than normal conditions Texas has experienced since late October. La Nina years that produce above normal dormant fire seasons have typically experienced below normal precipitation during the fall months.

In Summary:

- There is confidence that the reduced amount of grass on the landscape going into the 2023 dormant fire season will limit the ceiling of wildfire activity to normal levels for most of the state. (The Trans Pecos and deep south Texas could be exceptions)
- There is less confidence in the seasonal temperature and precipitation outlooks.
  - If we experience the CPC warmer and drier forecast associated with La Nina conditions, then a normal dormant fire season is the most likely outcome.
  - A below normal dormant fire season becomes more likely if cooler temperatures and normal precipitation are realized.

Contact: Texas A&M Forest Service encourages firefighters, fire managers, and emergency management professionals to subscribe to the weekly Texas Fire Potential Update by sending an email to tx-fire-potential+subscribe@lists.tamu.edu. These weekly fire potential outlooks provide short term analysis of current wildfire activity trends, fire environment conditions, and wildfire potential for the state of Texas.