

2020/2021 Seasonal Wildfire Outlook

Dormant Season Wildfire Potential
December - April



Prepared 11/16/20 // Updated 12/11/20

Quick Glance Impact Potential Summary

- **Increasing Fire Occurrence**

- CY 19 and CY 20 below average fire occurrence
- CY 21 is set up to present above average fire occurrence

- **Increasing Fire Severity**

- Heightened large fire probabilities early (>100 ac timber / >300 ac grass)
- Escalating significant fire potential March & April (>5,000 acres / notable structure loss)

- **Widespread County Burn Bans Expected**

- **Governor's Burn Ban Likely**

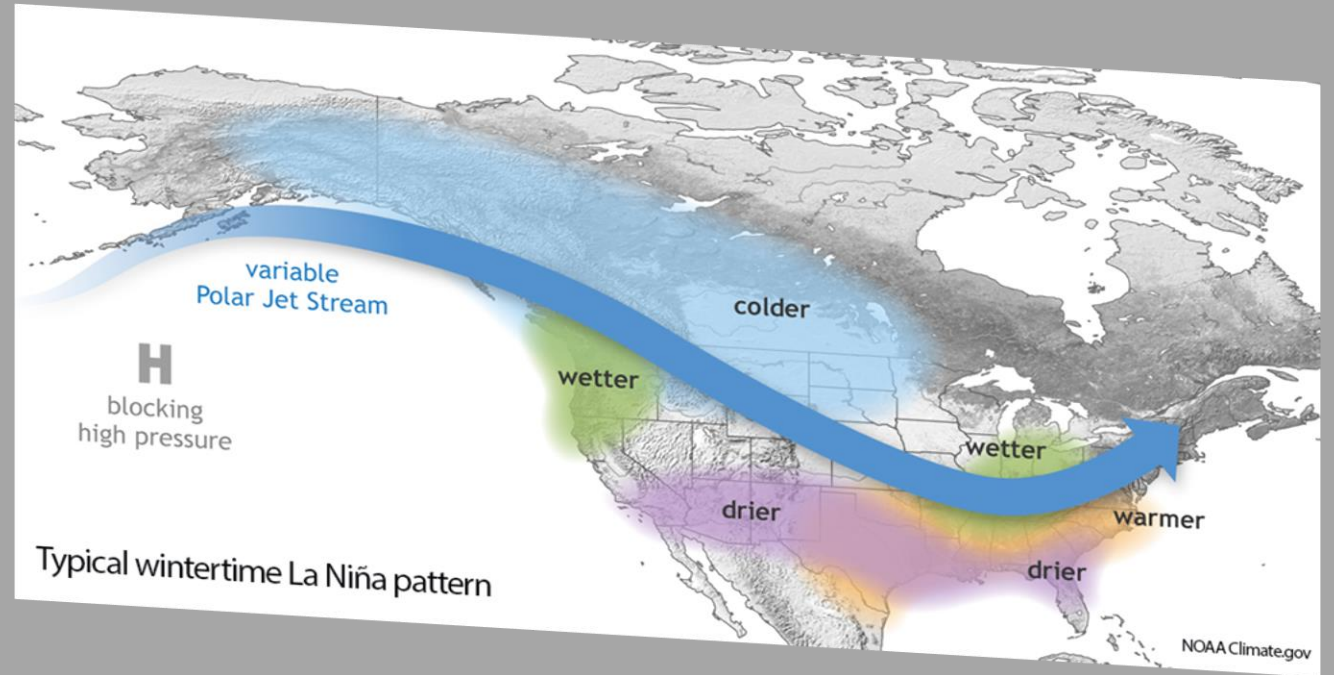
- **Heavy Resource Commitment Expected**

- Increased resource requirements during initial attack
- Extended attack fires expected to complete mop-up and ensure perimeter control
- High probability of long-term utilization of firefighting aviation



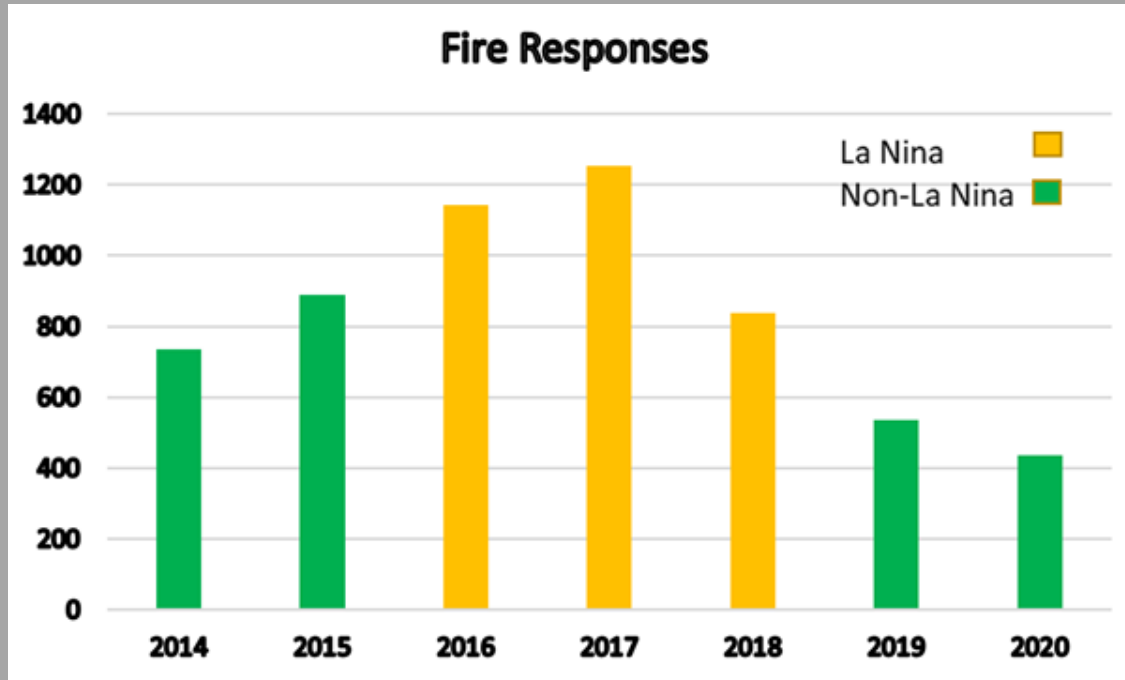
El Niño Southern Oscillation – La Niña

- Below-Normal Precipitation
- Above-Normal Temperature
- Forecaster Confidence
 - Jan-Mar 95%
 - Apr-Jun +/-50%
- Any version of La Niña brings expectation of increased fire activity and severity with a favorable fire environment.
- The strength of La Niña has little statistical influence on number of fires or acres burned.

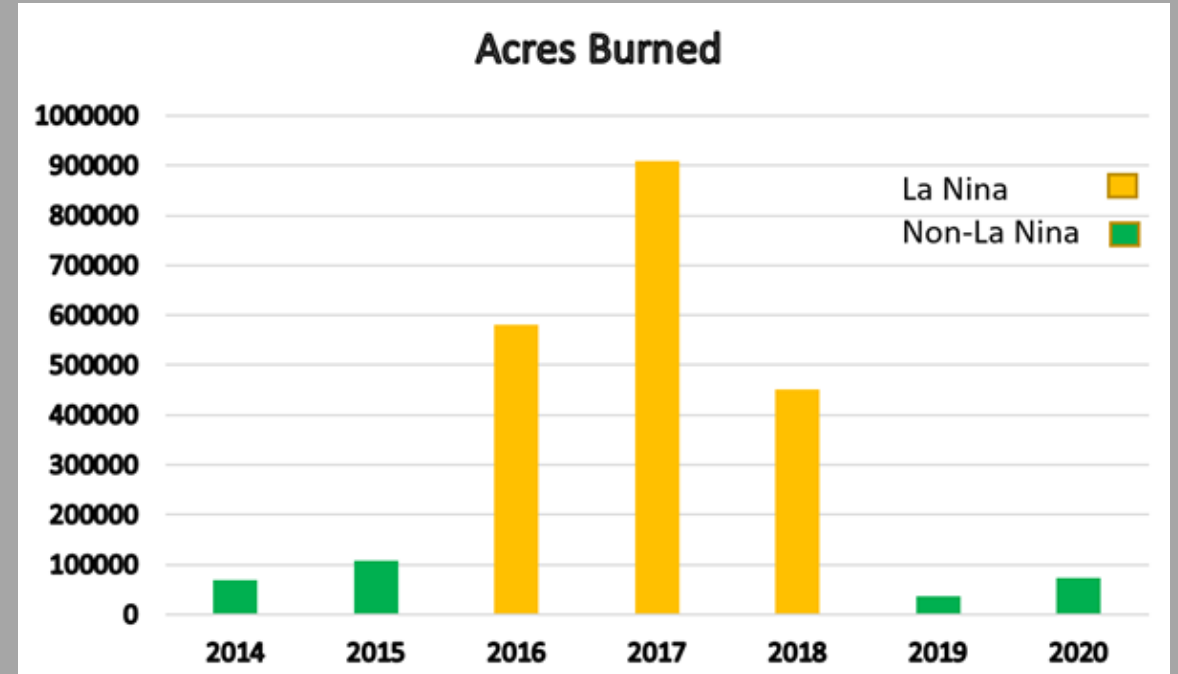


A natural ocean-atmospheric phenomenon marked by cooler-than-average sea surface temperatures in the central Pacific Ocean near the equator, the opposite of El Niño.

La Niña vs. Non- La Niña

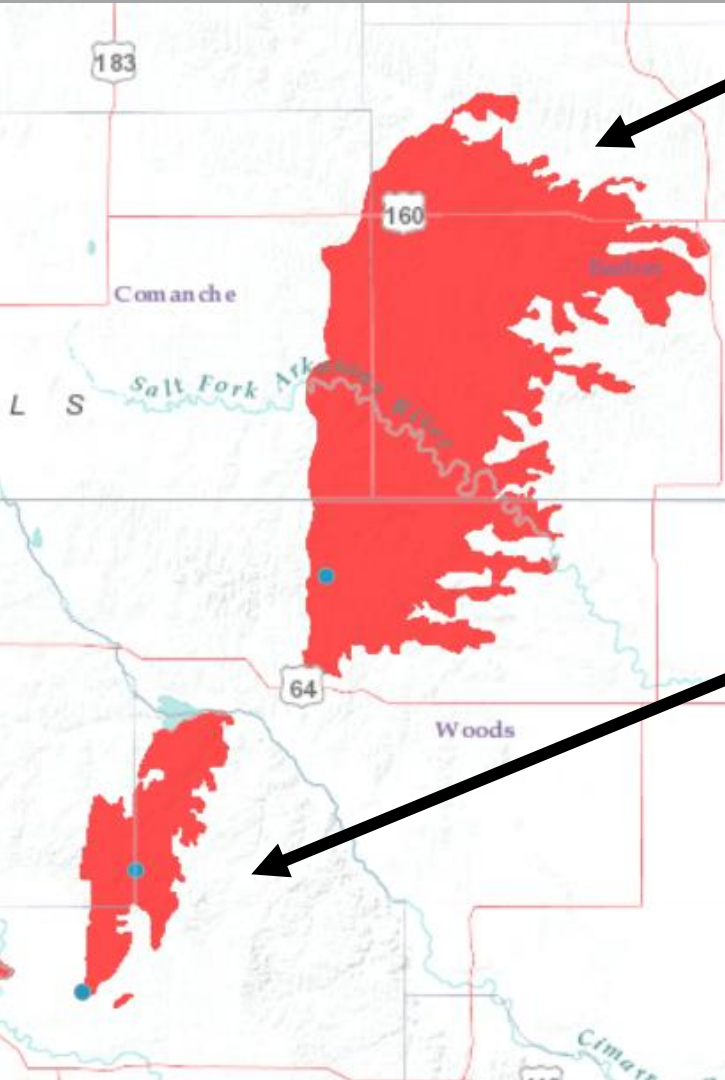


- *Fire Occurrence is 199% more frequent during La Niña when compared to El Niño or ENSO-Neutral.*



- *Acres Burned is 496% more during La Niña when compared to El Niño or ENSO-Neutral.*
- *Increased acreage and associated severity results in much more structure loss and increased probability of casualties.*

Notable La Niña Associated Fires



Anderson Creek (2016)

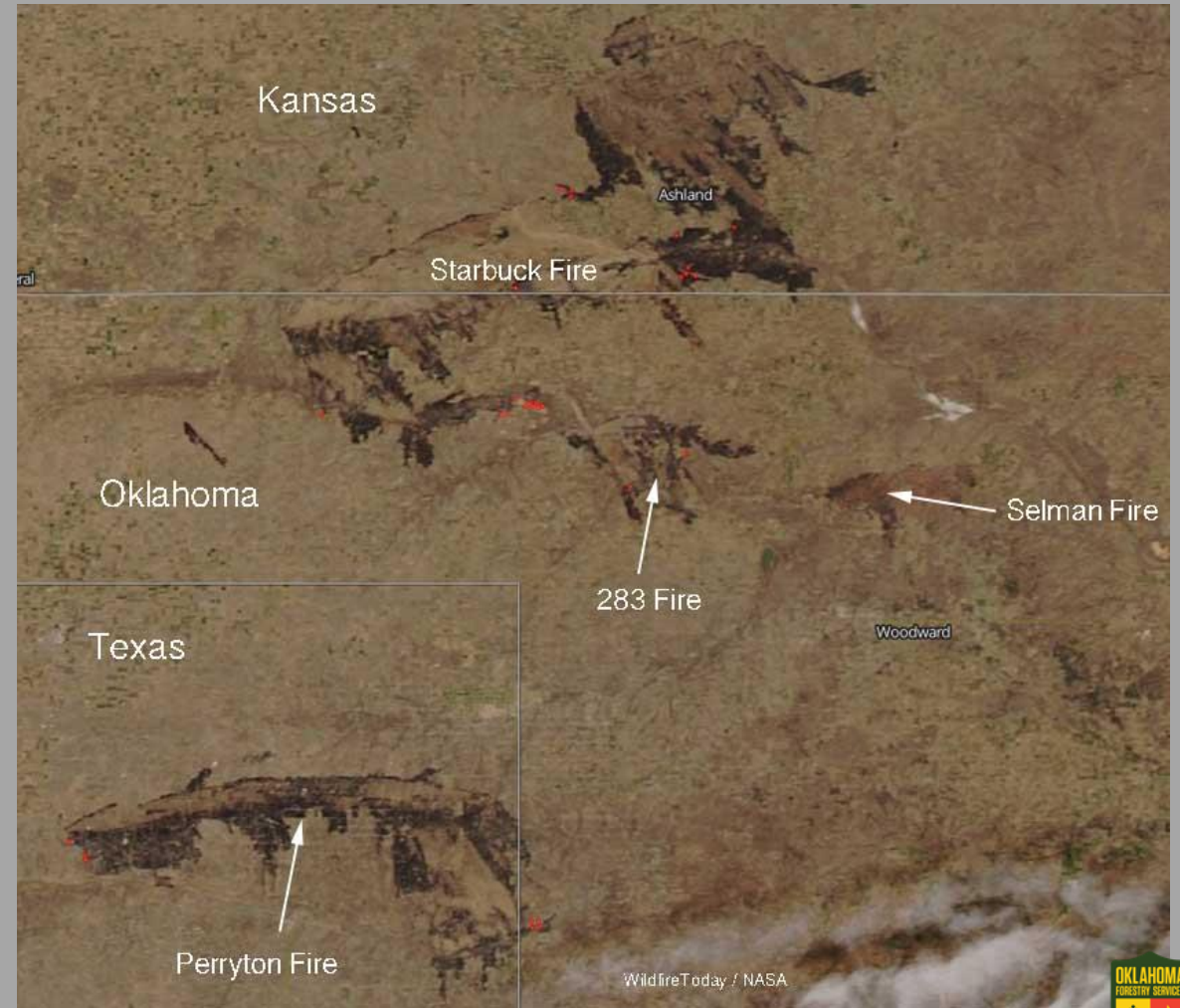
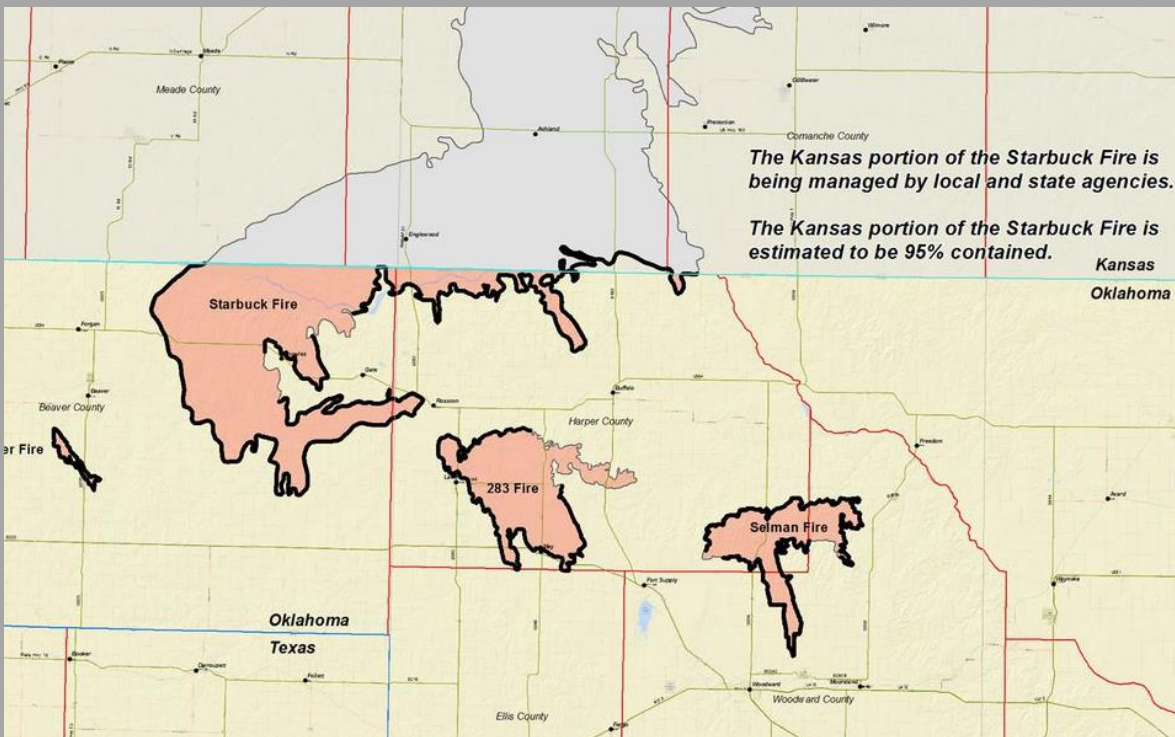
- 367,620 Acres (574.5 mi^2)
- 41 Structures Lost
- 600+ Cattle Lost

350 Complex (2016)

- 57,167 Acres (89.3 mi^2)
- 47 Structures Lost
- Numerous Cattle Lost
- 2 Civilian Casualties



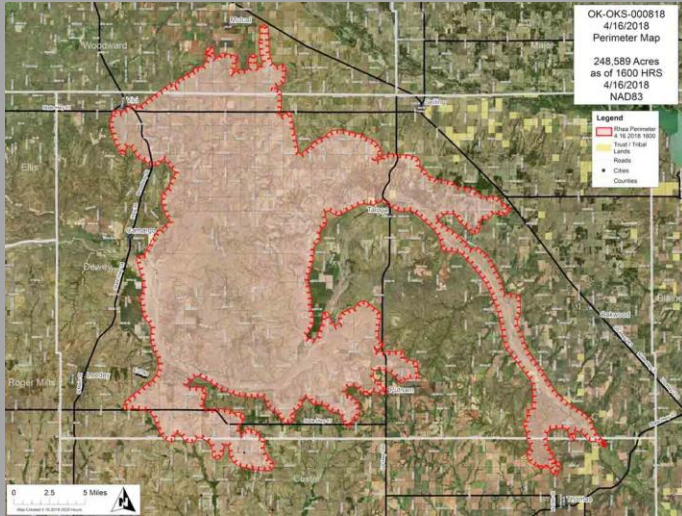
Notable La Niña Associated Fires



NW OK Complex(2017)

- 833,941 Acres (1,303 mi^2)
- 135 Structures Lost
- 9 Civilian Casualties
- 11,000+ Cattle Lost

Notable La Niña Associated Fires



Rhea Fire (2018)

- 286,196 Acres (447.2 mi^2)
- 32 Structures Lost
- 6 Bridges Destroyed
- 6 Civilian Casualties
- Significant Impacts to Agriculture

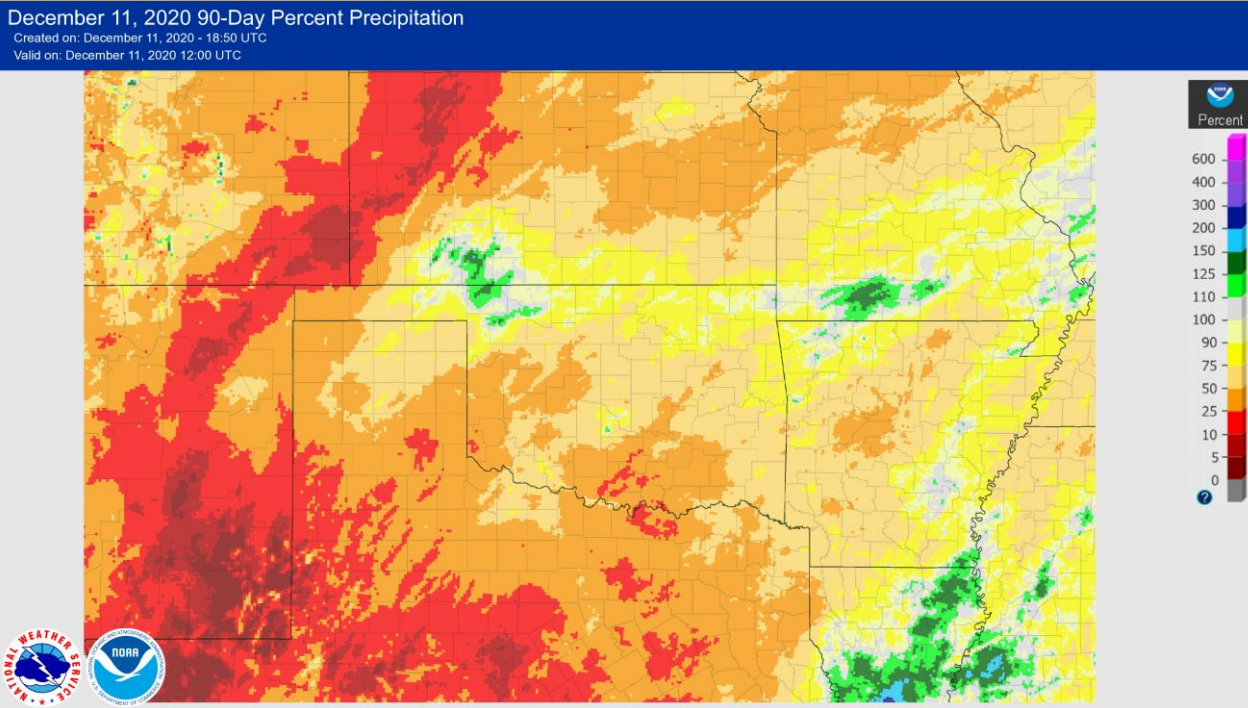


REUTERS/NICK OXFORD



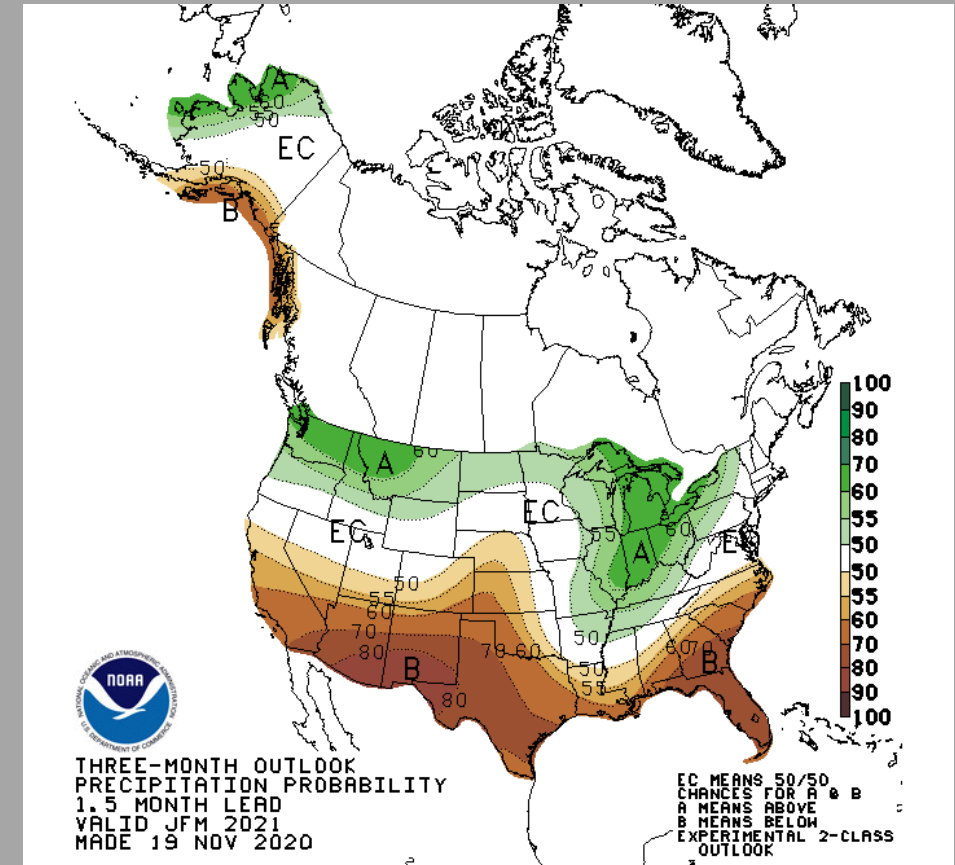
Precipitation Trends

90-Day Percent Precipitation



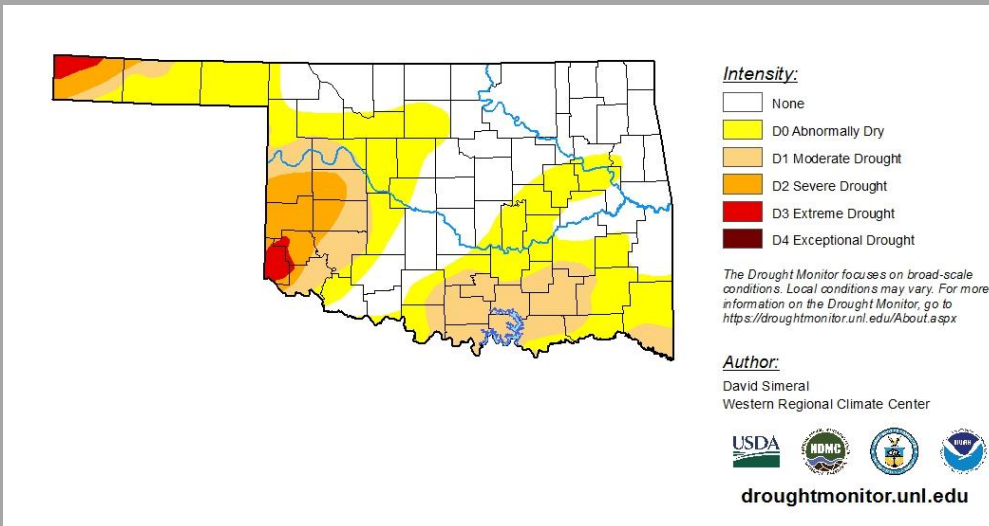
The majority of the growing season was drier than normal resulting in observation of drought indices and limited herbaceous fuel growth to some extent. *La Niña influence is likely to continue the drier trend.*

3 Month Outlook



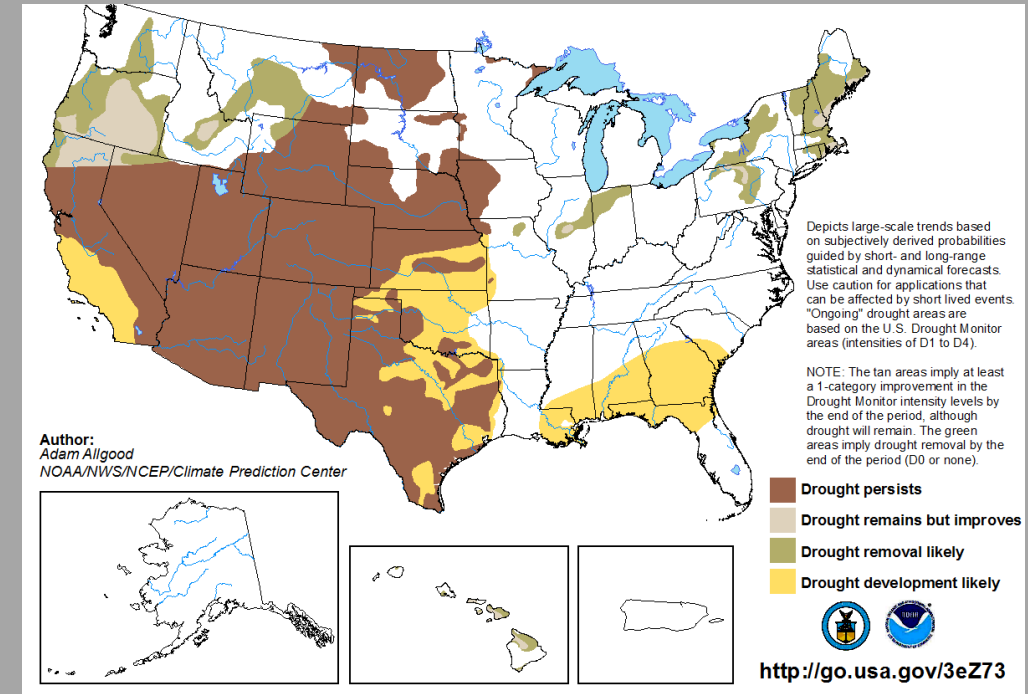
Drought Impacts

December 8, 2020 Drought Monitor



Extreme drought indices have remained fairly constant through the latter half of 2020, but spatial coverage of D0-D2 classification has expanded. Current outlooks point to persistence further development in the currently affected areas and development across most of Oklahoma through the winter months.

Seasonal Drought Outlook through February

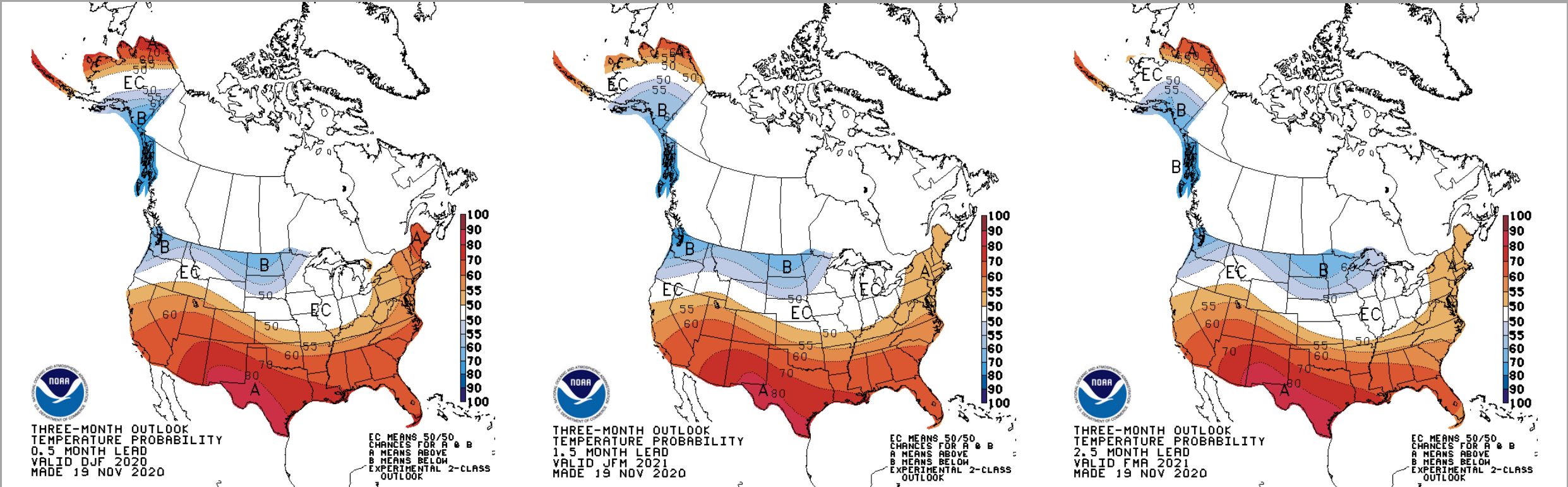


Temperature Trends

Dec-Feb

Jan-Mar

Feb-Apr

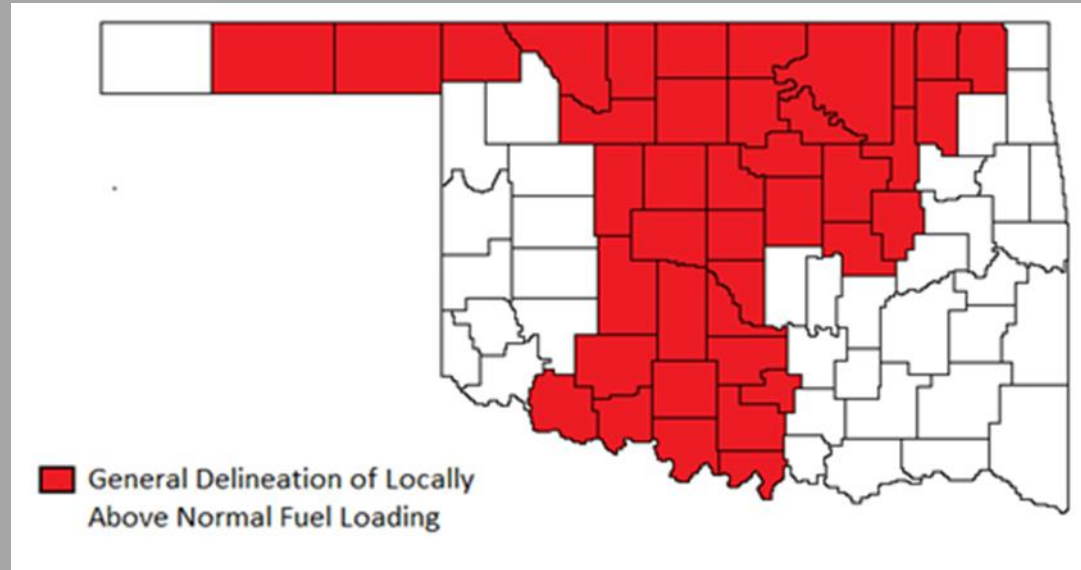


Temperature Outlooks through the dormant season point to the expectation of warmer than normal temperatures. This is notable due to the relationship anomalous high temperatures have with significant fire occurrence.



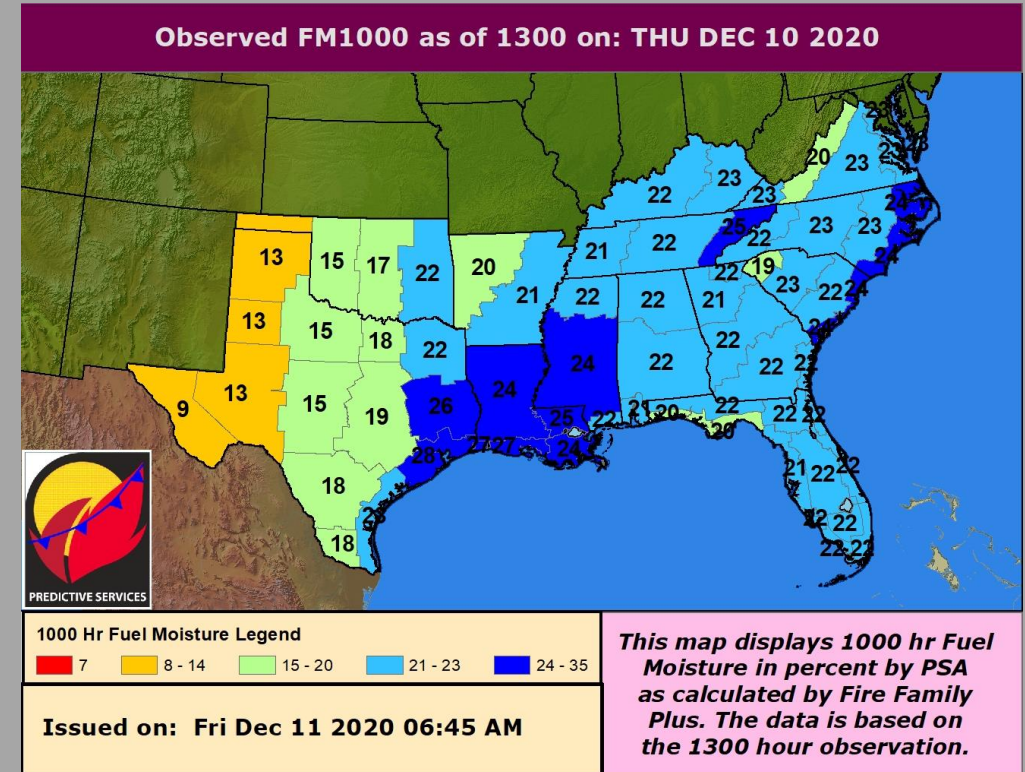
State of Fuels

Herbaceous Fuel Loading



Fuel loading is variable across Oklahoma and strongly correlated to amount, duration and timing of rainfall. Some areas within the counties depicted in the map below have localized above-normal grass loading where haying and grazing were absent.

1,000-Hr. Fuel Moisture



It is expected to see 1,000 hr. fuel moisture values <15% across western and central Oklahoma into the late-winter/early spring time frame contributing to increasing wildfire control challenges.

Gauging Fire Season Indicators

- Growing season rains
- Effective herbaceous fuel growth
- Onset of La Niña
- Persistent dryness – east
- Transition toward drought
- Period(s) of accelerated drying
- Increasing fire trends
- Weather systems

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Lack of complete alignment with these indicators may limit magnitude of fire episodes

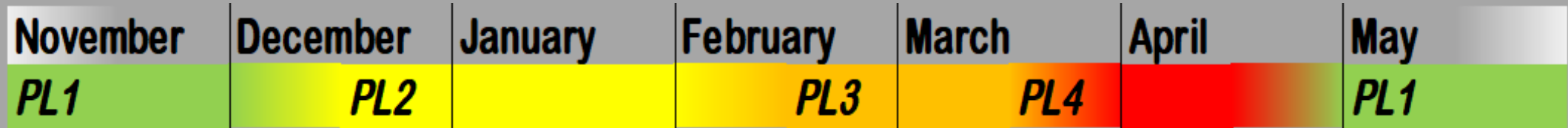
Domino Fall Process Analogy



Consider each of these indicators as dominoes lined up. As one falls the others are in line to be affected. As each of these indicators develop, expect magnitude of fire episodes to increase.



2021 Dormant Fire Season Outlook



Projected Oklahoma Forestry Services Preparedness Levels indicate a steady increase through late winter into spring transitioning to Preparedness Level 4 (PL4) in late March.

PL4 Operational Indicators

- Fires regularly require multiple operational periods to contain
- Large Fire occurrence is regular
- Significant Fire occurrence is more frequent/potential is present
- OFS Resources required regularly outside of Protection Area
- Aviation Resources required during initial/extended attack
- OFS Type 3 Team / Organization mobilized
- OFS State Command activated / OEM Activated in support of ESF4
- Type 1/2 Incident Management Teams may be ordered

PL4 Associated Actions

- Wildfire Situation Report issued 7 days/week
- Numerous County Burn Bans in place
- Governor's Burn Ban likely
- Southeastern/South-Central Compact opened
- Interagency resources likely
- Potential for State Emergency Declaration
- Potential for Fire Management Assistance Grant requests



2021 Dormant Fire Season Outlook

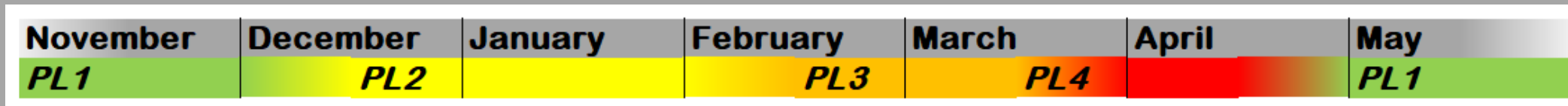
- Wildland fire activity will increase relative to 2019 & 2020
- Damaging & life threatening wildland fire episodes are possible
- The significant wildfire threat is highest in northern and central Oklahoma
- Extreme weather events are expected to increase significant wildfire potential in western Oklahoma
- Significant wildfire threat in eastern Oklahoma will be conditional on prolonged drying

Projected Probability of Occurrence in the 2020/21 Dormant Fire Season

100% 100% >90% >50% <20% <10%



Projected Preparedness Level



20/21 Seasonal Wildfire Outlook

Dormant Season Wildfire Potential

December – April

Sign Up for Oklahoma Wildfire Situation Updates at:

<https://forestry.ok.gov/situation-reports>

