A Guide to the Texas Fire Potential Update

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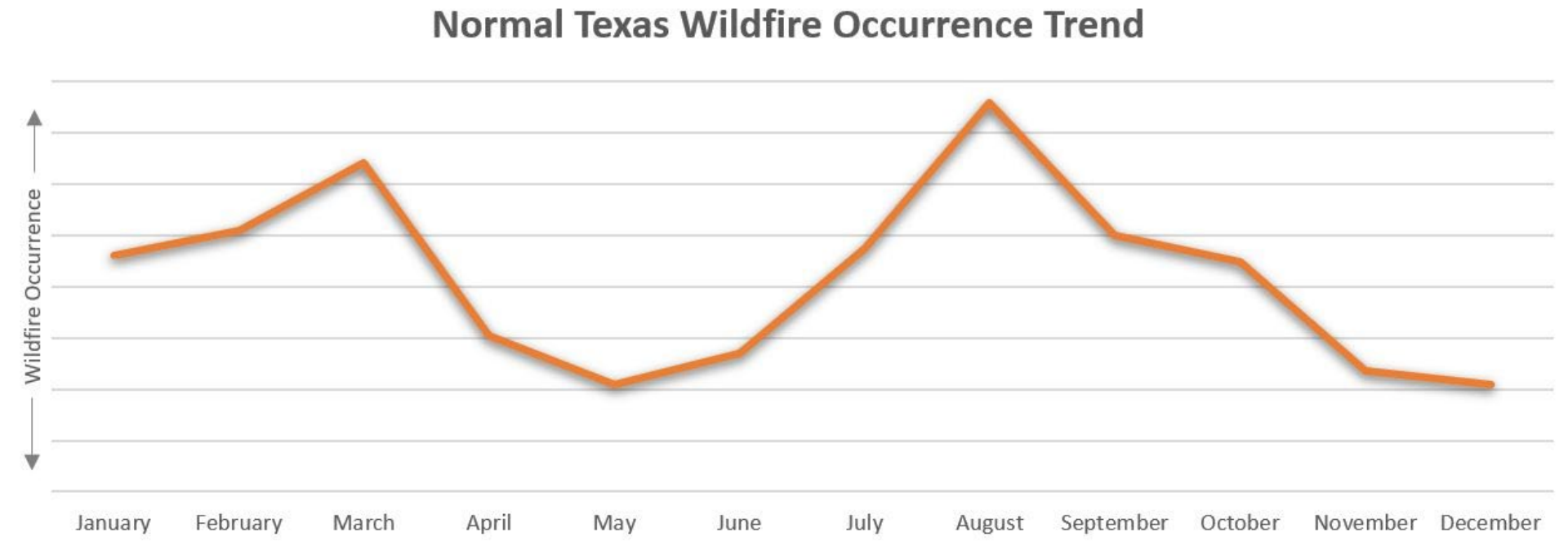
TEXAS A&M FOREST SERVICE

Annual Fire Occurrence Trends

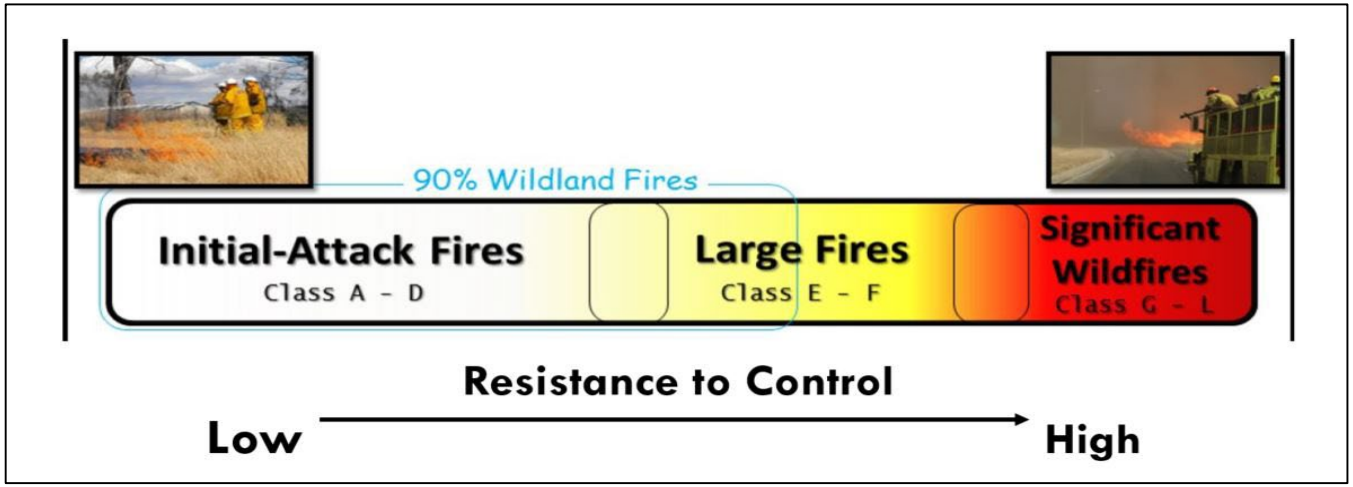


East Texas has two distinct fire seasons…Dormant and Growing Fires Seasons

Texas A&M Forest Service Predictive Services

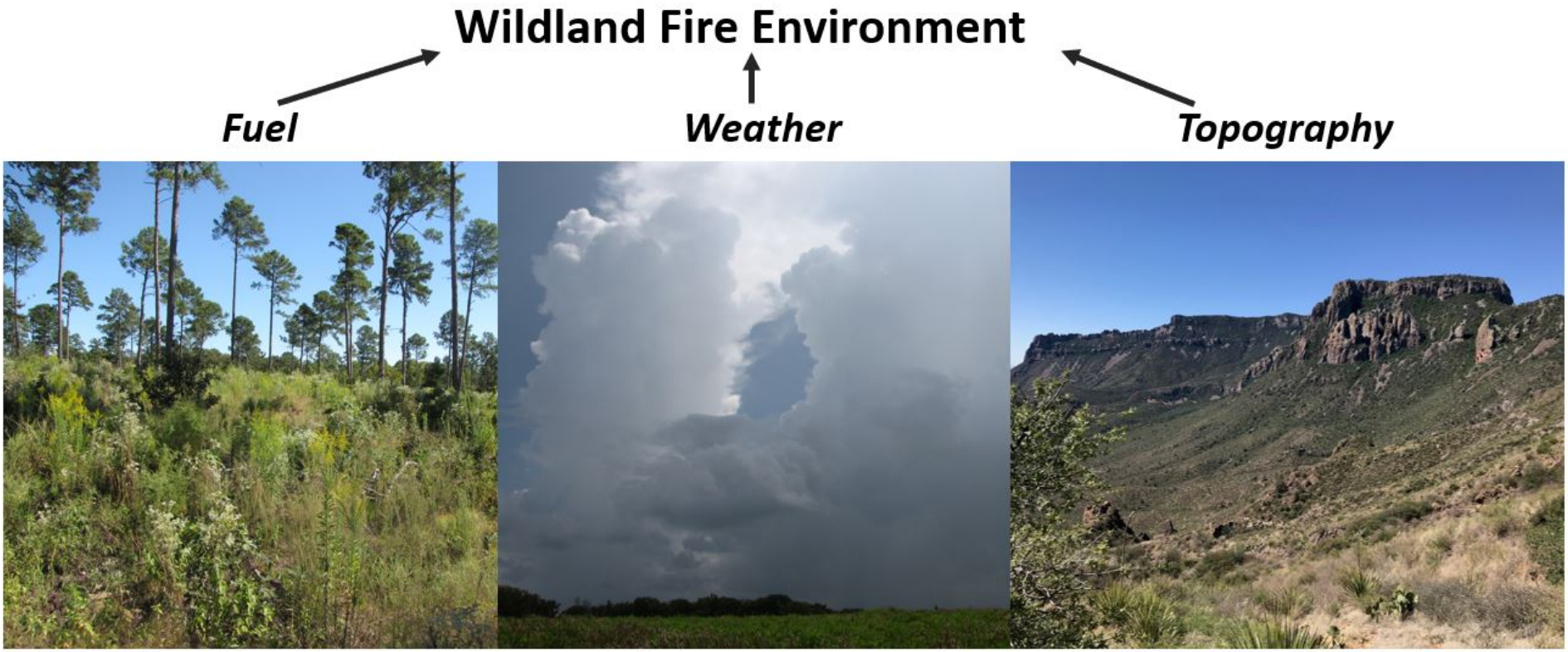
- Established in 1998 with a full time staff dedicated to assessing wildland fire potential across the state.
- We wanted to be proactive toward preparation with fire response rather than reactive.
- Establish and maintain a robust network of fire weather stations that include RAWS, ASOS, and WTM Mesonet platforms.
- Communicate wildland fire potential using fire weather and fire danger products = Decision Support!

Spectrum of Wildfires



Fire Environment conditions determine where a fire will land on this spectrum. The different combinations of fuel dryness and weather will determine if a fire is routine and takes little effort to control or if the fire is highly resistant to control and requires more suppression resources and time to contain.

What is the Wildland Fire Environment?



- The ingredients of the fire environment are all linked.
- Variable fuel types **and** increasing or decreasing fuel moisture content.
- Daily changes in the weather can increase or decrease wildfire potential. Small changes in the weather can have a big impact on resultant fire occurrence or fire behavior.

Timber Dominate Fuel

Angelina/Polk County Line October 2015

Timber litter on the forest floor is the primary carrier of fire. The drier the timber litter, the more likely wildfire ignitions can occur. Dry timber litter can produce higher surface fire intensities.

If surface fire intensities are higher, surface fire can transition to the canopy of the forest, increasing resistant to control of firefighter efforts. Live fuel moisture content in canopy is an important component to consider.

Dormant Grasses and Timber Dominant Fuels

Dormant grasses due to drought or freezing temperatures, provide a receptive fuel bed for wildfire ignitions and spread of wildfire.

Statewide Fire Weather Station Network

Remote Automated Weather Stations (RAWS)
-79 Stations

Automated Surface Observing System (ASOS)
-20 Stations

West Texas Mesonet (Planned)
-40+ stations

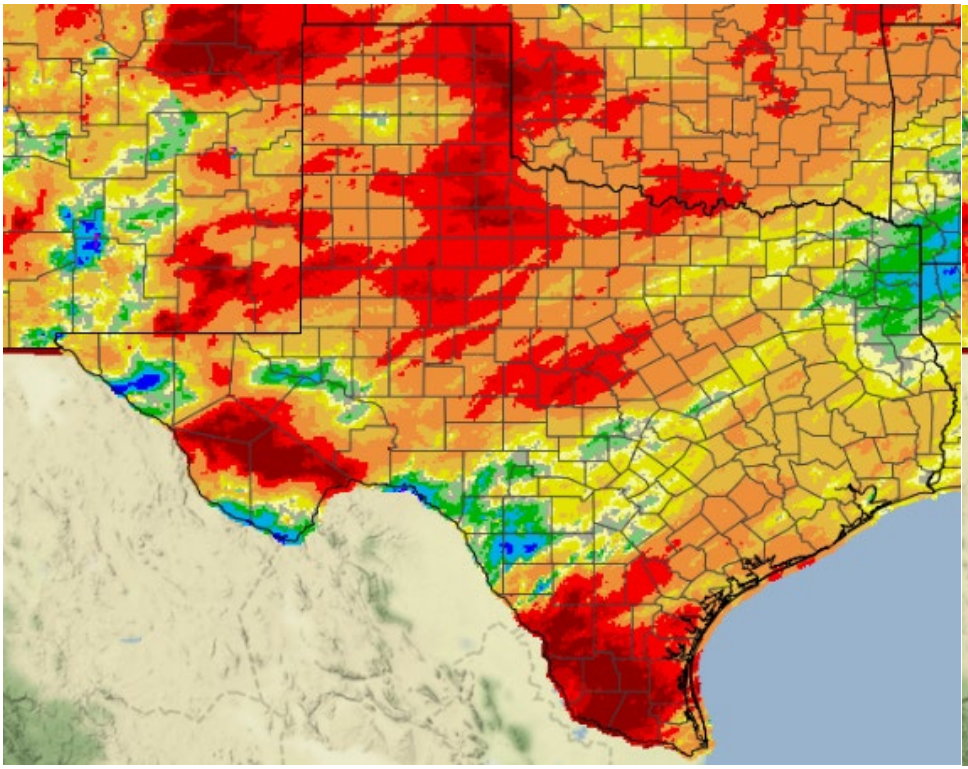
Daily, 24 hour observations (1300-1300) are used to calculate observed fire danger products based off the National Fire Danger Rating System (NFDRS).

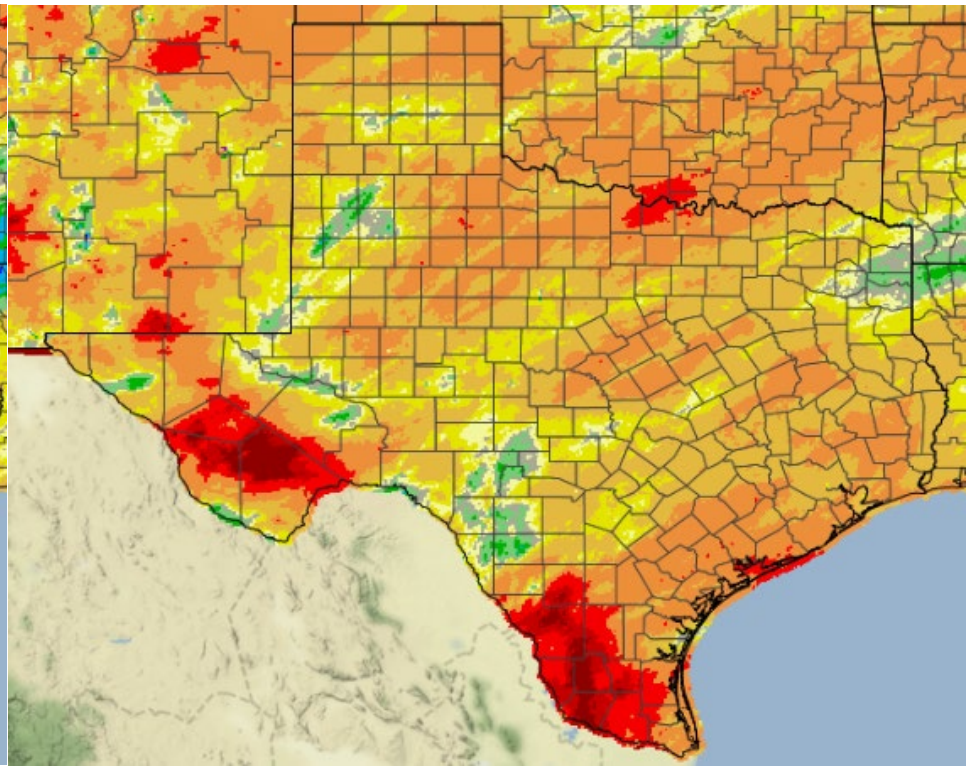
National Weather Service provides forecast weather data into NFDRS to produce forecast fire danger products. Quality of forecast weather data is important to produce accurate forecast fire danger maps.

Underlying Dryness

30 Day Percent of normal provides guidance toward **Emerging Dryness**

60 Day Percent of normal provides guidance toward **Persistent Dryness**





Mar 8, 2021

NORTH CAROLINA CLIMATEOFFICE

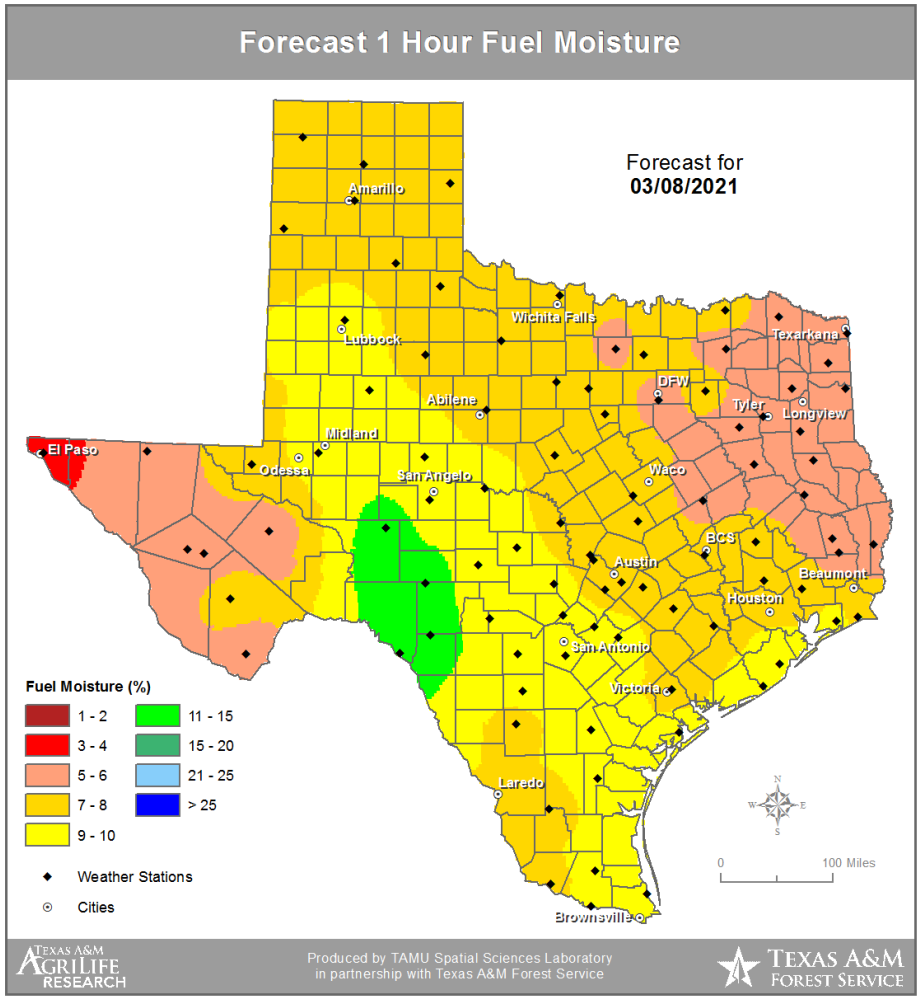
Percent of Normal Precip. (%)

≥0 5 10 25 50 75 90 100 110 125 150 200 300 400 600

Dead Fuel Moisture Products

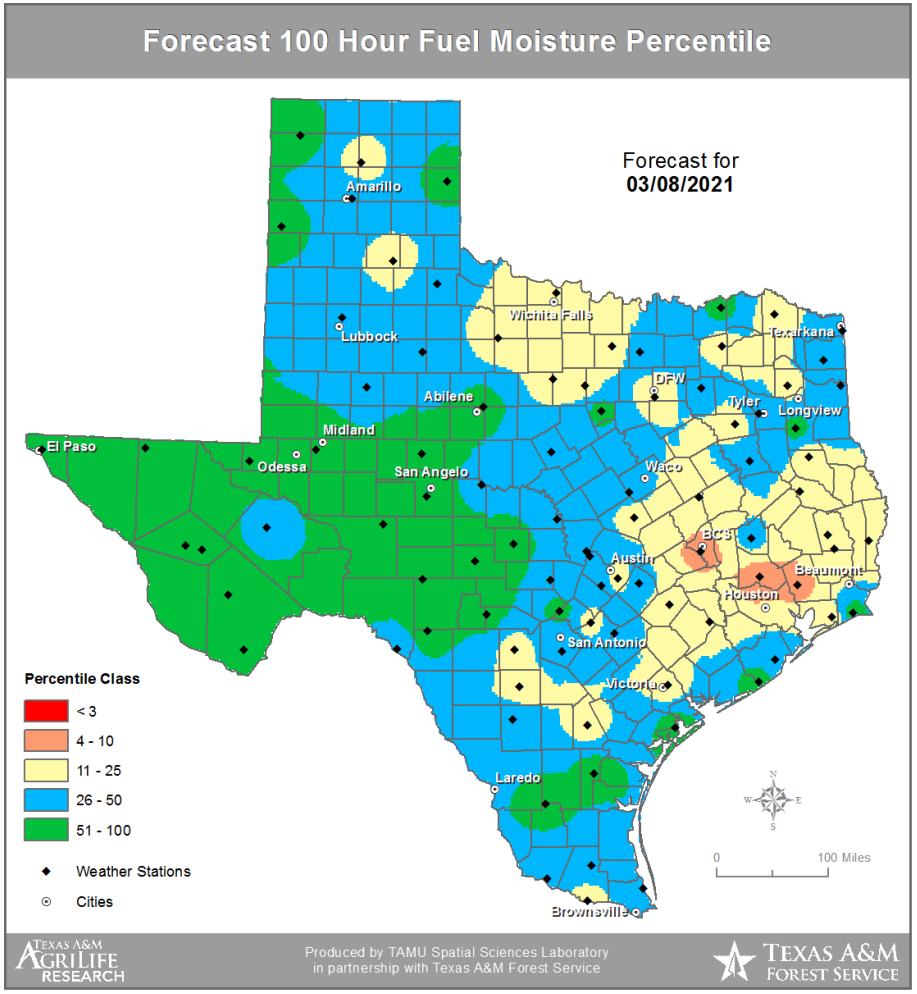
1-Hr fuel moisture relates to dead fuel of <¼ in. diameter

Dormant Grass, Pine Needles

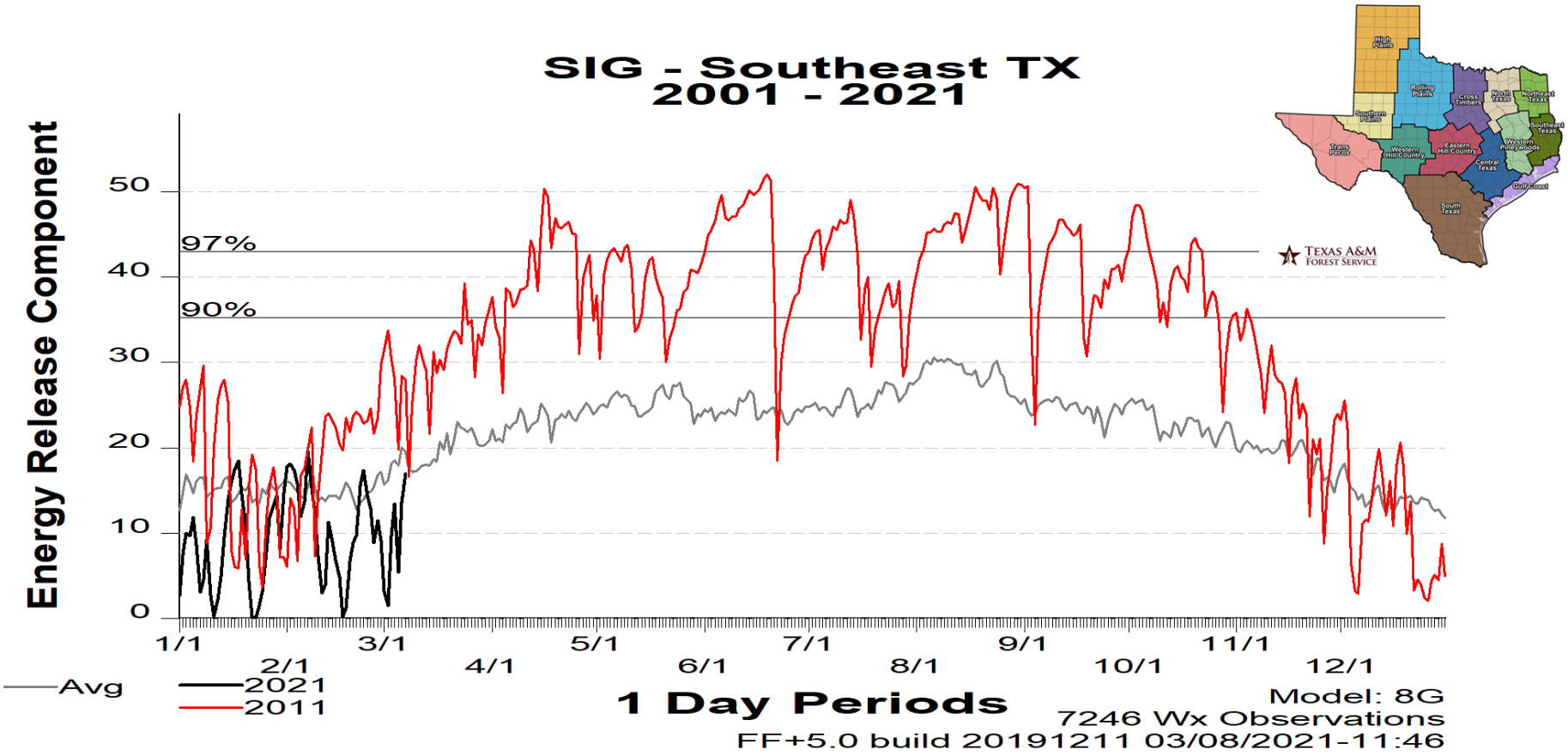


100-Hr fuel moisture relates to dead fuel of 1-3 in. diameter

Small twigs and branches



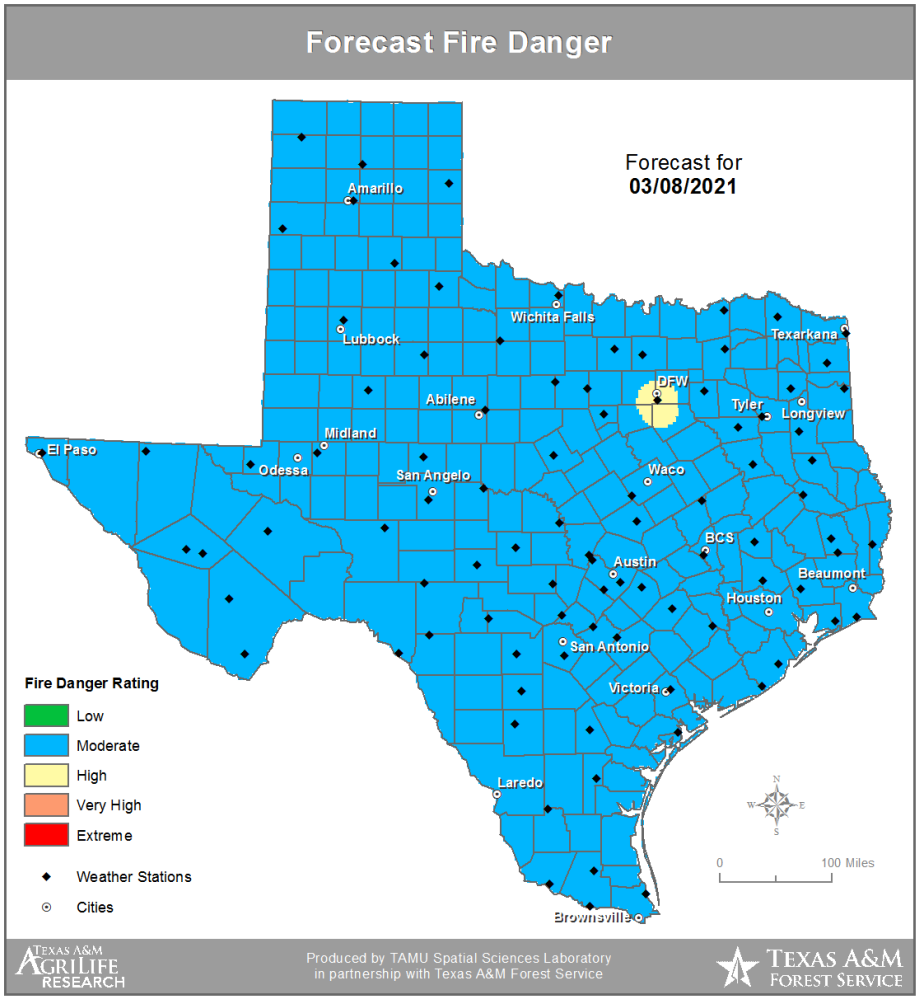
Energy Release Component



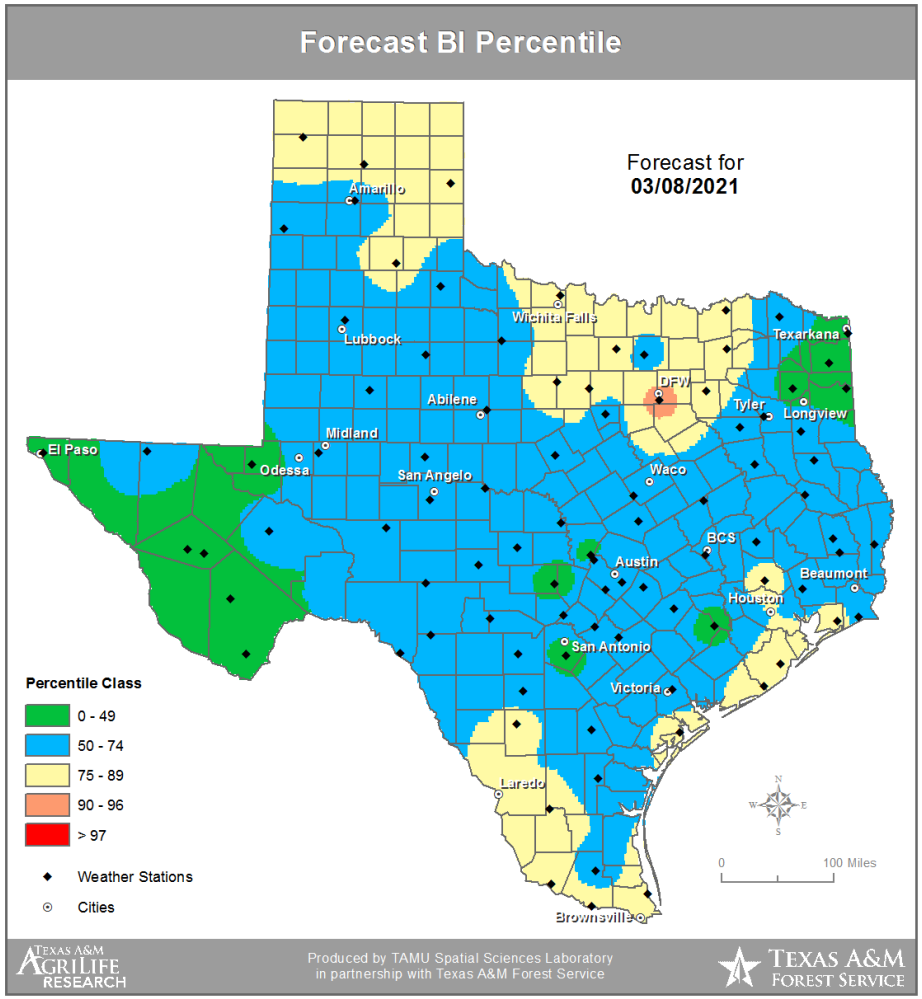
ERC is a composite fuel moisture index and can relate to the amount of energy released at the front of a fire. ERC calculations use observations from the past 7 days and is a great tool for showing fuel moisture trends.

Daily Fire Danger Products

Adjective Fire Danger Rating is the description for the fire environment that a fire will ignite and require suppression action

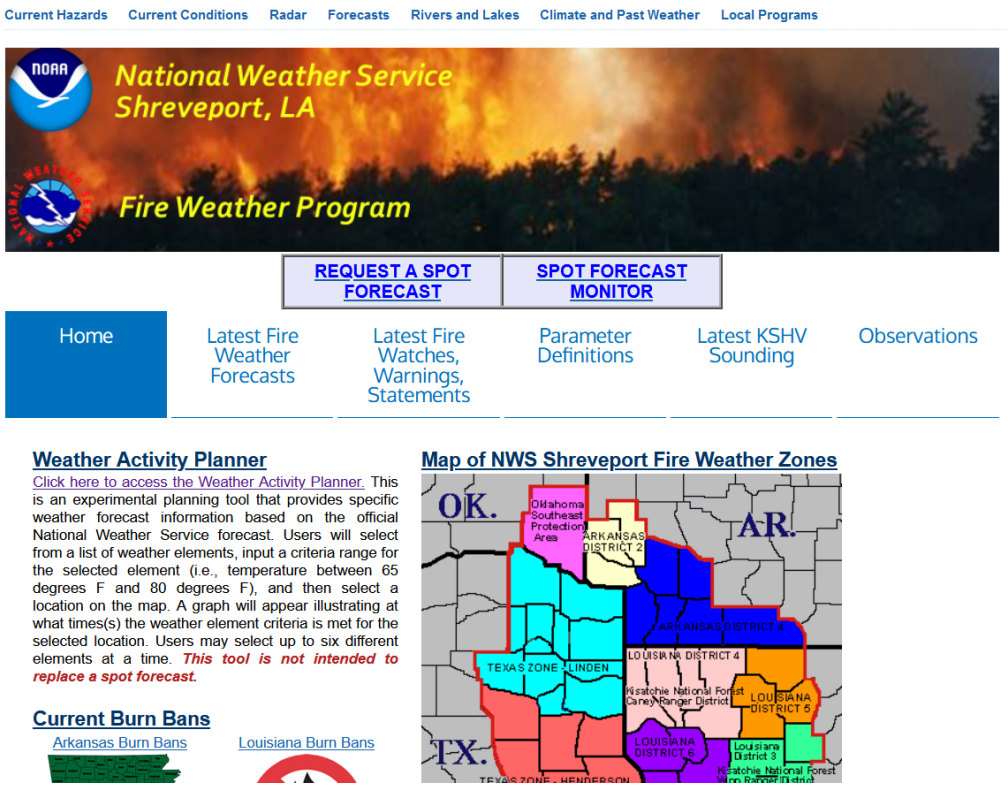


Burning Index quantifies the strength of the fire weather for that day and the potential difficulty toward suppression



Fire Weather Elements to consider

- Temperature (Above Normal)
- Humidity (Daytime Minimum and Nighttime Maximum)
- Windspeed and Direction
- Rainfall (Amounts and Duration)
- Important to stay up to date with local fire weather forecast from National Weather Service



Texas Fire Potential Update

- Weekly or Bi-Weekly product produced by TFS Predictive Services Department.

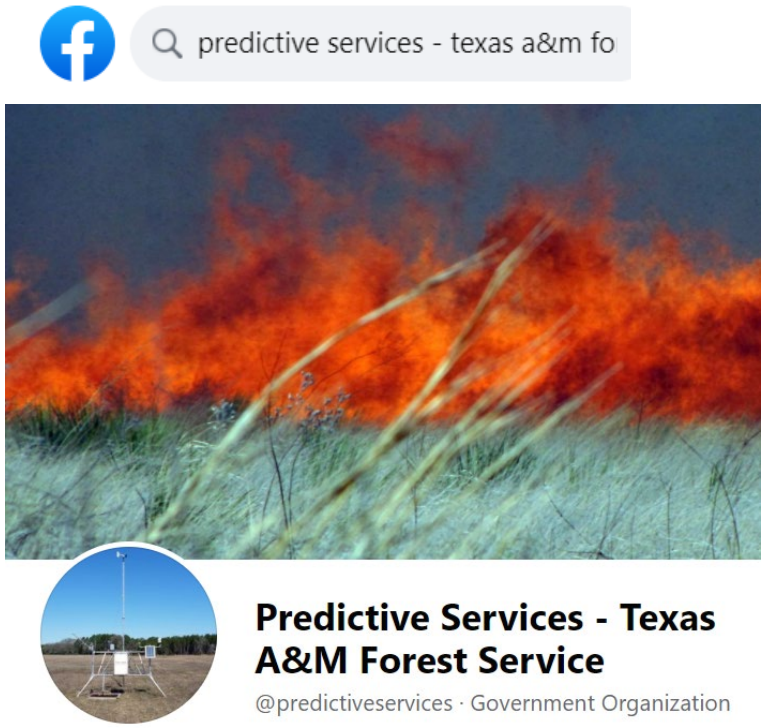
- Provides discussion on current and forecast trends of the fire environment and the resultant fire potential for the outlook period.

- Posted on the Texas Interagency Coordination Center Webpage.

TEXAS INTERAGENCY
COORDINATION CENTER

Staying Current With Wildfire Potential

https://ticc.tamu.edu/PredictiveServices/



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