2015 Winter and Spring Fire Potential Assessment

For the Grass Dominant Fuels on the Western Plains of Texas

Produced by the Texas A&M Forest Service Predictive Services Group

Seasonal Fire Potential Factors

- Fine Fuel Conditions
- Drought
- Seasonal Temperature and Precipitation

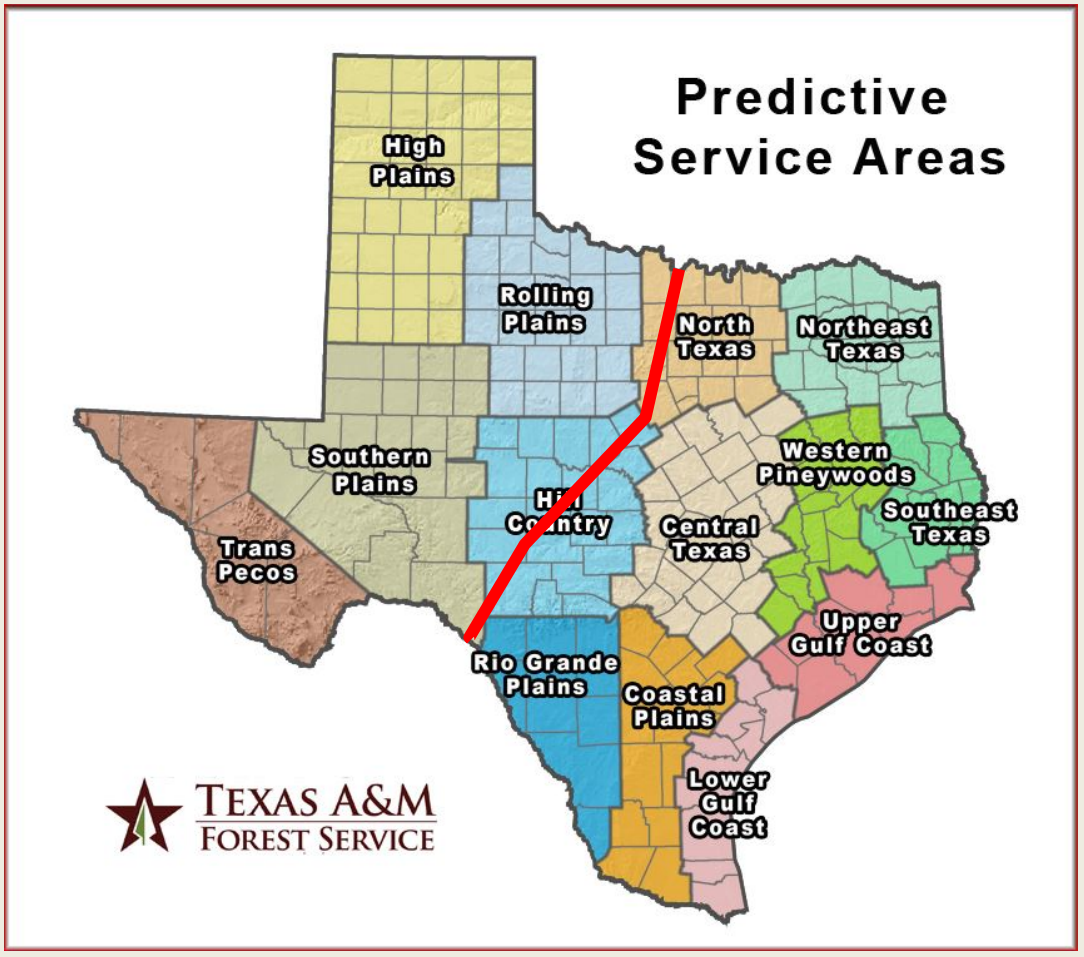
Grass Dominant Fuels

Grass dominant fuels are generally found west of the red line shown on the map.

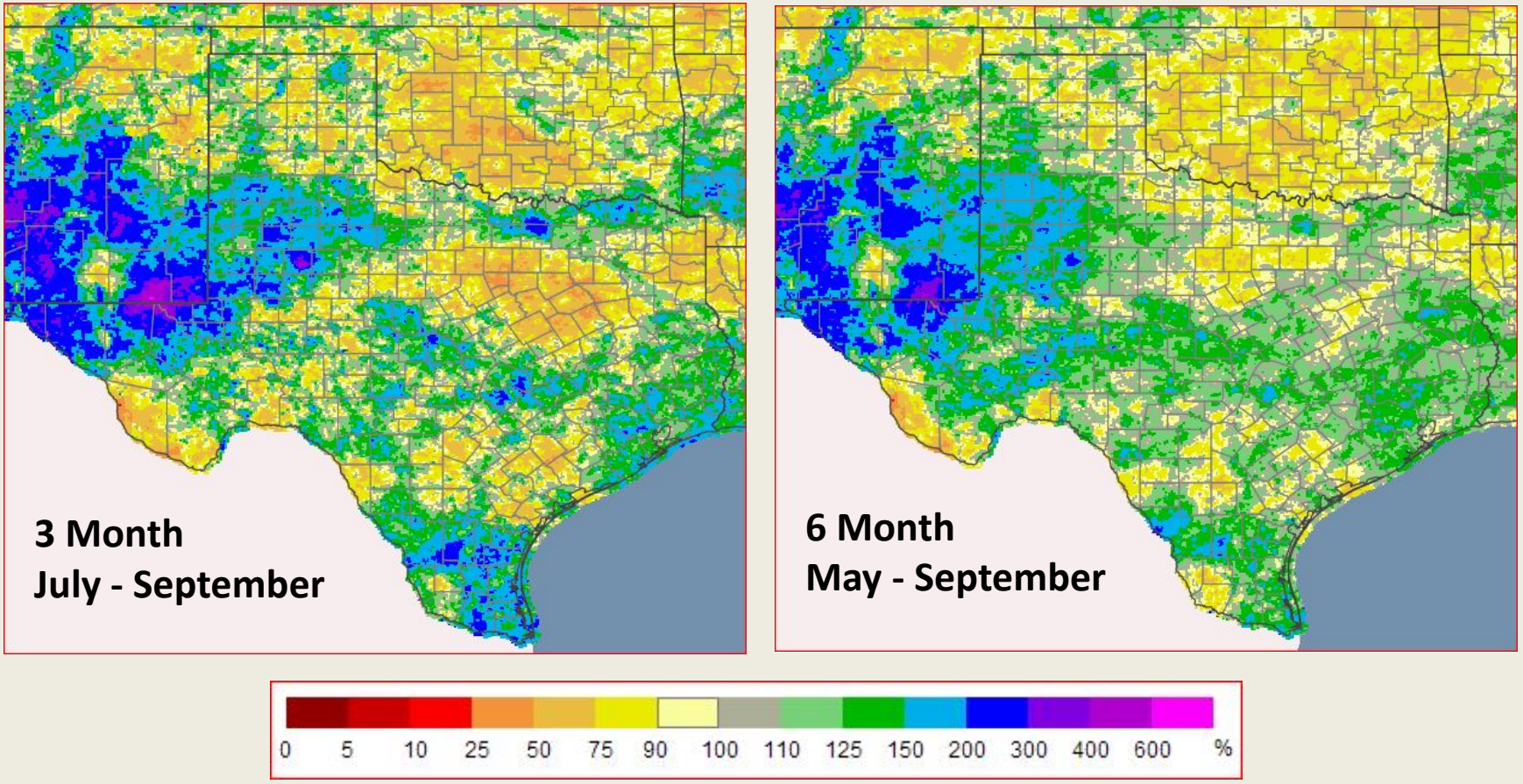
During the dormant season, freeze-cured grasses are the catalyst for fire movement.

The continuity of these fine fuels and the amount or loading (lbs./acre) of the fine fuel (grass) component are key factors in determining how far and how fast a fire will spread.

Fire potential decreases dramatically during late spring or early summer when the dormant grasses begin to grow and transition back to green.



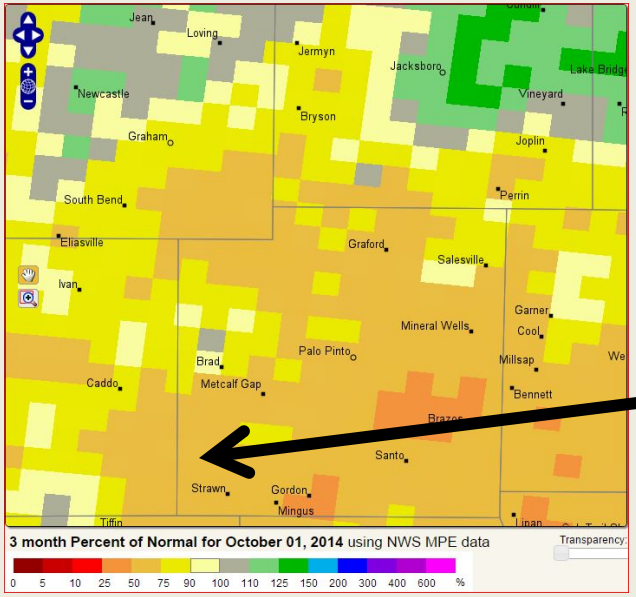
3 and 6 Month Percent of Normal Precipitation Ending October 1st



Gauging Fine Fuel Production using Growing Season Rainfall

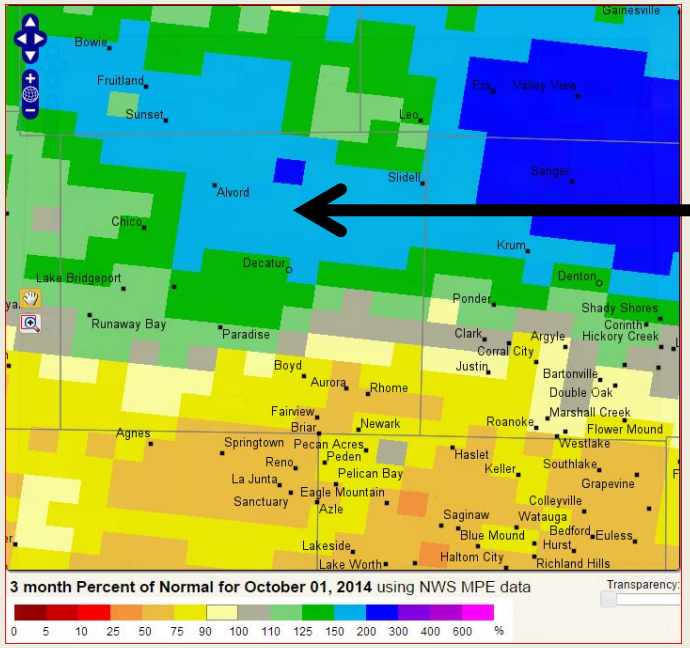
- As seen on the previous percent of normal rainfall maps, much of the Texas Plains received above normal rainfall during the 2014 growing season. June and July were particularly wet for the Plains.
- Above normal rainfall has produced above normal fine fuel loading where grazing is absent.
- Grazed rangeland receiving 150% or more of normal rainfall will still support normal or average fine fuel loading.
- Below normal fine fuel loading is the exception this year and not the norm as it was in the 2012 and 2013 dormant seasons.

Average Fine Fuel Loading in Palo Pinto County 2011 Fire Scar



50% of normal rainfall has produced normal (borderline below normal) fine fuel loading in the ungrazed fire scar.

Above Normal Fine Fuel Loading in Wise County



150% of normal rainfall, most of which fell in July, has produced above normal fine fuel loading on the LBJ Grasslands in Wise County.

Average Fine Fuel Loading

Nolan County near Lake Sweetwater

Coke County Near Lake Spence

Grazing has a significant impact on fine fuel loading. It is also nearly impossible to quantify the amount and intensity of grazing on a regional scale and gauge the impact to regional fine fuel loading.

Grazed vs ungrazed in Gray County

Grazed vs ungrazed in Roberts County

The images below show the same heavily grazed pasture in Stonewall County. Assuming that the grazing intensity is the same this year as last, the above normal rainfall this growing season has produced more normal fine fuel loading here.

Below normal fine fuel loading with grazing and persistent drought in 2013

More normal fine fuel loading with grazing and above normal rainfall in 2014

Average fine fuel loading with grazing and 150% or more of normal rainfall

King County

Motley County

Recent Initial Attack activity in above normal fine fuel loading following short term drying. The Hall County fire occurred November 30th during a strong frontal passage.

CRP Grasses in Hall County

Rangeland Grasses in Gray County

Here is a landscape view and a zoomed in view of the above normal fine fuel loading found on an ownership in Collingsworth County.

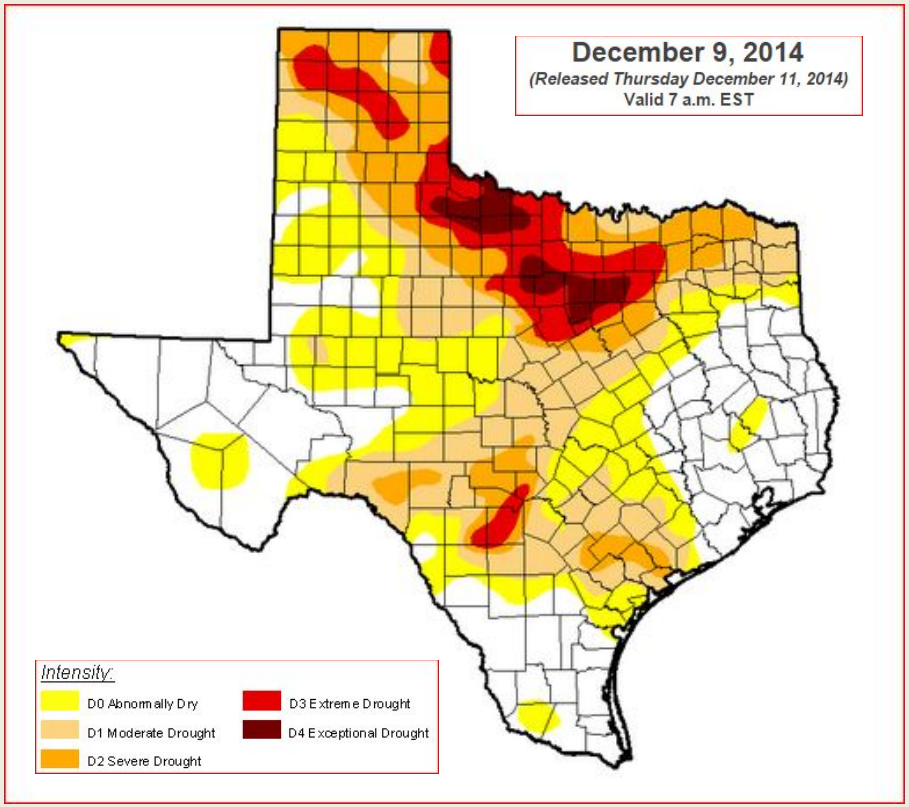
Above Normal Fine Fuel Loading in Motley County (left) and King County (right)

Here is a landscape and close view of the above normal fine fuel loading in the 2011 Cooper Mt. fire scar in Fisher County just north of Rotan.

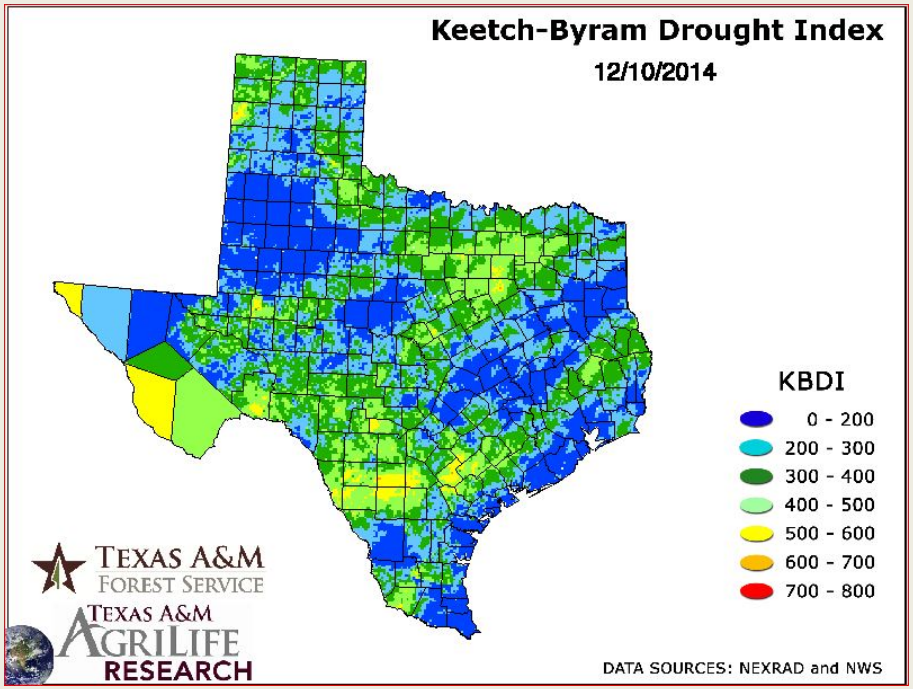
The fine fuel loading and surface water levels are both improving in Wilbarger and Wichita Counties.

Drought Indices are not always in agreement. The Drought Monitor has more wide ranging criteria that includes hydrology and is more subjective in its drought determination. KBDI is more narrowly focused on soil moisture and is objective in its drought determination.

Drought Monitor

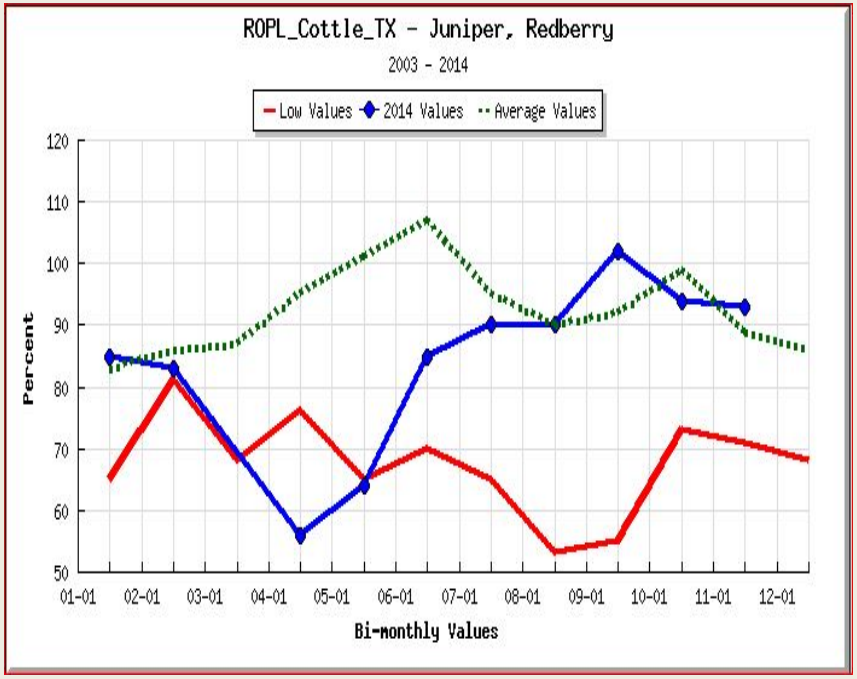


KBDI

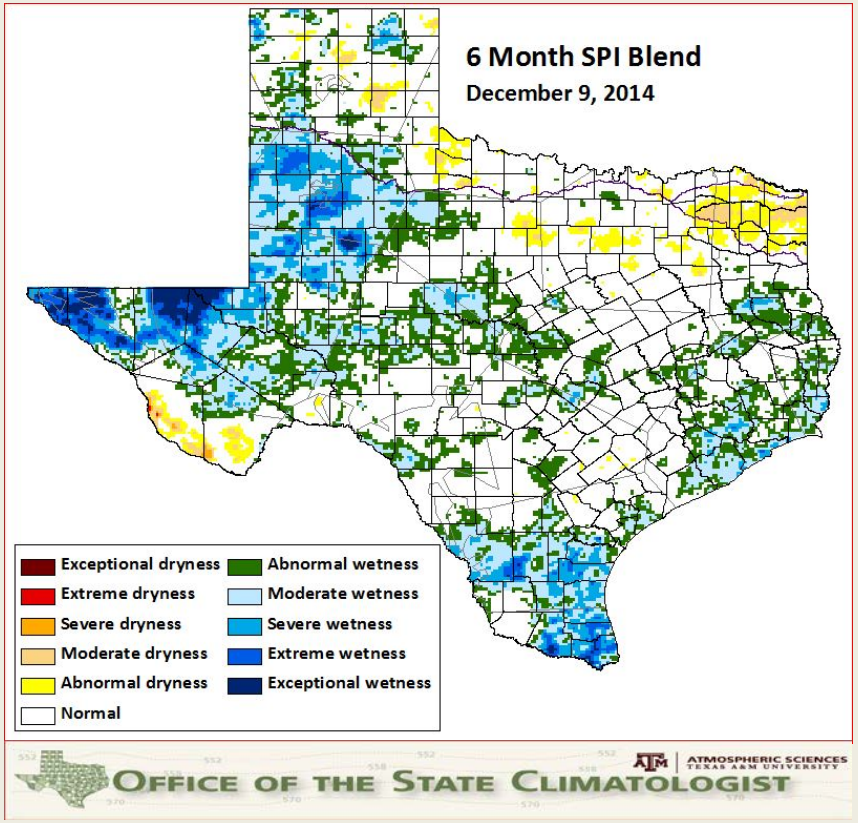


Drought is not an underlying factor for significant fire activity this season. Live fuel moistures in Juniper are tracking near normal and extended periods of drying associated with drought have not been observed.

Live Fuel Moisture in Juniper for Cottle County tracking just above average.

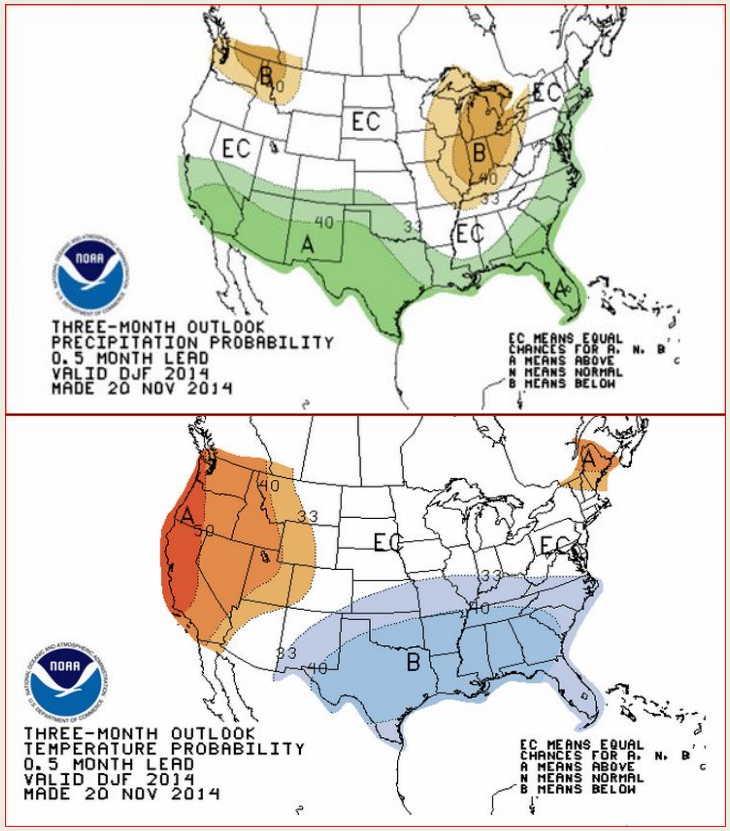


The 6 month Standard Precipitation Index blend indicating most of the state experiencing normal to above normal wetness.

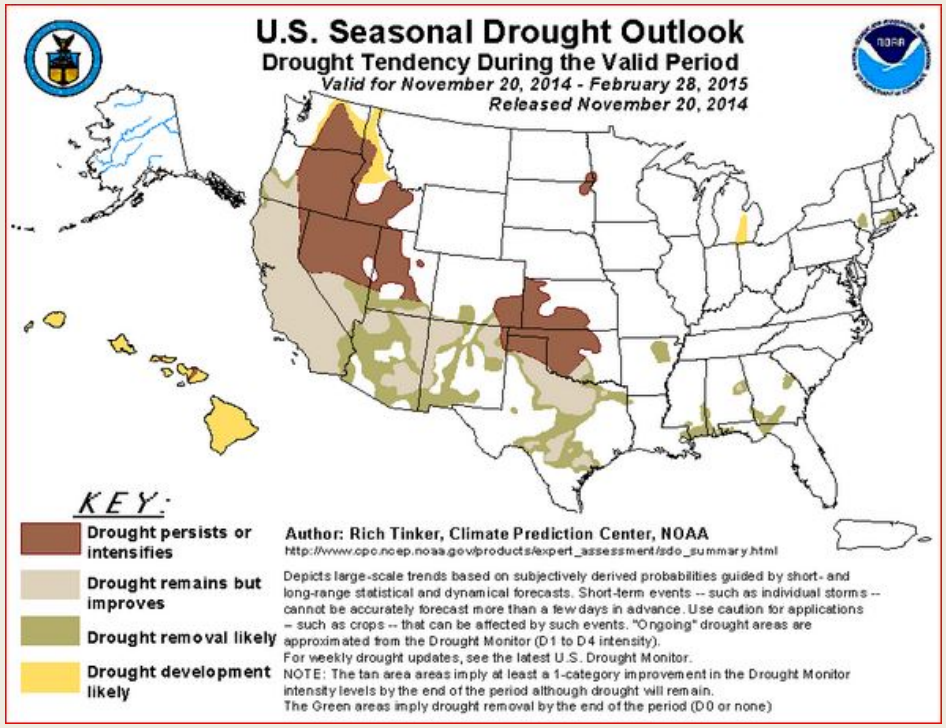


Seasonal precipitation and temperature outlooks into the spring of 2015 favor above normal rainfall and below normal temperatures for the Texas Plains. This outlook is based in large part on a 65% probability that El Nino conditions will be present.

Climate Prediction Center 3 month precipitation and temperature outlook



Climate Prediction Center drought outlook through February



Framing this Season with Past Seasons

- **The 2011 winter/spring fire season produced above normal significant fire activity in the grass dominant regions of the Texas Plains.**
  - **There were widespread above average fine fuel loadings present on the Plains**
  - **Strong La Nina conditions were present that contributed to a warm, dry progressive weather pattern that produced extended periods of drying and frequent episodes of critical and extreme fire weather.**
  - **TFS fires reported in the Northwest dispatch zone from 1/1 to 6/15 included 200 fires for 766,239 acres**

- **The 2012 winter/spring fire season produced below normal significant fire activity in the grass dominant regions of the Texas Plains.**
  - **Persistent drought reduced the fine fuel loading to below normal across the Texas Plains**
  - **Moderate La Nina conditions were present that contributed to a warm, dry progressive weather pattern that produced extended periods of drying and numerous episodes of critical fire weather.**
  - **TFS fires reported in the Northwest dispatch zone from 1/1 to 6/15 included 8 fires for 1628 acres.**

Framing this Season with Past Seasons

- **The 2013 winter/spring fire season produced below normal significant fire activity in the grass dominant regions of the Texas Plains.**
  - **Persistent drought reduced the fine fuel loading to below normal across the Texas Plains**
  - **Neutral, neither La Nina nor El Nino, conditions were present and contributed to a weather pattern that did not include extended drying periods and produced very few episodes of critical fire weather.**
  - **TFS fires reported in the Northwest dispatch zone from 1/1-6/15 included 4 fires for 615 acres.**

- **What will the 2015 winter/spring season produce?**
  - **There is average to above average fine fuel loading across the Texas Plains. There is more grass present this year than has been observed since 2011.**
  - **There is a 65% chance that El Nino conditions will be present in 2015. El Nino conditions do not contribute to extended drying periods but may allow some short term drying. Critical fire weather may occasionally occur with some of the dry frontal passages. Extreme fire weather is not likely to occur.**
  - **Fire activity……???**

2015 Winter/Spring Significant Fire Potential

Fine fuel loadings this season appear to be less than the loading levels observed in 2011 but significantly more than we have seen since 2011. Average to above average fine fuel loading as we have in place this year is enough to support significant fire activity. But……..

The forecasted El Nino conditions do not support significant fire activity. If El Nino conditions are present……

The most likely outcome this season is to experience initial attack activity following a period of short term drying with the initial attack activity centered around a dry frontal passage that can produce elevated to critical fire weather.

Without the extended drying which can produce critical fuel dryness, significant fire potential will be a rare occurrence. Significant fires are those that escape initial containment efforts and continue to grow through multiple burning periods. They generally reach at least type 3 complexity.