**Fire Weather Briefing**

**National Weather Service – Norman, OK**

Issued: Thu Apr 12 2018

Forecast Period: Thu Apr 12 – Sat Apr 14

---

### FIRE WEATHER OUTLOOK

OKLAHOMA, NORTH TEXAS AREA - NEXT 6 DAYS

<table>
<thead>
<tr>
<th></th>
<th>Thu 12</th>
<th>Fri 13</th>
<th>Sat 14</th>
<th>Sun 15</th>
<th>Mon 16</th>
<th>Tue 17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Red Flag</strong></td>
<td>Red Flag Warning</td>
<td>Red Flag Warning</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td><strong>Main area(s)</strong></td>
<td>Western OK and Western North TX</td>
<td>Southwest OK and Western North TX</td>
<td>Western OK and Western North TX</td>
<td>Western OK and Western North TX</td>
<td>Western OK and Western North TX</td>
<td>Western OK and Western North TX</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Thu 12</th>
<th>Fri 13</th>
<th>Sat 14</th>
<th>Sun 15</th>
<th>Mon 16</th>
<th>Tue 17</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Temperatures</strong></td>
<td>80-100</td>
<td>69-82</td>
<td>47-62</td>
<td>56-69</td>
<td>67-82</td>
<td>76-93</td>
</tr>
<tr>
<td><strong>Minimum RH(%)</strong></td>
<td>7-57</td>
<td>7-39</td>
<td>15-36</td>
<td>13-33</td>
<td>14-30</td>
<td>10-40</td>
</tr>
<tr>
<td><strong>Avg. Winds (mph)</strong></td>
<td>S/SW</td>
<td>SW → NW</td>
<td>NW</td>
<td>N/NW</td>
<td>S/SE</td>
<td>S/SW</td>
</tr>
<tr>
<td><strong>Max Gusts (mph)</strong></td>
<td>11-31</td>
<td>13-39</td>
<td>11-35</td>
<td>5-20</td>
<td>31</td>
<td>36</td>
</tr>
</tbody>
</table>

Weather Forecast Office Norman, Oklahoma - issued Apr 12, 2018 3:35 AM CDT
WHAT DOES “HISTORIC” MEAN?
We got a lot of questions yesterday when we used the term “historic” to describe Friday’s threat.

To clarify, the "historical" description in our graphics is driven by significant Red Flag Threat Index (RFTI) values. Those unusually high RFTI values are being generated due to the combination of very strong winds and very low relative humidity (RH) in our forecast.

The “historic” category means that RH and/or wind are exceeding anything we’ve seen in a 10-year database.

It’s important to know this historical category is,
1.) confined to a relatively small area of southwest Oklahoma and western north Texas and does not accurately describe the scenario further north and east, closer to OKC metro;
2.) is a model forecast which could have some error;
3.) is quite sensitive to small changes in RH and wind which drive RFTI values, thus some oscillation between categories from forecast to forecast could occur.
Today, April 12, 2018

Dangerous wildfire conditions are expected across parts of our area today, with the most volatile combination of heat, wind, humidity and fuels being over far western Oklahoma and western north Texas.

TECHNICAL DISCUSSION:
We will continue the current configuration of the Red Flag Warning for today. Elevated to near critical fire weather conditions may occur further east, but transitioning fuels due to spring greenup and hence lower ERC-G values, along with increased moisture as southerly low level flow continues limit the concern there and precludes eastward expansion of the Red Flag Warning at this time.

There should be a fairly sharp delineation between elevated to near-critical conditions east of the dryline and potentially high-end critical conditions to its west. A more significant fire setup will exist on the west side of low-level thermal ridge which will be oriented roughly along the western Oklahoma border with Texas.
Friday, April 13, 2018

Friday has the potential to be a very dangerous wildfire day across parts of western Oklahoma and western north Texas. It is likely the red flag warning will need to be extended further east.

**Friday Fire Weather Headlines**
- Effective Time: 10 AM until 10 PM
- Minimum Relative Humidity: 6 to 20%
- Southwest Wind becoming Northwest during the Afternoon & Evening
- Sustained 20 to 39 mph, Gusts 30 to 50 mph
- Max Temperatures: 68F to 83F

**TECHNICAL DISCUSSION:**
For Friday, the most classic trough position and geometry for a southern Great Plains wildfire outbreak will not occur. However, important elements of some of the more active significant fire outbreaks will be in play. A complex and dynamic assortment of boundaries, air masses, and fuel regimes will exist Friday across the area and so the fire threat will evolve throughout the day. By early Friday morning, RH values across northwest Oklahoma may already be below 30 percent. This poor RH recovery tonight into early Friday morning raises concern for any ongoing fires, especially with an imminent wind shift from advancing polar front. Frontal timing is not yet certain with variability as much as 3 hours in hi-res guidance. Nevertheless, by early afternoon a good portion of northwest Oklahoma will see improving conditions with slightly weaker winds, albeit still strong from the northwest, and cooler, more moist, and potentially cloudy conditions limiting the fire threat.

Meanwhile, within a wedge shaped area from our western north Texas counties and southwest Oklahoma northeastward to the Kansas border in north-central Oklahoma, and extending eastward to the Pacific front/dryline, strong southwesterly winds and downsloped/dry warm air will be in place resulting in very high RFTI values as high as 8. The eastern extent of the more significant threat area will probably be heavily influenced by fuels. Spring greenup has resulted in a fairly significant gradient of ERC values roughly along and west of Highway 81, and to the west of there is where we chose to upgrade to a Red Flag Warning. This is where confidence in high end fire threat is greatest, with a more tempered threat in the watch area to the north and east.

West-southwesterly downslope winds behind the Pacific front will still favor warm temperatures, albeit not as hot as the previous day. This will support deep mixing into mid-level speed max and significant momentum transfer. This is occurring on the favorable windward side of low-level thermal ridge which is expected to be moving from central Oklahoma into eastern Oklahoma by mid afternoon. Where the mid-level wind max intersects this thermal ridge has historically proven to be where the greatest concentration of significant fires are. Later forecasts will better refine these key features and further expansion of the Red Flag Warning may be needed.
Ominous fire danger will be present both Thursday and Friday with subsequent fire danger remaining firmly in place through the weekend. The Fire Environment will support problematic and extreme fire behavior with potential for historic fire weather to occur over the most significantly drought influenced fuels. A dry line will push firmly into western Oklahoma with temperatures above 90°, single digit relative humidity and very strong southwest winds on Thursday. With minimal moisture recovery in the overnight hours and sustaining strong winds over extremely dry fuels, the burning period will last through Thursday night into Friday morning in the Panhandle, northwest and potentially far western Oklahoma. A cold front will push into northwest Oklahoma progressing through the state during the peak of the burning period.

A Red Flag Warning/Fire Weather Watch is currently in effect. Please refer to http://www.weather.gov/ for the latest updates to the fire weather forecast.

- **Fire Behavior predictions indicate that attacking the head of any fire - frontal assault should be avoided.**
- **Establish a Staging Area at the onset of a wildfire incident and designate additional fireline leadership personnel to facilitate span of control and resource accountability.**
- **Consider predicted rates of fire spread and, if needed, plan evacuation notifications accordingly.**
- **Forecast wind speeds and gust spread may**

All firefighters are advised to take particular note of the 10 Standard Fire Orders with specific interest in the first three: (a complete list of the Standard Firefighting Orders below)

1. Keep informed on fire weather conditions and forecasts.
2. Know what your fire is doing at all times.
3. Base all actions on current and expected behavior of the fire.

**Thursday:**

Significant fire danger indices will exist across a broad area of the Southern Great Plains as a dry line pushes into Oklahoma. Temperatures into the mid-90°s and relative humidity values in the single digits translate into fine-dead fuel moisture values of 2-5% and a probability of ignition approaching 100%. Southwest winds sustained 20-30+ mph will insure that any fire becoming established will likely exhibit extreme rates of fire spread and erratic fire behavior on Sunday. The burning period will last through the night and continue into Friday with poor overnight recovery.

- **Short Grass / Pasture:** Maximum of 170-240 ft./min. (2.7 mph), head fire flame length 11 ft.
- **Tall Grass / Prairie:** Maximum of 375-500 ft./min. (5.7 mph), head fire flame length 18-31 ft.
- **Grass/Shrub/Redcedar:** Maximum of 120-190 ft./min, head fire flame length 10-20 ft. (Medium range spotting expected)

![Probability of Significant Wildland Fire or Southern Great Plains Wildfire Outbreak](image)

Probability: Most likely, 2018-04-12 09:00

- **risk legend**
  - <10%: nil or routine fire
  - 10%-30%: Low threat of significant fire
  - Moderate-high threat of significant fire
  - >50%: wild fire outbreak likely

Outlook last updated: Wed 11 April 2018 - 9:00 AM - T/US/GM/DDD

...and is strictly intended to reflect forecast probabilities of significant wildland fire and "firestorm" conditions.
Friday:
Ominous fire danger indices are expected across a much broader area on Friday in the pre-frontal fire environment. Green up has been delayed with drought impacts and further set back by hard freeze conditions. Very poor overnight moisture recovery will encourage an early burning period ahead of a cold front that will pass during the peak of the burning period and effectively push the fire threat eastward. Fuels will be very receptive given the depth of drying in previous days. Southwest winds sustained as high as 35+ mph with gusts nearing 50 mph will shift clockwise to the northwest with the passage of a cold front. Extreme fire danger will progress into and east of the I-44 corridor ahead of the cold front. Again, problematic fire behavior and extreme rates of fire spread are expected along with a change in direction of fire spread.

- **Short Grass / Pasture:** Maximum of 190-270 ft./min. (3.1 mph), head fire flame length 10-12 ft.
- **Tall Grass / Prairie:** Maximum of 375-600 ft./min. (6.8 mph), head fire flame length 18-35 ft.
- **Grass/Shrub/Redcedar:** Maximum of 120-190 ft./min, head fire flame length 10-20 ft. (Medium range spotting expected)

Anchor the fire at advantageous point (road, creek, cold black) and flank the fire if utilizing direct firefighting tactics. Work the fire from the black if possible to provide for quick escape to a safety zone. Avoid placing yourselves in a situation where unburned fuel is between you and the fire. If protecting structures insure that ingress and egress are identified, escape routes and safety zones are identified and equipment is pointed in a direction to facilitate rapid escape. Establish trigger points for evaluating tactics and develop contingency plans should the primary plan not be successful.

All firefighters are advised to take particular note of the 10 Standard Fire Orders with specific interest in the first three:
(a complete list of the Standard Firefighting Orders below)

4. **Keep informed on fire weather conditions and forecasts.**
5. **Know what your fire is doing at all times.**
6. **Base all actions on current and expected behavior of the fire.**

Resources:
- Oklahoma Forestry Services will have multiple Task Forces prepositioned in Western, Northwestern and along the I-35 corridor.
- USFS cooperating with OFS will have aviation resources available.
- National Guard will have aircraft available.
- County Wildland Task Force Resources should be prepared for mobilization.

To request assistance, call the Resource Hotline (800) 800-2481

**Four common denominators of fire behavior on tragedy fires:**

1. On relatively small fires or deceptively quiet areas of large fires.
2. In relatively light fuels, such as grass, herbs, and light brush.
3. When there is an unexpected shift in wind direction or wind speed.
4. When fire responds to topographic conditions and runs uphill. Alignment of topography and wind during the burning period should always be considered a trigger point to re-evaluate strategy and tactics.
Saturday, April 14, 2018

Saturday’s potential will be lower due to higher humidity and cooler temperatures. But, with dry fuels and strong winds still in place, there could be some issues even on Saturday.

**TECHNICAL DISCUSSION:**
Post-frontal northwesterly winds and a dry air mass may lead to elevated to possibly critical fire weather conditions Saturday, particularly over the southwest 1/4th of the area. The main limiting factor will be cooler temperatures (mid 50s to low 60s). But, fuels across this area remain quite dry and volatile, so at least some initial attack if not larger fire risk will be present.
Information Resources:

WFO Norman Fire Weather Page
weather.gov/norman/fireweather

NWS Storm Prediction Center Fire Weather Page
www.spc.noaa.gov/products/fire_wx/overview.html