The Fractional Water Index ranges from very dry soil having a value of 0 to soil at field capacity illustrated by a value of 1.

- [1.0 - 0.8 = Enhanced Growth; 0.8 - 0.5 = Limited Growth; 0.5 - 0.3 = Plants Wilting; 0.3 - 0.1 = Plants Dying; <0.1 = Barren Soil.]

**SOIL MOISTURE**

**Fractional Water Index**

**February 4, 2013**
Drought Indices

Palmer Drought Severity Index\(^1\)

<table>
<thead>
<tr>
<th>Climate Division</th>
<th>Current Status 2/2/2013</th>
<th>Value 2/2</th>
<th>Value 1/5</th>
<th>Change in Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northwest</td>
<td>SEVERE DROUGHT</td>
<td>-3.18</td>
<td>-3.46</td>
<td>0.28</td>
</tr>
<tr>
<td>North Central</td>
<td>SEVERE DROUGHT</td>
<td>-3.39</td>
<td>-3.69</td>
<td>0.30</td>
</tr>
<tr>
<td>Northeast</td>
<td>MODERATE DROUGHT</td>
<td>-2.68</td>
<td>-3.65</td>
<td>0.97</td>
</tr>
<tr>
<td>West Central</td>
<td>SEVERE DROUGHT</td>
<td>-3.02</td>
<td>-3.46</td>
<td>0.44</td>
</tr>
<tr>
<td>Central</td>
<td>SEVERE DROUGHT</td>
<td>-3.40</td>
<td>-3.67</td>
<td>0.27</td>
</tr>
<tr>
<td>East Central</td>
<td>MODERATE DROUGHT</td>
<td>-2.98</td>
<td>-3.46</td>
<td>0.48</td>
</tr>
<tr>
<td>Southwest</td>
<td>SEVERE DROUGHT</td>
<td>-3.45</td>
<td>-3.62</td>
<td>0.17</td>
</tr>
<tr>
<td>South Central</td>
<td>SEVERE DROUGHT</td>
<td>-3.52</td>
<td>-3.68</td>
<td>0.16</td>
</tr>
<tr>
<td>Southeast</td>
<td>SEVERE DROUGHT</td>
<td>-3.23</td>
<td>-3.64</td>
<td>0.41</td>
</tr>
</tbody>
</table>

| Standardized Precipitation Index\(^2\) Through December 2012 |
|--------------------|----------------|----------------|----------------|----------------|
| 3-Month            | 6-Month | 9-Month | 12-Month |
| MODERATELY DRY     | MODERATELY DRY | SEVERELY DRY | ABNORMALLY DRY |
| EXTREMELY DRY      | EXCEPTIONALLY DRY | EXTREMELY DRY | MODERATELY DRY |
| MODERATELY DRY     | EXTREMELY DRY | EXCEPTIONALLY DRY | SEVERELY DRY |
| SEVERELY DRY       | SEVERELY DRY | EXTREMELY DRY | MODERATELY DRY |
| MODERATELY DRY     | SEVERELY DRY | EXTREMELY DRY | MODERATELY DRY |
| MODERATELY DRY     | MODERATELY DRY | SEVERELY DRY | MODERATELY DRY |
| SEVERELY DRY       | SEVERELY DRY | SEVERELY DRY | MODERATELY DRY |
| MODERATELY DRY     | MODERATELY DRY | MODERATELY DRY | MODERATELY DRY |

- All nine climate divisions continue to experience moderate to severe drought conditions, according to the PDSI, but conditions have improved as all regions have undergone a PDSI moisture increase since January 5. According to the SPI, all climate divisions continue to experience near long-term dry conditions for at least a two-year period.

Keetch-Byram Drought Fire Index\(^3\)

<table>
<thead>
<tr>
<th>Mesonet Station</th>
<th>Climate Division</th>
<th>Current Value 2/4/2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tipton</td>
<td>Southwest</td>
<td>699</td>
</tr>
<tr>
<td>Buffalo</td>
<td>Northwest</td>
<td>693</td>
</tr>
<tr>
<td>May Ranch</td>
<td>North Central</td>
<td>684</td>
</tr>
</tbody>
</table>

- Stations currently at or above 600 (February 4) = 19
- Stations above 600 on January 7 = 30

Streamflow Conditions

February 4, 2013

Hydrologic Drought

- Extreme
- Severe
- Moderate

Below Normal Streamflow

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\(^1\) The Palmer Drought Severity Index is based upon precipitation, temperature, and soil moisture. Though widely used by government agencies and states to trigger drought relief programs, the PDSI may underestimate or overestimate the severity of ongoing dry periods.

\(^2\) The Standardized Precipitation Index, more sensitive than the PDSI, provides a comparison of precipitation over a specified period with precipitation totals from that same period for all years included in the historical record. The 3-month SPI provides a seasonal estimation of precipitation while the 6-month SPI can be very effective in showing precipitation over distinct seasons.

\(^3\) The Keetch-Byram Drought Index measures the state of near-surface soil moisture (within the uppermost eight inches of soil) as well as the amount of fuel available for fires. KBDI values of 600 and above are often associated with more severe drought and increased wildfire occurrence.
February 5—The latest U.S. Drought Monitor reports that severe storms that dumped precipitation from the southern Plains into the Midwest and also from the Deep South through upstate New York had a positive impact on the drought situation in portions of Oklahoma. Eastern Oklahoma through Arkansas saw significant improvements in Extreme (D3), Severe (D2), and Moderate Drought (D1) and Abnormal Dryness this week with the passing of the January 29-30 storm. In southern Texas and the Oklahoma Panhandle, areas of Exceptional (D4), Extreme (D3), Severe (D2), and Moderate Drought (D1) expanded as did Abnormal Dryness (D0). In South Texas, this was largely due to dry conditions compounded by above normal temperatures and wind.

Almost 90 percent of Oklahoma is classified in Extreme Drought. More than 39 percent of the state—including most of northern and western Oklahoma and the Panhandle—is considered Exceptional, the most intense drought category.

According to the latest Drought Outlook (February 7), general persistence of current drought conditions is expected across the Plains states and much of the western U.S. through April.
January 28, 2013 – Another month of below normal precipitation added to the ongoing drought in Oklahoma. The result of the continuing drought has been poor conditions for all fall planted crops and limited grazing of small grains. Livestock producers are low on water and hay supplies in addition to the lack of grazing. Topsoil moisture conditions improved slightly from December, but 90 percent was rated short to very short. Subsoil moisture conditions were still rated 98 percent short to very short, though the portion rated very short dropped from 80 percent in December to 75 percent in January.

Conditions of all small grains and canola declined over the past month and were rated mostly poor to very poor. Only 22 percent of the wheat crop was being grazed, 14 points below the five-year average. Thirty one percent of rye was reported as grazed, 30 points less than normal. Ten percent of oats were being grazed, compared to 47 percent of oats grazed last year, and a five-year average of 24 percent.

Pasture and range conditions continued to be rated poor to very poor. Below average rainfall was not enough to significantly improve conditions. Producers continued to provide hay and supplementary feed to herds. Pond levels have not improved overall and the availability of water is a major concern for livestock producers. Although some operations were reducing herds, livestock conditions continued to be rated mostly in the good to fair range.