Rocky Mountain Area
120 Day Significant Fire Potential Outlook
June through September 2022

June 2, 2022
Antecedent Considerations
- Climate and Weather Patterns (seasonal)
- Temperature Anomalies
- Precipitation and Drought Comparisons
- Fuel Moisture and Fuel Loading
- Seasonal Green-up of Fuels
- Large Fire History

Prediction Considerations
- Climate Trends including Sea Surface Temperature Anomalies and Predictions (El Nino, La Nina, MJO)
- Short Term and Long-Term Model Forecasts
- Climate Prediction Center Outlooks and Predictive Services Temperature/Precipitation Anomaly Forecasts
- Final Thoughts and Considerations for Summer 2022.

Outlook Summary
Above normal significant wildland fire potential is expected to continue across portions of the Rocky Mountain Area (RMA) through September 2022 due to long-term precipitation deficits and ongoing drought in conjunction with expansion of above normal temperatures and below normal precipitation during the outlook period. Areas with these conditions will see above normal fire potential due to the availability of receptive fuels for new fire ignitions in June and July with monsoon thunderstorms but also potential for rapid fire spread in fine fuels where dry and windy conditions overlap.
CPC/IRI objective outlook La Niña is favored to continue through the Northern Hemisphere summer and fall (55-60% chance through November 2022), with a decline toward neutral by early winter 2022-2023.
Long Term Drought Analysis
From the National Drought Mitigation Center

U.S. Drought Monitor

High Plains Climate Region

Current

May 24, 2022
(Released Thursday, May 26, 2022)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>D0-D1</th>
<th>D1-D2</th>
<th>D2-D3</th>
<th>D3-D4</th>
<th>D4</th>
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<tbody>
<tr>
<td>Current</td>
<td>20.32</td>
<td>79.58</td>
<td>70.55</td>
<td>39.18</td>
<td>11.22</td>
<td>1.19</td>
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<tr>
<td>Last Week 25-31-2022</td>
<td>19.90</td>
<td>80.10</td>
<td>71.92</td>
<td>40.45</td>
<td>11.82</td>
<td>1.19</td>
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<tr>
<td>3 Months Ago 02-22-2022</td>
<td>7.88</td>
<td>92.12</td>
<td>78.36</td>
<td>38.56</td>
<td>5.80</td>
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<tr>
<td>Start of Calendar Year 01-01-2022</td>
<td>12.84</td>
<td>87.16</td>
<td>64.61</td>
<td>34.56</td>
<td>8.63</td>
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<tr>
<td>Start of Water Year 09-28-2021</td>
<td>14.24</td>
<td>85.76</td>
<td>63.58</td>
<td>43.59</td>
<td>18.57</td>
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<tr>
<td>One Year Ago 09-25-2021</td>
<td>31.19</td>
<td>68.81</td>
<td>47.67</td>
<td>29.93</td>
<td>18.56</td>
<td>5.80</td>
</tr>
</tbody>
</table>

Intensity:
- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:
Richard Heim
NCEI/NOAA

droughtmonitor.unl.edu
Long Term Drought Analysis from the National Drought Mitigation Center

Drought Classification

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Current

Last Month

May 24, 2022

April 26, 2022
Long Term Drought Analysis from the National Drought Mitigation Center

Drought Classification

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Current

May 24, 2022

1 Year Ago

May 25, 2021
An above normal temperature signature expanded across Colorado, Kansas and Nebraska. Periods of cooler than normal temperatures are expected to persist across north portions of the RMA into the first week of June.
Precipitation was lacking across most of the RMA in March and April, with above normal amounts observed across eastern portions of the High Plains.

March (90 days)

April (60 days)

May (30 days)

However, within the last 30 days, below normal precipitation anomalies have intensified across the western half of the RMA, especially across southwest Colorado and the Western Slope, with very dry conditions persisting in place across western South Dakota, the Nebraska Panhandle and western Kansas.
Snow Depth and Snow Water Equivalent (SWE) Percent of Average

Westwide SNOTEL Current Snow Water Equivalent (SWE) % of Normal

May 26

- unavailable *
- <50%
- 50 - 69%
- 70 - 89%
- 90 - 109%
- 110 - 129%
- 130 - 149%
- >= 150%

* Data unavailable at time of posting or measurement is not representative at this time of year
Soil moisture anomalies in May show continued drying (loss in soil moisture) across the Central and Southern Plains of the United States, especially across Oklahoma, Kansas, Nebraska and eastern Colorado.
Evaporative Demand Drought Index “EDDI”
The Monthly “thirst of the atmosphere”

Look at the change in just one month!

Images provided by the NOAA/ESRL Physical Sciences Laboratory, Boulder, Colorado
https://psl.noaa.gov/eddi/
Rocky Mountain Area Fire History

Rocky Mountain Area 1994-2012

- Acres Burned from Large Fires
  - Y-axis: 0 to 500,000

- Number of Large Fires
  - Y-axis: 0 to 150

- X-axis: Jan to Dec

Historical fire data 1992-2015 (large fire clustering analysis) in September shows a decrease overall in fire activity across the RMA, with most large fires across eastern Wyoming, western South Dakota, northwest Nebraska, and to a less extent northern Colorado.
% Change in Grassland Production for Your Area this Summer Compared to Its 38-yr Average - Forecast Made: May 17, 2022

For the 3 maps (scenarios) below: "If precipitation between now and August 31st is above (left map), near (middle), or below (right) normal, we estimate that grassland production in your area (at lbs / acre of peak biomass) will be ___ % more or less than its 38-year average."
Climate Prediction Center (CPC)
Temperature and Precipitation Anomaly Forecasts

Seasonal Temperature Outlook
Valid: Jun-Jul-Aug 2022
Issued: May 19, 2022

Seasonal Precipitation Outlook
Valid: Jun-Jul-Aug 2022
Issued: May 19, 2022

Seasonal Temperature Outlook
Valid: Jul-Aug-Sep 2022
Issued: May 19, 2022

Seasonal Precipitation Outlook
Valid: Jul-Aug-Sep 2022
Issued: May 19, 2022

Seasonal Temperature Outlook
Valid: Aug-Sep-Oct 2022
Issued: May 19, 2022

Seasonal Precipitation Outlook
Valid: Aug-Sep-Oct 2022
Issued: May 19, 2022
One of the four recurring synoptic weather patterns that facilitates increased wildfire activity related to the North American Monsoon is a Zonal (west-to-east) or southwest flow transition to a ridge of high pressure.

Significant Fire Potential Outlook - New 28 PSA’s for 2022

- June 2022 Significant Fire Potential
- July 2022 Significant Fire Potential
- August 2022 Significant Fire Potential
- September 2022 Significant Fire Potential

Above Normal Significant Fire Potential