Local Drought Update

Widespread Degradation across eastern Nebraska and western Iowa

Key Messages

➔ Spring brought widespread improvements across western Iowa. Eastern Nebraska improved over most of May and June but **deterioration has been common** across the entire area since then.

➔ A one category degradation was implemented for parts of Knox, Cedar, Pierce, Wayne, and Thurston counties in northeast Nebraska and much of east central Nebraska; **including the Omaha/CB metro**.

➔ Parts of Pottawattamie, Mills, Fremont and Harrison counties in western Iowa were degraded by one category, too.

Next Scheduled Briefing

➔ The US Drought Monitor is updated and released each Thursday morning and can be viewed at droughtmonitor.unl.edu. This packet will be updated by August 13th.
Change in Drought Status

Interactive Drought Monitor: droughtmonitor.unl.edu/CurrentMap.aspx
Drought Change Maps: droughtmonitor.unl.edu/Maps/ChangeMaps.aspx
Change in Drought Status
Since September 2019

Areal Coverage of Drought

**NEBRASKA**

**Drought Impacts**

➔ June runoff above Sioux City, Iowa, was 94 percent of average. The updated 2022 runoff forecast is 78 percent of average.

➔ Water conservation measures along the Missouri River are expected to continue through the remainder of 2022 and into 2023.

➔ The Iowa DNR, Iowa Homeland Security and Emergency Management and the Iowa Department of Agriculture and Land Stewardship plan to draft a drought plan by October that will be available for public comment.

Drought Timeline: mesonet.agron.iastate.edu/plotting/auto/?q=183

Click this to reproduce the maps… and then change the state to Nebraska and change the dates, too!
# Drought Category Definitions

<table>
<thead>
<tr>
<th>D0</th>
<th>Abnormally Dry</th>
<th>Going into drought:</th>
<th>Coming out of drought:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Abnormally Dry</td>
<td>Short-term dryness slowing planting, growth of crops or pastures</td>
<td>Some lingering water deficits</td>
</tr>
<tr>
<td></td>
<td>Abnormally Dry</td>
<td></td>
<td>Pastures or crops not fully recovered</td>
</tr>
</tbody>
</table>

| D1 | Moderate Drought | Some damage to crops, pastures |
|    | Moderate Drought | Streams, reservoirs, or wells low, some water shortages developing or imminent |
|    | Moderate Drought | Voluntary water-use restrictions requested |

| D2 | Severe Drought | Crop or pasture losses likely |
|    | Severe Drought | Water shortages common |
|    | Severe Drought | Water restrictions imposed |

| D3 | Extreme Drought | Major crop/pasture losses |
|    | Extreme Drought | Widespread water shortages or restrictions |

<p>| D4 | Exceptional Drought | Exceptional and widespread crop/pasture losses |
|    | Exceptional Drought | Shortages of water in reservoirs, streams, and wells creating water emergencies |</p>
<table>
<thead>
<tr>
<th>Percent of normal over the past 30 days:</th>
<th>Departure over past 30 days:</th>
<th>Precipitation over past 30 days:</th>
<th>Location</th>
<th>Year to Date Precipitation: January 1 - July 26</th>
<th>Year to Date Departure: January 1 - July 26</th>
<th>Percent of normal over the past 30 days:</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 26 - July 26</td>
<td>June 26 - July 26</td>
<td>June 26 - July 26</td>
<td>Norfolk, NE</td>
<td>9.22&quot;</td>
<td>-7.35&quot;</td>
<td>56%</td>
</tr>
<tr>
<td>68%</td>
<td>-0.98&quot;</td>
<td>2.05&quot;</td>
<td>Omaha, NE</td>
<td>16.14&quot;</td>
<td>-2.70&quot;</td>
<td>86%</td>
</tr>
<tr>
<td>79%</td>
<td>-0.73&quot;</td>
<td>2.73&quot;</td>
<td>Lincoln, NE</td>
<td>16.89&quot;</td>
<td>-1.23&quot;</td>
<td>93%</td>
</tr>
<tr>
<td>79%</td>
<td>-0.68&quot;</td>
<td>2.57&quot;</td>
<td>Tekamah, NE</td>
<td>10.84&quot;</td>
<td>-6.19&quot;</td>
<td>64%</td>
</tr>
<tr>
<td>66%</td>
<td>-1.03&quot;</td>
<td>2.00&quot;</td>
<td>Falls City, NE</td>
<td>19.58&quot;</td>
<td>-1.74&quot;</td>
<td>92%</td>
</tr>
<tr>
<td>91%</td>
<td>-0.47&quot;</td>
<td>4.60&quot;</td>
<td>Clarinda, IA</td>
<td>17.98&quot;</td>
<td>-4.63&quot;</td>
<td>80%</td>
</tr>
<tr>
<td>70%</td>
<td>-1.38&quot;</td>
<td>3.27&quot;</td>
<td>Albion, NE</td>
<td>12.63&quot;</td>
<td>-3.83&quot;</td>
<td>77%</td>
</tr>
<tr>
<td>180%</td>
<td>+2.58&quot;</td>
<td>5.81&quot;</td>
<td>Beatrice, NE</td>
<td>19.77&quot;</td>
<td>+0.36&quot;</td>
<td>102%</td>
</tr>
<tr>
<td>69%</td>
<td>-0.56&quot;</td>
<td>3.43&quot;</td>
<td>(3 NE) Columbus, NE</td>
<td>11.38&quot;</td>
<td>-6.62&quot;</td>
<td>63%</td>
</tr>
<tr>
<td>71%</td>
<td>-1.01&quot;</td>
<td>2.44&quot;</td>
<td>Fremont, NE</td>
<td>10.56&quot;</td>
<td>-8.03&quot;</td>
<td>57%</td>
</tr>
<tr>
<td>77%</td>
<td>-0.74&quot;</td>
<td>2.53&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The northern plains have been the tale of two areas. North Dakota and Minnesota continue to outpace the southern / western portions of the area, especially in the YTD (year to date) Percent of Normal map.

To Reproduce These Maps and For More Information, Visit the High Plains Regional Climate Center at: hprcc.unl.edu/maps.php?map=ACISClimatemaps
Current Soil Moisture Status

Nebraska (Entire State)

<table>
<thead>
<tr>
<th></th>
<th>As of July 24th</th>
<th>Very Short Moisture</th>
<th>Short Moisture</th>
<th>Adequate Moisture</th>
<th>Moisture Surplus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topsoil</td>
<td>26%</td>
<td>42%</td>
<td>31%</td>
<td>1%</td>
<td></td>
</tr>
<tr>
<td>Subsoil</td>
<td>29%</td>
<td>37%</td>
<td>34%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

SW Iowa

<table>
<thead>
<tr>
<th></th>
<th>As of July 25th</th>
<th>Very Short Moisture</th>
<th>Short Moisture</th>
<th>Adequate Moisture</th>
<th>Moisture Surplus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topsoil</td>
<td>10%</td>
<td>18%</td>
<td>72%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Subsoil</td>
<td>2%</td>
<td>13%</td>
<td>85%</td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

Additional Information

Crop reports are issued weekly April through November and can be found at nass.usda.gov/Statistics_by_State/
Summary of Drought Impacts

Rated Poor or Very Poor

Warmer than average temps have covered most of the region over the past 30 days.

The lack of precipitation has been exacerbated by warm temps, wind and evapotranspiration.

Overall crop development for all crops has continued to be behind average despite warmer temperatures.

For additional information on agriculture impacts may be viewed from the:

- USDA National Agricultural Statistics Service
- Iowa
- Nebraska

### Nebraska (Entire State) as of July 25th

<table>
<thead>
<tr>
<th>Crop Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasture &amp; Range</td>
<td>50%</td>
</tr>
<tr>
<td>Sorghum</td>
<td>27%</td>
</tr>
<tr>
<td>Oats</td>
<td>37%</td>
</tr>
<tr>
<td>Corn</td>
<td>18%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>13%</td>
</tr>
</tbody>
</table>

### Iowa (Entire State) as of July 24

<table>
<thead>
<tr>
<th>Crop Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pasture &amp; Range</td>
<td>13%</td>
</tr>
<tr>
<td>Hay (all)</td>
<td>6%</td>
</tr>
<tr>
<td>Oats</td>
<td>2%</td>
</tr>
<tr>
<td>Corn</td>
<td>4%</td>
</tr>
<tr>
<td>Soybeans</td>
<td>4%</td>
</tr>
</tbody>
</table>
USDA Topsoil Moisture Rankings

USDA Topsoil Moisture by Short-Very Short

Percent of State Area
Weekly Value for Period Ending Jul 24, 2022

Very Dry (>50%)
Dry (30% to 50%)
No Data

Means are calculated from historical weekly data published by USDA/NASS using the closest date to the equivalent date for this year.

Results are based on the short and very short percentages of topsoil moisture (upper 6 inches) reported by the USDA. Reports are based on subjective observations.

USDA Topsoil Moisture by Short-Very Short

Current Vs. 5-Year Mean
Weekly Value for Period Ending Jul 24, 2022

Drier Than 5-Year Mean
Wetter Than 5-Year Mean
Equal to 5-Year Mean
Insufficient Data

Omaha, Nebraska
Current Hydrology Conditions

Map of Real-Time Streamflow Compared to Historical Streamflow for the Day

Overview

► Streamflow continues to decline across the area.
► Drought conservation measures have been implemented by the U.S. Army Corps of Engineers.

Percentile Classes

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>&lt;10: Much Below Normal</td>
</tr>
<tr>
<td></td>
<td>10-24: Below Normal</td>
</tr>
<tr>
<td></td>
<td>25-75: Normal</td>
</tr>
<tr>
<td></td>
<td>76-90: Above Normal</td>
</tr>
<tr>
<td></td>
<td>&gt;90: Much Above Normal</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Not Ranked</td>
</tr>
</tbody>
</table>

More Information

► Hourly and forecast river stages out to 90 days can be found at the National Weather Service's (NWS) Advanced Hydrologic Prediction Service (AHPS) web page: [water.weather.gov/ahps2/index.php?wfo=oax](water.weather.gov/ahps2/index.php?wfo=oax)
► Additional Current stream and river stages may be viewed at the following USGS Web Site: [waterwatch.usgs.gov](waterwatch.usgs.gov)
Current Hydrology Conditions

Map of Below Normal 7 Day Average Stream Flow Compared to Historical Streamflow for the Day

Key: Percentile Classes

<table>
<thead>
<tr>
<th></th>
<th>Low</th>
<th>6 - 9</th>
<th>10 - 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extreme hydrologic</td>
<td>&lt;= 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>drought</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe hydrologic</td>
<td>6 - 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>drought</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate hydrologic</td>
<td>10 - 24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>drought</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below Normal Stream</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

More Information

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Current Fire Weather Conditions

Fire Danger is Highest South of the Area

Keetch-Byram Drought Index (KDBI)

<table>
<thead>
<tr>
<th>KBDI Value</th>
<th>Description of Fire Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 200</td>
<td>Low - Wet with little danger of fire initiation</td>
</tr>
<tr>
<td>201 to 400</td>
<td>Moderate - Drying occurring with some fire danger</td>
</tr>
<tr>
<td>401 to 600</td>
<td>High - Ground cover dry and will burn readily</td>
</tr>
<tr>
<td>601 to 800</td>
<td>Extreme - Dead and live fuels will burn readily</td>
</tr>
</tbody>
</table>

KBDI and Dead Fuel Moisture data can be found through the Wildland Fire Assessment System (WFAS)

Highlights

➔ Last month NWS Omaha issued its first Red Flag Warning in the month of June since at least 2009.

Local Burn Bans:

These Nebraska Game and Parks Commission areas will have campfire bans, until further notice:

➔ Enders State Recreation Area
➔ Gallagher Canyon SRA
➔ Medicine Creek SRA
➔ Red Willow State Recreation Area
➔ Rock Creek Lake SRA
➔ Swanson SRA
Current Fire Weather Conditions

10 Hour Dead Fuel Moisture Values & Palmer Drought Severity Index

Obs. or Computed 10-Hour FM: 28-Jul-22

Drought Severity Index by Division Weekly Value for Period Ending Jul 23, 2022
Long Term Palmer

Palmer Drought Severity Index and Dead Fuel Moisture data can be found through the: Wildland Fire Assessment System (WFAS)
Upcoming Precipitation Potential

For More Information Visit: [wpc.ncep.noaa.gov](http://wpc.ncep.noaa.gov)

**Highlights**

- The monsoonal moisture will be missing Nebraska and Iowa to the south this weekend.
- A ridge of high pressure develops over the area next week and will keep the area dry and hot.
- Flash drought development is possible across much of this area including eastern Nebraska and western Iowa.
Short Term Climate Outlook

For More Information Visit: cpc.ncep.noaa.gov

Highlights

➔ The outlook for week two looks likely to be warmer than normal across Nebraska, Iowa and the country’s mid-section. Excessive heat will continue to be a concern through the month of July.

➔ The pattern nearly assures that drier than normal conditions are found in the area over the next two weeks.
Long Range Climate Outlook

For More Information Visit: [cpc.ncep.noaa.gov](cpc.ncep.noaa.gov)

**Highlights**

- Long range outlooks for autumn are calling for an increased chance of above normal temperatures and below normal precipitation.

- After widespread improvements in drought conditions in Nebraska and Iowa this spring, dry long-range precipitation outlooks suggest drought expansion in the area.

- Winter’s seasonal outlook brings equal chances of below and above normal precipitation and temperatures.
Seasonal Drought Outlook


**Highlights**

- As summer continues, drought conditions are expected to persist over much of Nebraska and expand in southeast Nebraska and most of Iowa.

- Eastern Nebraska would need approximately 6-11” of **extra** precipitation over the next four weeks to see the drought completely wiped out.

- Western Iowa would need 4-8” of extra precipitation over the same period of time to erase the drought conditions.
The drought monitor is a multi-agency effort involving NOAA's National Weather Service and National Climatic Data Center, the USDA, state and regional center climatologists and the National Drought Mitigation Center. Information for this statement has been gathered from NWS and FAA observation sites, cooperative and volunteer observations, USDAFS, the USDA and USGS.

Additional Resources

Additional information on current drought conditions may be found at the following web addresses:

- National Weather Service Omaha: weather.gov/Omaha
- Climate Prediction Center Drought: cpc.ncep.noaa.gov/products/Drought/
- US Drought Monitor: droughtmonitor.unl.edu/
- National Drought Mitigation Center: https://drought.unl.edu/
- National Water Dashboard: dashboard.waterdata.usgs.gov/app/nwd/
- National Integrated Drought Information System: drought.gov
- Current Drought Conditions: drought.gov/current-conditions
- USGS Water Watch: waterwatch.usgs.gov
- US Army Corps of Engineers (USACE): usace.army.mil
- High Plains Regional Climate Center (HRPCC): hprcc.unl.edu
- Iowa State Climatologist: Justin Glisan, Ph.D. (515) 281-8981 iowaagriculture.gov/climatology-bureau
- Nebraska State Climatologist: Martha Shulski, Ph.D. (402) 472-6711 nsco.unl.edu
- USDA Crop Information: nass.usda.gov/index.asp
- Drought Impact Reporter: droughtreporter.unl.edu/map

Contact Information

If you have questions or comments about this information, please contact:

**National Weather Service**

**David Pearson** - Senior Service Hydrologist
**Taylor Nicolaisen** - Meteorologist, Drought Focal Point
**Van DeWald** - Lead Meteorologist, Drought Focal Point

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**Email:**
- David.Pearson@noaa.gov
- Taylor.Nicolaisen@noaa.gov
- Van.DeWald@noaa.gov

Acknowledgments:

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