The U.S. Drought Monitor

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National Drought Mitigation Center • School of Natural Resources
University of Nebraska-Lincoln
NW Drought Workshop
July 28, 2020
Outline

What’s on the map?

What does it mean?

How is it made?

How can you participate?
Takeaway #1

The map synthesizes a lot of information.
What is drought?

A deficit of expected water availability that results in water shortages for some activity or group.
Map strives to represent different perspectives.
Map incorporates multiple types of data to capture the different perspectives
Map depicts multiple timescales

Monthly → Seasonal → Inter-annual
Map colors indicate drought intensity

- **D0**: Abnormally Dry
- **D1**: Moderate Drought
- **D2**: Severe Drought
- **D3**: Extreme Drought
- **D4**: Exceptional Drought

Not Drought

- None

Drought

- Short-Term, typically less than 6 months (e.g., agriculture, groundwater)
- Long-Term, typically greater than 6 months (e.g., hydrology, ecology)
S = short term typically < 6 months

L = long term, typically > 6 months

Map depicts short- and long-term conditions

NATIONAL DROUGHT MITIGATION CENTER
A narrative explains any changes.
Outline

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### Takeaway #2

Categories are based on historical likelihood.

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentile</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>None</td>
<td>31-100</td>
<td>Once per 1 to 3 years</td>
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<tr>
<td>D0 Abnormally dry</td>
<td>21-30</td>
<td>Once per 3 to 5 years</td>
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<tr>
<td>D1 Moderate drought</td>
<td>11 - 20</td>
<td>Once per 5 to 10 years</td>
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<td>D2 Severe drought</td>
<td>6 - 10</td>
<td>Once per 10 to 20 years</td>
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<td>D3 Extreme drought</td>
<td>3 - 5</td>
<td>Once per 20 to 50 years</td>
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<tr>
<td>D4 Exceptional drought</td>
<td>1 - 2</td>
<td>Once per 50 to 100 years</td>
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</table>
Outline

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How is it made?

How can you participate?
Takeaway #3: The map is a participatory process. Partners collaborate on map standards & methodology
Authors interpret data & involve local experts in discussion
The public reports impacts to provide information on the effects of drought

cocorahs.org  droughtimpacts.unl.edu
Objective data

Impact reports

DRAFT MAPS

Author

Convergence of Evidence

USDM

FINAL MAP RELEASED THURSDAY

Local experts

NATIONAL DROUGHT MITIGATION CENTER
What does this look like?
The author reviews the data.
Draft 2 changes:

1) AR-LA-TX: expanded D0 in northwest and northeast AR using 30-day (tempered by 60-day) AHPS percent of normal precip as a guide. Joined the D0 in southwest LA and expanded the D0 in central to northeast LA, again using 30-day AHPS precip pcpn as a guide (thanks, Kyle); the sw LA D0 spread into adjacent southeast TX.

2) OK-TX: expanded D0/joined old D0 spots in southeast OK and northeast TX, using 30-day AHPS pcpn (tempered by 60-90-day) as a guide.

3) MN-WI: AHPS radar-based precip showed locally 4+ inches of rain from the storm system that moved through northeast MN. ACIS SPI (which haven’t as of mid-afternoon been updated through 7/19 yet) still showed D3 station SPI values at 90 days to 6 months. I generally made a 1-cat improvement in ne MN and adjacent WI where the heaviest rains fell, using AHPS 7-day precip through 90-day pcpn as a guide.

4) VA: introduced D1 in northern VA where 30-90-day AHPS pcpn is dry and ACIS SPI shows D1 or worse stations, and where agricultural impacts are being seen (thanks, Brad).

5) MD-PA: added a new spot of D1 along the MD-PA border, and expanded the southwest PA D1, using the same VA criteria (7-day precip tempered the sw PA expansion).

6) OH-IN-MI: expanded D1 and D0 in OH pretty much per recommendations (thanks, Aaron and state team). Also expanded D1 in IN based on 30-90 day precip deficits and introduced D1 into Lower MI based on 90-day deficits tempered by 7-day rainfall.

Other:

A) NJ: status quo (thanks Dave & Chris).

B) VT-NY: status quo in VT and northern NY (thanks John).

C) ME: status quo (thanks for the input, Corey).
Local experts provide feedback

The first attachment contains Missouri recs. The 2nd attachment is a CMOR from southwestern MO, Dade County.

- We’re thinking D0 can be eliminated near and north of the Missouri River. The only exception is a small island of D0 in southeastern Callaway Co. and northeastern Osage Co. I leaned heavily on AHPS’s 30-day PON for guidance as well as recs from NWS LSK.
- The southern half of Missouri is challenging (I have eye strain) with the highly localized nature of convection over the past several weeks. There are recs for some D1 islands, using AHPS 30-day, ≤25% of norm.
- The 2nd attachment is a Condition Monitoring Report from southwestern Dade Co, MO, submitted on 7/17, and it’s one reason why there are recs for D1 islands. If you happen to be living in an area that keeps missing out, it may be a small area but the impacts are big.

Thanks for considering and for all your hard work.
Final map released on Thursday mornings
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Data for the map released on 7/30

Data Cutoff : 12Z (7 AM CDT)
Data for the map released on 7/30

Draft 1

Draft 2

Near Final Draft
Noon, Input Cutoff
2:00 PM, Final files + narrative sent

Map Released
7:30 AM

Times in CDT
Outline

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How can you participate?
Providing Input into the USDM

LOCAL CONTACTS

- Join the USDM listserv
- Contact your state climatologist

[cocorahs.org]
[Droughtimpacts.unl.edu]
Condition Monitoring Observer Reports (CMOR) on Drought: “See More Drought”

Kelly Helm Smith

Pacific Northwest DEWS webinar

April 27, 2020
Impacts are a piece of the drought puzzle.
Takeway #5

It’s more than just a map

https://droughtmonitor.unl.edu