Hydrologic and Climate Assessment

September 21, 2018

Ag Weather and Climate
State Climate Office of Ohio, OSU Extension, Byrd Polar and Climate Research Center, Department of Geography
The Ohio State University
Do you measure precipitation?
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ASK HERE!
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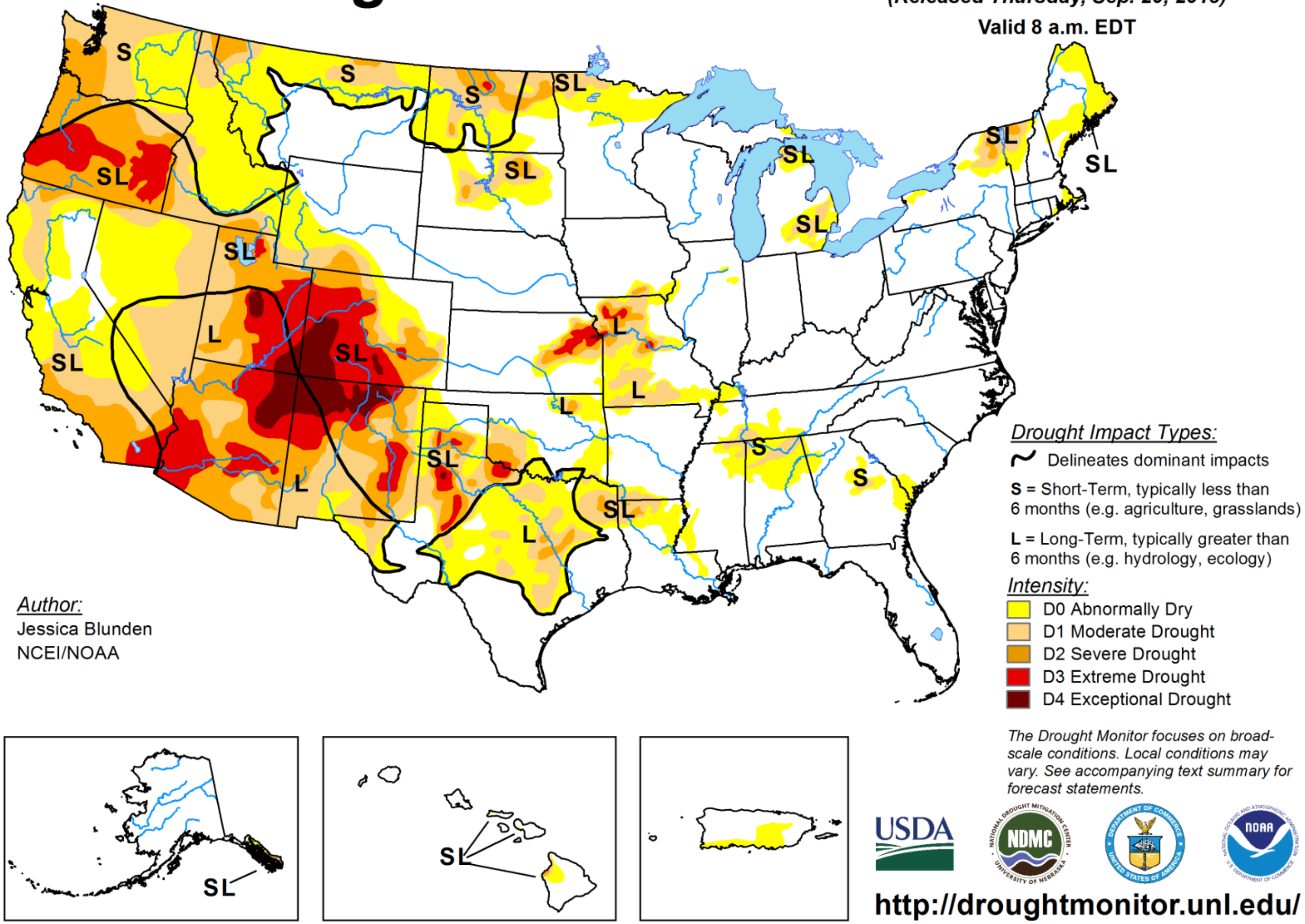
Aaron B. Wilson
STATE CLIMATE OFFICE OF OHIO (SCOO)
DEPARTMENT OF EXTENSION - CFAES
BYRD POLAR & CLIMATE RESEARCH CENTER
DEPARTMENT OF GEOGRAPHY

U.S. Drought Monitor

September 18, 2018

(Released Thursday, Sep. 20, 2018)

Valid 8 a.m. EDT



Drought Impact Types:

~ Delineates dominant impacts

S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- 🟨 D0 Abnormally Dry
- 🟧 D1 Moderate Drought
- 🟧 D2 Severe Drought
- 🟥 D3 Extreme Drought
- 🟫 D4 Exceptional Drought

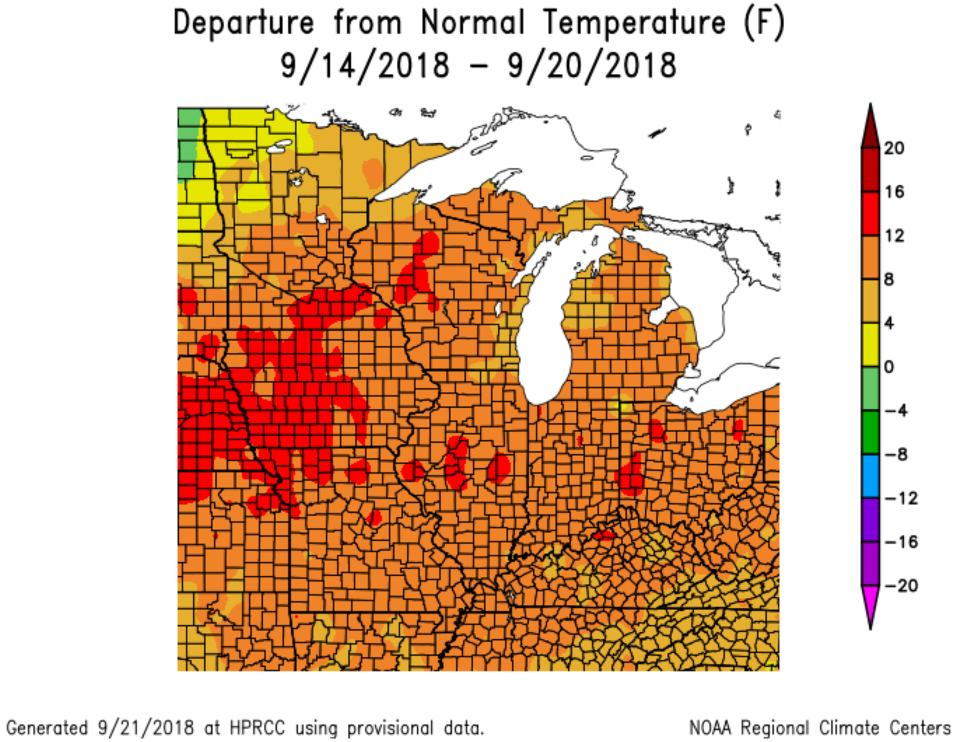
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Jessica Blunden
NCEI/NOAA

http://droughtmonitor.unl.edu/

Temperature Differences Compared to Average (1981-2010)

7-Day


Departure from Normal Temperature (F)
9/14/2018 – 9/20/2018
20
16
12
8
4
0
−4
−8
−12
−16
−20
Generated 9/21/2018 at HPRCC using provisional data.
NOAA Regional Climate Centers

NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM NIDIS Drought.gov U.S. Drought Portal

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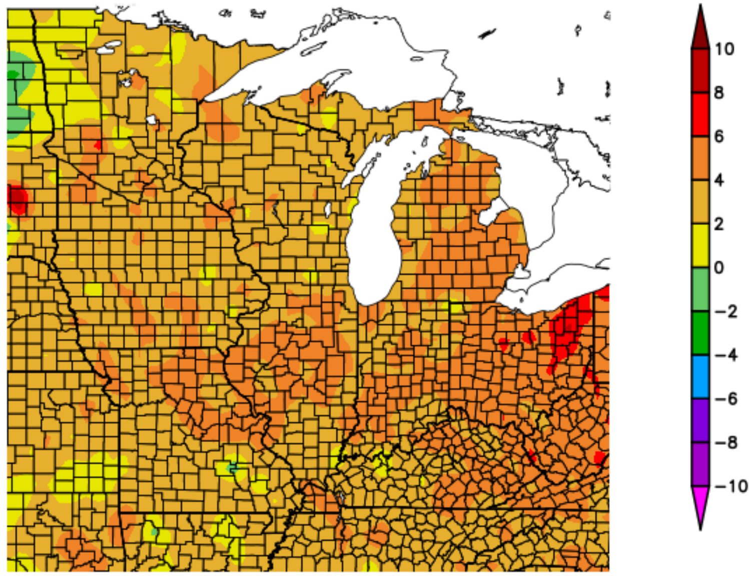
Temperature Differences Compared to Average (1981-2010)

30-Day

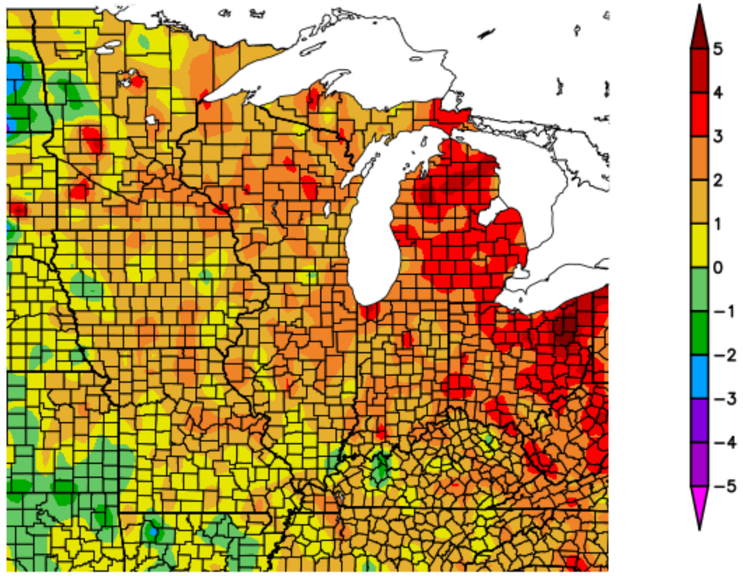


Departure from Normal Temperature (F)
8/22/2018 – 9/20/2018

Generated 9/21/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

60-Day



Departure from Normal Temperature (F)
7/23/2018 – 9/20/2018

Generated 9/21/2018 at HPRCC using provisional data.

NOAA Regional Climate Centers

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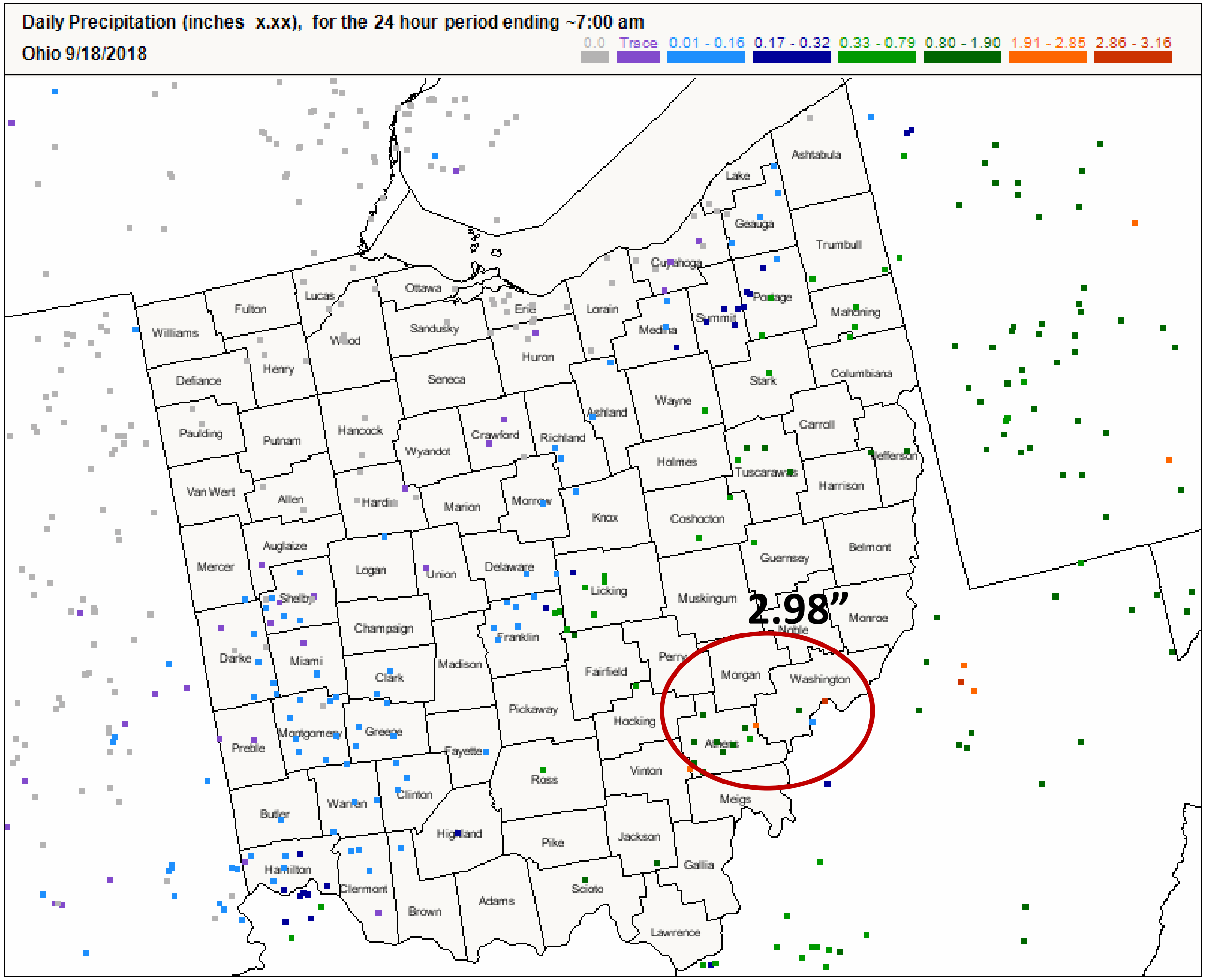
CoCoRaHS Observed Precipitation:

http://cocorahs.com/

September 18


Daily Precipitation (inches x.xx), for the 24 hour period ending ~7:00 am
Ohio 9/18/2018
0.0
Trace
0.01 - 0.16
0.17 - 0.32
0.33 - 0.79
0.80 - 1.90
1.91 - 2.85
2.86 - 3.16
2.98"
Ashtabula
Lake
Geauga
Trumbull
Cuyahoga
Portage
Summit
Mahoning
Lorain
Medina
Columbiana
Williams
Fulton
Lucas
Ottawa
Wood
Sandusky
Erie
Huron
Defiance
Henry
Seneca
Stark
Wayne
Ashland
Carroll
Paulding
Putnam
Hancock
Wyandot
Crawford
Richland
Holmes
Tuscarawas
Jefferson
Harrison
Van Wert
Allen
Hardin
Marion
Morrow
Knox
Coshocton
Belmont
Mercer
Auglaize
Logan
Union
Delaware
Licking
Muskingum
Guernsey
Shelby
Monroe
Noble
Champaign
Franklin
Darke
Miami
Clark
Madison
Fairfield
Perry
Morgan
Washington
Pickaway
Hocking
Athens
Preble
Montgomery
Greene
Fayette
Ross
Vinton
Meigs
Butler
Warren
Clinton
Highland
Pike
Jackson
Gallia
Hamilton
Clermont
Brown
Adams
Scioto
Lawrence

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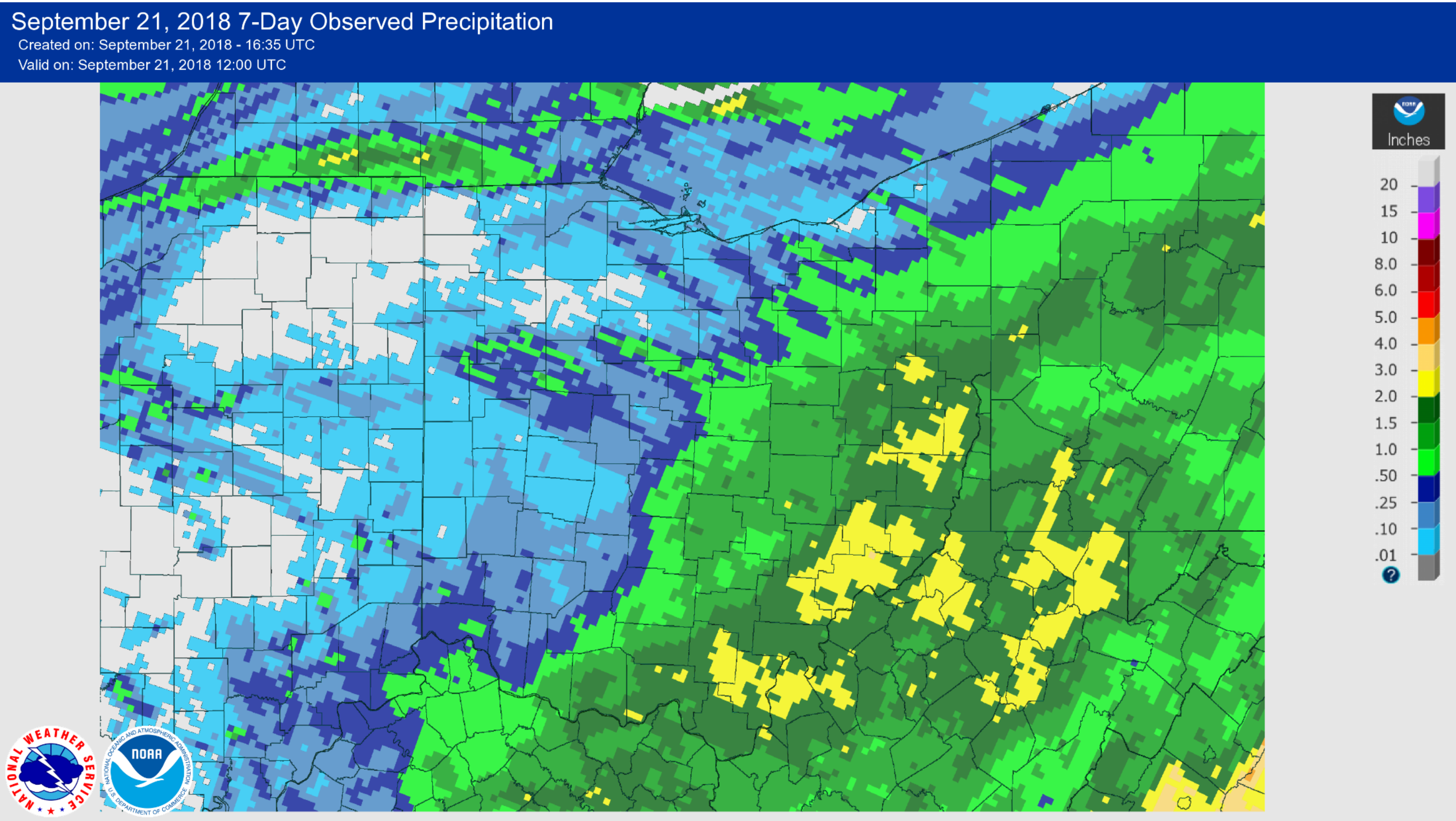
Previous 7-Day Precipitation: **Total**



September 21, 2018 7-Day Observed Precipitation

Created on: September 21, 2018 - 16:35 UTC

Valid on: September 21, 2018 12:00 UTC

Inches
20
15
10
8.0
6.0
5.0
4.0
3.0
2.0
1.5
1.0
.50
.25
.10
.01
?

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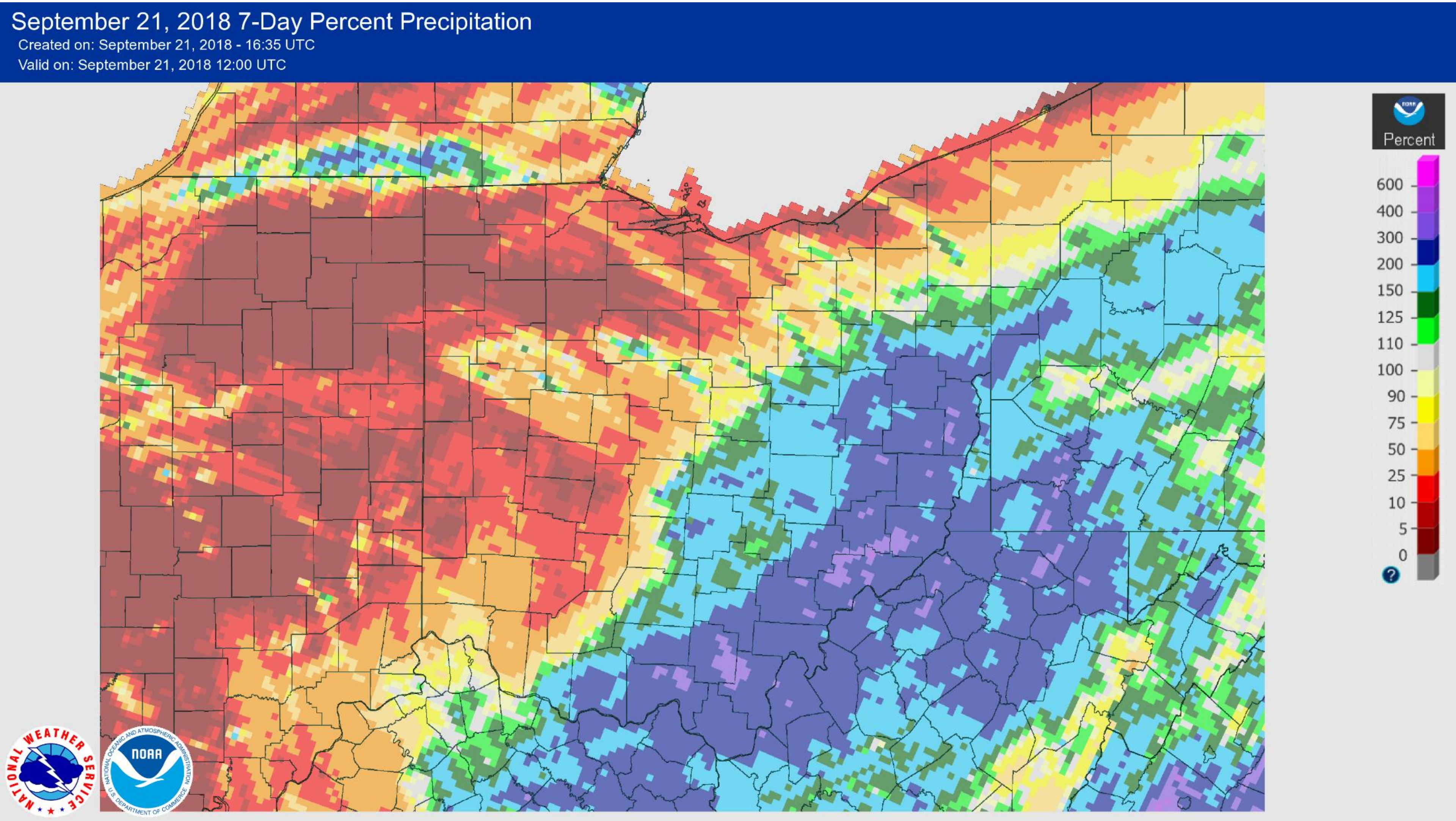
Previous 7-Day Precipitation: Percent of Normal



September 21, 2018 7-Day Percent Precipitation

Created on: September 21, 2018 - 16:35 UTC

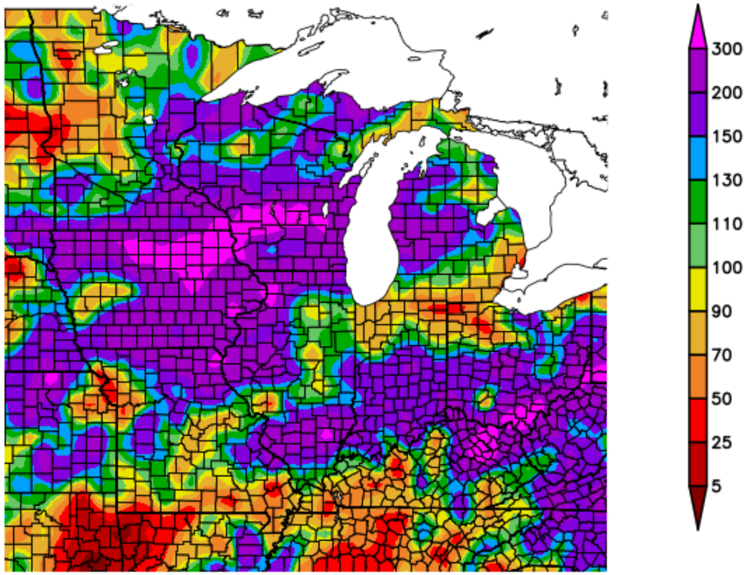
Valid on: September 21, 2018 12:00 UTC

Percent
600
400
300
200
150
125
110
100
90
75
50
25
10
5
0
?
NATIONAL WEATHER SERVICE
NOAA
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

Precipitation Differences Compared to Average (1981-2010)

30-Day

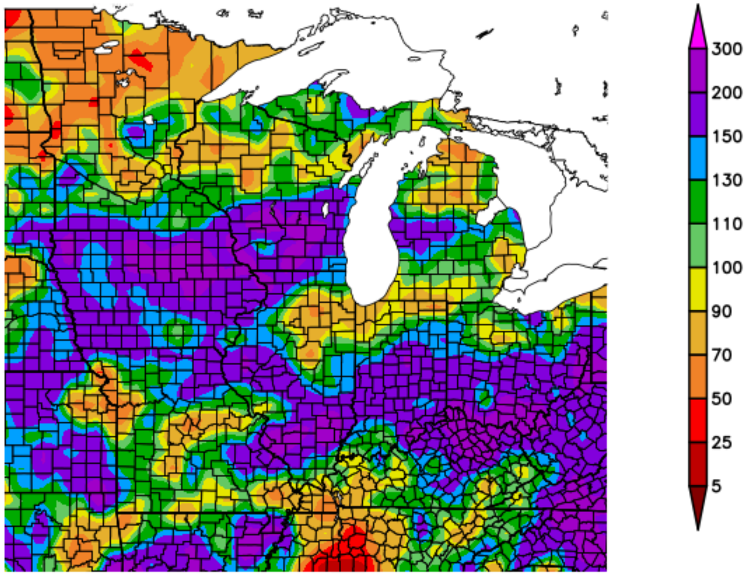
Percent of Normal Precipitation (%)
8/22/2018 - 9/20/2018



Generated 9/21/2018 at HPRCC using provisional data. NOAA Regional Climate Centers

60-Day

Percent of Normal Precipitation (%)
7/23/2018 - 9/20/2018



Generated 9/21/2018 at HPRCC using provisional data. NOAA Regional Climate Centers

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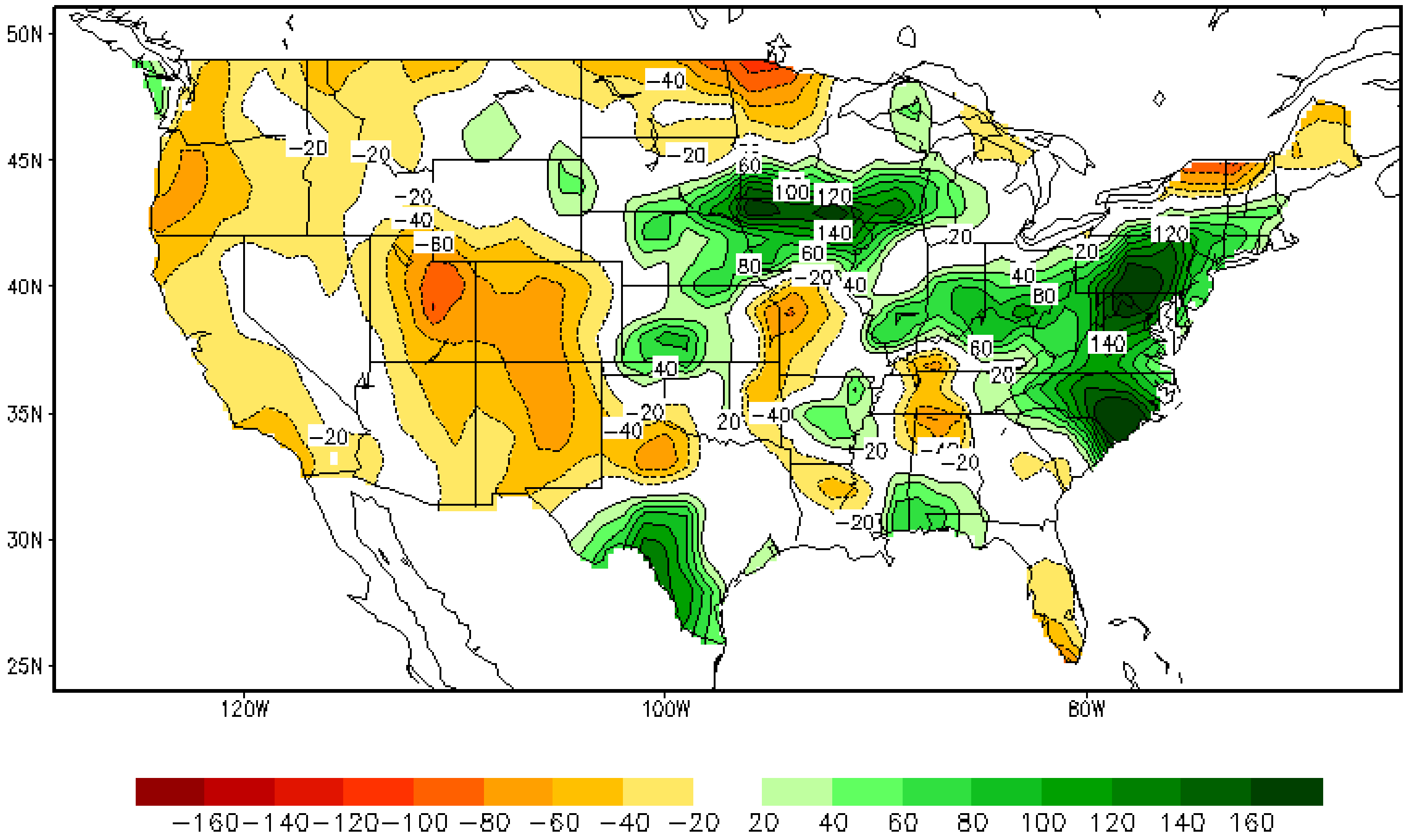
Soil Moisture

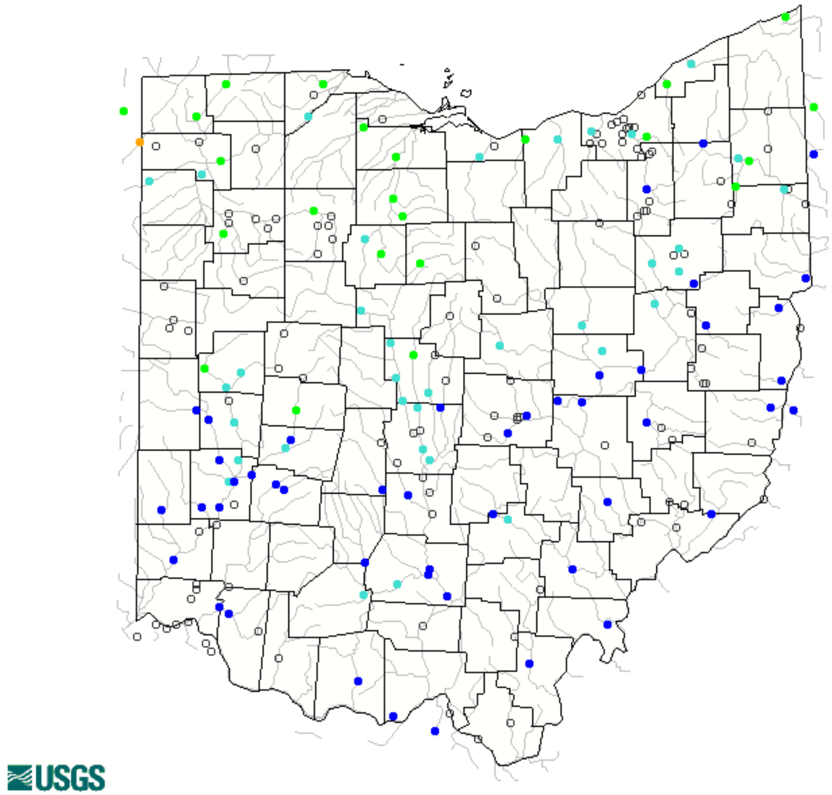


Calculated Soil Moisture Anomaly (mm)
SEP 20, 2018

50N
45N
40N
35N
30N
25N
120W
100W
80W
−40
−20
−20
−20
−40
−60
60
100
120
140
60
80
−20
40
20
120
20
40
80
140
60
20
40
−20
−40
20
−40
−20
20
−20
−20
−20
−160
−140
−120
−100
−80
−60
−40
−20
20
40
60
80
100
120
140
160

USGS Streamflow

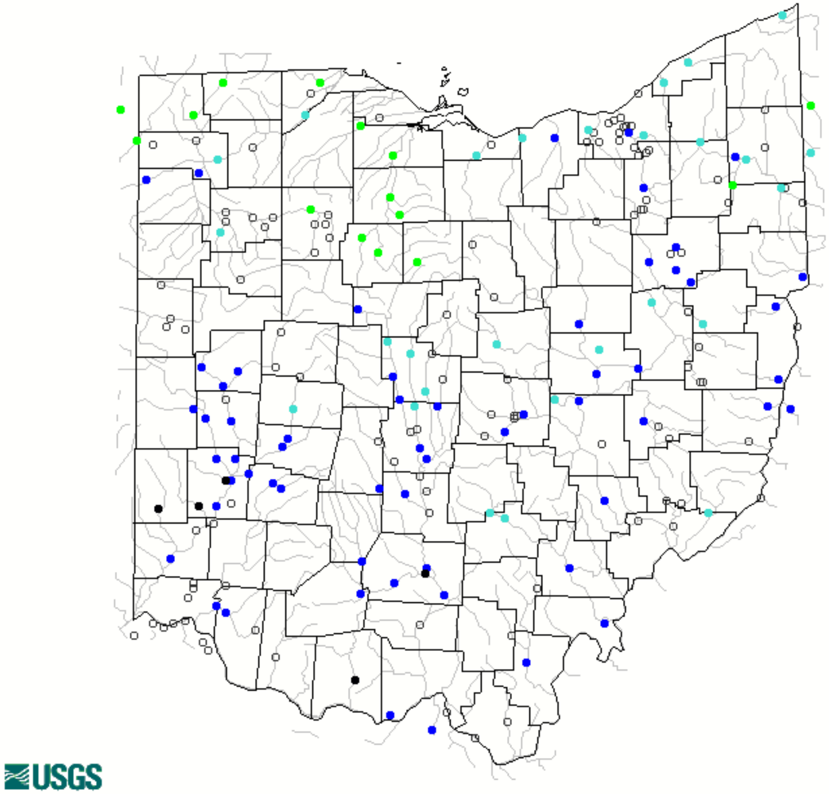
7-DAY



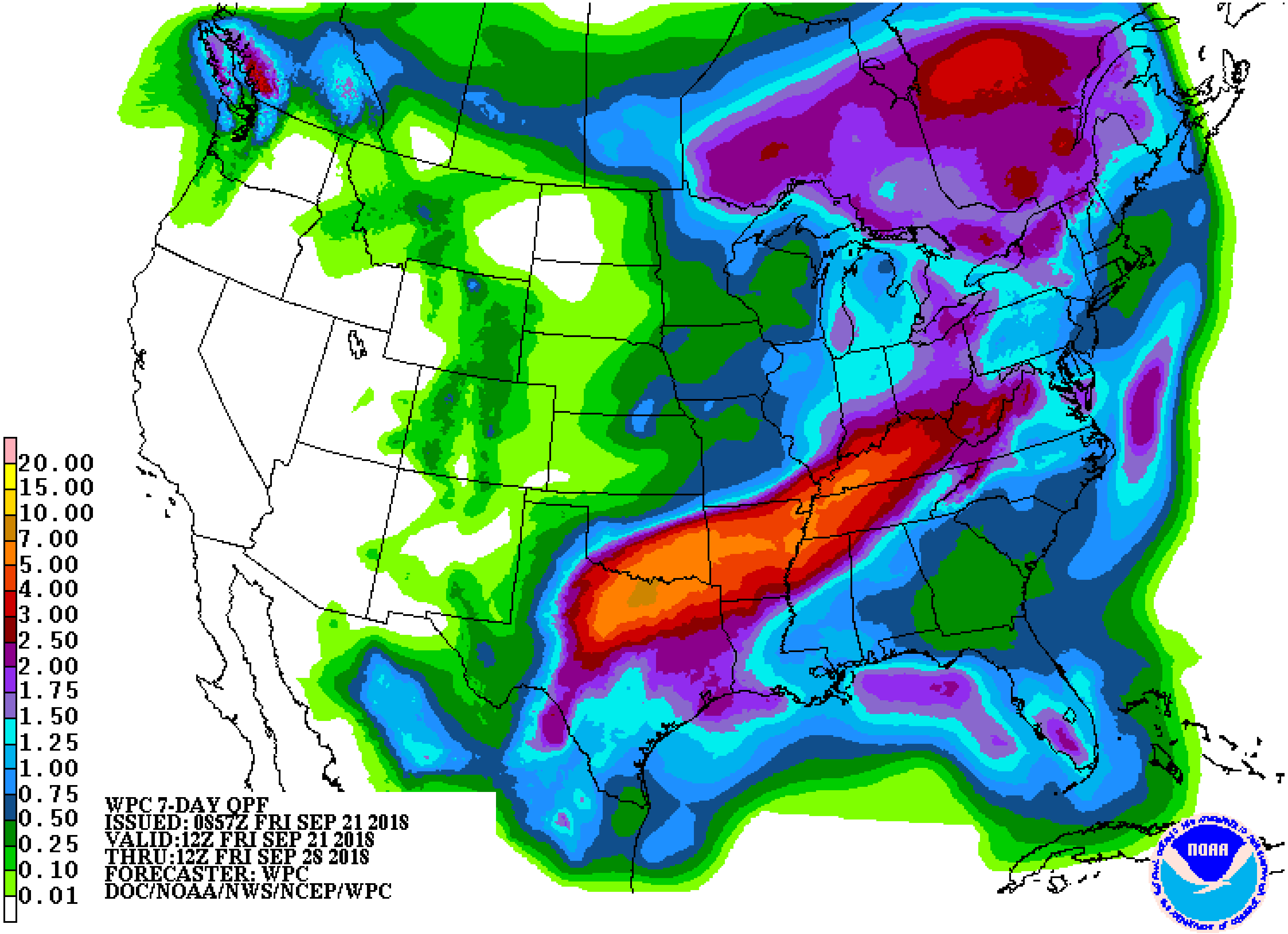
Explanation - Percentile classes							
●	●	●	●	●	●	●	○
Low	<10 Much below normal	10-24 Below normal	25-75 Normal	76-90 Above normal	>90 Much above normal	High	Not-ranked

Average streamflow compared to historical streamflow for the day of the year

28-DAY



Weather for the Week Ahead


20.00
15.00
10.00
7.00
5.00
4.00
3.00
2.50
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.10
0.01
WPC 7-DAY QPF
ISSUED: 0857Z FRI SEP 21 2018
VALID:12Z FRI SEP 21 2018
THRU:12Z FRI SEP 28 2018
FORECASTER: WPC
DOC/NOAA/NWS/NCEP/WPC
NOAA

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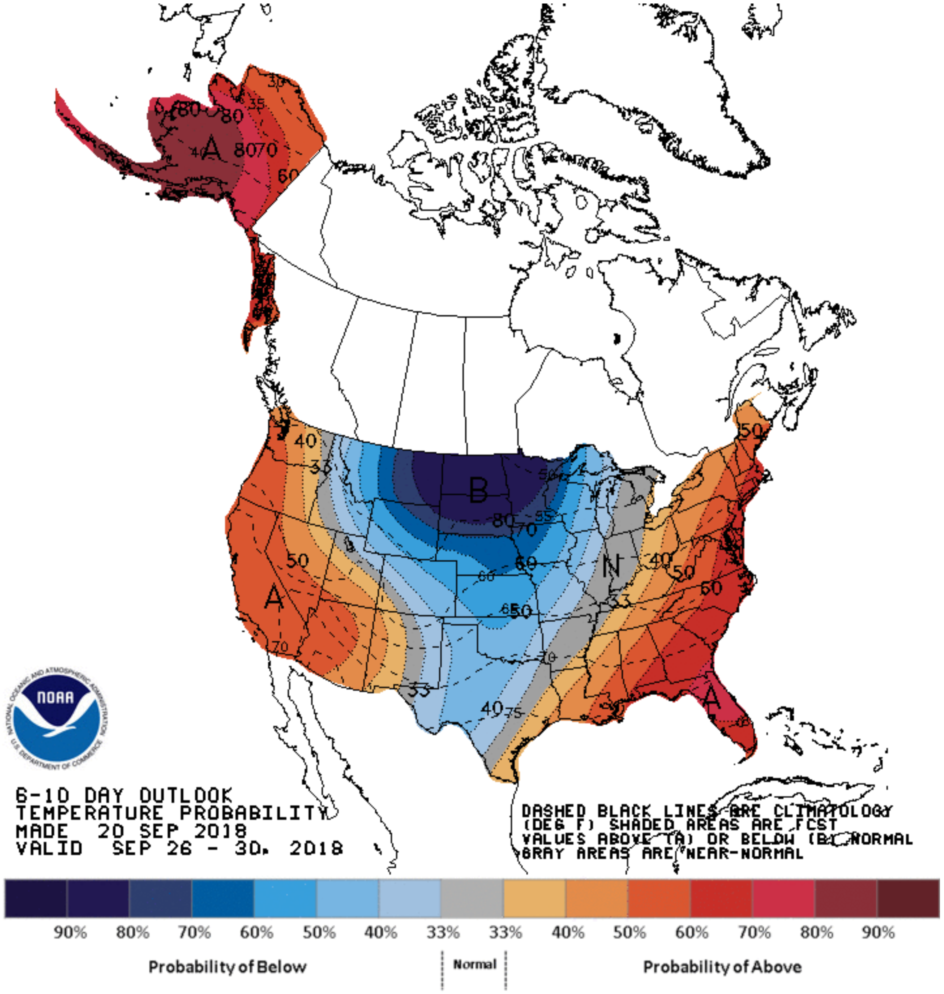
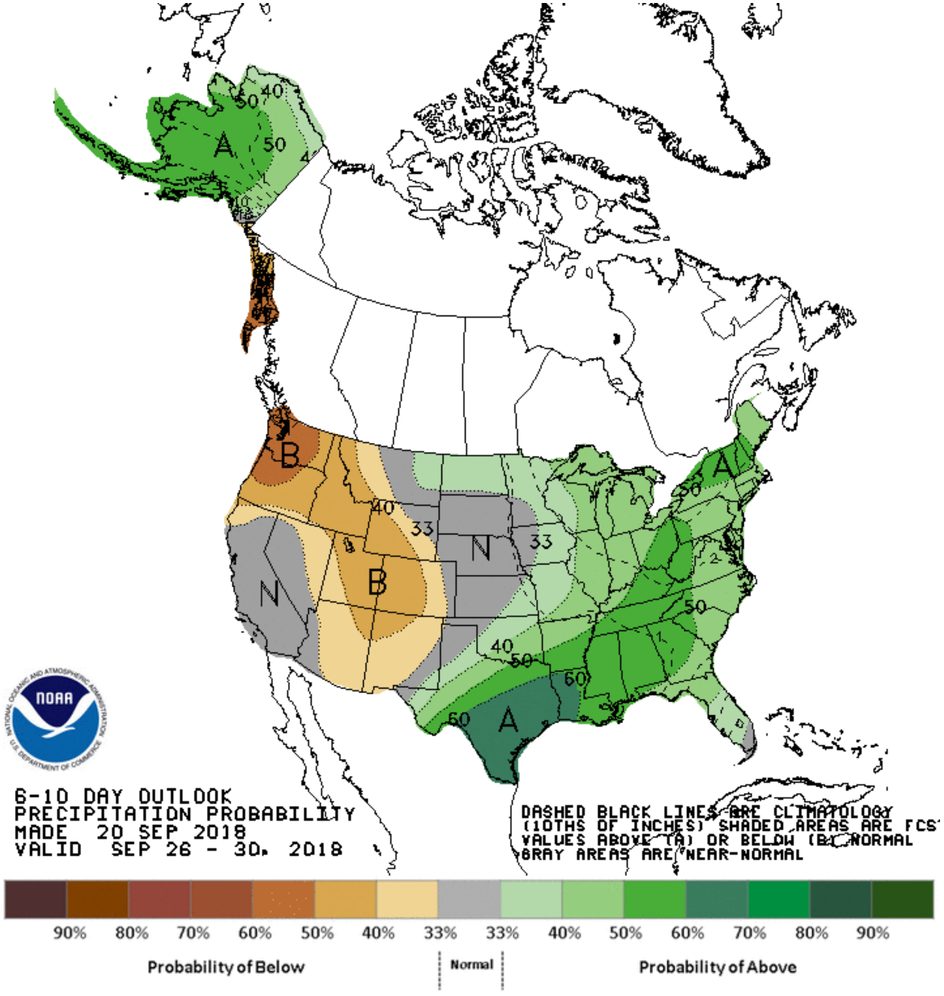
6-10 Day Outlook


6-10 DAY OUTLOOK
TEMPERATURE PROBABILITY
MADE 20 SEP 2018
VALID SEP 26 - 30, 2018
DASHED BLACK LINES ARE CLIMATOLOGY
(DEG F) SHADED AREAS ARE FCST
VALUES ABOVE (A) OR BELOW (B) NORMAL
GRAY AREAS ARE NEAR-NORMAL
A
B
N
90%
80%
70%
60%
50%
40%
33%
33%
40%
50%
60%
70%
80%
90%
Probability of Below
Normal
Probability of Above


6-10 DAY OUTLOOK
PRECIPITATION PROBABILITY
MADE 20 SEP 2018
VALID SEP 26 - 30, 2018
DASHED BLACK LINES ARE CLIMATOLOGY
(10THS OF INCHES) SHADED AREAS ARE FCST
VALUES ABOVE (A) OR BELOW (B) NORMAL
GRAY AREAS ARE NEAR-NORMAL
A
B
N
90%
80%
70%
60%
50%
40%
33%
33%
40%
50%
60%
70%
80%
90%
Probability of Below
Normal
Probability of Above

Highs: Low to upper 70s; **Lows:** Low to Mid 50s; **Precip:** 0.5-0.75” (per week)

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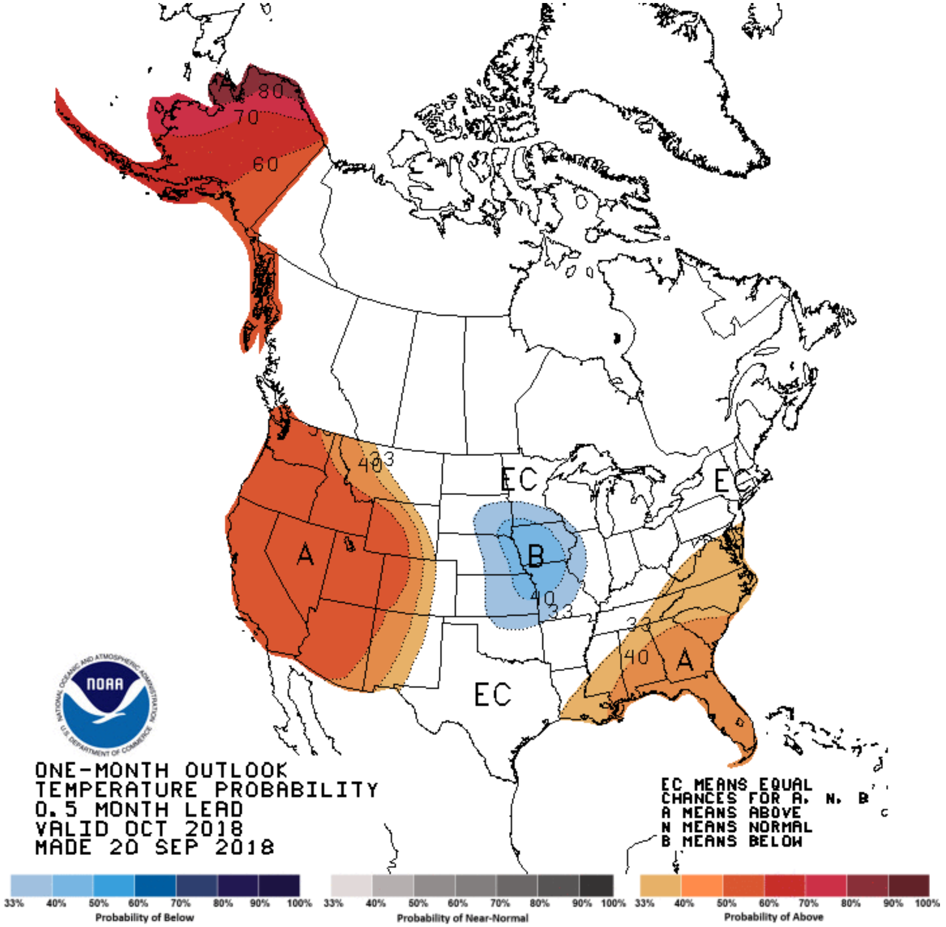
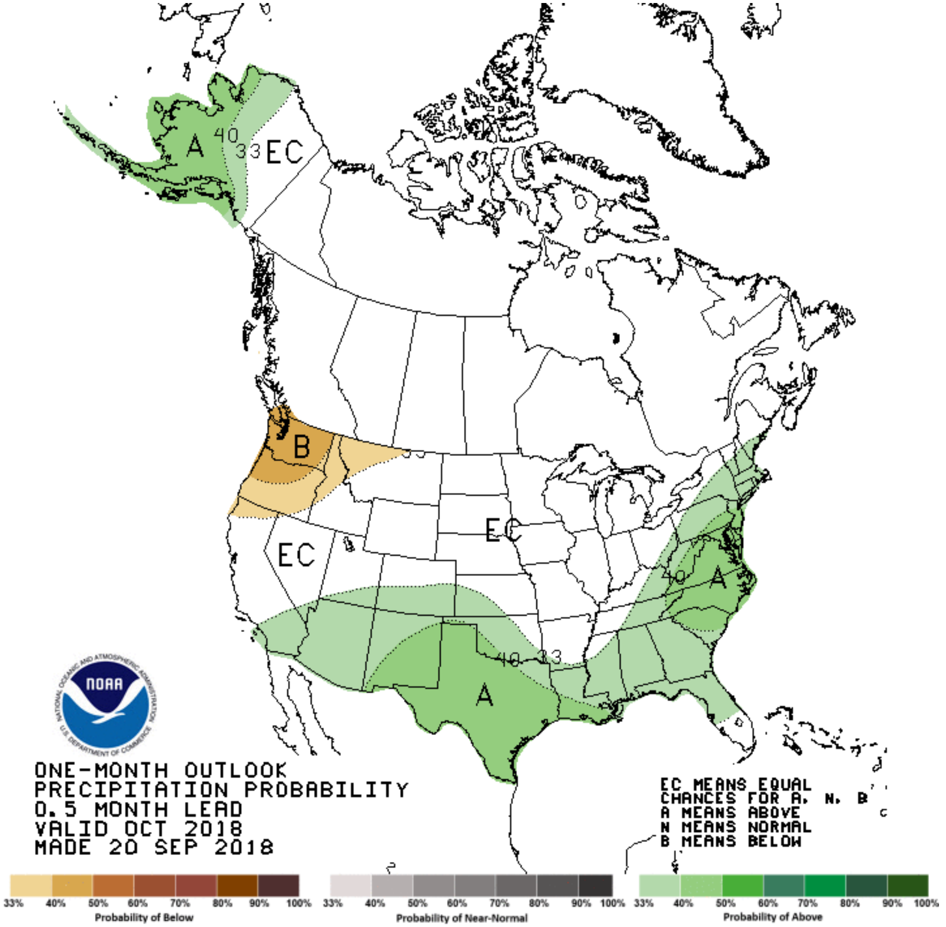
October Outlook



A
80
70
60
403
A
EC
B
40
33
E
EC
33
40
A
EC
ONE-MONTH OUTLOOK
TEMPERATURE PROBABILITY
0.5 MONTH LEAD
VALID OCT 2018
MADE 20 SEP 2018
EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW
33% 40% 50% 60% 70% 80% 90% 100%
Probability of Below
33% 40% 50% 60% 70% 80% 90% 100%
Probability of Near-Normal
33% 40% 50% 60% 70% 80% 90% 100%
Probability of Above



A
40
33
EC
B
33
EC
EC
40
A
40
33
A
ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID OCT 2018
MADE 20 SEP 2018
EC MEANS EQUAL
CHANCES FOR A, N, B
A MEANS ABOVE
N MEANS NORMAL
B MEANS BELOW
33% 40% 50% 60% 70% 80% 90% 100%
Probability of Below
33% 40% 50% 60% 70% 80% 90% 100%
Probability of Near-Normal
33% 40% 50% 60% 70% 80% 90% 100%
Probability of Above

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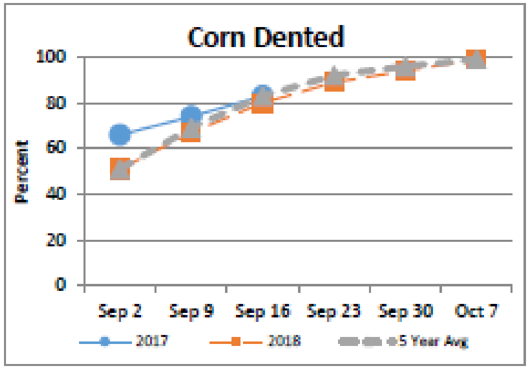
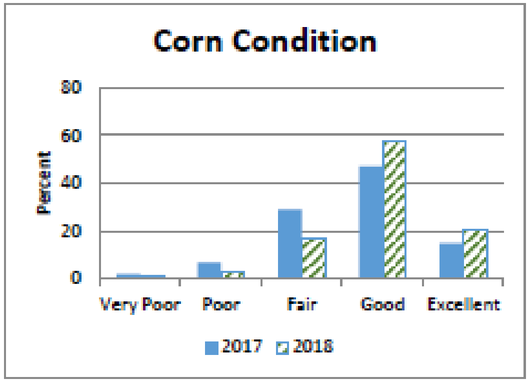
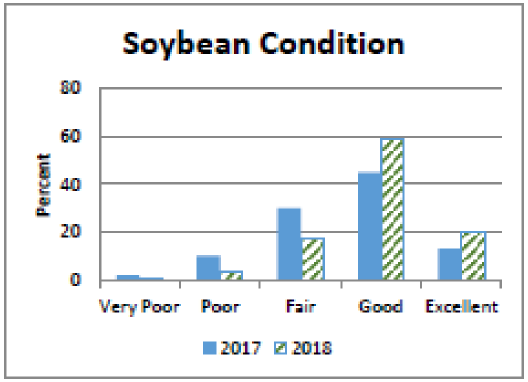
Ag Highlights

- 4.0 days suitable for work (through Sept. 16)
- Harvest was delayed in some areas with some ponding
- Corn for grain and soybean harvests began.

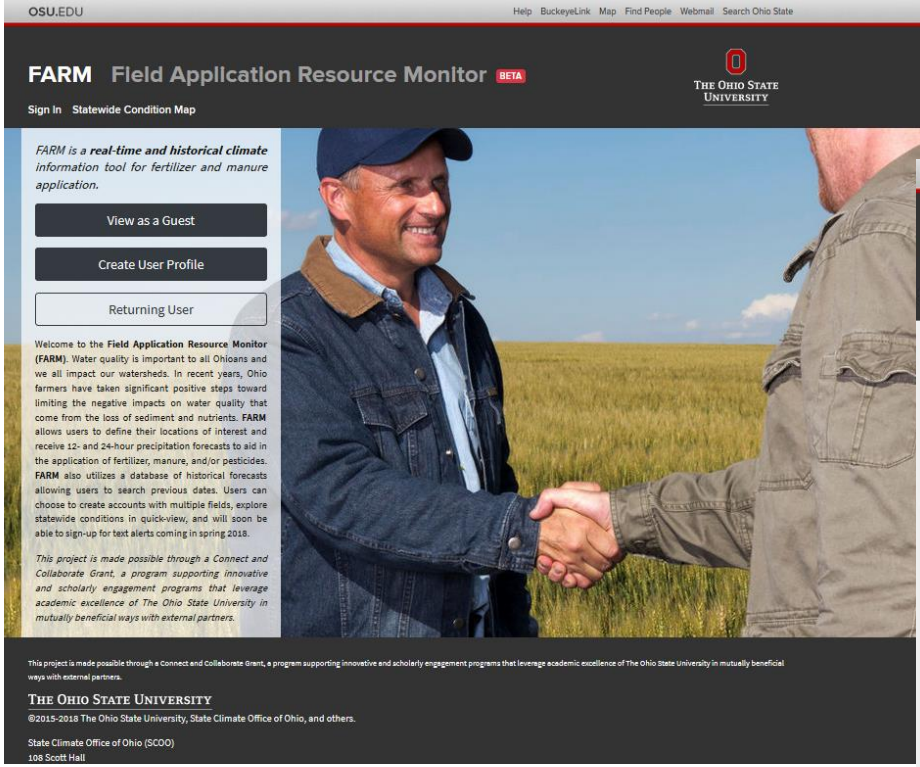
NASS: Cheryl Turner –
https://www.nass.usda.gov/Statistics_by_State/Ohio/Publications/Crop_Progress_&_Condition/2017/cw3017oh.pdf







Field Application Resource Monitor
FARM


OSU.EDU
Help BuckeyeLink Map Find People Webmail Search Ohio State
FARM Field Application Resource Monitor BETA
THE OHIO STATE UNIVERSITY
Sign In Statewide Condition Map
View as a Guest
Create User Profile
Returning User

*FARM is a **real-time and historical climate** information tool for fertilizer and manure application.*

Welcome to the **Field Application Resource Monitor (FARM)**. Water quality is important to all Ohioans and we all impact our watersheds. In recent years, Ohio farmers have taken significant positive steps toward limiting the negative impacts on water quality that come from the loss of sediment and nutrients. **FARM** allows users to define their locations of interest and receive 12- and 24-hour precipitation forecasts to aid in the application of fertilizer, manure, and/or pesticides. **FARM** also utilizes a database of historical forecasts allowing users to search previous dates. Users can choose to create accounts with multiple fields, explore statewide conditions in quick-view, and will soon be able to sign-up for text alerts coming in spring 2018.

This project is made possible through a Connect and Collaborate Grant, a program supporting innovative and scholarly engagement programs that leverage academic excellence of The Ohio State University in mutually beneficial ways with external partners.

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State Climate Office of Ohio (SCOO)
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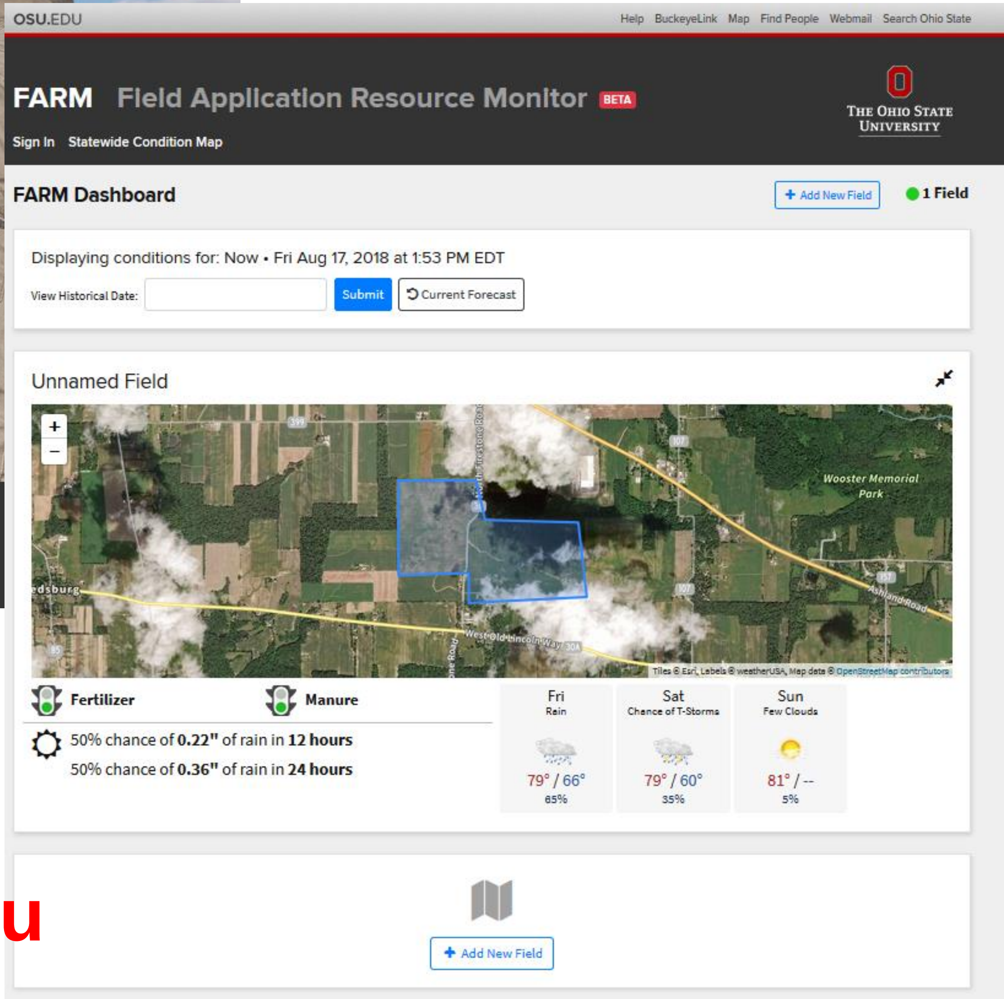
OSU.EDU
Help BuckeyeLink Map Find People Webmail Search Ohio State
FARM Field Application Resource Monitor BETA
THE OHIO STATE UNIVERSITY
Sign In Statewide Condition Map
FARM Dashboard
+ Add New Field
● 1 Field
Submit
Current Forecast
Unnamed Field
+
−
Wooster Memorial Park
edsburg
North Firestone Road
West Old Lincoln Way 30A
Ashland Road
Tiles © Esri, Labels © weatherUSA, Map data © OpenStreetMap contributors
Fertilizer
Manure
+ Add New Field

Displaying conditions for: Now • Fri Aug 17, 2018 at 1:53 PM EDT

View Historical Date:

50% chance of **0.22"** of rain in **12 hours**

50% chance of **0.36"** of rain in **24 hours**

Fri	Sat	Sun
Rain	Chance of T-Storms	Few Clouds
79° / 66°	79° / 60°	81° / --
65%	35%	5%

https://farm.bpcrc.osu.edu

Summary of Conditions

Back Cover Photo Credit: Kat Bledsoe - katscanx(Instagram)

Drought Monitor: Nothing of note

Climate Recap: Very warm week with heavy rain in the eastern counties; Warm and wet conditions have prevailed since the beginning of August

The week ahead: A couple of disturbances likely to bring widespread moderate rain (locally heavy)

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