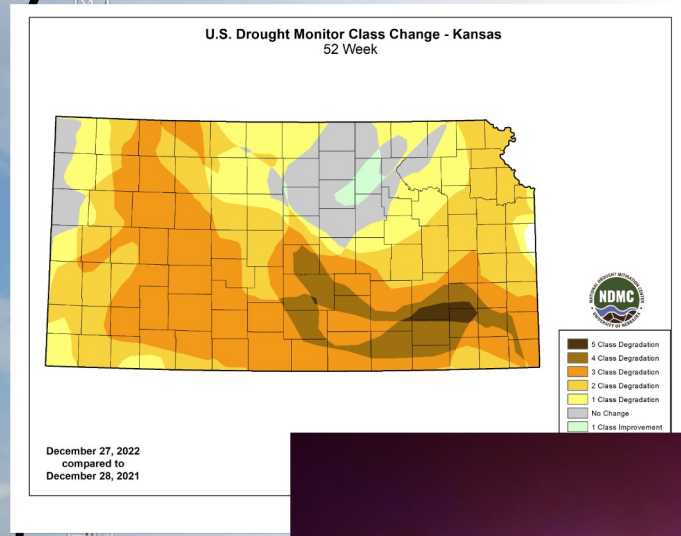
Using weather data for farm management

1/12/23

Chip Redmond - Assistant Meteorologist, Mesonet Manager

Kansas State University | Kansas Mesonet

2022 Haves



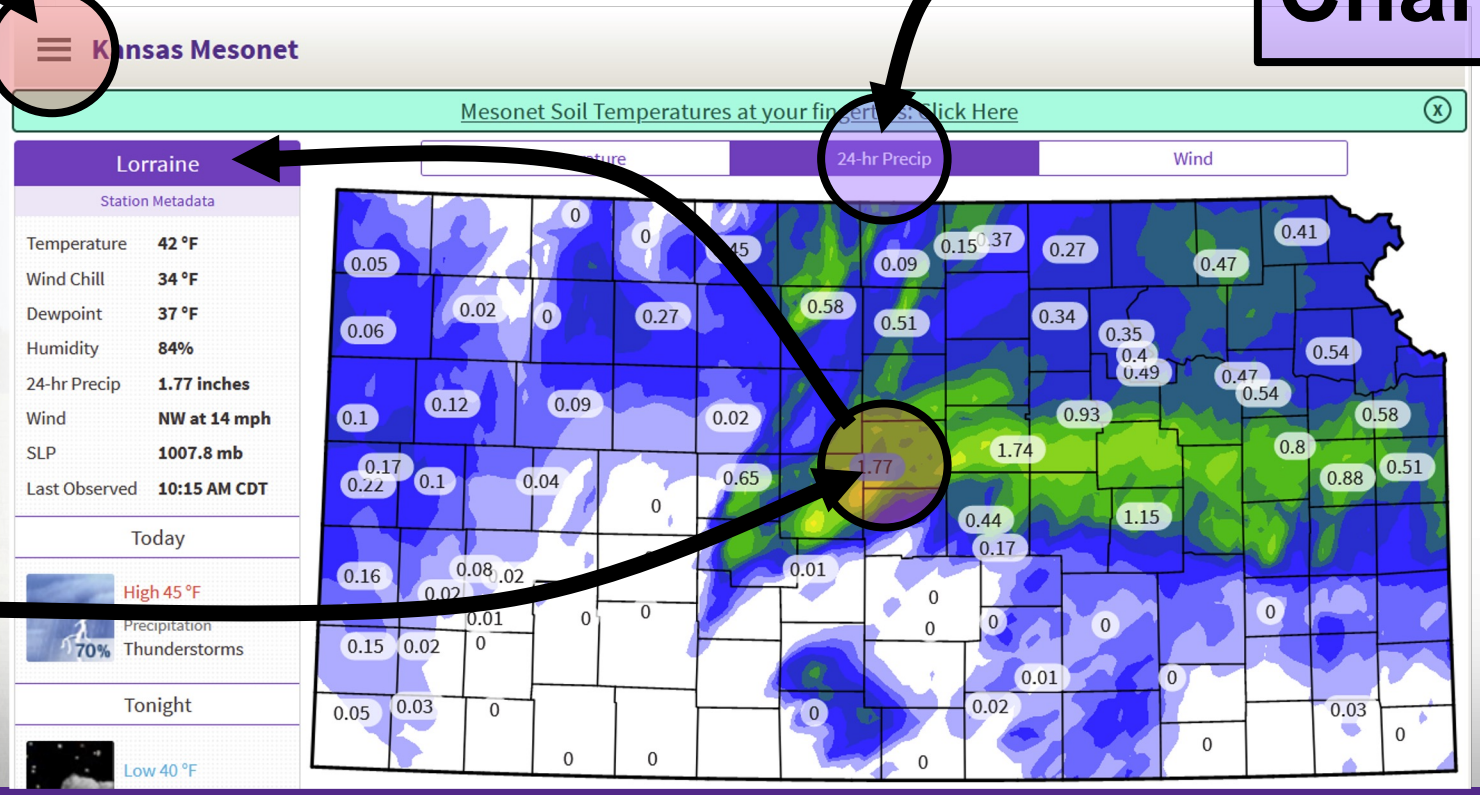
2022 Have Nots

Data availability @ mesonet.ksu.edu

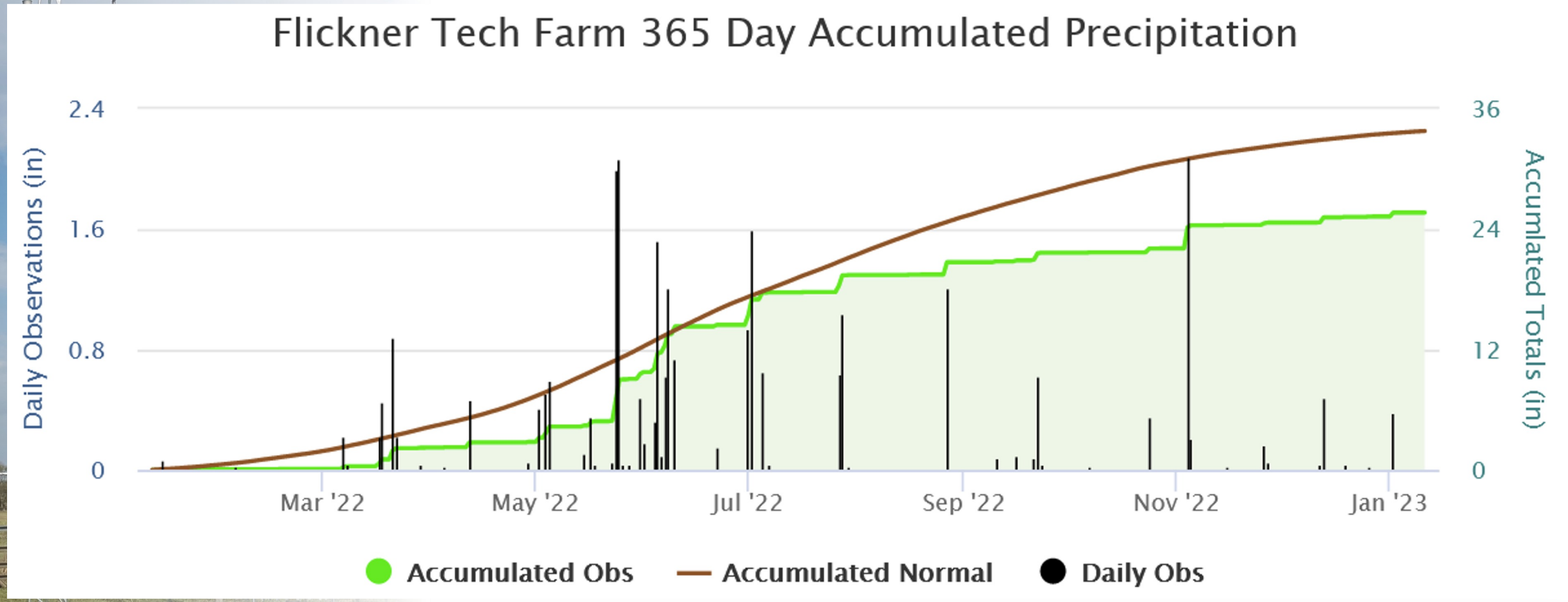
Menu

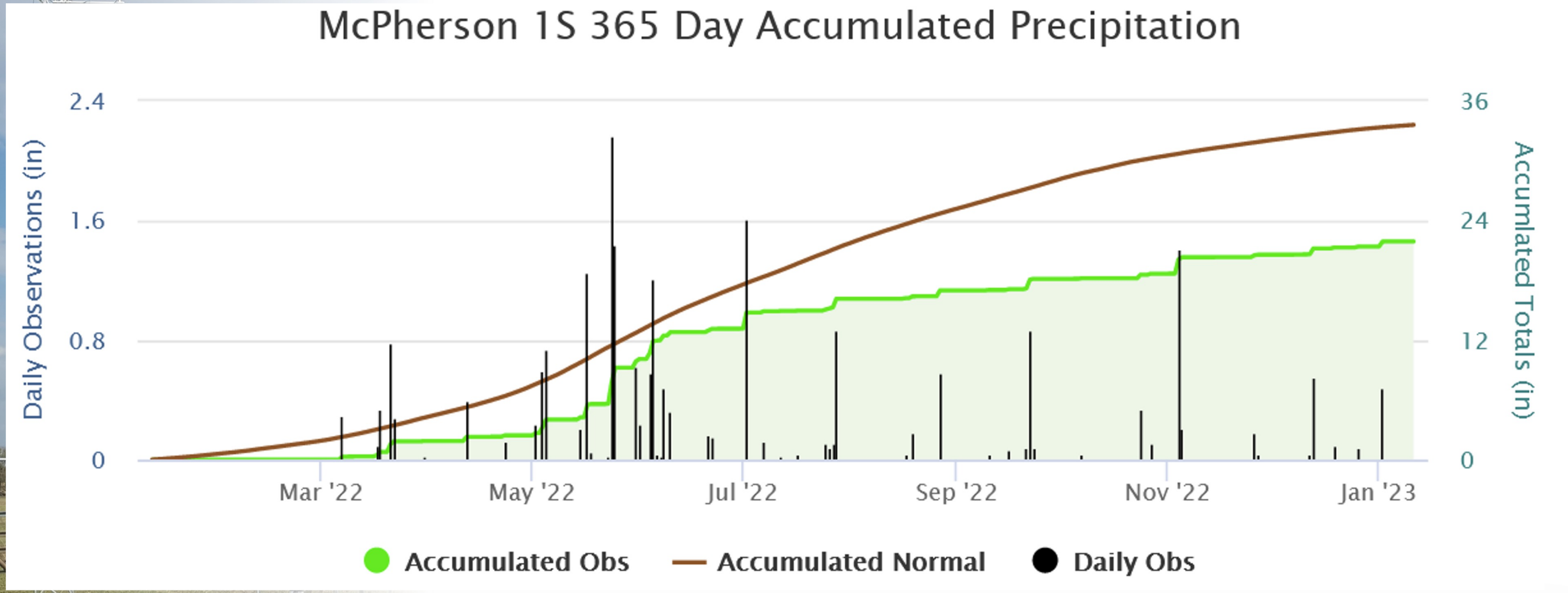
Change map

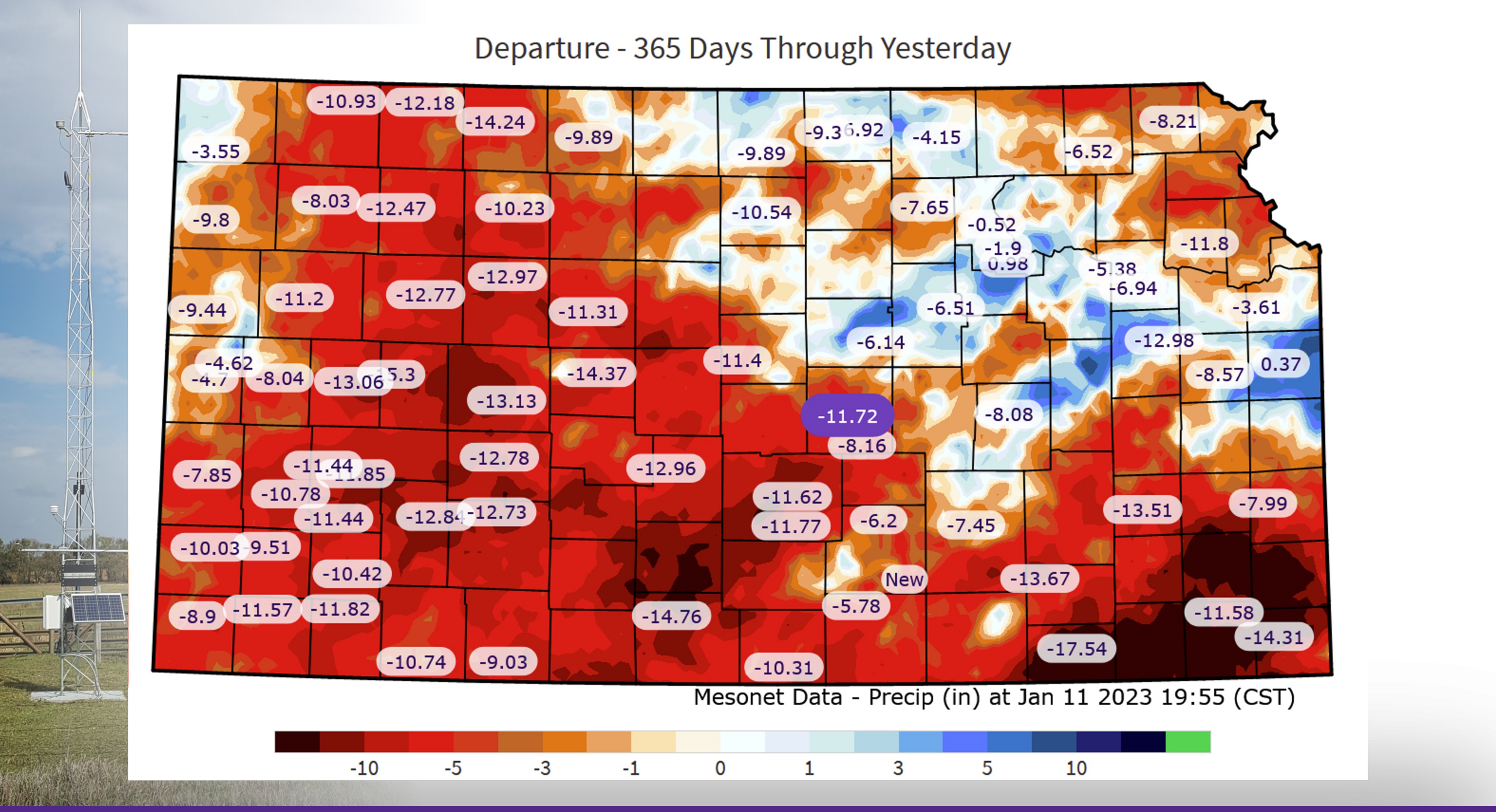
Change station

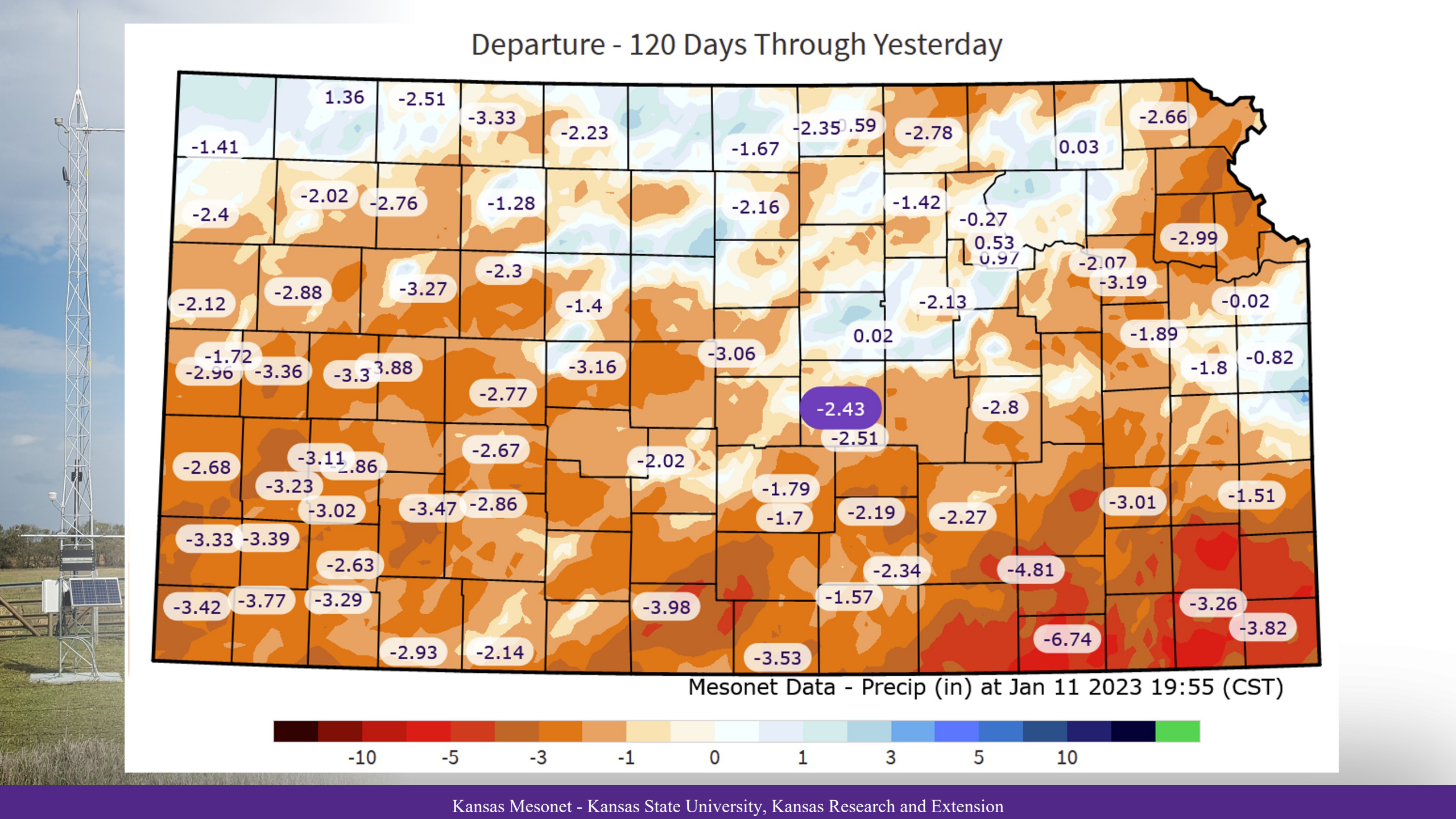


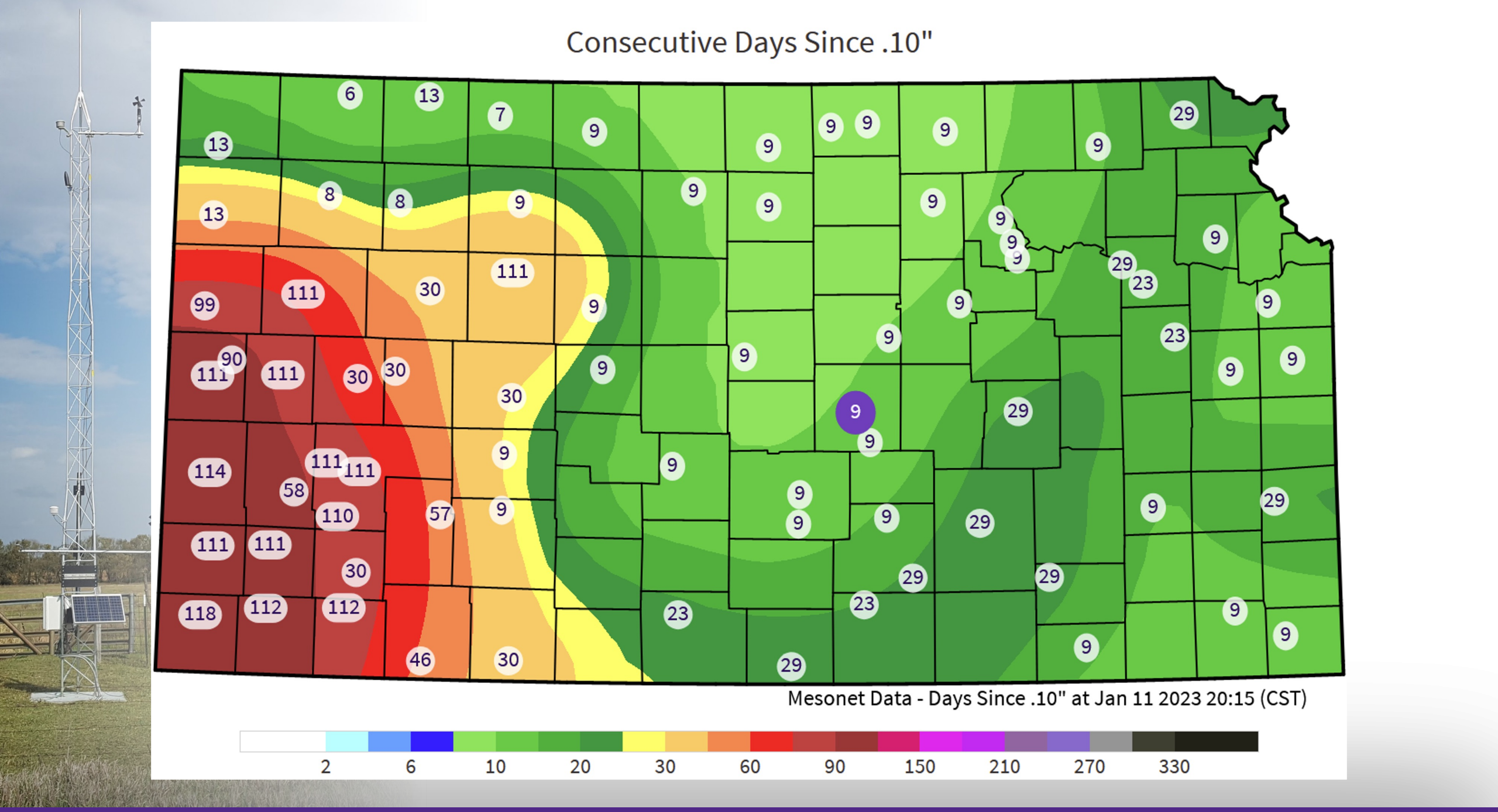
Mesonet Menu > Precipitation > Daily Totals

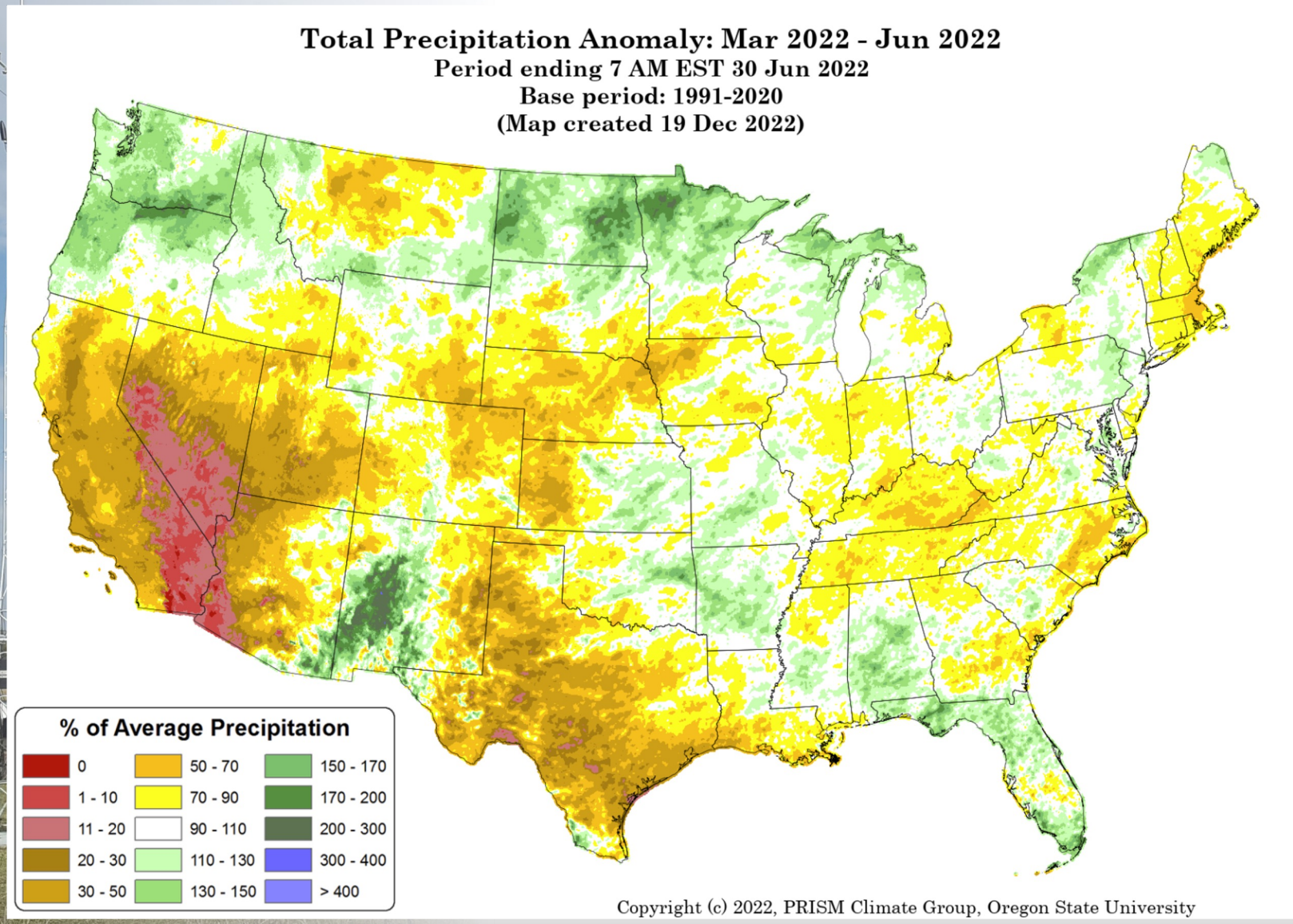

Flickner Tech Farm 365 Day Accumulated Precipitation
Daily Observations (in)
2.4
1.6
0.8
0
36
24
12
0
Accumlated Totals (in)
Mar '22
May '22
Jul '22
Sep '22
Nov '22
Jan '23
Accumulated Obs
Accumulated Normal
Daily Obs


McPherson 1S 365 Day Accumulated Precipitation
Daily Observations (in)
2.4
1.6
0.8
0
Accumulated Totals (in)
36
24
12
0
Mar '22
May '22
Jul '22
Sep '22
Nov '22
Jan '23
Accumulated Obs
Accumulated Normal
Daily Obs


Departure - 365 Days Through Yesterday
-10.93
-12.18
-14.24
-9.89
-9.89
-9.3 6.92
-4.15
-8.21
-3.55
-6.52
-8.03
-12.47
-10.23
-10.54
-7.65
-0.52
-9.8
-1.9
-11.8
-5.38
-6.94
-12.97
-11.2
-12.77
-11.31
-6.51
-3.61
-9.44
-6.14
-12.98
-4.62
-11.4
-14.37
-8.57
0.37
-8.04
-13.06
-13.13
-11.72
-8.08
-8.16
-12.78
-11.44
-12.96
-7.85
-10.78
-11.62
-7.99
-11.44
-12.73
-11.77
-6.2
-7.45
-13.51
-10.03
9.51
-10.42
New
-13.67
-8.9
-11.57
-11.82
-14.76
-5.78
-11.58
-14.31
-17.54
-10.74
-9.03
-10.31
Mesonet Data - Precip (in) at Jan 11 2023 19:55 (CST)
-10
-5
-3
-1
0
1
3
5
10

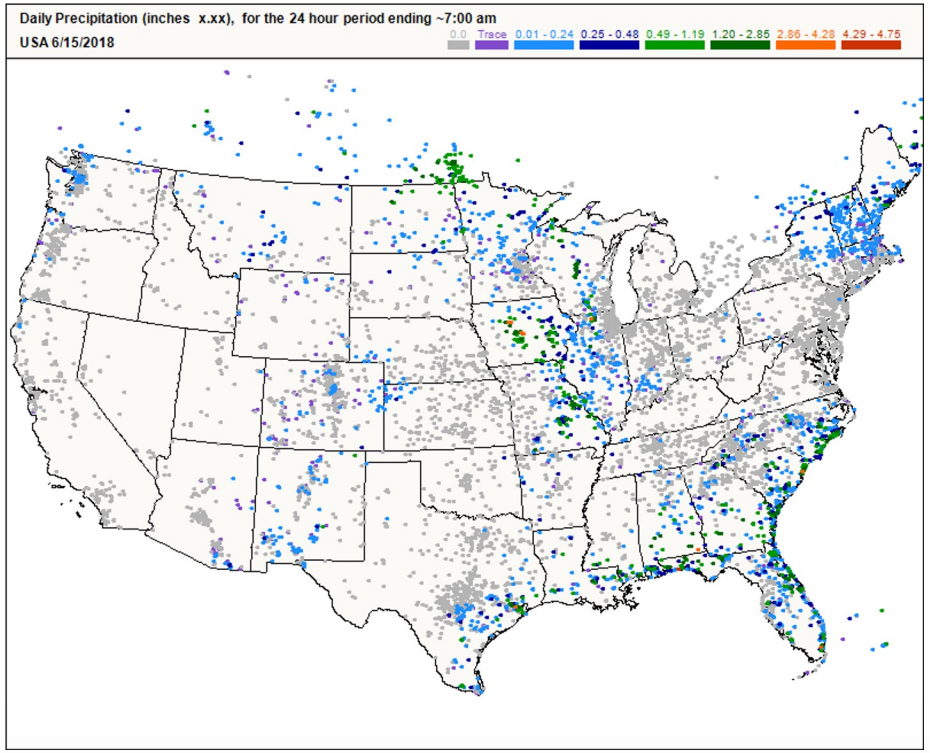

Departure - 120 Days Through Yesterday
1.36
-2.51
-3.33
-2.23
-1.67
-2.35
.59
-2.78
0.03
-2.66
-1.41
-2.4
-2.02
-2.76
-1.28
-2.16
-1.42
-0.27
0.53
-2.99
-2.3
-2.07
-3.19
-2.12
-2.88
-3.27
-1.4
-2.13
-0.02
0.02
-1.89
-1.72
-3.06
-3.16
-1.8
-0.82
-2.96
-3.36
-3.3
3.88
-2.77
-2.43
-2.8
-2.51
-2.68
-3.11
2.86
-2.67
-2.02
-3.23
-1.79
-3.01
-1.51
-3.02
-3.47
-2.86
-1.7
-2.19
-2.27
-3.33
-3.39
-2.34
-4.81
-2.63
-1.57
-3.42
-3.77
-3.29
-3.98
-3.26
-3.82
-6.74
-2.93
-2.14
-3.53
Mesonet Data - Precip (in) at Jan 11 2023 19:55 (CST)
-10
-5
-3
-1
0
1
3
5
10


Consecutive Days Since .10"
Mesonet Data - Days Since .10" at Jan 11 2023 20:15 (CST)
2
6
10
20
30
60
90
150
210
270
330



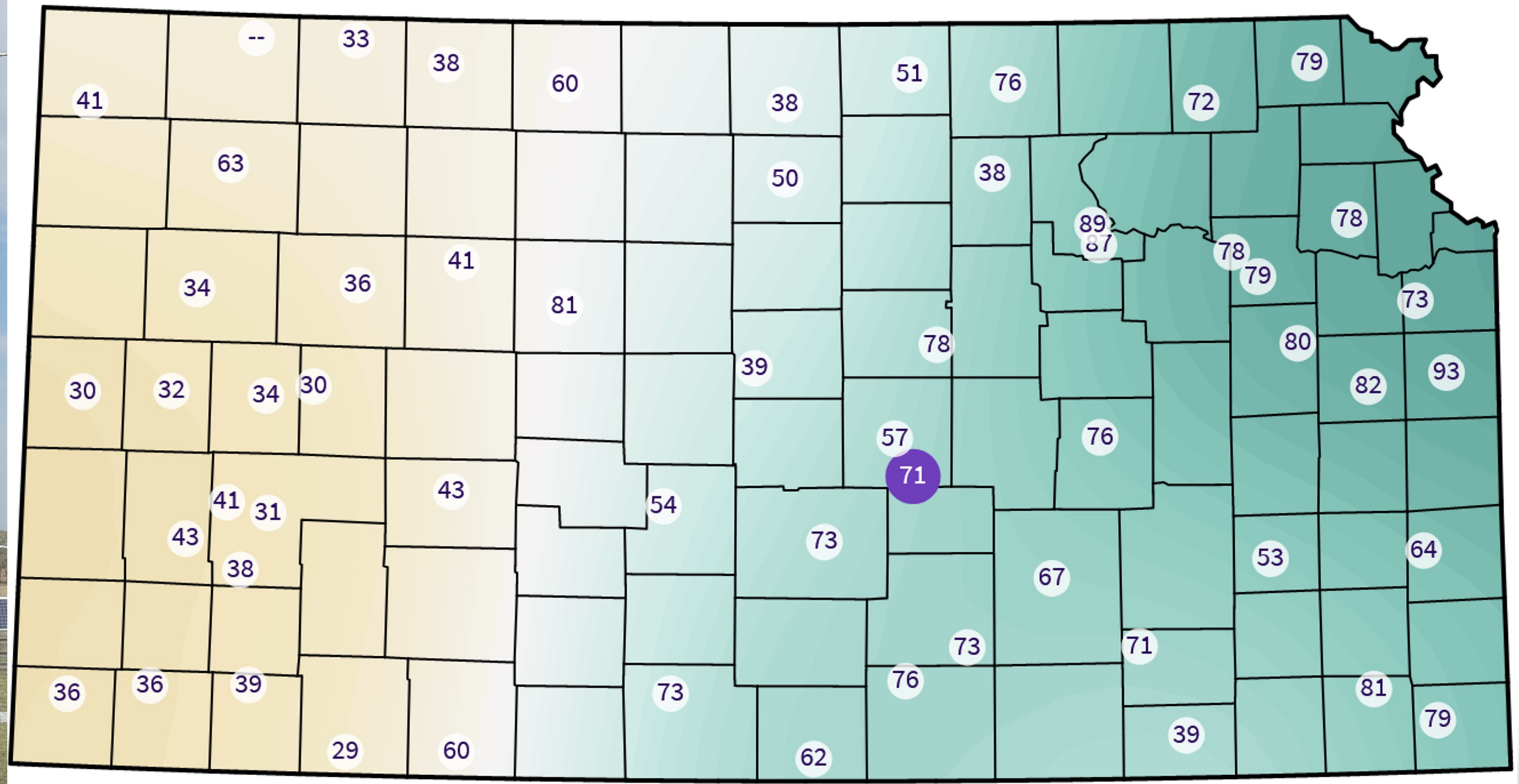
PRISM Drought Datasets

cocorahs.org



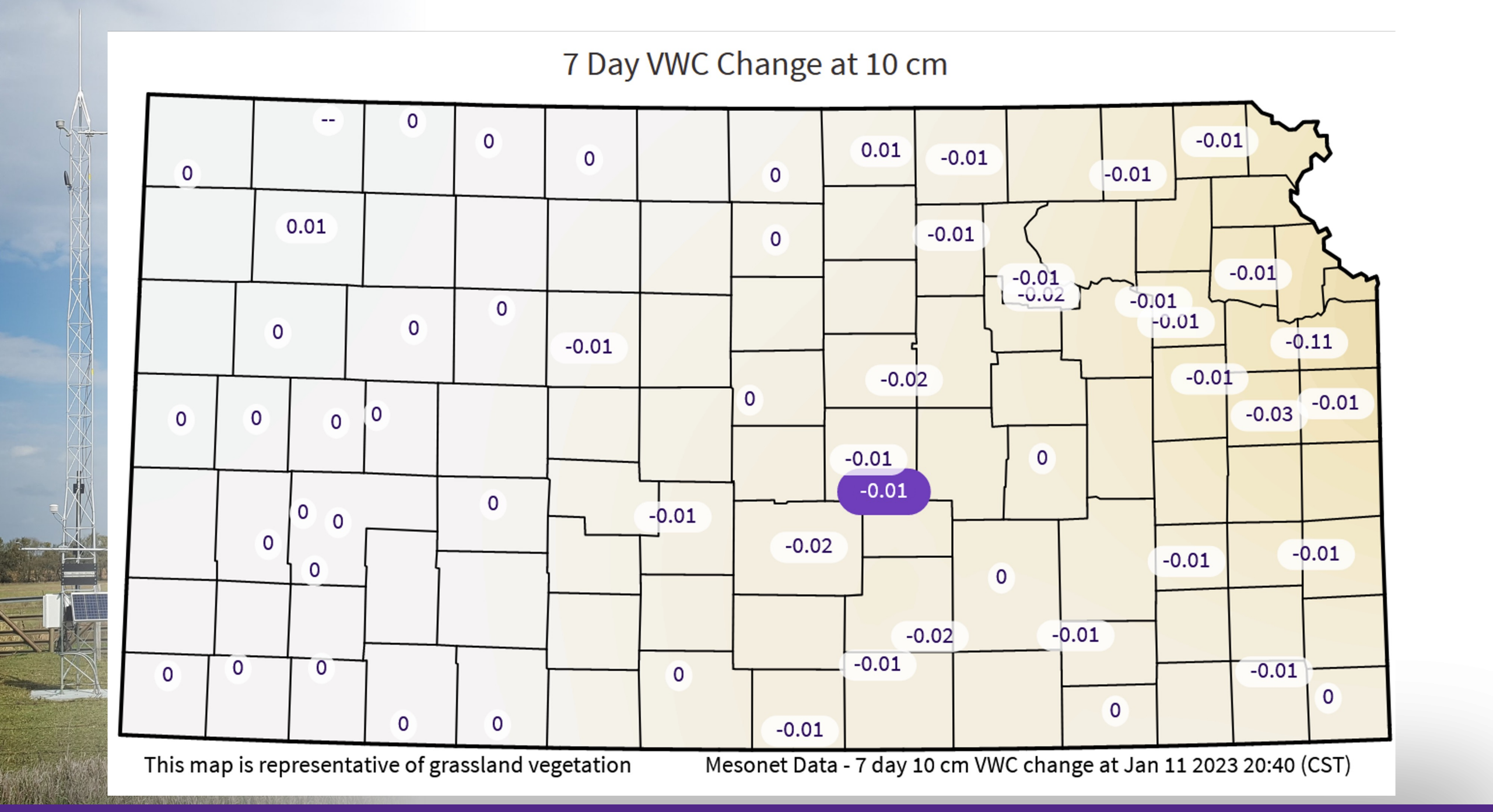
Mesonet Menu > Agriculture > Soil Moisture

Percent of Saturation at 10 cm

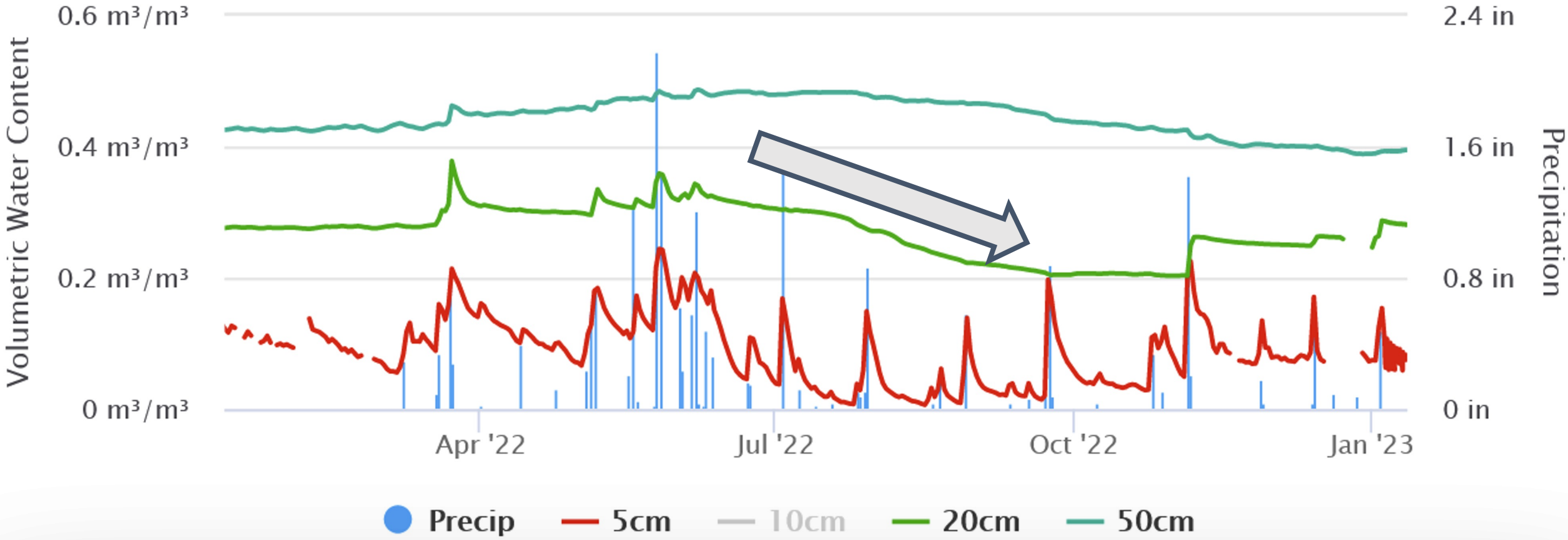


This map is representative of grassland vegetation

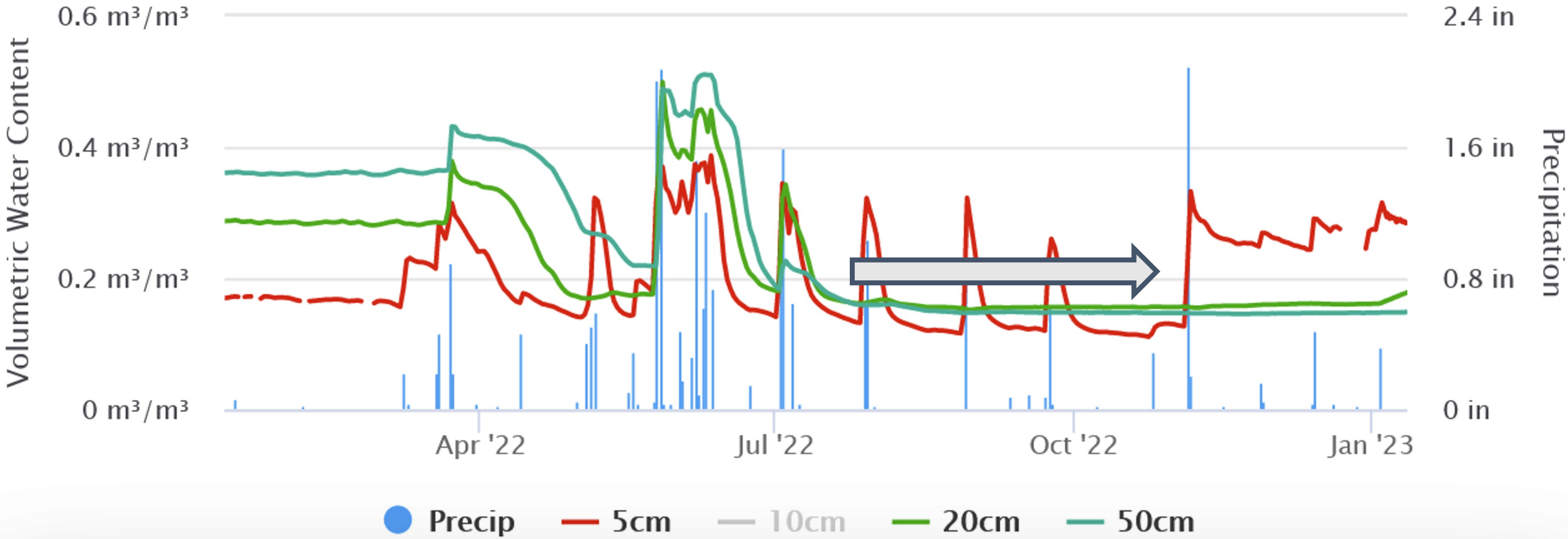
Mesonet Data - 10 cm % Saturation at Jan 11 2023 20:40 (CST)


7 Day VWC Change at 10 cm
This map is representative of grassland vegetation
Mesonet Data - 7 day 10 cm VWC change at Jan 11 2023 20:40 (CST)

McPherson 1S 365 Day Soil Moisture



Flickner Tech Farm 365 Day Soil Moisture



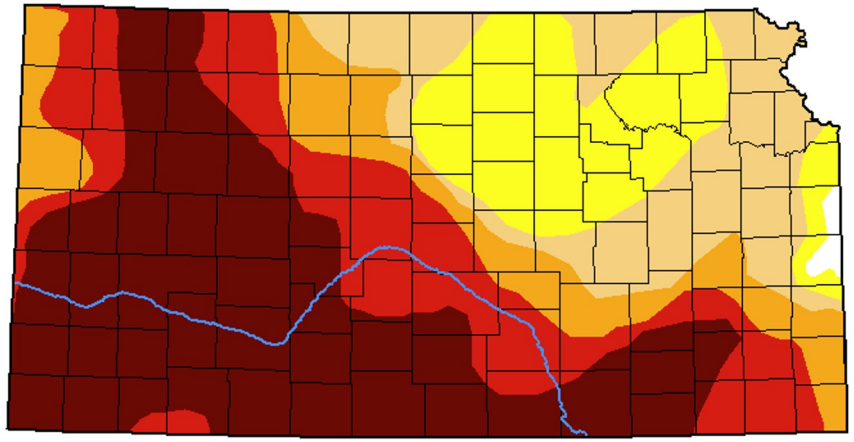
U.S. Drought Monitor

Kansas

January 10, 2023

(Released Thursday, Jan. 12, 2023)

Valid 7 a.m. EST



Intensity:

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

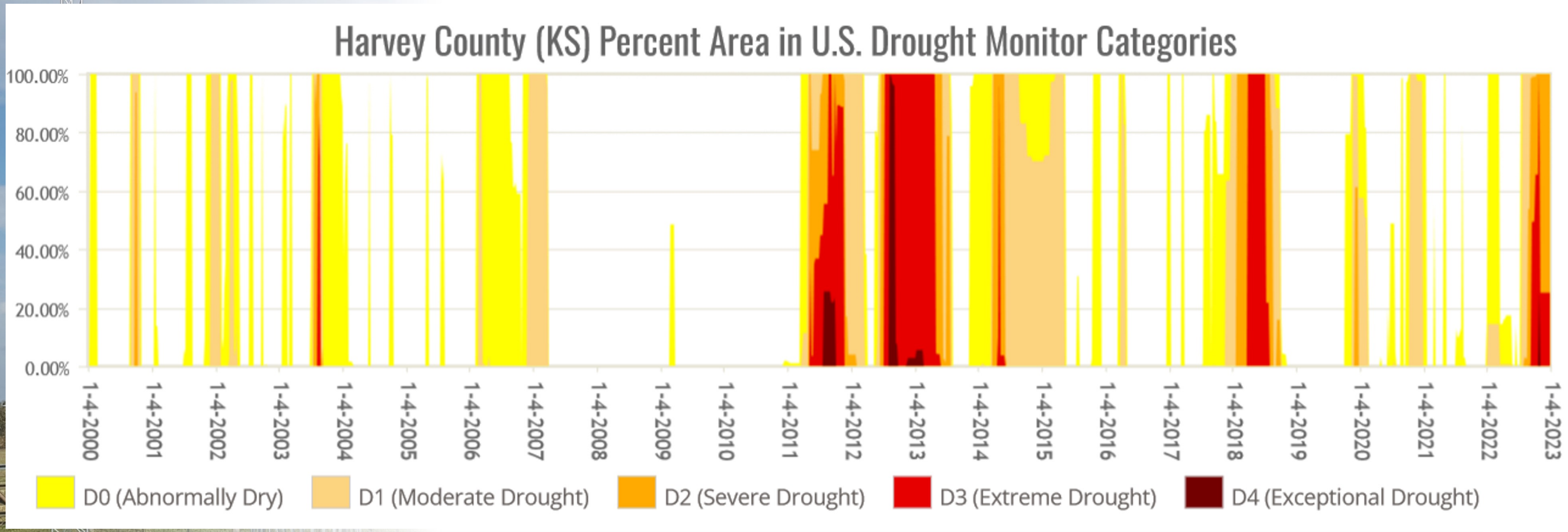
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

Author:

Richard Tinker
CPC/NOAA/NWS/NCEP

droughtmonitor.unl.edu

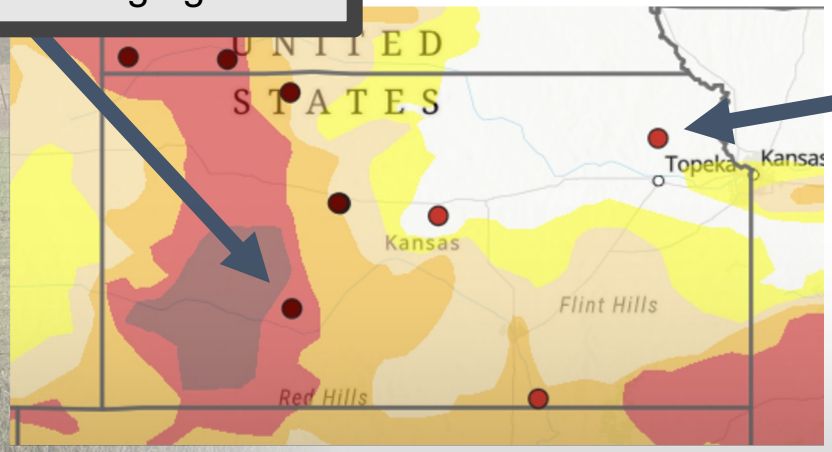
Drought Monitor

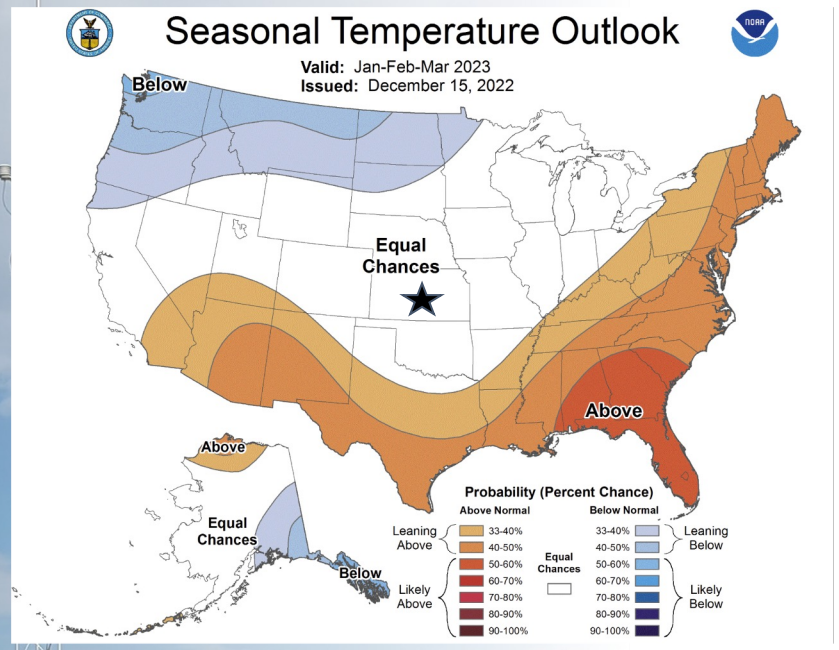

Harvey County (KS) Percent Area in U.S. Drought Monitor Categories
100.00%
80.00%
60.00%
40.00%
20.00%
0.00%
1-4-2000
1-4-2001
1-4-2002
1-4-2003
1-4-2004
1-4-2005
1-4-2006
1-4-2007
1-4-2008
1-4-2009
1-4-2010
1-4-2011
1-4-2012
1-4-2013
1-4-2014
1-4-2015
1-4-2016
1-4-2017
1-4-2018
1-4-2019
1-4-2020
1-4-2021
1-4-2022
1-4-2023
D0 (Abnormally Dry)
D1 (Moderate Drought)
D2 (Severe Drought)
D3 (Extreme Drought)
D4 (Exceptional Drought)

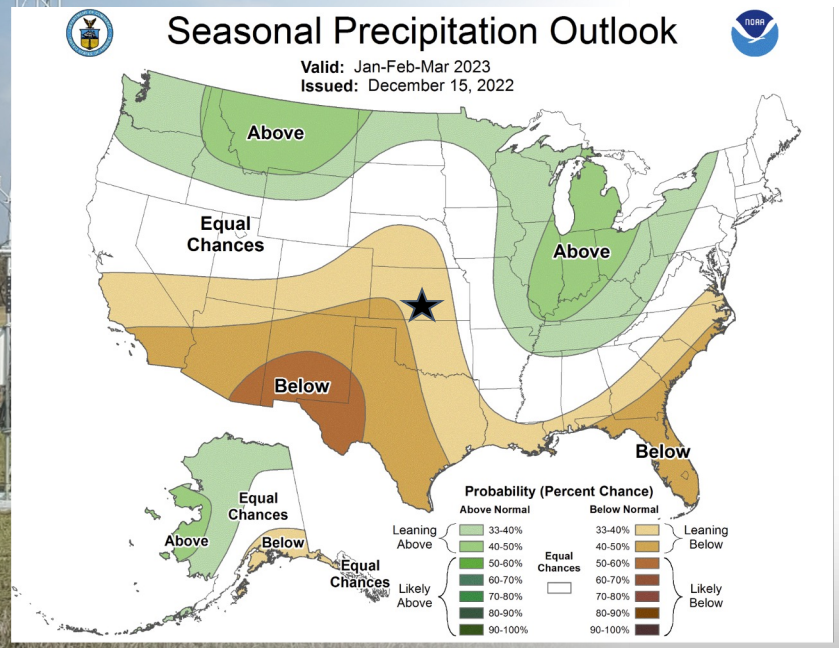
We need more drought reports!

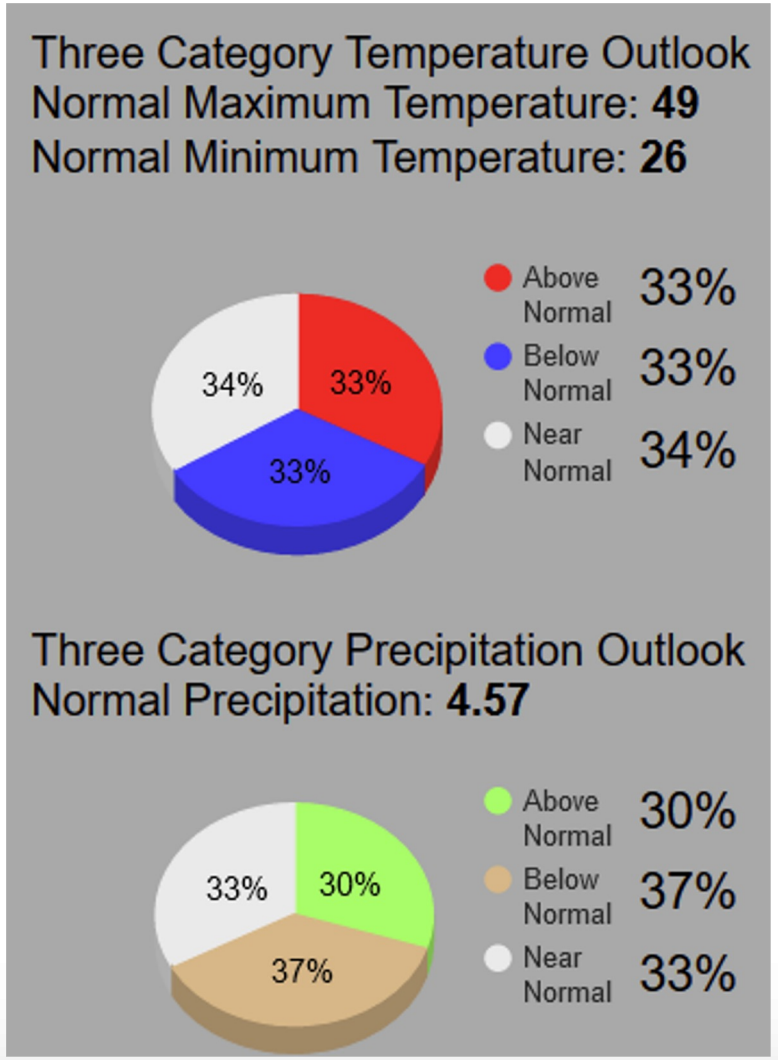
Make a CMOR Report: go.unl.edu/CMOR

Some widespread rainfall was received across most of southwest Kansas last week. However, there is little to no subsoil moisture, so although the rain was greatly appreciated and needed, moisture stress is already showing again….



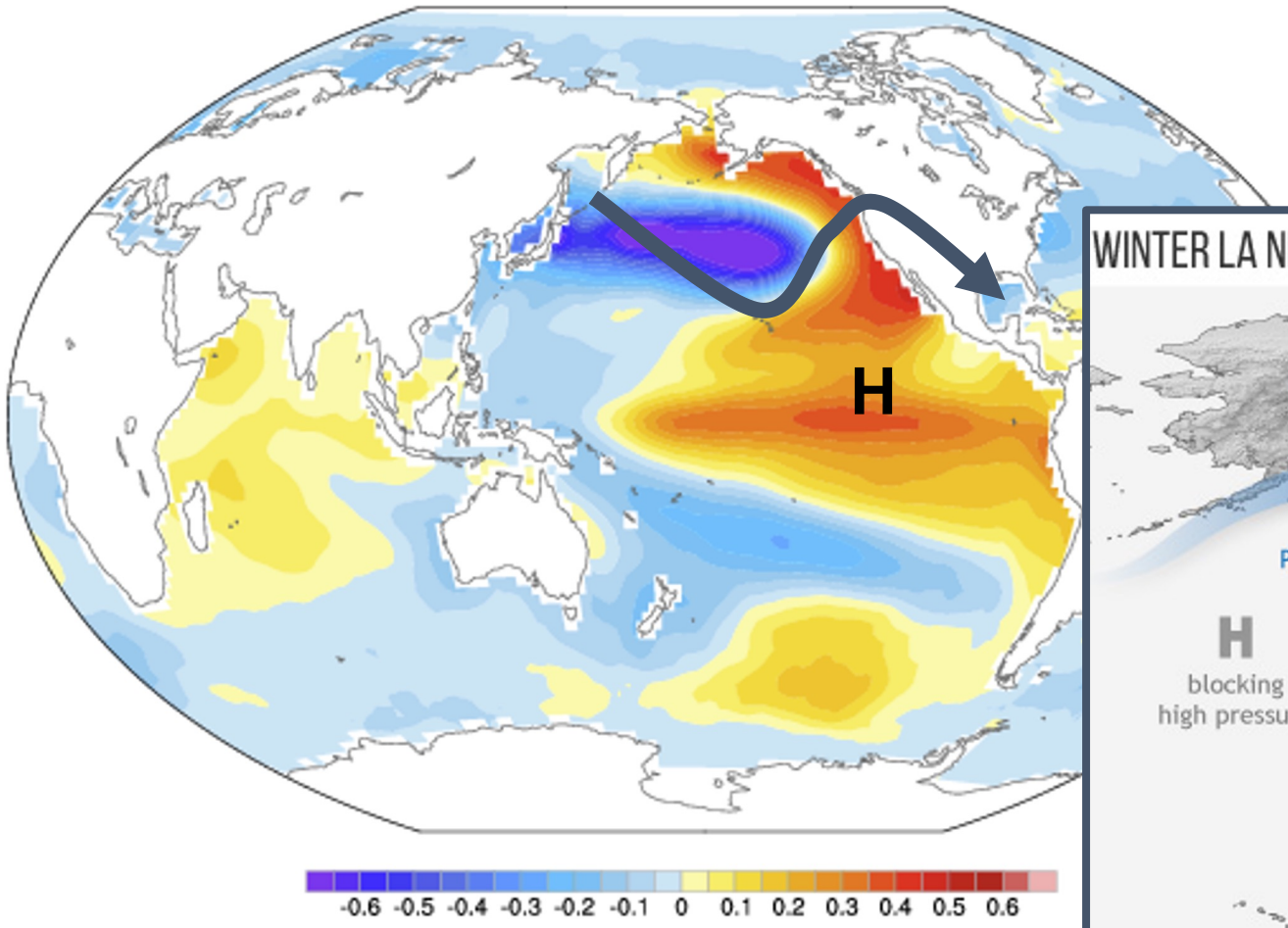


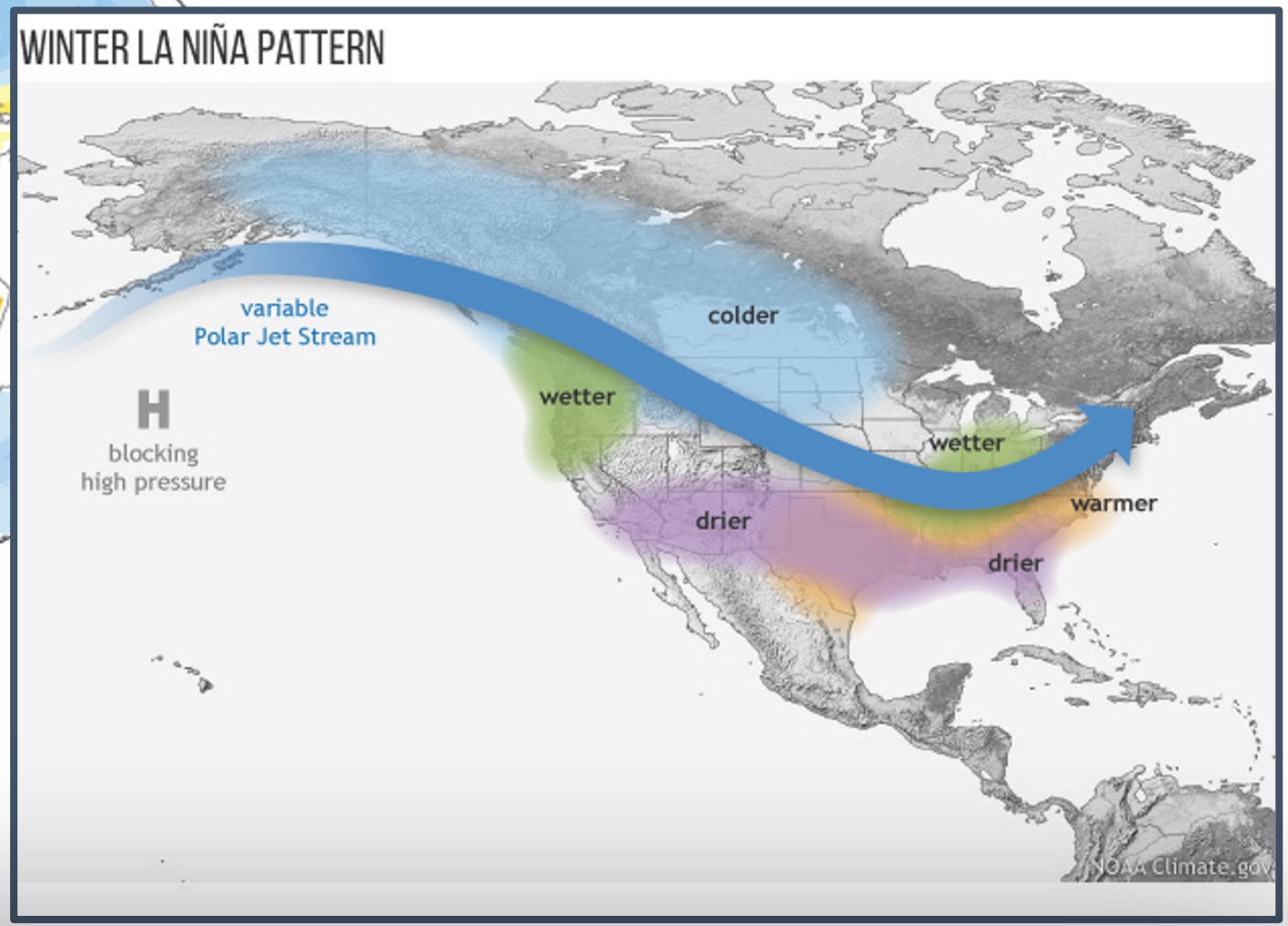


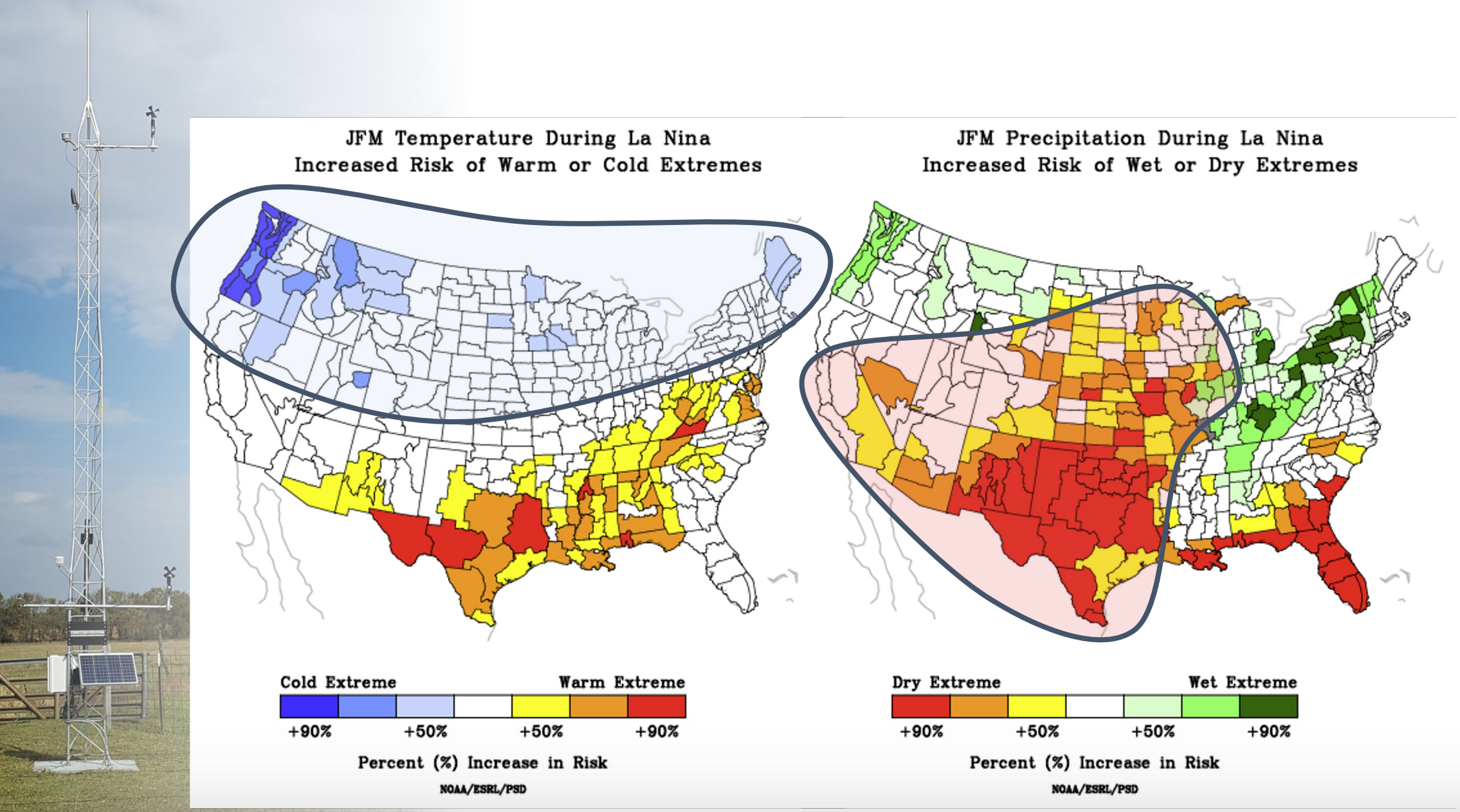


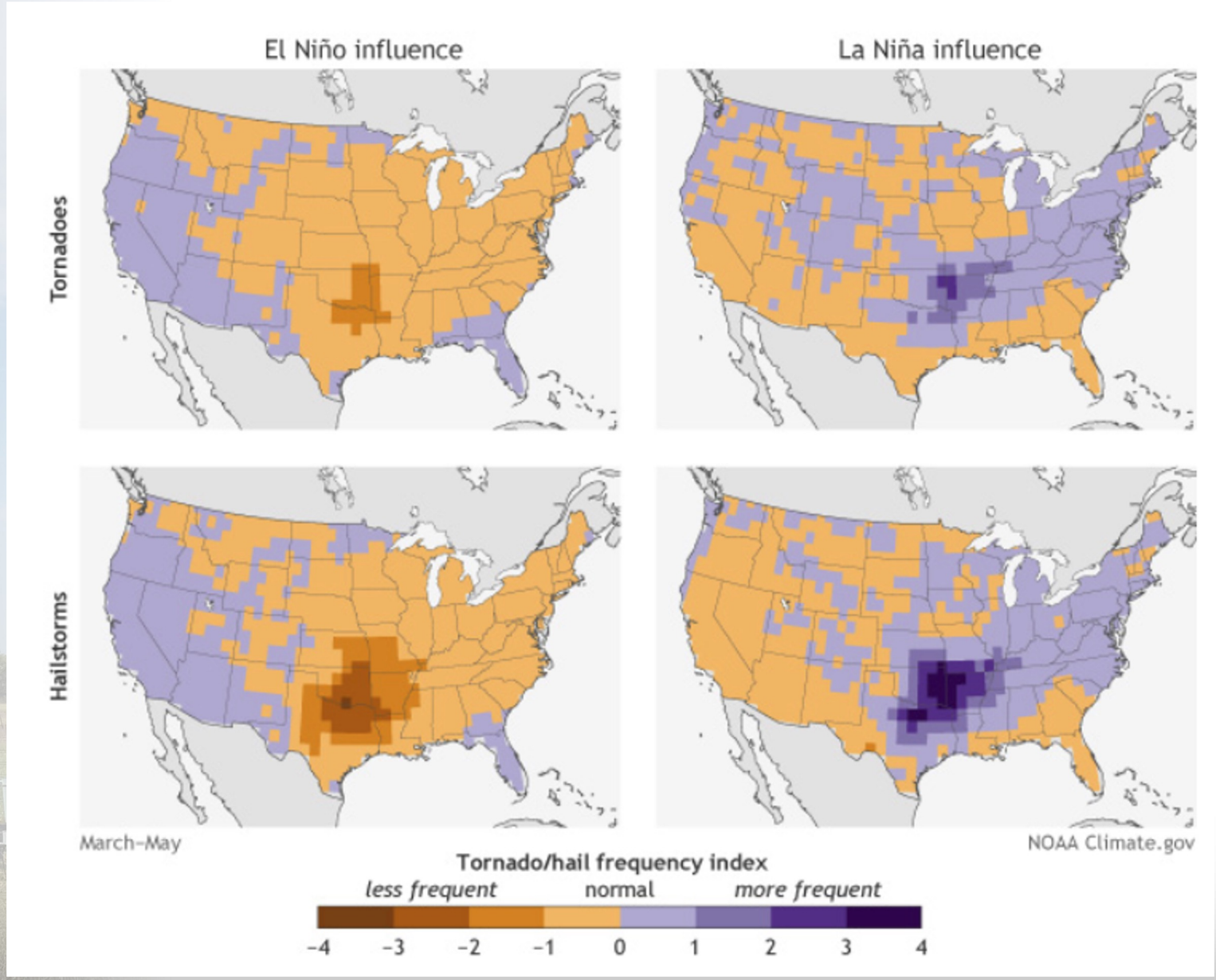
Climate Prediction Center Outlooks

PDO ERSST V5


H
-0.6 -0.5 -0.4 -0.3 -0.2 -0.1 0 0.1 0.2 0.3 0.4 0.5 0.6


WINTER LA NIÑA PATTERN
variable
Polar Jet Stream
H
blocking
high pressure
colder
wetter
wetter
warmer
drier
drier
NOAA Climate.gov


JFM Temperature During La Nina
Increased Risk of Warm or Cold Extremes
Cold Extreme
Warm Extreme
+90%
+50%
+50%
+90%
Percent (%) Increase in Risk
NOAA/ESRL/PSD
JFM Precipitation During La Nina
Increased Risk of Wet or Dry Extremes
Dry Extreme
Wet Extreme
+90%
+50%
+50%
+90%
Percent (%) Increase in Risk
NOAA/ESRL/PSD


El Niño influence
La Niña influence
Tornadoes
Hailstorms
March–May
NOAA Climate.gov
Tornado/hail frequency index
less frequent
normal
more frequent
−4
−3
−2
−1
0
1
2
3
4

Seasonal Forecast (Feb, Mar, Apr)

- Temperatures sneaking below normal again in Feb
- Drier after next week as La Nina impacts return
- Active storm track likely in spring - severe, fire, eventually rain
- Capitalize on the drought (dig out ponds, terracing, etc)
- Long term drought will continue into 2023

mesonet.ksu.edu

climate.ksu.edu

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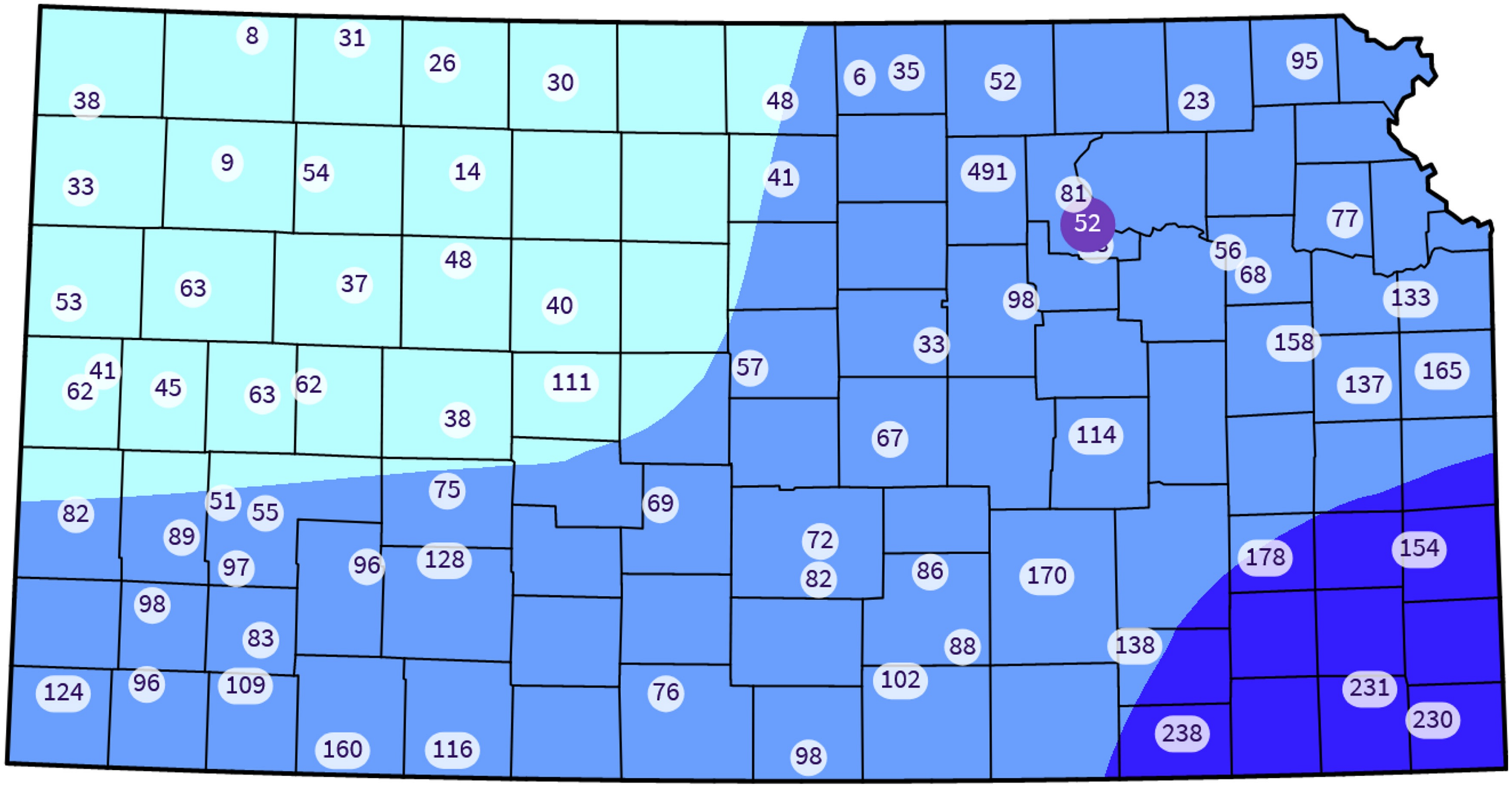
Twitter: @ksmesonet

KANSAS STATE UNIVERSITY | Kansas Mesonet

christopherredmond@k-state.edu
@wx_chip

Mesonet Menu > Agriculture > Hollow Stem

4in Soil Temp Growing Degrees



Mesonet Data - Wheat 4in Soil Growing Degrees Jan 11 2023 00:00 (CST)

McPherson 1S 4in Soil Growing Degrees