2014 in Review/2015 Weather Outlook

By,
Joshua Senechal

Overview

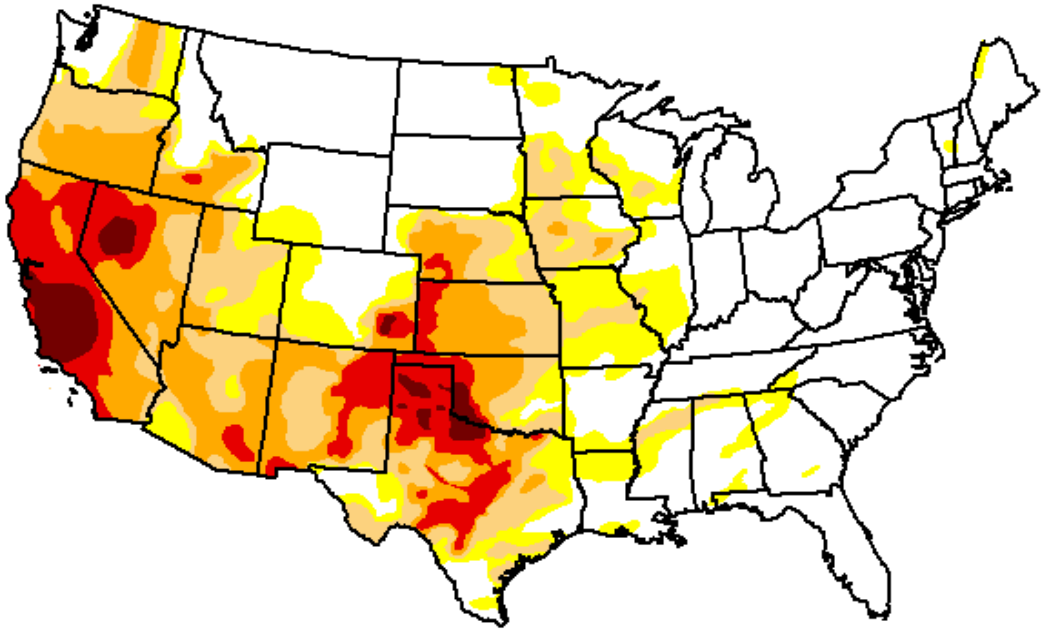
- Part I: Spring 2014 Overview
- Part II: Summer 2014 Overview
- Part III: Fall Outlook
- Part IV: Winter Forecast
- Part V: Summer Preview

Spring 2014

- Soil temperatures warmed slowly in response to a brutally cold winter.
- Untimely rainfall delayed corn and soybean planting by several weeks.
- Drought lingered across the Western Midwest.

U.S. Drought Monitor

CONUS



April 1, 2014

(Released Thursday, Apr. 3, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	47.12	52.88	38.37	24.12	9.80	2.18
Last Week *3/25/2014*	48.02	51.98	38.27	23.09	9.70	2.09
3 Months Ago *12/31/2013*	48.24	51.76	30.95	16.67	3.96	0.37
Start of Calendar Year *12/31/2013*	48.24	51.76	30.95	16.67	3.96	0.37
Start of Water Year *10/1/2013*	39.57	60.43	41.21	20.70	3.06	0.29
One Year Ago *4/2/2013*	33.29	66.71	51.92	35.30	17.13	5.20

Intensity:

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

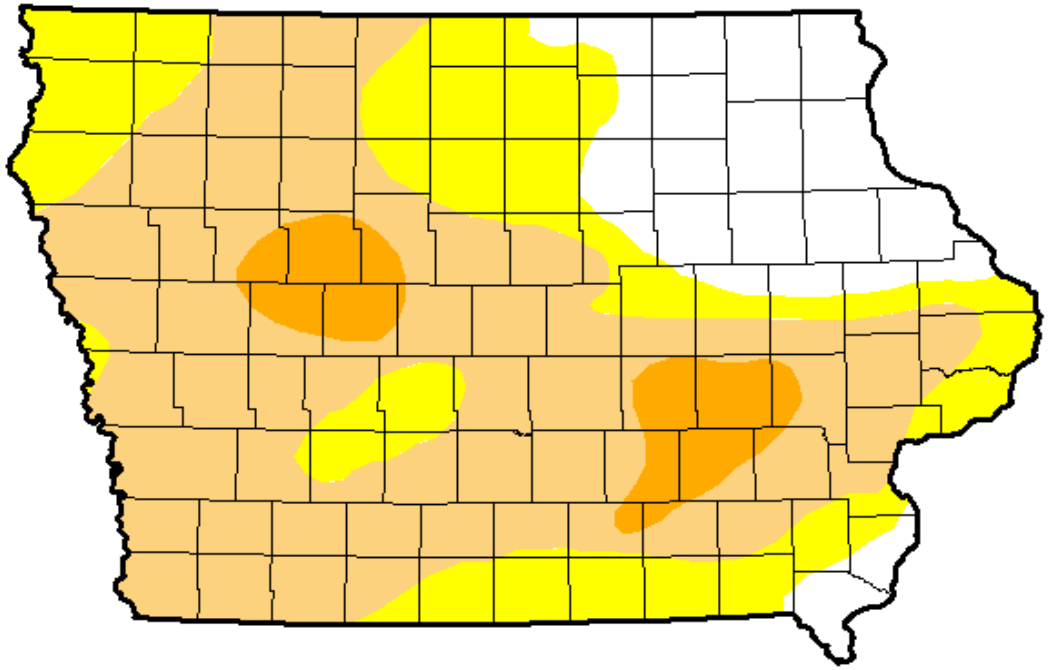
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author(s):
David Simeral
Western Regional Climate Center

http://droughtmonitor.unl.edu/

U.S. Drought Monitor

Iowa



April 1, 2014

(Released Thursday, Apr. 3, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	17.67	82.33	56.68	6.84	0.00	0.00
Last Week *3/25/2014*	17.67	82.33	56.68	6.84	0.00	0.00
3 Months Ago *12/31/2013*	23.40	76.60	52.56	19.70	0.00	0.00
Start of Calendar Year *12/31/2013*	23.40	76.60	52.56	19.70	0.00	0.00
Start of Water Year *10/1/2013*	5.32	94.68	78.89	38.39	1.76	0.00
One Year Ago *4/2/2013*	6.78	93.22	74.93	47.66	21.37	0.06

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
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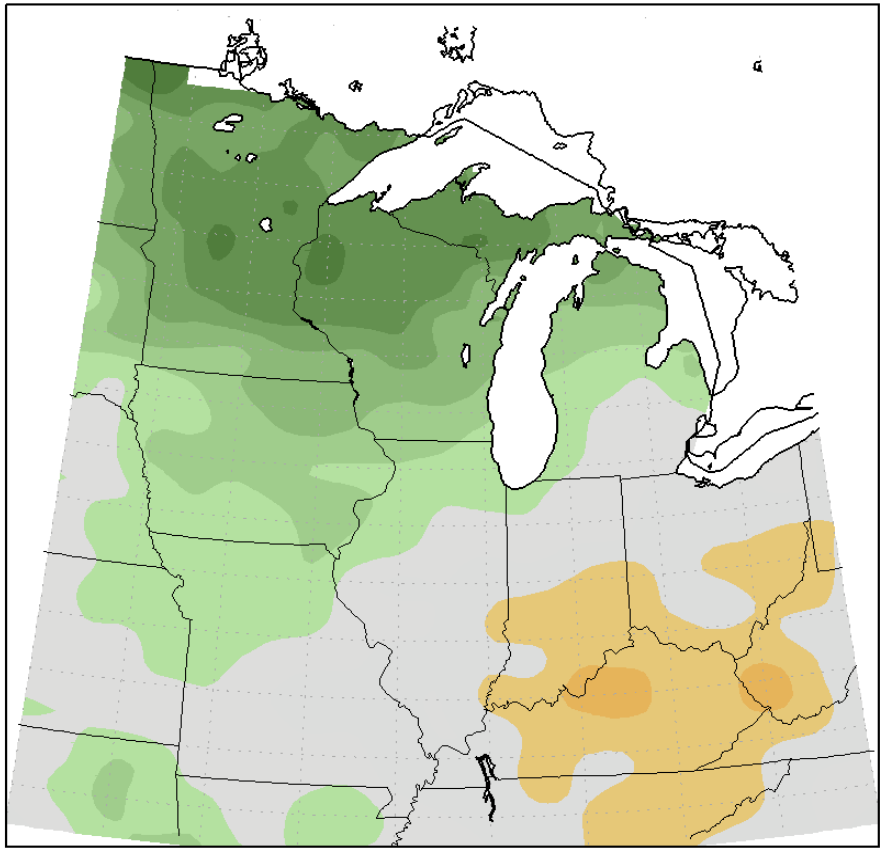
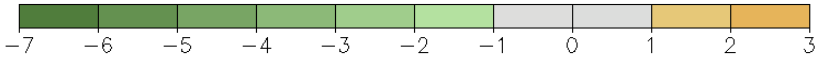
Average Temperature (°F): Departure from Mean
April 1, 2014 to April 30, 2014



Mean period is 1981–2010.



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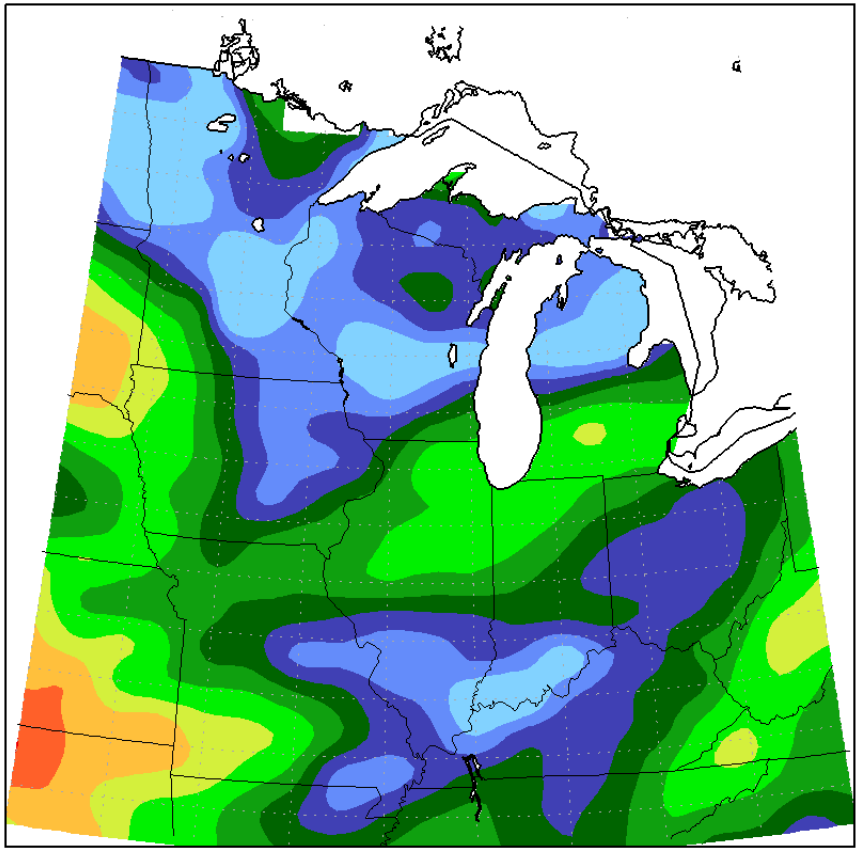
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Accumulated Precipitation: Percent of Mean
April 1, 2014 to April 30, 2014



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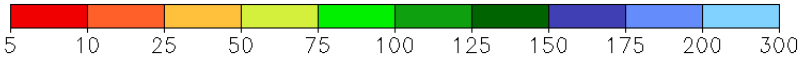

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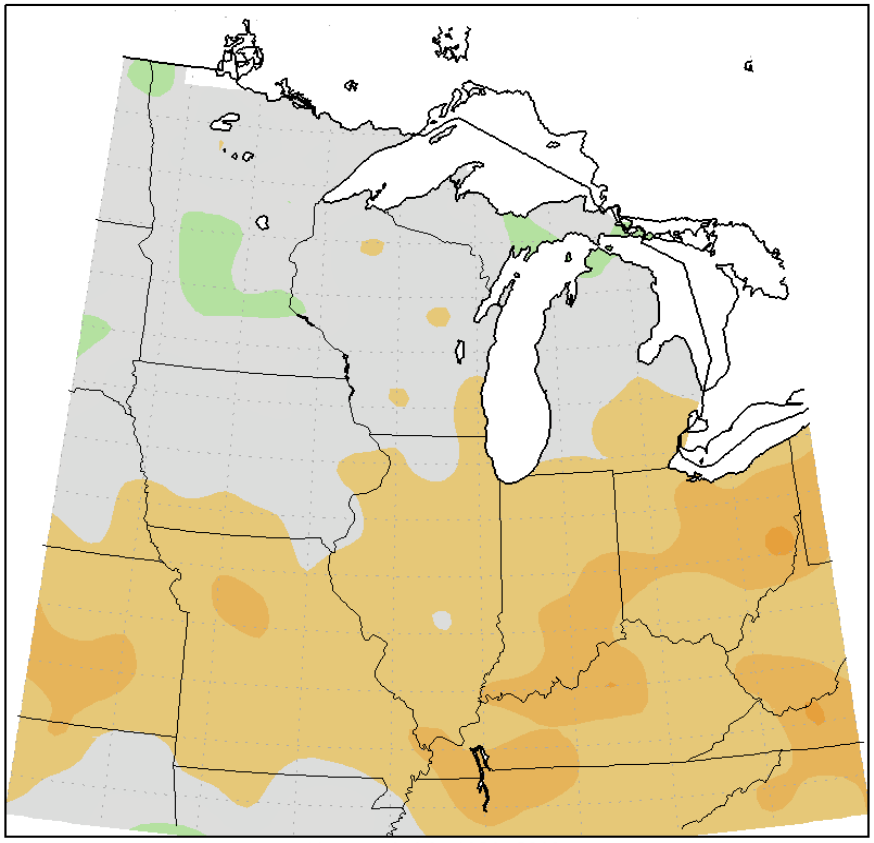
University of Illinois at Urbana–Champaign

May Highlights

- Temperatures averaged near to above normal
- Rainfall averaged near to below normal, allowing for a quick resumption of planting by mid-month
- Market prices begin to tumble

Average Temperature (°F): Departure from Mean
May 1, 2014 to May 31, 2014



Mean period is 1981–2010.

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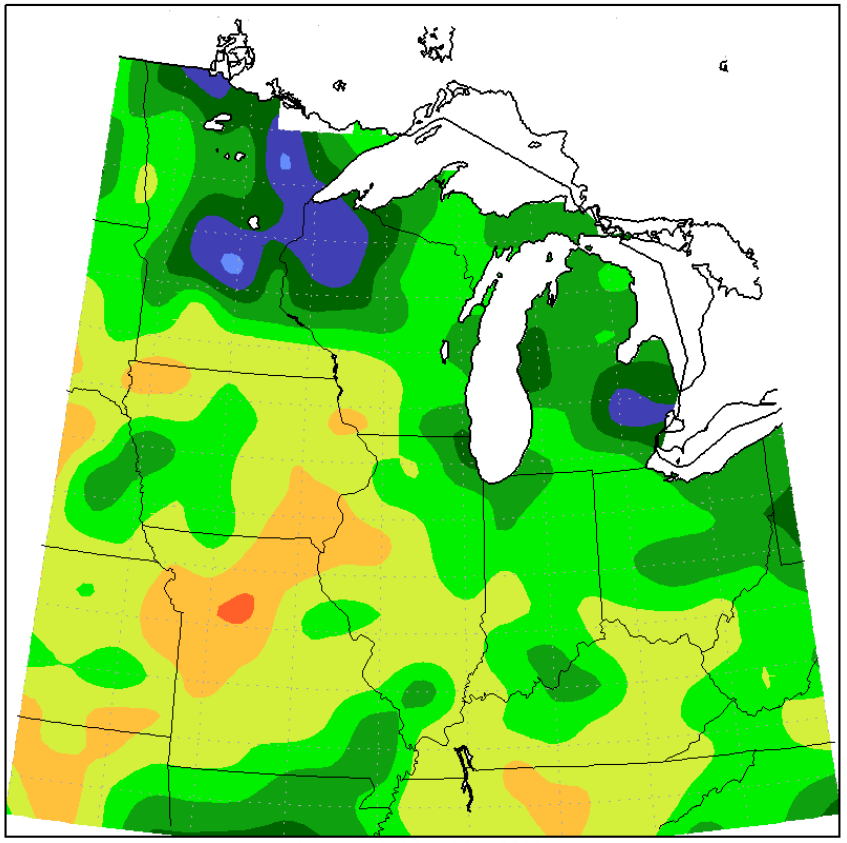
Accumulated Precipitation: Percent of Mean
May 1, 2014 to May 31, 2014



Mean period is 1981–2010.

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Crop Progress

ISSN: 1948-3007

Released May 5, 2014, by the National Agricultural Statistics Service (NASS), Agricultural Statistics Board, United States Department of Agriculture (USDA).

Corn Planted - Selected States
[These 18 States planted 91% of the 2013 corn acreage]

State	Week ending: May 4, 2013	Week ending: April 27, 2014	Week ending: May 4, 2014	2009-2013 Average
	percent			
Colorado	11	16	35	30
Illinois	6	32	43	41
Indiana	7	8	20	34
Iowa	7	15	23	50
Kansas	16	37	52	46
Kentucky	31	32	39	52
Michigan	4	1	3	23
Minnesota	2	4	8	46
Missouri	21	47	63	51
Nebraska	12	20	44	45
North Carolina	87	60	75	91
North Dakota	1	-	-	19
Ohio	6	4	9	32
Pennsylvania	26	2	8	25
South Dakota	6	11	25	23
Tennessee	55	53	68	70
Texas	70	64	73	76
Wisconsin	3	1	2	23
18 States	11	19	29	42

Soybeans Planted - Selected States
[These 18 States planted 95% of the 2013 soybean acreage]

State	Week ending: May 4, 2013	Week ending: April 27, 2014	Week ending: May 4, 2014	2009-2013 Average
	percent			
Arkansas	13	16	24	29
Illinois	-	2	3	7
Indiana	-	1	3	14
Iowa	-	-	1	8
Kansas	-	1	4	5
Kentucky	1	1	2	8
Louisiana	37	55	69	48
Michigan	-	-	1	8
Minnesota	-	-	-	10
Mississippi	14	24	36	50
Missouri	-	-	4	6
Nebraska	1	6	11	11
North Carolina	2	-	3	8
North Dakota	-	-	-	2
Ohio	1	1	3	12
South Dakota	-	-	1	2
Tennessee	1	2	5	7
Wisconsin	-	-	1	4
18 States	2	3	5	11

Corn Planted - Selected States
[These 18 States planted 91% of the 2013 corn acreage]

State	Week ending: May 25, 2013	Week ending: May 18, 2014	Week ending: May 25, 2014	2009-2013 Average
	percent			
Colorado	88	83	93	90
Illinois	87	84	95	88
Indiana	83	72	87	77
Iowa	83	84	96	95
Kansas	85	86	93	93
Kentucky	71	74	87	82
Michigan	88	29	53	82
Minnesota	80	53	81	92
Missouri	81	92	97	88
Nebraska	94	91	97	97
North Carolina	99	96	98	100
North Dakota	70	17	67	75
Ohio	87	50	69	74
Pennsylvania	82	51	63	74
South Dakota	89	73	90	86
Tennessee	86	93	97	92
Texas	93	93	97	96
Wisconsin	61	36	67	80
18 States	84	73	88	88

Soybeans Planted - Selected States
[These 18 States planted 95% of the 2013 soybean acreage]

State	Week ending: May 25, 2013	Week ending: May 18, 2014	Week ending: May 25, 2014	2009-2013 Average
	percent			
Arkansas	42	49	63	53
Illinois	37	36	64	50
Indiana	56	33	58	50
Iowa	37	40	80	75
Kansas	34	32	58	48
Kentucky	13	14	30	32
Louisiana	72	87	90	81
Michigan	64	15	29	54
Minnesota	39	16	49	67
Mississippi	44	73	83	79
Missouri	28	32	61	40
Nebraska	59	65	88	76
North Carolina	27	32	43	37
North Dakota	31	5	31	45
Ohio	66	20	34	52
South Dakota	45	32	64	49
Tennessee	19	23	39	34
Wisconsin	26	8	39	50
18 States	41	33	59	56


520-0
500-0
480-0
460-0
440-0
420-0
400-0
380-0
360-0
348-2
320-0
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• Volume 174,549
• Open Interest 750,283
800k
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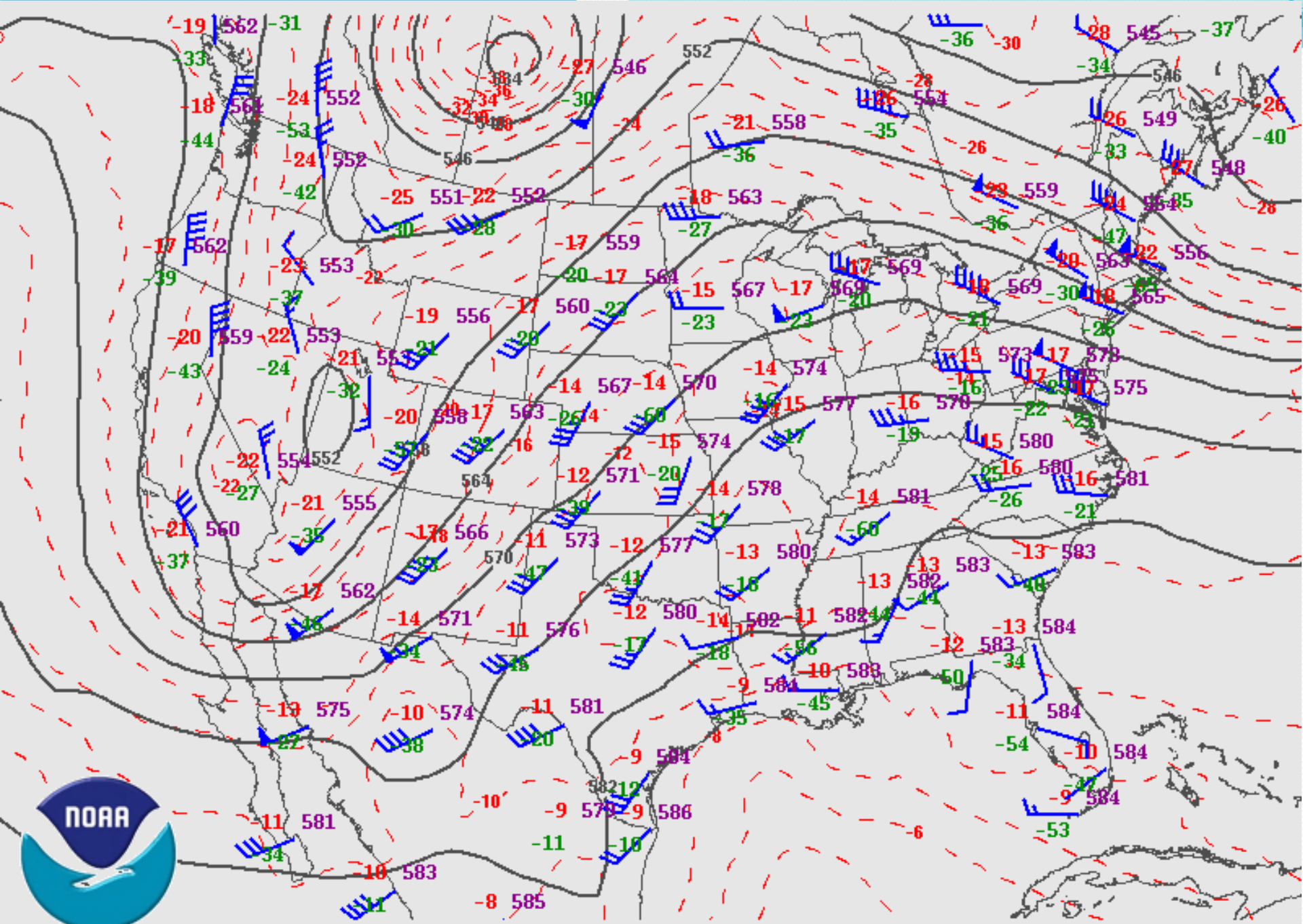
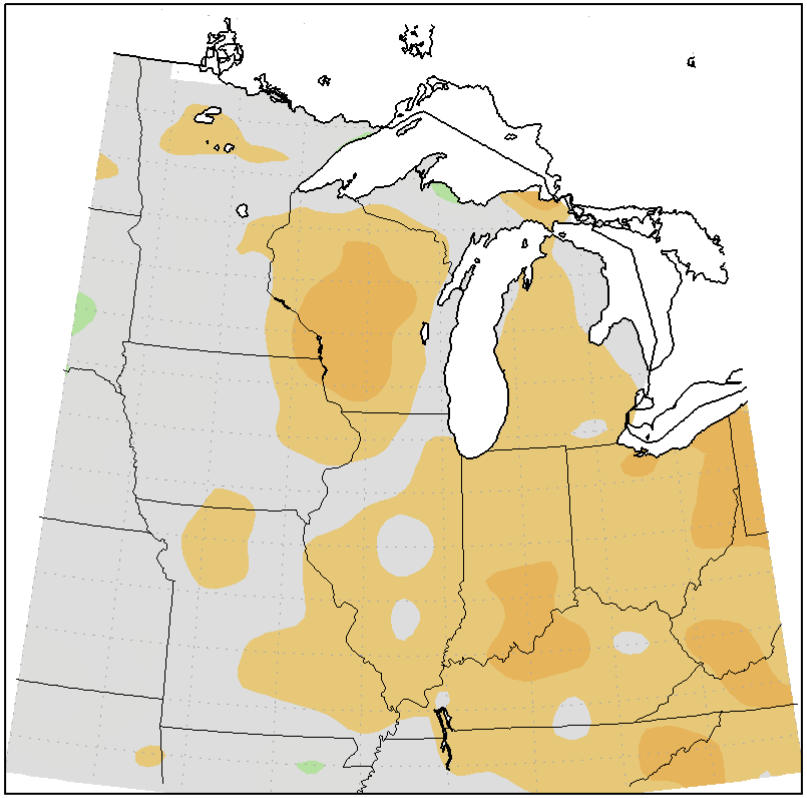
Jan '14
Feb '14
Mar '14
Apr '14
May '14
Jun '14
Jul '14
Aug '14
Sep '14
Oct '14


NOAA
National Weather Service
Storm Prediction Center
140507/1200 500 MB UA OBS, HGHTS, and TEMPS

June Highlights

- Extreme rainfall plagues the western Midwest along with several episodes of severe weather.
- Temperatures were near normal west, above normal east.
- Many fields become flooded in addition to river flooding.
- Some farmers are forced to replant.
- Good and excellent condition starts high.

Average Temperature (°F): Departure from Mean
June 1, 2014 to June 30, 2014



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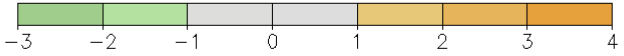

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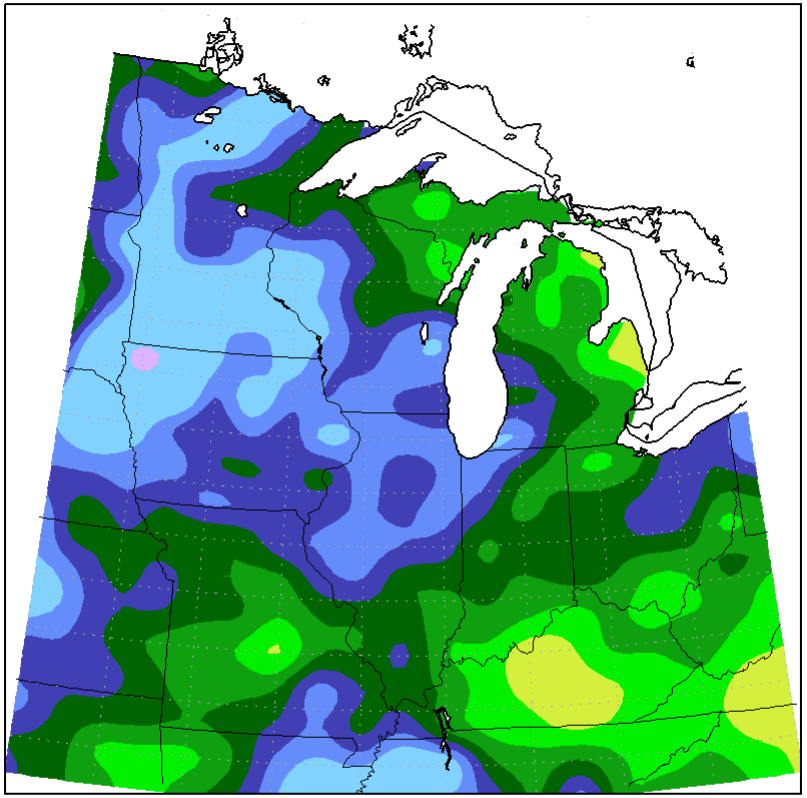
University of Illinois at Urbana–Champaign

Accumulated Precipitation: Percent of Mean
June 1, 2014 to June 30, 2014



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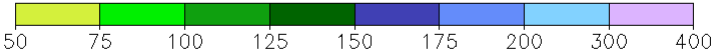

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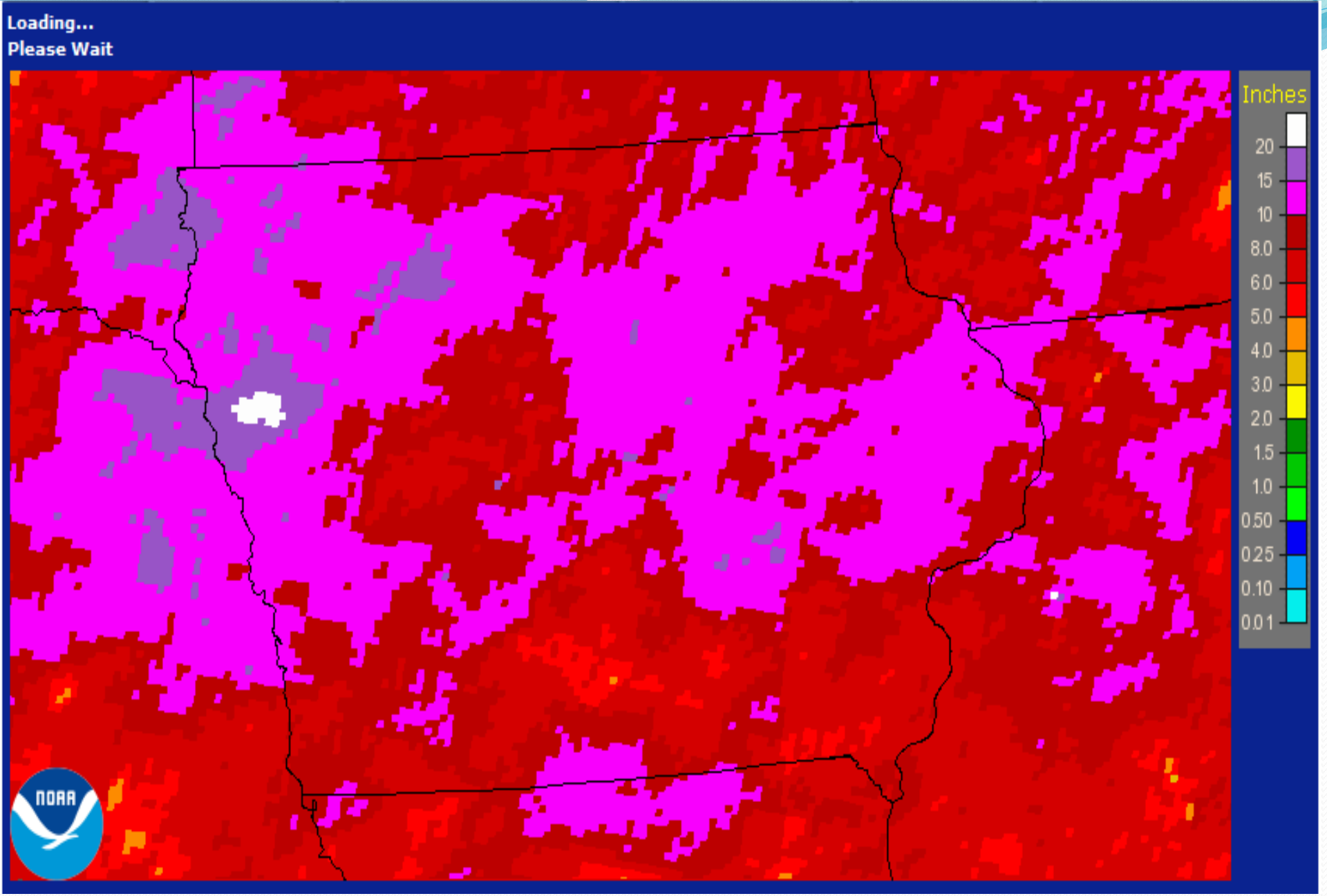
Loading...
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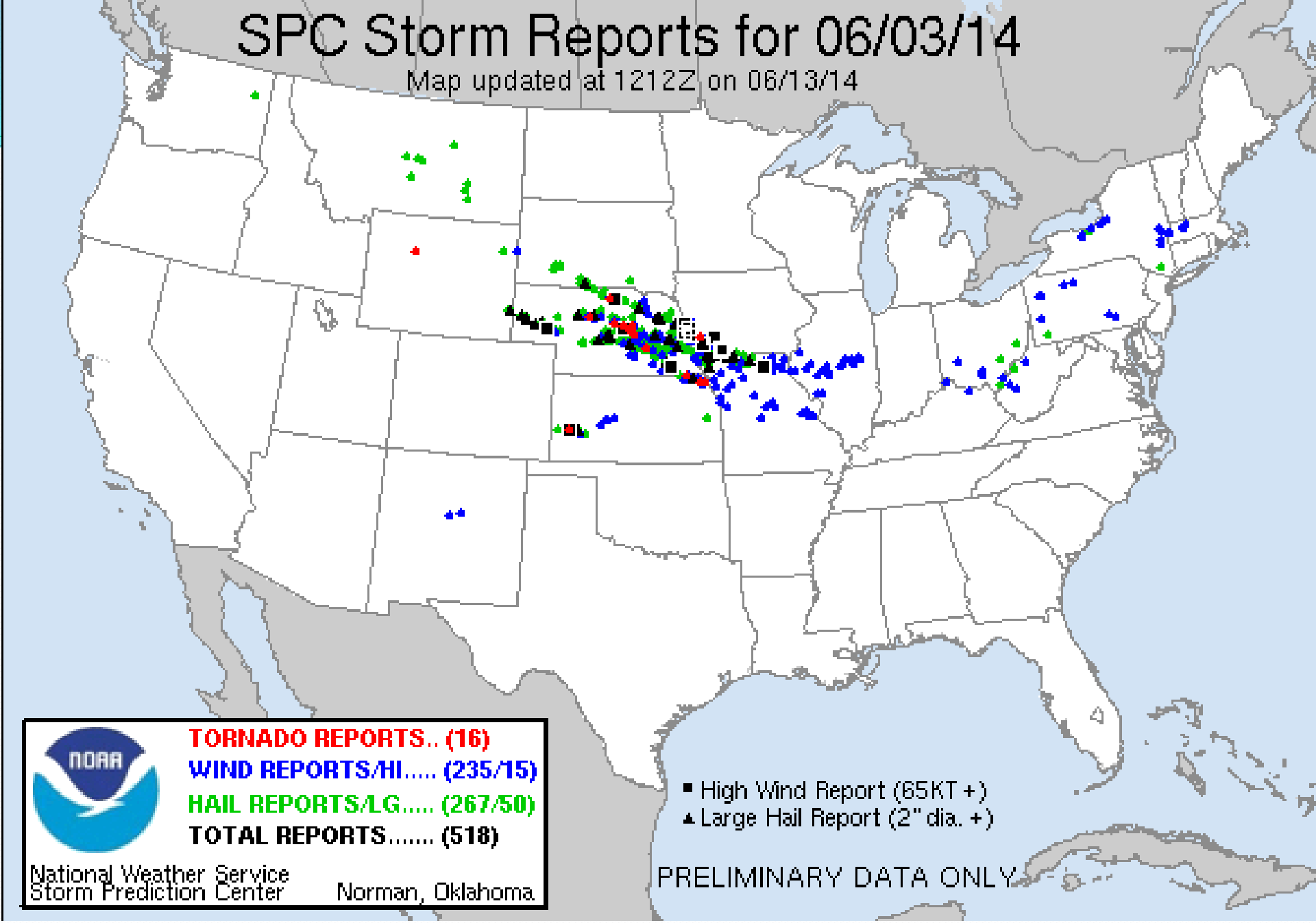
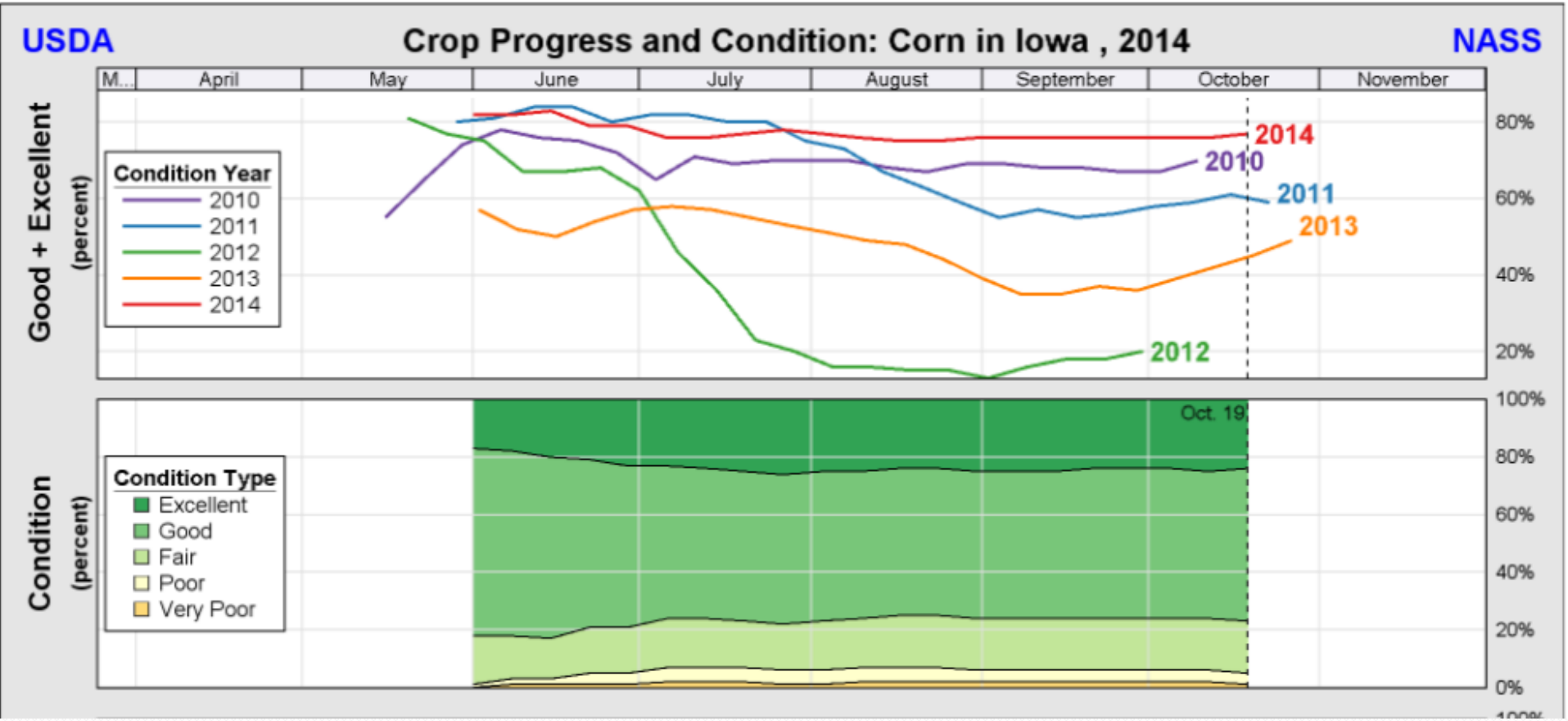
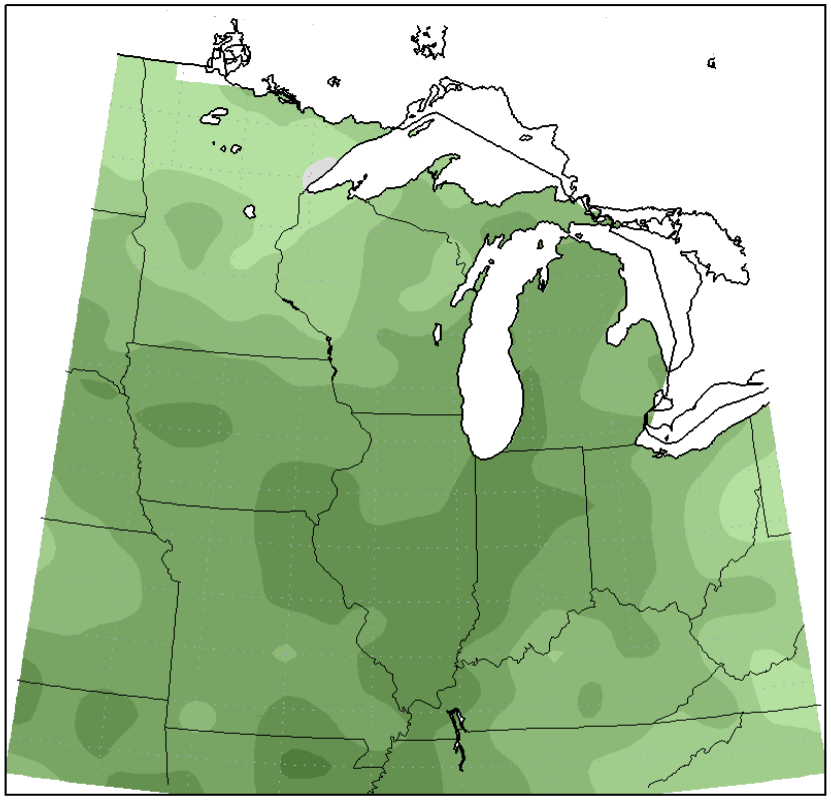

SPC Storm Reports for 06/03/14
Map updated at 1212Z on 06/13/14
TORNADO REPORTS.. (16)
WIND REPORTS/HI..... (235/15)
HAIL REPORTS/LG..... (267/50)
TOTAL REPORTS..... (518)
National Weather Service
Storm Prediction Center
Norman, Oklahoma
■ High Wind Report (65KT +)
▲ Large Hail Report (2" dia. +)
PRELIMINARY DATA ONLY


USDA
Crop Progress and Condition: Corn in Iowa , 2014
NASS
M...
April
May
June
July
August
September
October
November
Good + Excellent
(percent)
Condition Year
2010
2011
2012
2013
2014
80%
60%
40%
20%
Condition
(percent)
Condition Type
Excellent
Good
Fair
Poor
Very Poor
Oct. 19
100%
80%
60%
40%
20%
0%

July Highlights

- Rainfall trends below normal for many across the western Midwest.
- Temperatures averaged below normal.
- Good and excellent corn and soybean conditions remain near record levels.
- Market prices tumble

Average Temperature (°F): Departure from Mean
July 1, 2014 to July 31, 2014



Mean period is 1981–2010.

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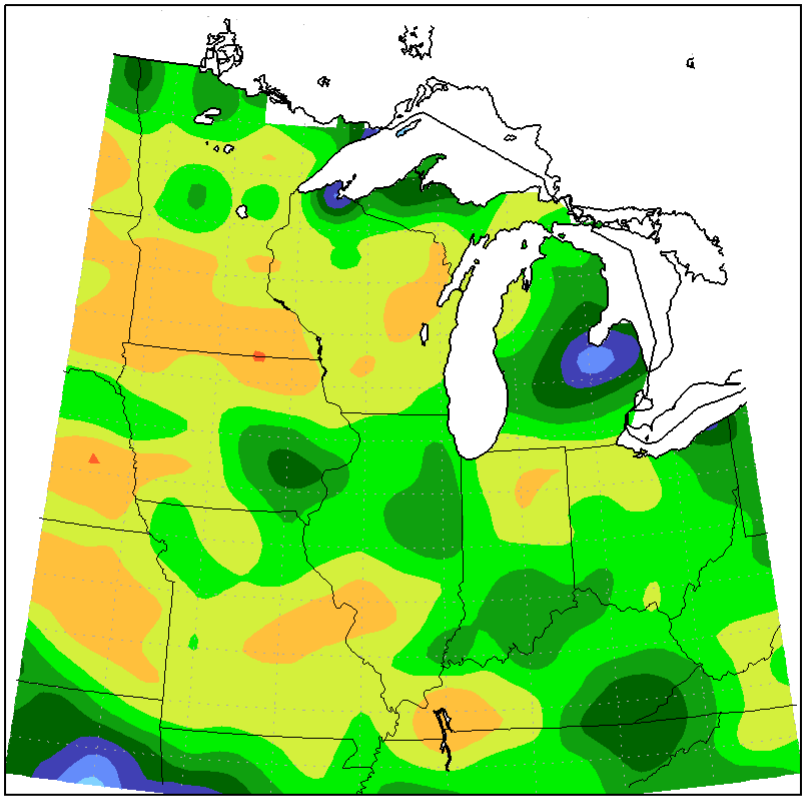
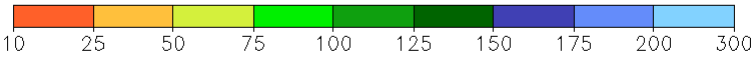
Illinois State Water Survey, Prairie Research Institute
University of Illinois at Urbana–Champaign

Accumulated Precipitation: Percent of Mean
July 1, 2014 to July 31, 2014



Mean period is 1981–2010.



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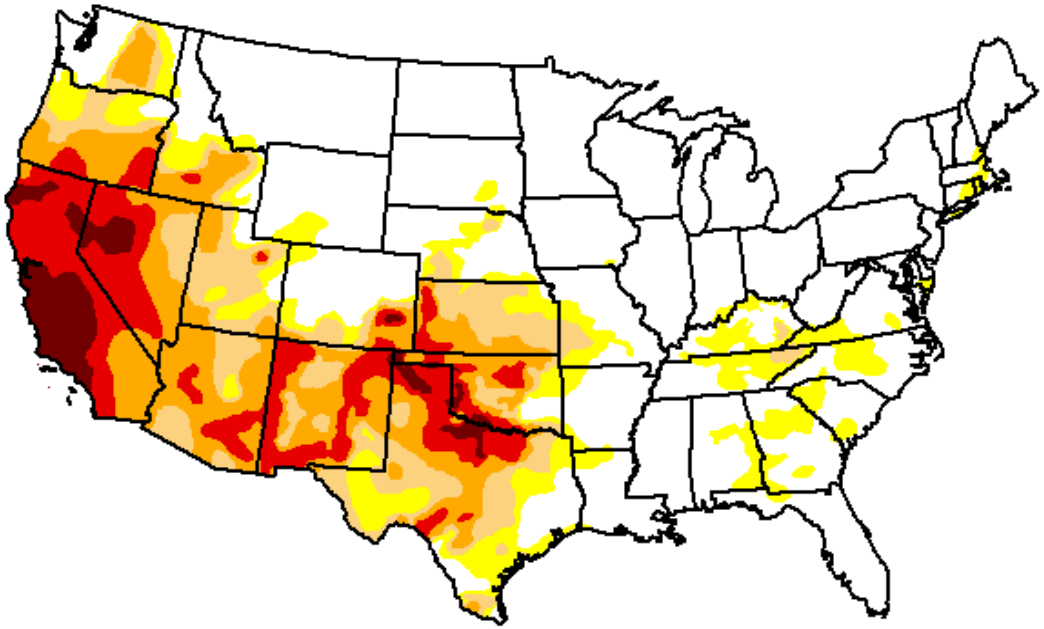
U.S. Drought Monitor
CONUS



July 15, 2014

(Released Thursday, Jul. 17, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	54.61	45.39	34.16	24.12	11.87	2.86
Last Week *7/8/2014*	54.53	45.47	34.25	24.95	12.02	2.94
3 Months Ago *4/15/2014*	51.54	48.46	37.88	25.20	10.11	2.83
Start of Calendar Year *12/31/2013*	48.24	51.76	30.95	16.67	3.96	0.37
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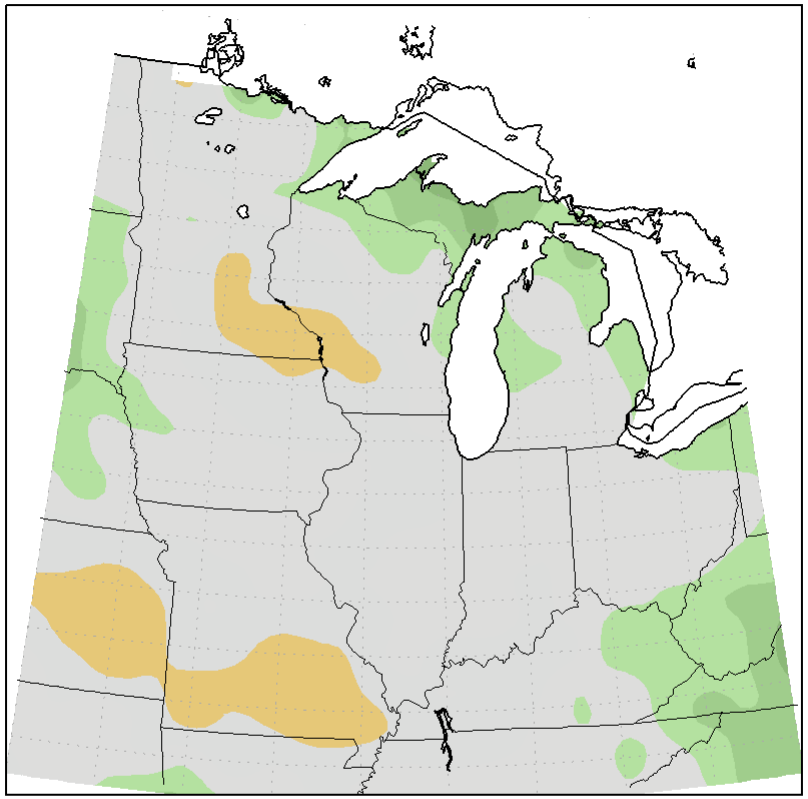
Author(s):
David Miskus
NOAA/NWS/NCEP/CPC

http://droughtmonitor.unl.edu/

August Highlights

- Weather remains favorable for maturing crops, with some localized dry spots.
- Record yields are becoming more certain.
- Most areas see near normal temperatures with near to above normal rainfall

Average Temperature (°F): Departure from Mean
August 1, 2014 to August 31, 2014



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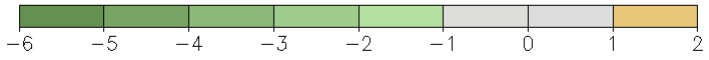

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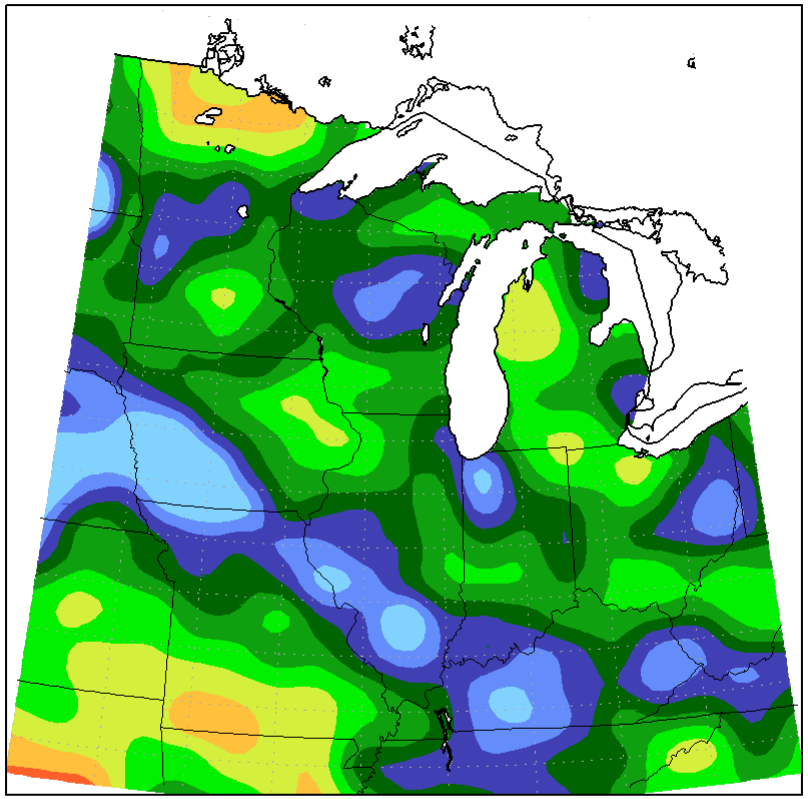
Accumulated Precipitation: Percent of Mean
August 1, 2014 to August 31, 2014



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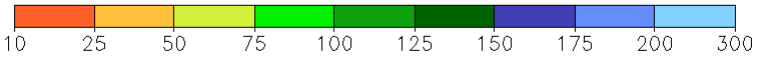

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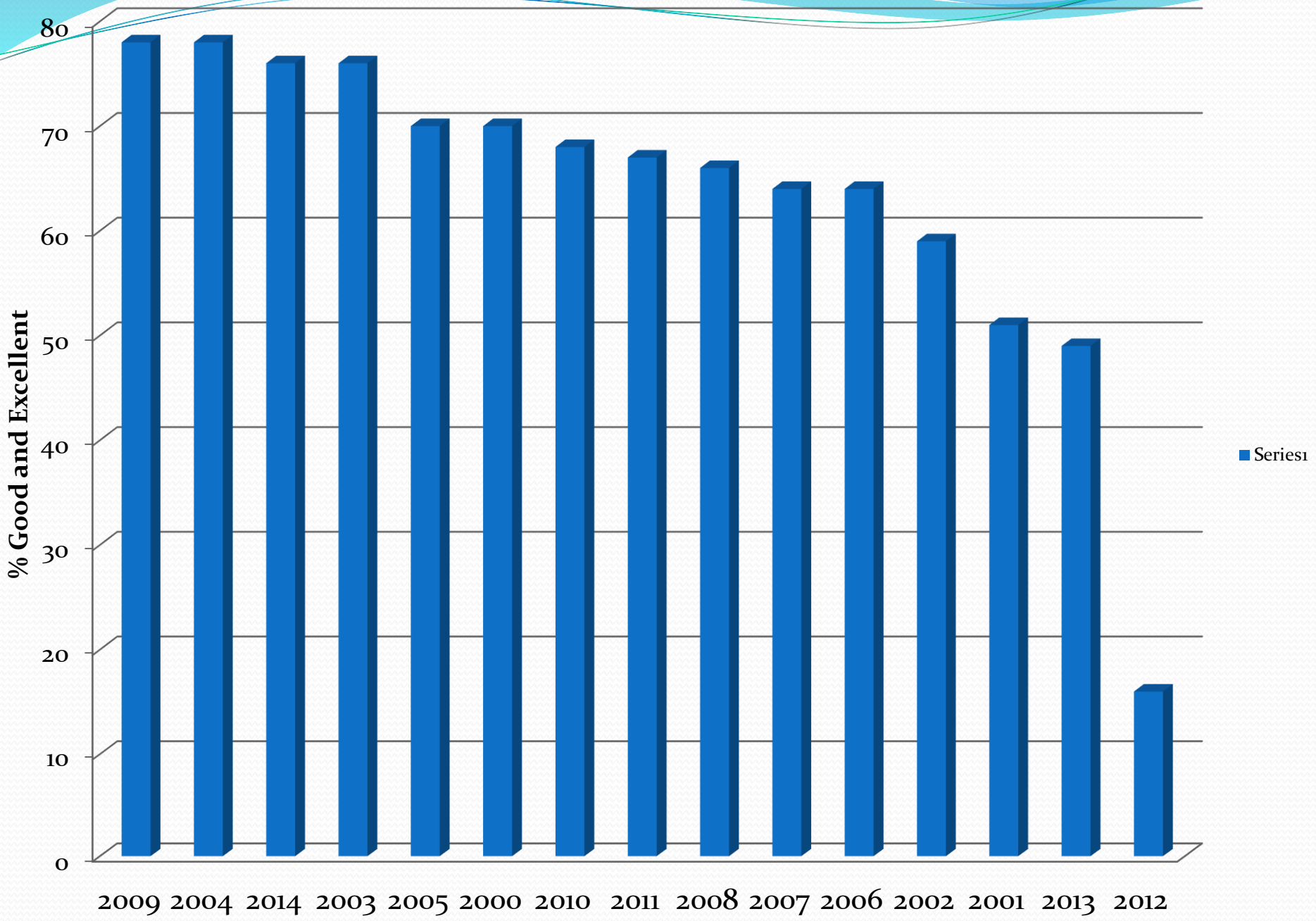
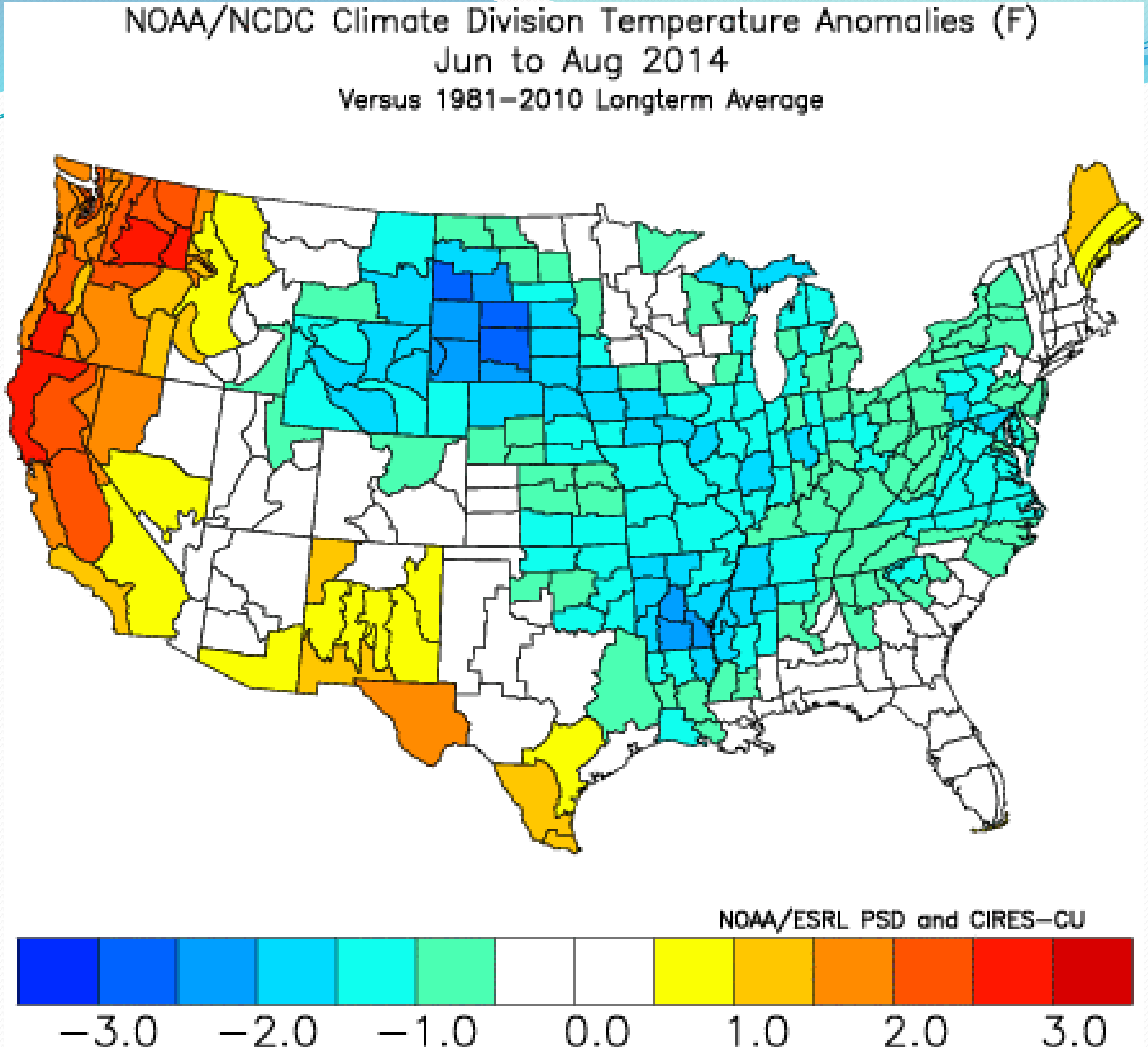
Corn from Mansfield, IL August 20, 2014

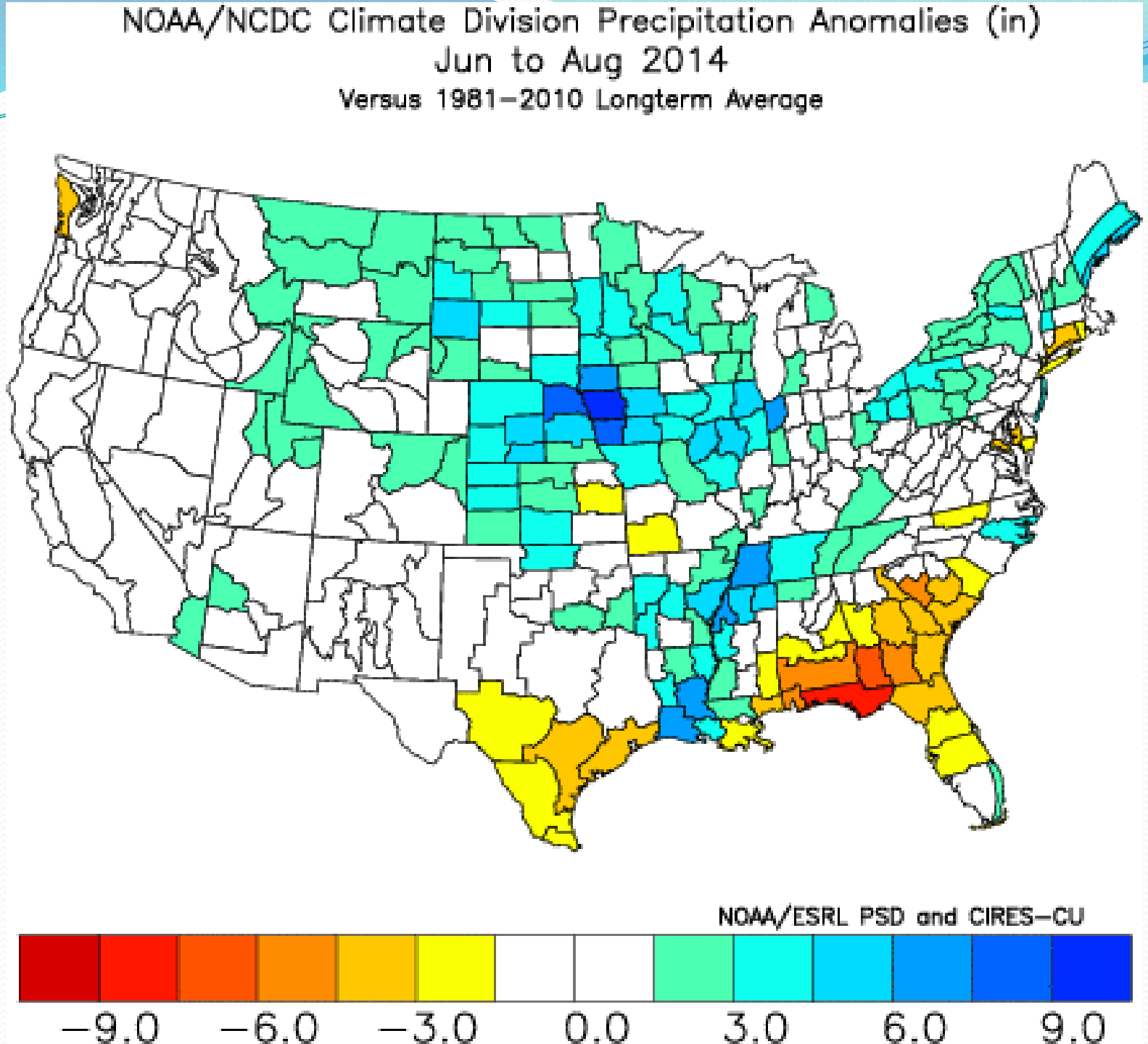
Good and Excellent Iowa Corn Condition Week 32



Summer Review

- Extreme wetness turn into a more benign pattern, even some dryness.
- Crop conditions remains near all time highs.
- Record crop yields a near guarantee by the end of August.
- USDA increases their August corn and soybean yields forecasts to 167.4 bu/acre and 45.4 bu/acre, respectively.


NOAA/NCDC Climate Division Temperature Anomalies (F)
Jun to Aug 2014
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
−3.0
−2.0
−1.0
0.0
1.0
2.0
3.0


NOAA/NCDC Climate Division Precipitation Anomalies (in)
Jun to Aug 2014
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
−9.0
−6.0
−3.0
0.0
3.0
6.0
9.0

Fall 2014

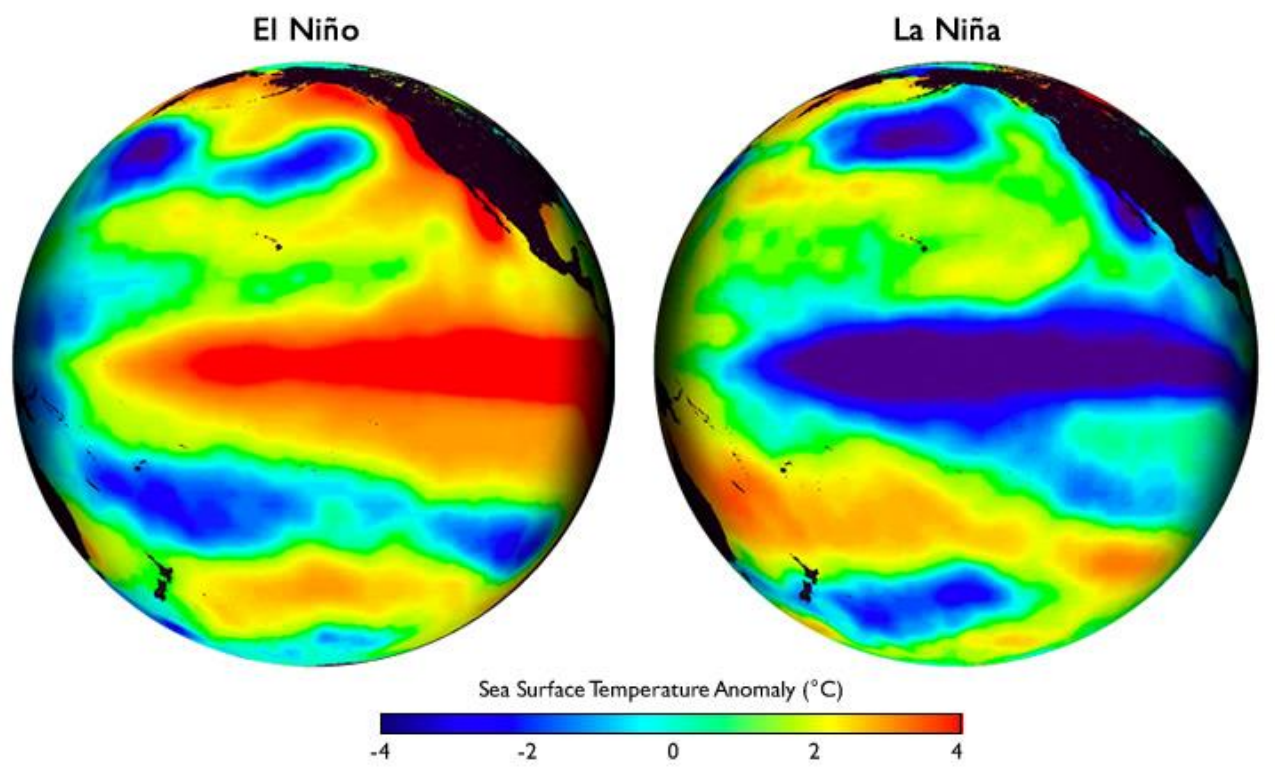
- September/early October rainfall stalls harvest.
- Late October warmth allows for a quick rebound.
- Lack of an early frost preserves record yield potential, despite some patchy frost in late September and a few stronger events in early October.
- USDA increases corn and soybean yield forecasts in October to 174.2 bu/acre and 47.1 bu/acre, respectively.

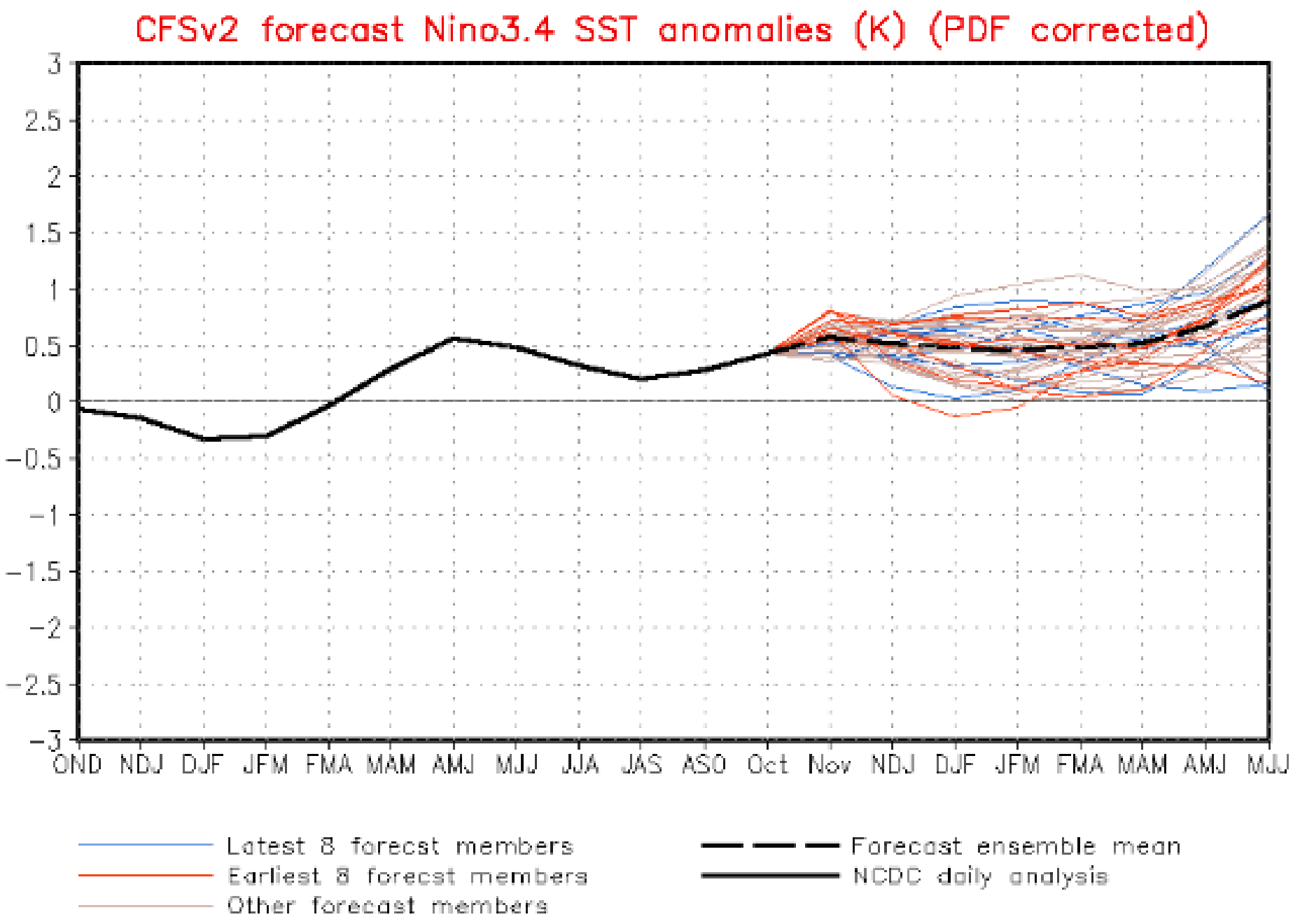
Winter 2014/15 Outlook

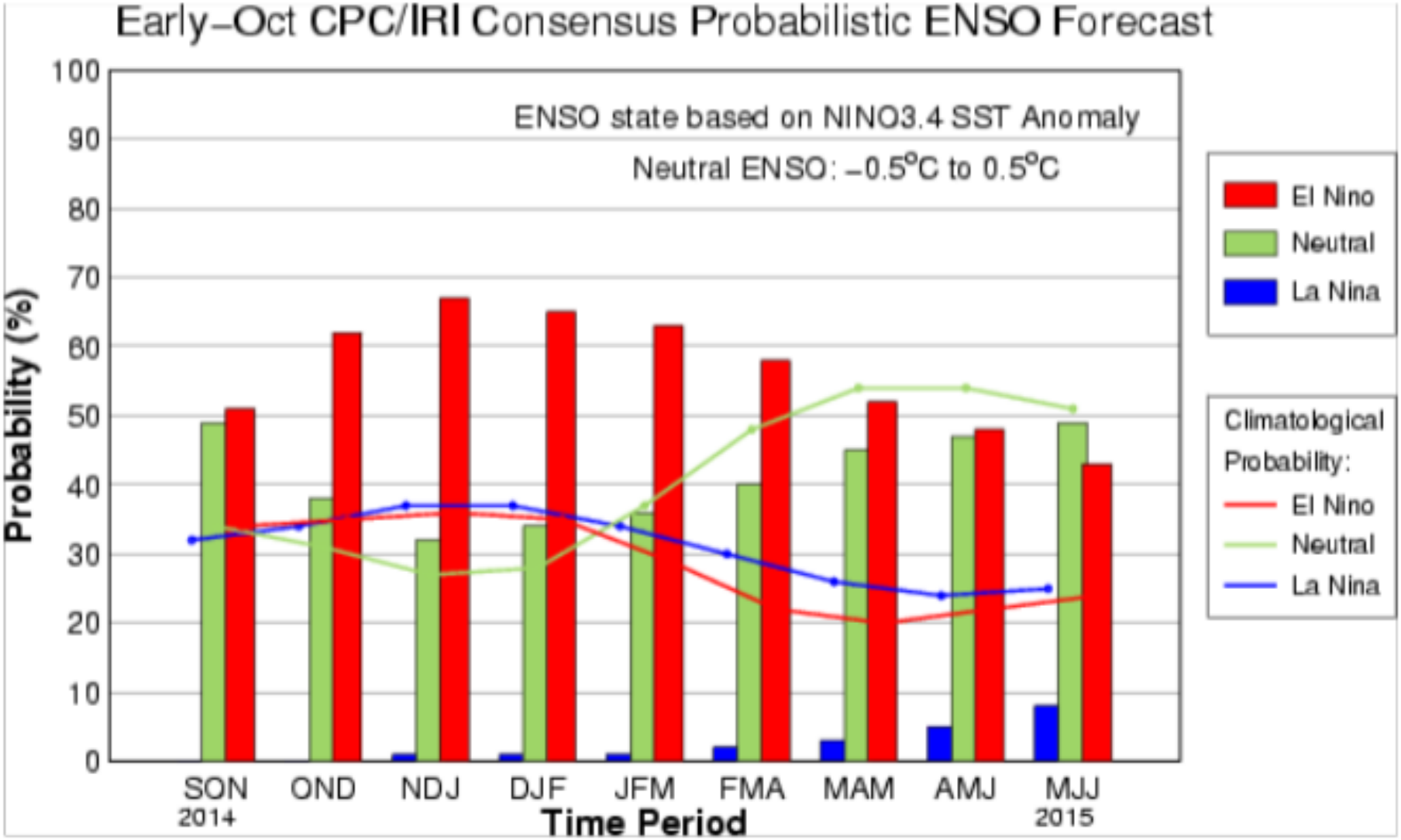
Key Factors:

1. El Nino Southern Oscillation
2. Analog years (ONI-based)
3. Pacific Decadal Oscillation
4. Pattern Persistence

ENSO

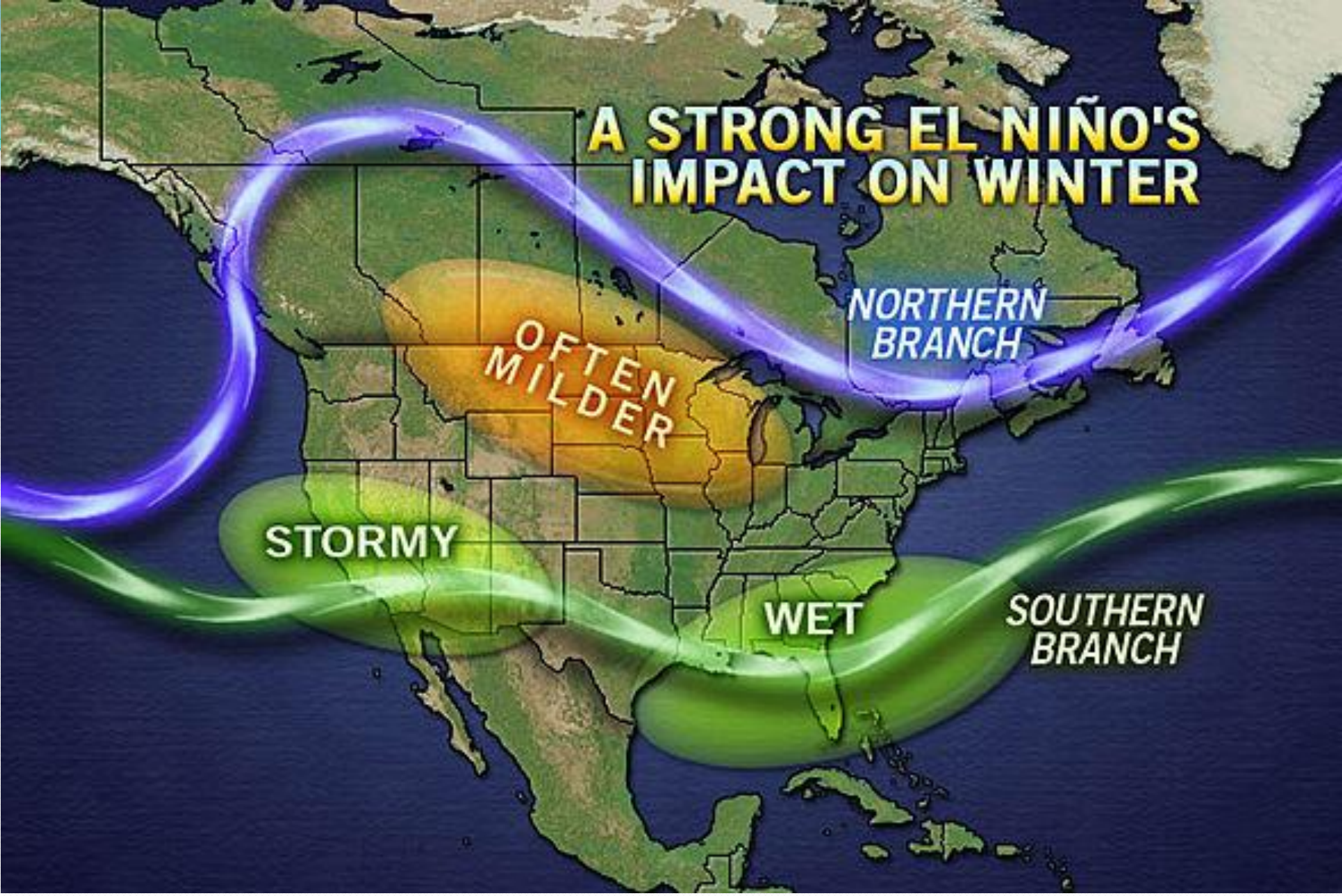


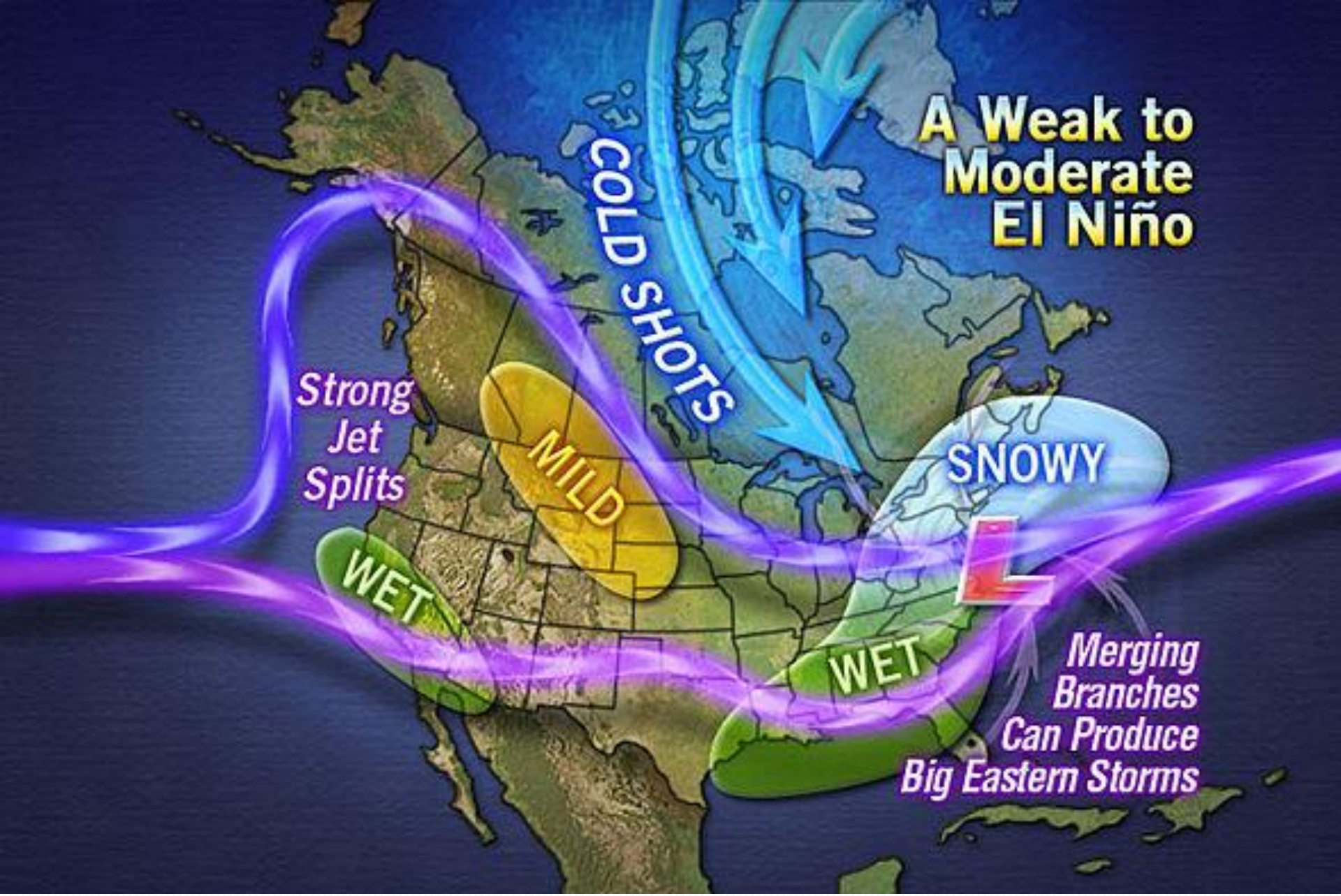

CFSv2 forecast Nino3.4 SST anomalies (K) (PDF corrected)
3
2.5
2
1.5
1
0.5
0
−0.5
−1
−1.5
−2
−2.5
−3
OND NDJ DJF JFM FMA MAM AMJ MJJ JJA JAS ASO Oct Nov NDJ DJF JFM FMA MAM AMJ MJJ
Latest 8 forecst members
Earliest 8 forecst members
Other forecast members
Forecast ensemble mean
NCDC daily analysis
(Model bias correct base period: 1999−2010; Climatology base period: 1982−2010)

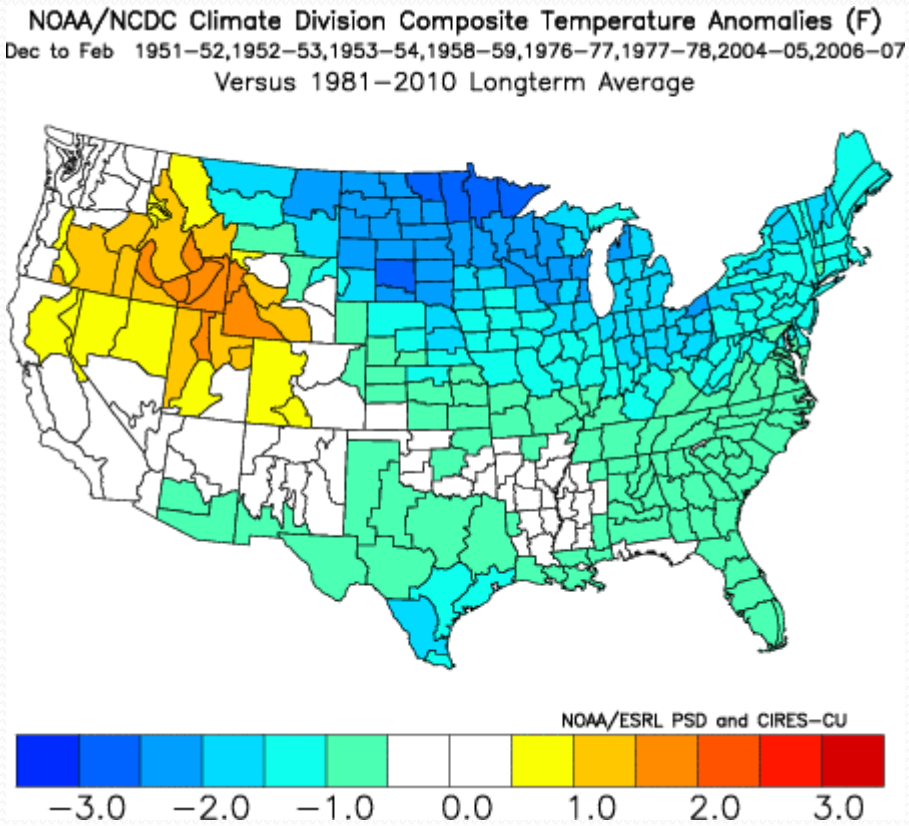

Early–Oct CPC/IRI Consensus Probabilistic ENSO Forecast
ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: –0.5°C to 0.5°C
Probability (%)
100
90
80
70
60
50
40
30
20
10
0
SON
2014
OND
NDJ
DJF
JFM
FMA
MAM
AMJ
MJJ
2015
Time Period
El Nino
Neutral
La Nina
Climatological Probability:
El Nino
Neutral
La Nina

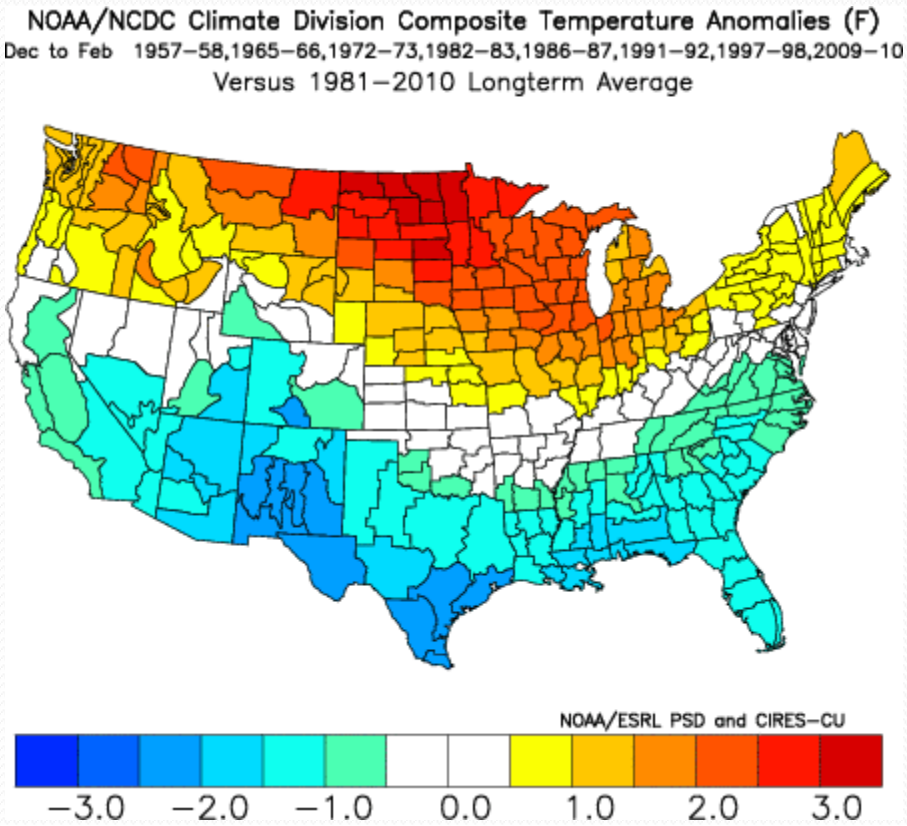
Why Do We Care??

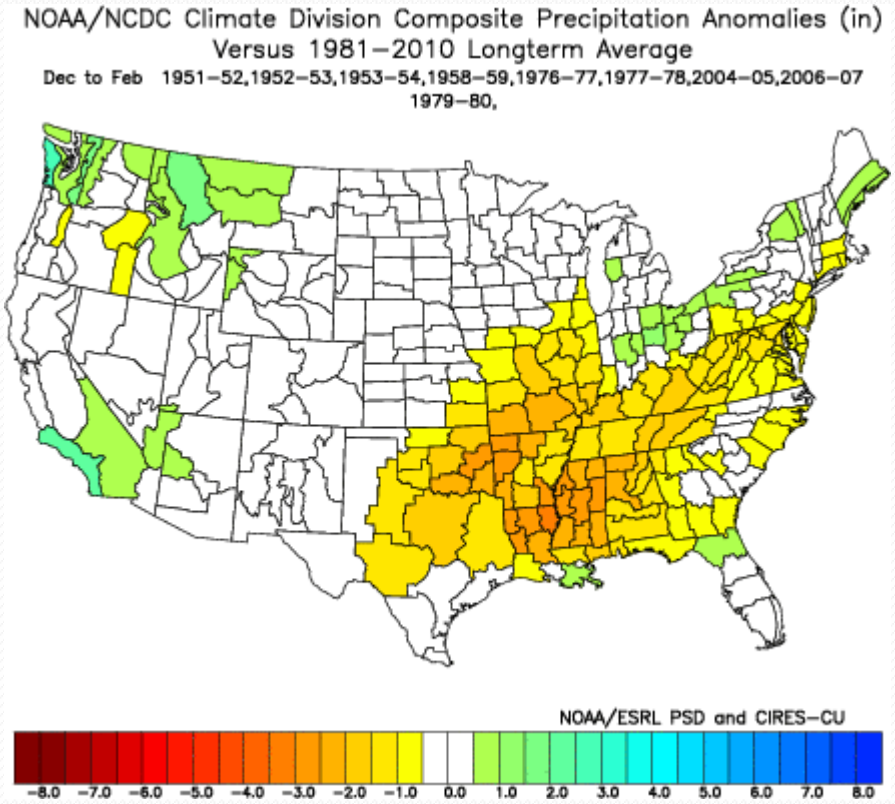
- Wintertime temperature and rainfall patterns vary significantly across the US depending on the strength of the El Nino signal.
- Historically, strong El Nino patterns favor above normal temperatures across the western and northern US with above normal rainfall for the south.
- Weak El Nino patterns allow for more “buckling” in the jet stream, resulting in a cooler signal across the northern and especially eastern US.

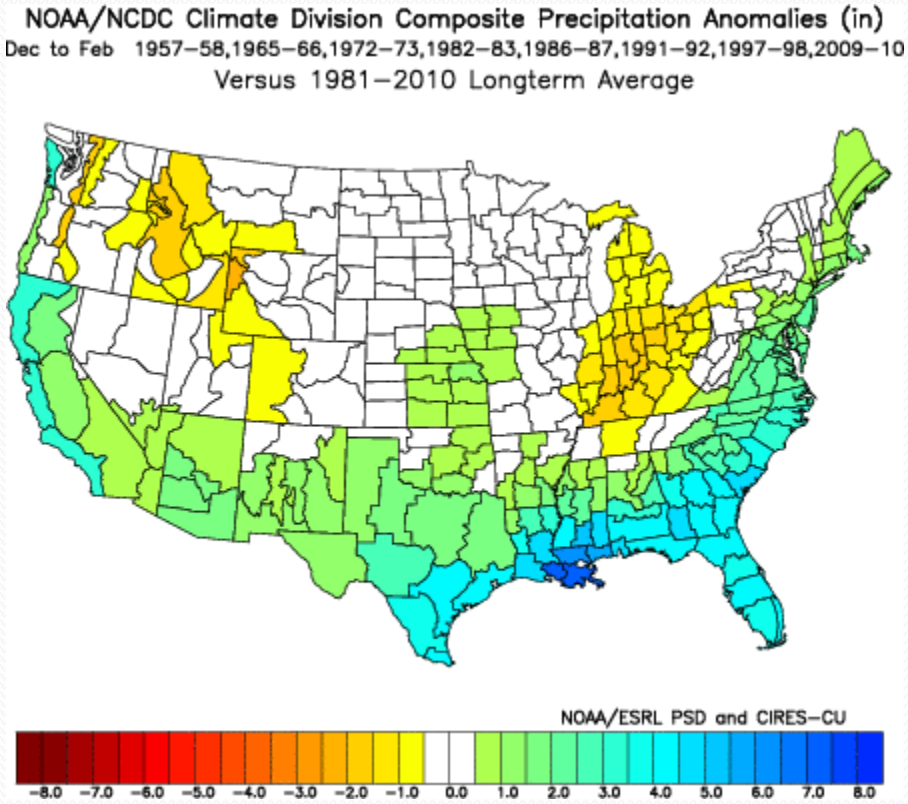

A STRONG EL NIÑO'S IMPACT ON WINTER
NORTHERN BRANCH
OFTEN MILDER
STORMY
WET
SOUTHERN BRANCH


A Weak to Moderate El Niño
COLD SHOTS
Strong Jet Splits
MILD
WET
SNOWY
WET
Merging Branches Can Produce Big Eastern Storms


NOAA/NCDC Climate Division Composite Temperature Anomalies (F)
Dec to Feb 1951–52,1952–53,1953–54,1958–59,1976–77,1977–78,2004–05,2006–07
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
−3.0 −2.0 −1.0 0.0 1.0 2.0 3.0


NOAA/NCDC Climate Division Composite Temperature Anomalies (F)
Dec to Feb 1957–58,1965–66,1972–73,1982–83,1986–87,1991–92,1997–98,2009–10
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
−3.0 −2.0 −1.0 0.0 1.0 2.0 3.0


NOAA/NCDC Climate Division Composite Precipitation Anomalies (in)
Versus 1981–2010 Longterm Average
Dec to Feb 1951–52,1952–53,1953–54,1958–59,1976–77,1977–78,2004–05,2006–07
1979–80,
NOAA/ESRL PSD and CIRES–CU
-8.0 -7.0 -6.0 -5.0 -4.0 -3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0


NOAA/NCDC Climate Division Composite Precipitation Anomalies (in)
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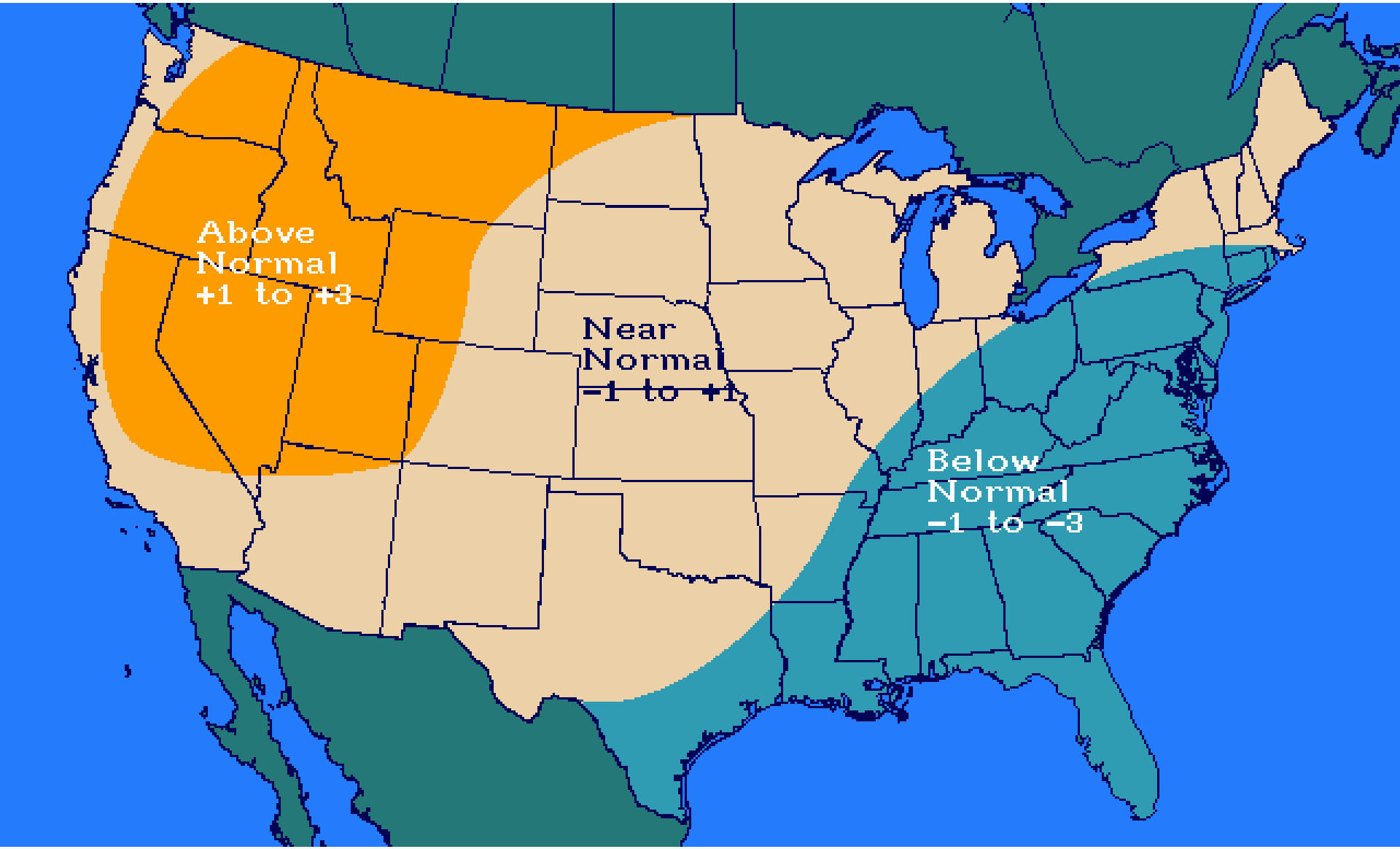
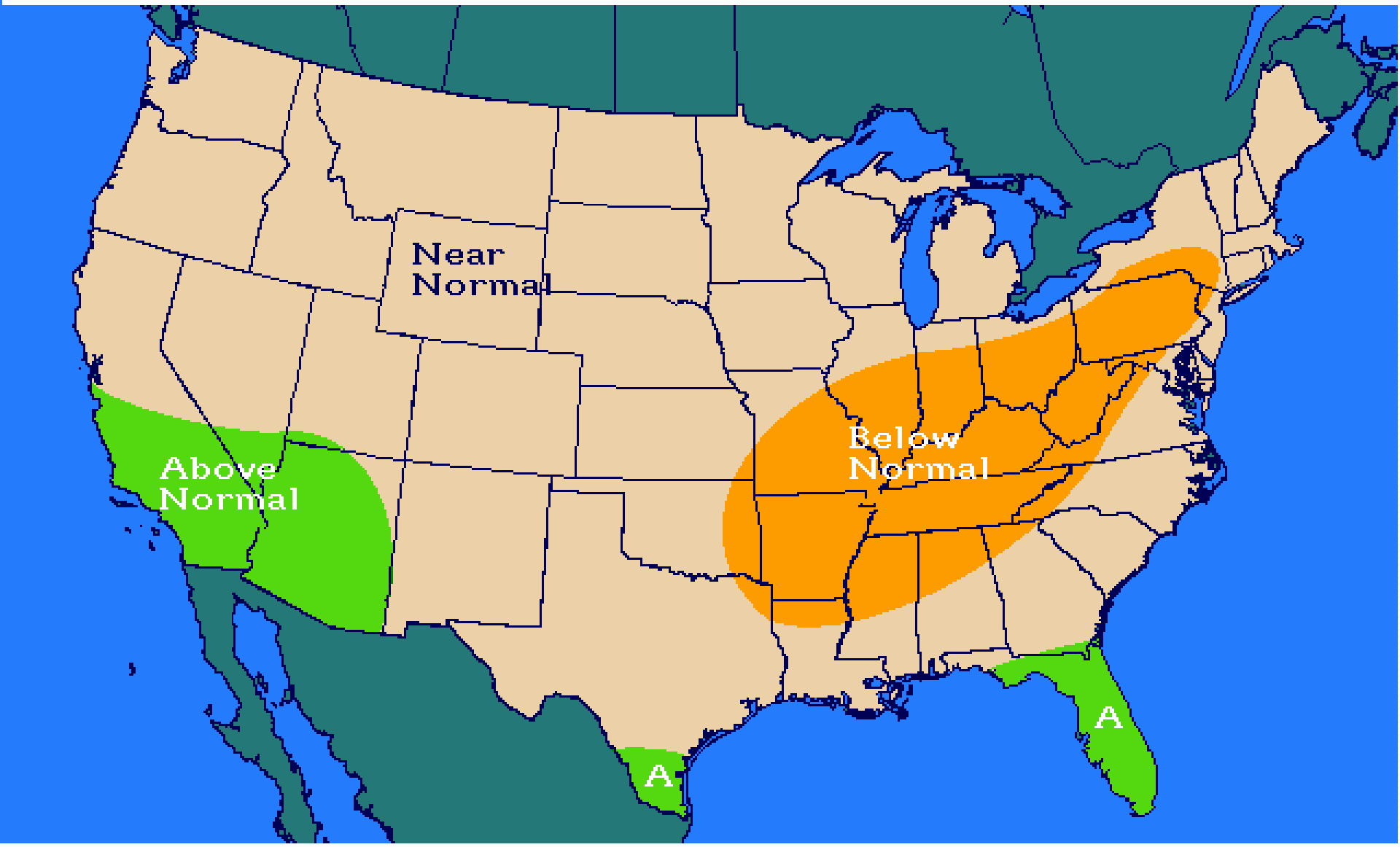
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
-8.0 -7.0 -6.0 -5.0 -4.0 -3.0 -2.0 -1.0 0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0 8.0

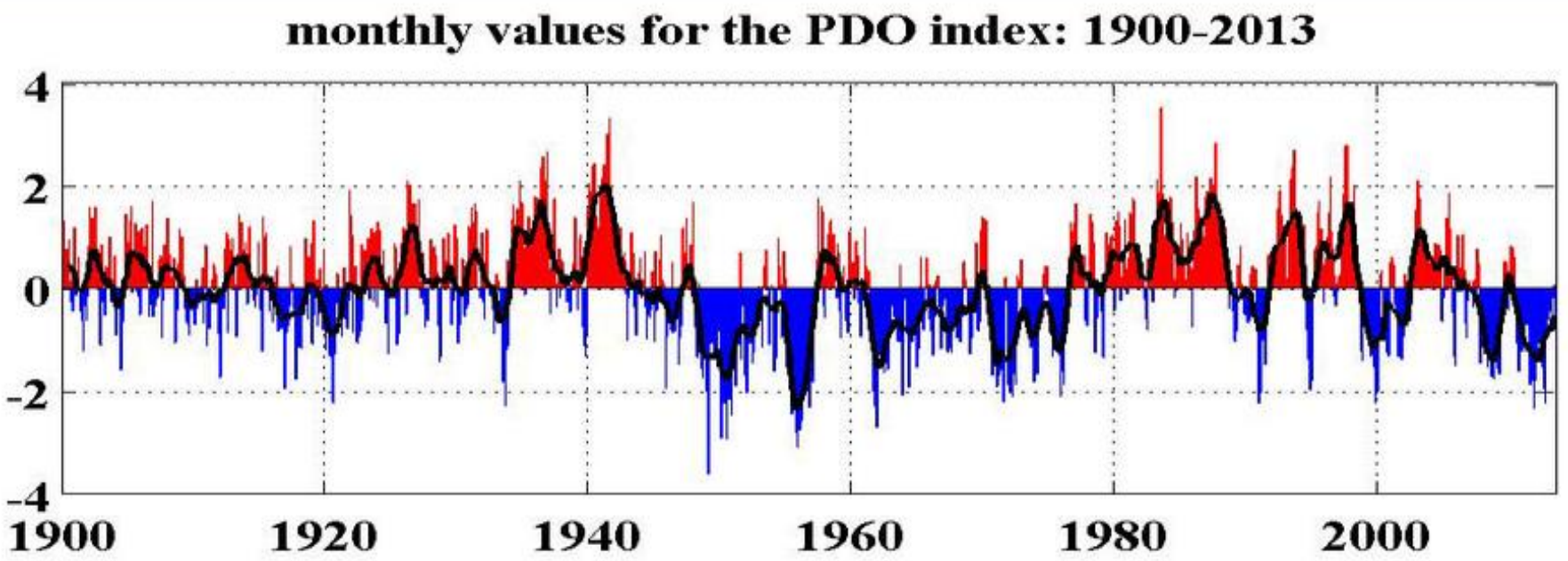


Degrees F.

Winter 2014/15 Temperature Forecast
December Through February



Winter 2014/15 Precipitation Forecast
December Through February


monthly values for the PDO index: 1900-2013
4
2
0
-2
-4
1900
1920
1940
1960
1980
2000

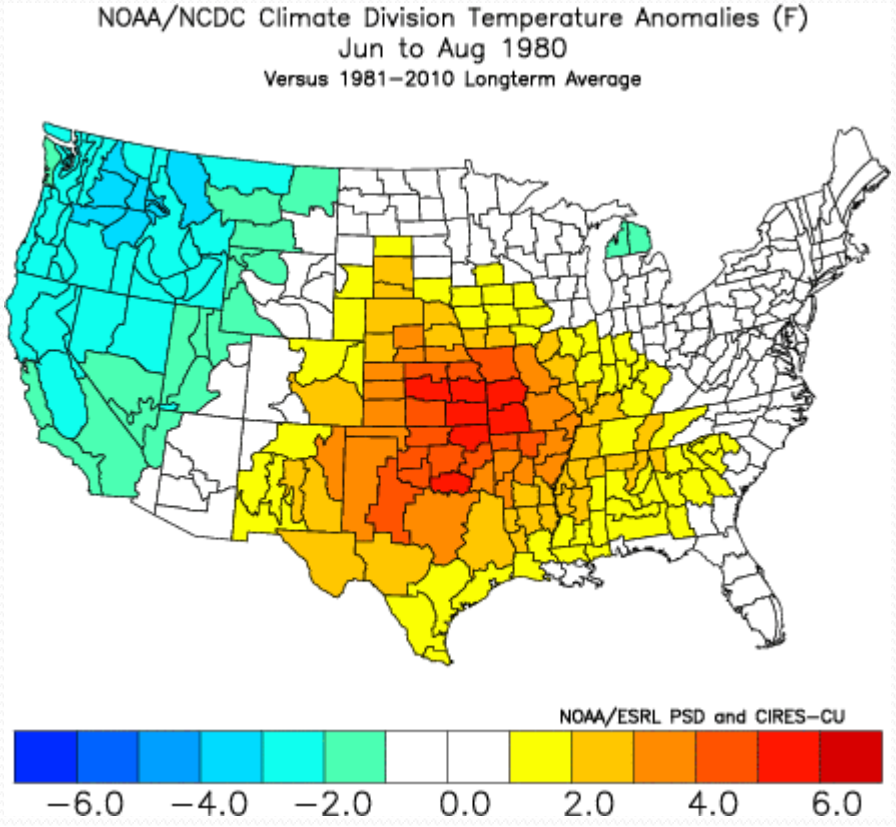
Ag Impacts

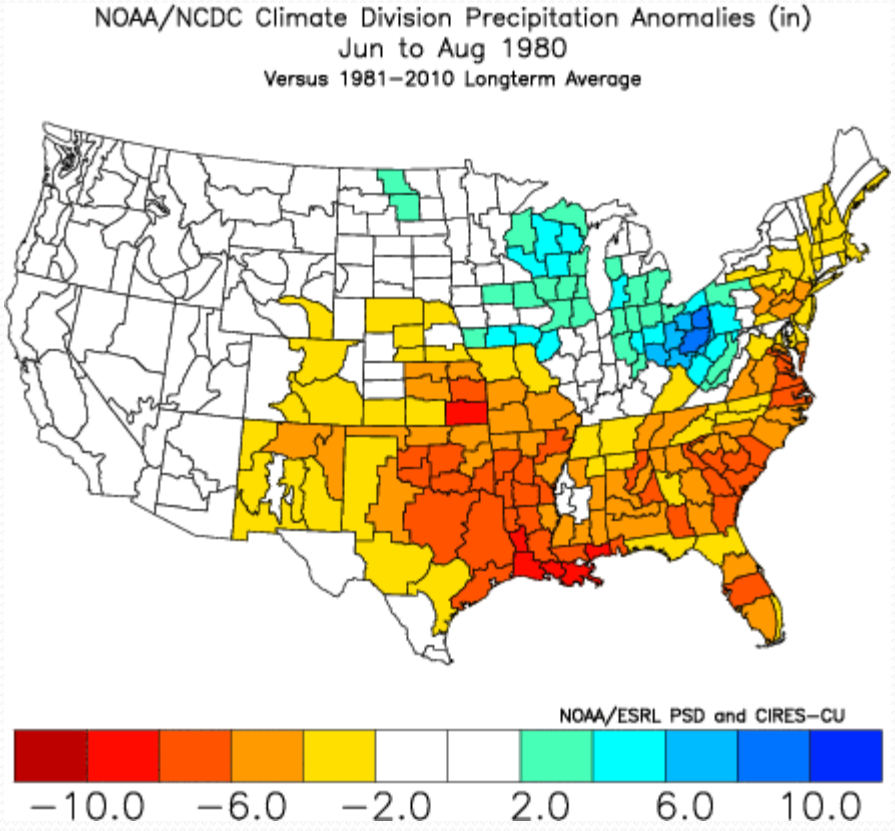
- Near normal temperatures across the Plains limits the winterkill risk.
- Weak El Nino is less favorable for rainfall across drought stricken areas of S Plains, and drought may linger into the Spring putting a limit on yield potential of HRW Wheat.
- Western Midwest sees a seasonable winter.
- Minor freeze risks for Florida citrus.

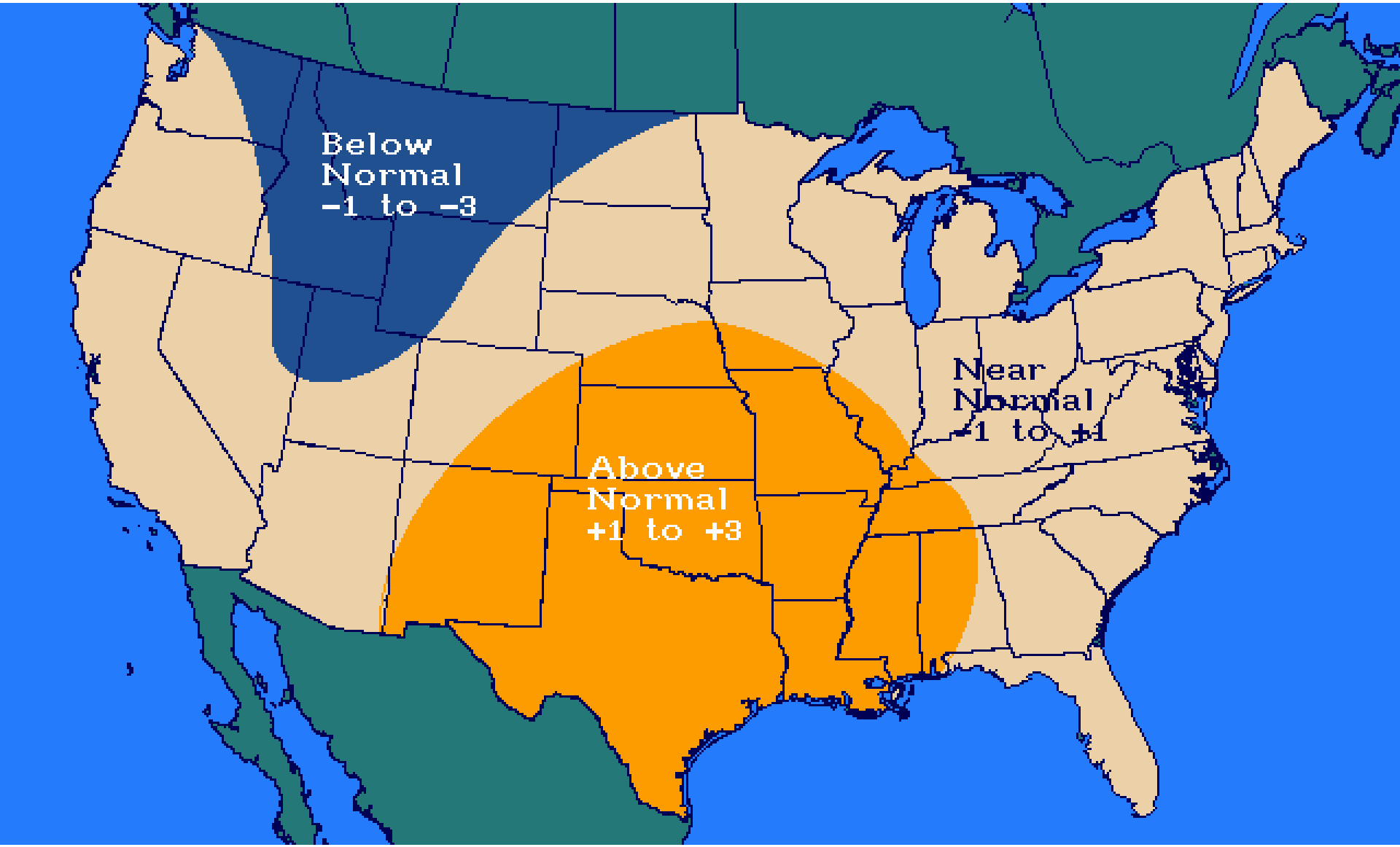
Summer Preview

- Most climate models indicate wintertime El Nino will gradually fade into neutral conditions by next summer.
- Return of El Nino cannot be ruled out.
- Nosedive into La Nina seems unlikely.
- All three scenarios have occurred with our analog years

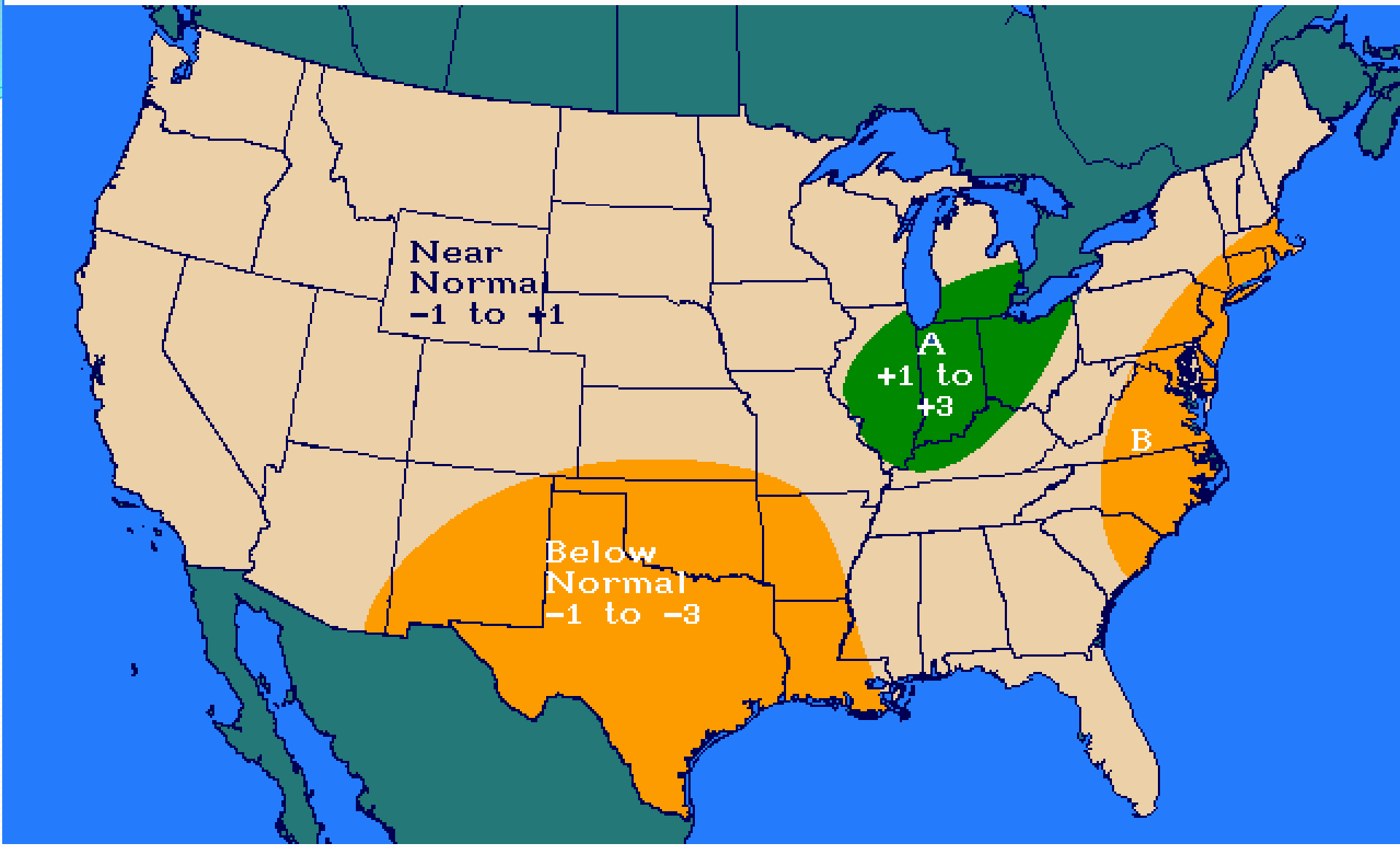
1980 Analog


NOAA/NCDC Climate Division Temperature Anomalies (F)
Jun to Aug 1980
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
−6.0 −4.0 −2.0 0.0 2.0 4.0 6.0


NOAA/NCDC Climate Division Precipitation Anomalies (in)
Jun to Aug 1980
Versus 1981–2010 Longterm Average
NOAA/ESRL PSD and CIRES–CU
−10.0 −6.0 −2.0 2.0 6.0 10.0



Summer 2015 Temperature Forecast

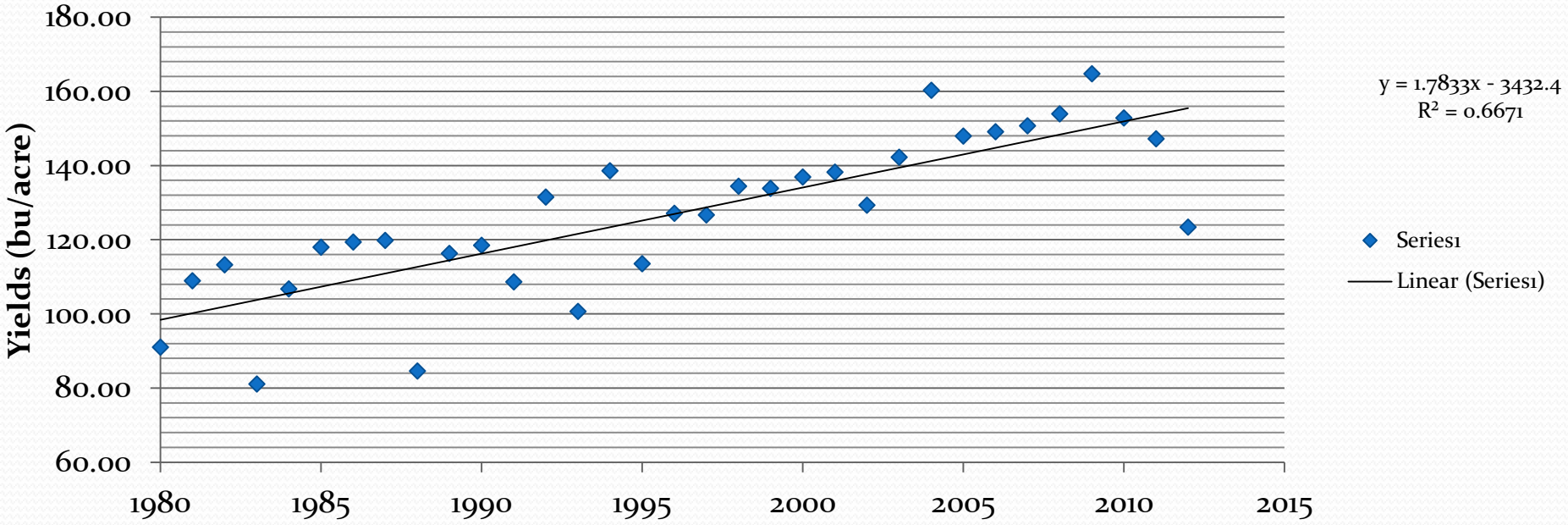


Summer 2015 Rainfall Forecast

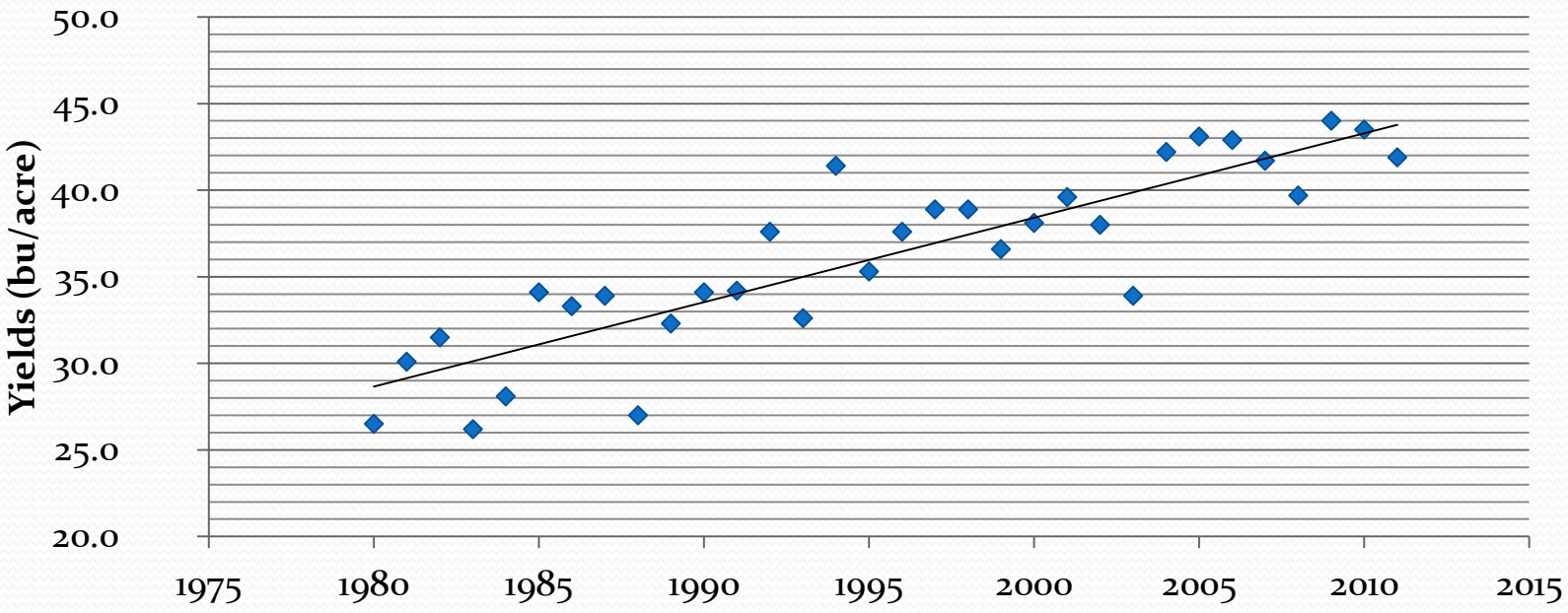
Ag Impacts

- Low confidence in summer forecast
- Heat threat favored across southwest Midwest/Plains.
- Best growing conditions focused across the Ohio Valley.
- Severe weather threat may be elevated across OH Valley.
- Drought may worsen across Plains, impacting wheat.

National Corn Yields Since 1980



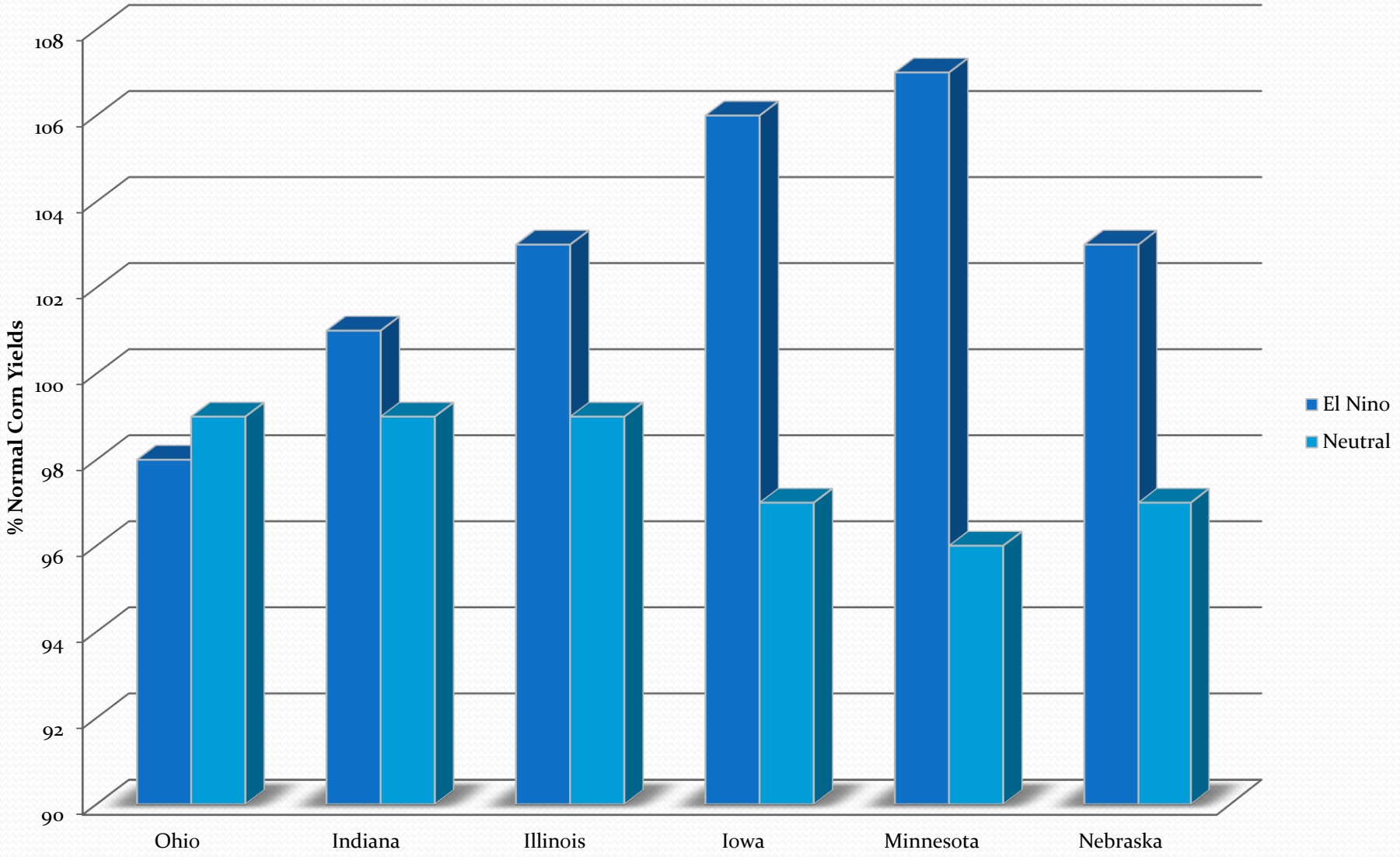
National Soybean Yields



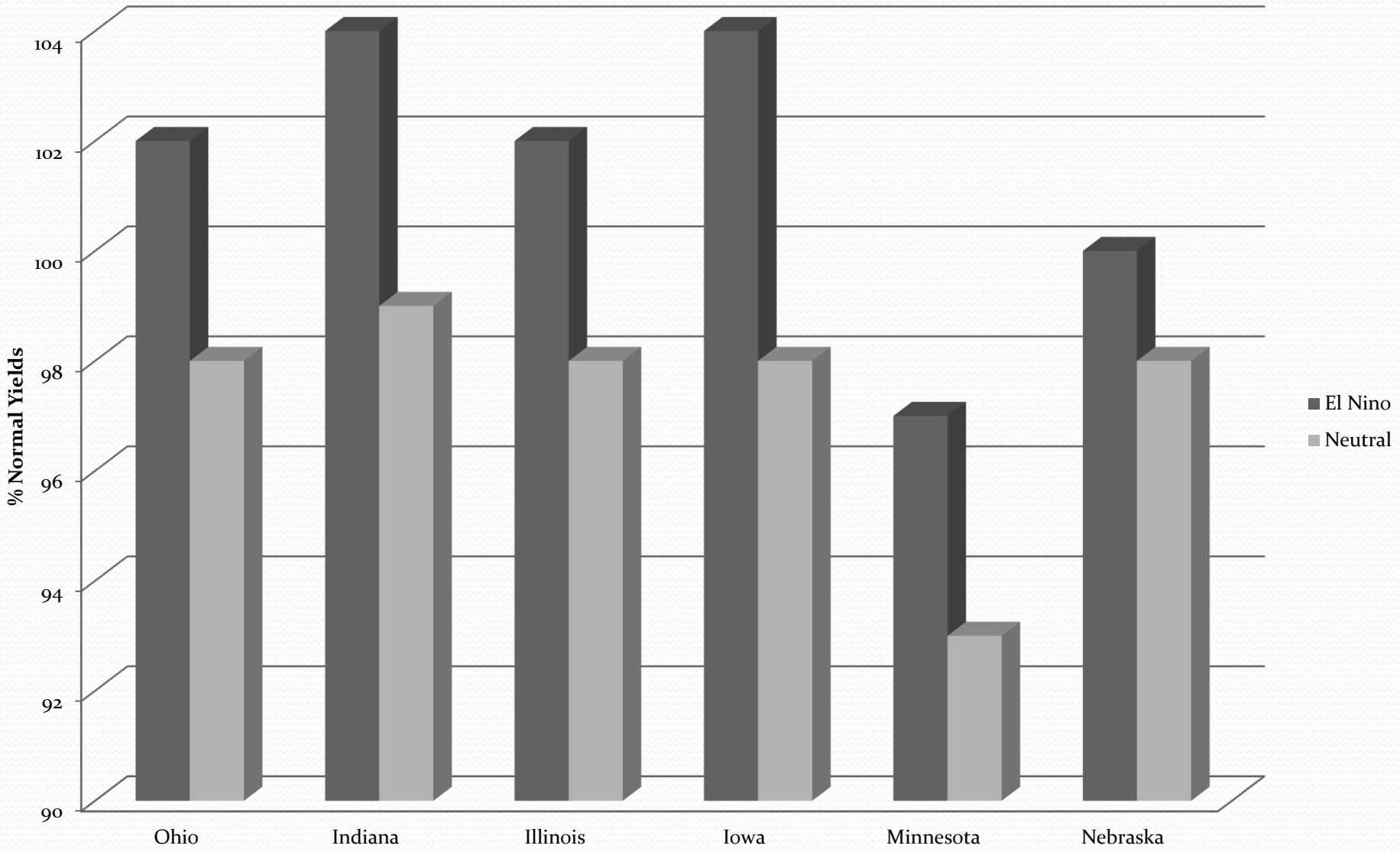
Trendline Yields

- Trendline National Corn Yields are 165.5 bu/acre
- Trendline soybean yields are 45.6 bu/acre
- Iowa trendline corn yield: 183 bu/acre
- Iowa trendline soybean yield: 53 bu/acre

% Normal Corn Yields El Nino vs. Neutral



% Normal Soybean Yields El Nino vs. Neutral



National Corn/Soybean Yield Forecast

- Based off the summer outlook, near normal corn and soybean yields are expected.
- Historically, back-to-back years with record yields are very rare.
- Corn Yield: 165.5 bu/acre
- Soybean Yield: 45.7 bu/acre

CLUPOINT PROJECT

WHAT IS CLUPOINT?

- Dynamic Micro Level Weather Reporting.
- Virtual Yield Forecast Model
- Web based Weather Data Library

Application To Crop Insurance

- CLUPOINT uses historical weather data to build predictive yield modeling for the current year.
- Data and predictions are updated daily.
- This yield model can be tied to the Crop Insurance Level and the CME futures price to predict the probability of a Common Land Unit will have a loss.
- All CLUs of a policy can be summed to determine if the Policy may have an indemnity.

CLUPOINT TIMING

- The model is being released in the first quarter of 2015.

- CLUPOINT will need the client to provide the CLU GPS coordinate and the Yield history by crop for the CLU.

Questions or Comments?

FOR MORE INFO

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Call us at 515-282-9310

http://freesenotis.agricharts.com/fnform

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