



# Climate Update

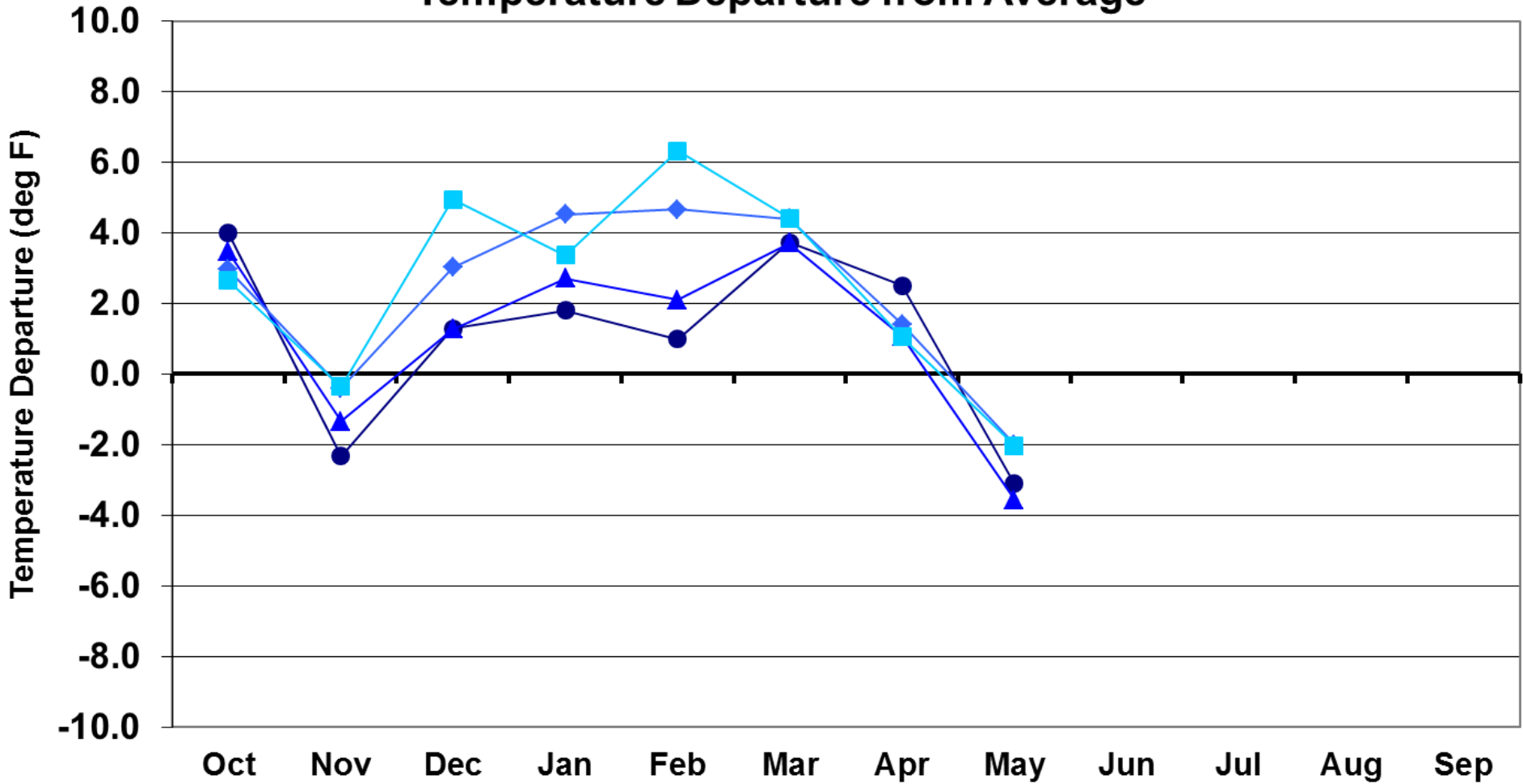


Zach Schwalbe  
Colorado Climate Center

Presented to  
Water Availability Task Force  
17 June 2015  
Denver, CO

# Water Year 2015 Temperature Departures

Water Year 2015  
Temperature Departure from Average



● Eastern Plains

▲ Foothills

◆ Mountains

■ Western Valleys

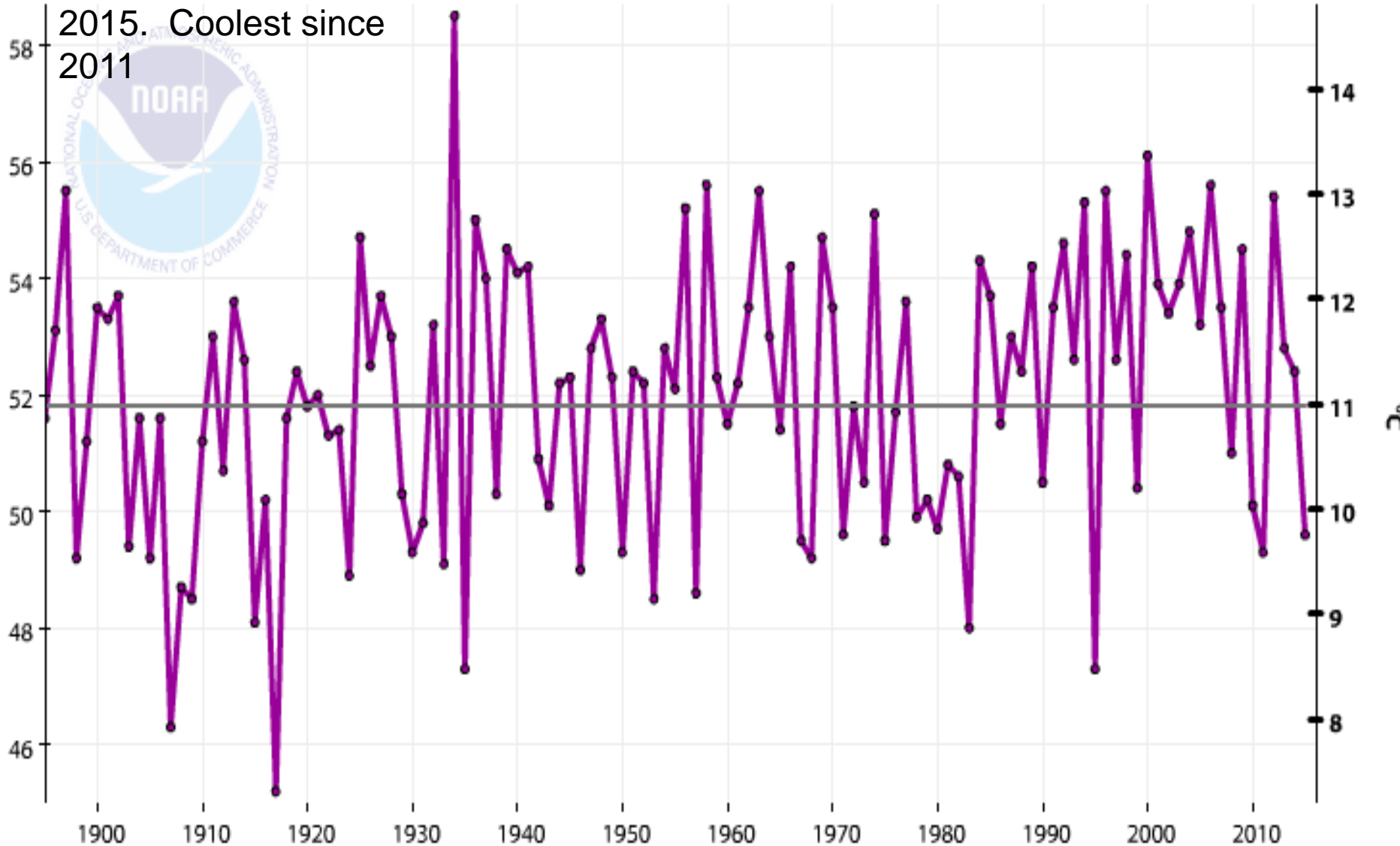
# May 2015 Average Temperature History for Colorado (NCDC)

49.6 F (-2.2) Ranks  
23<sup>rd</sup> coolest 1895-  
2015. Coolest since  
2011

## Colorado, Average Temperature, May

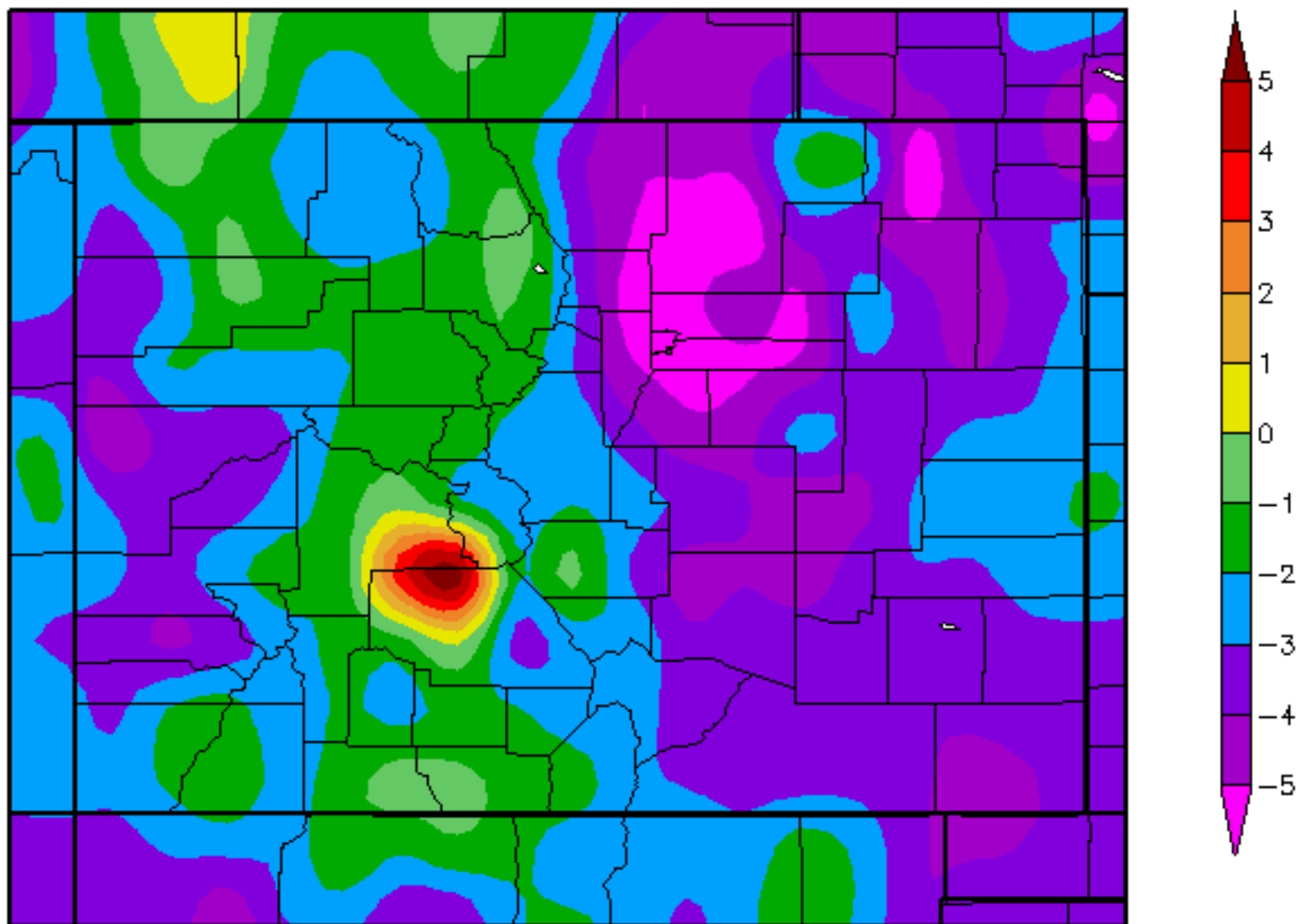
1901-2000  
Avg: 51.8°F

Avg Temperature



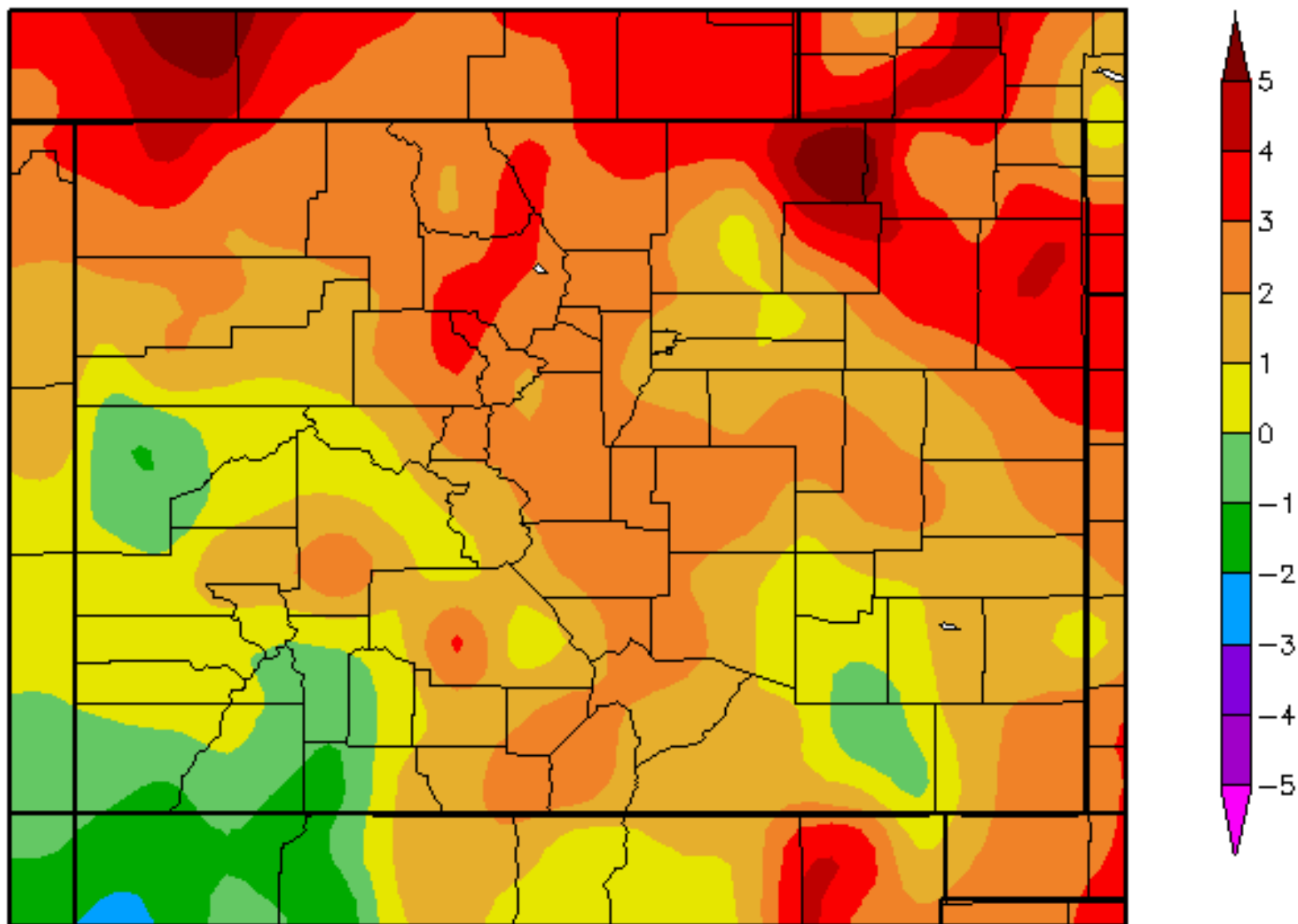
# Departure from Normal Temperature (F)

## 5/1/2015 – 5/31/2015



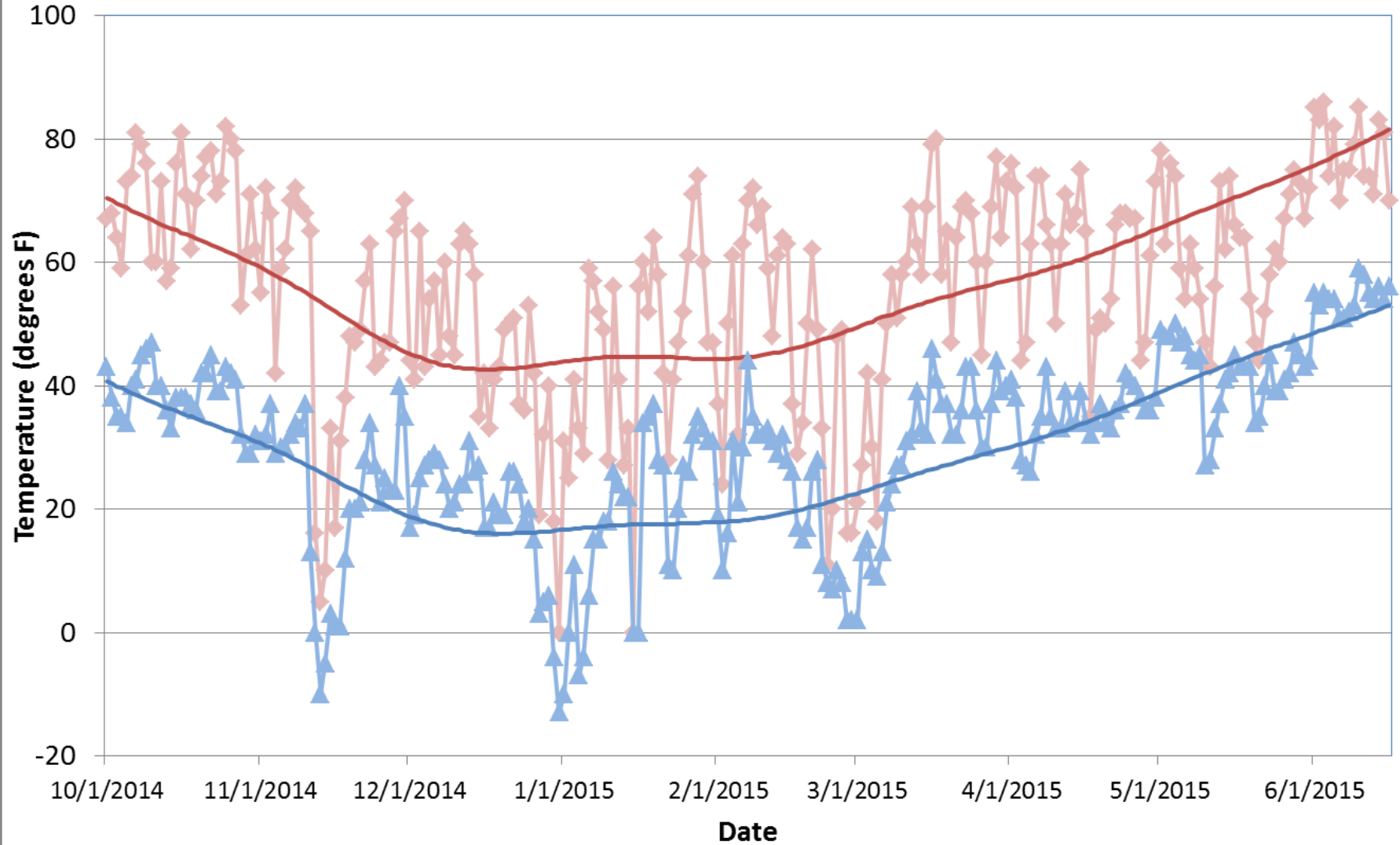
# Departure from Normal Temperature (F)

6/1/2015 – 6/15/2015



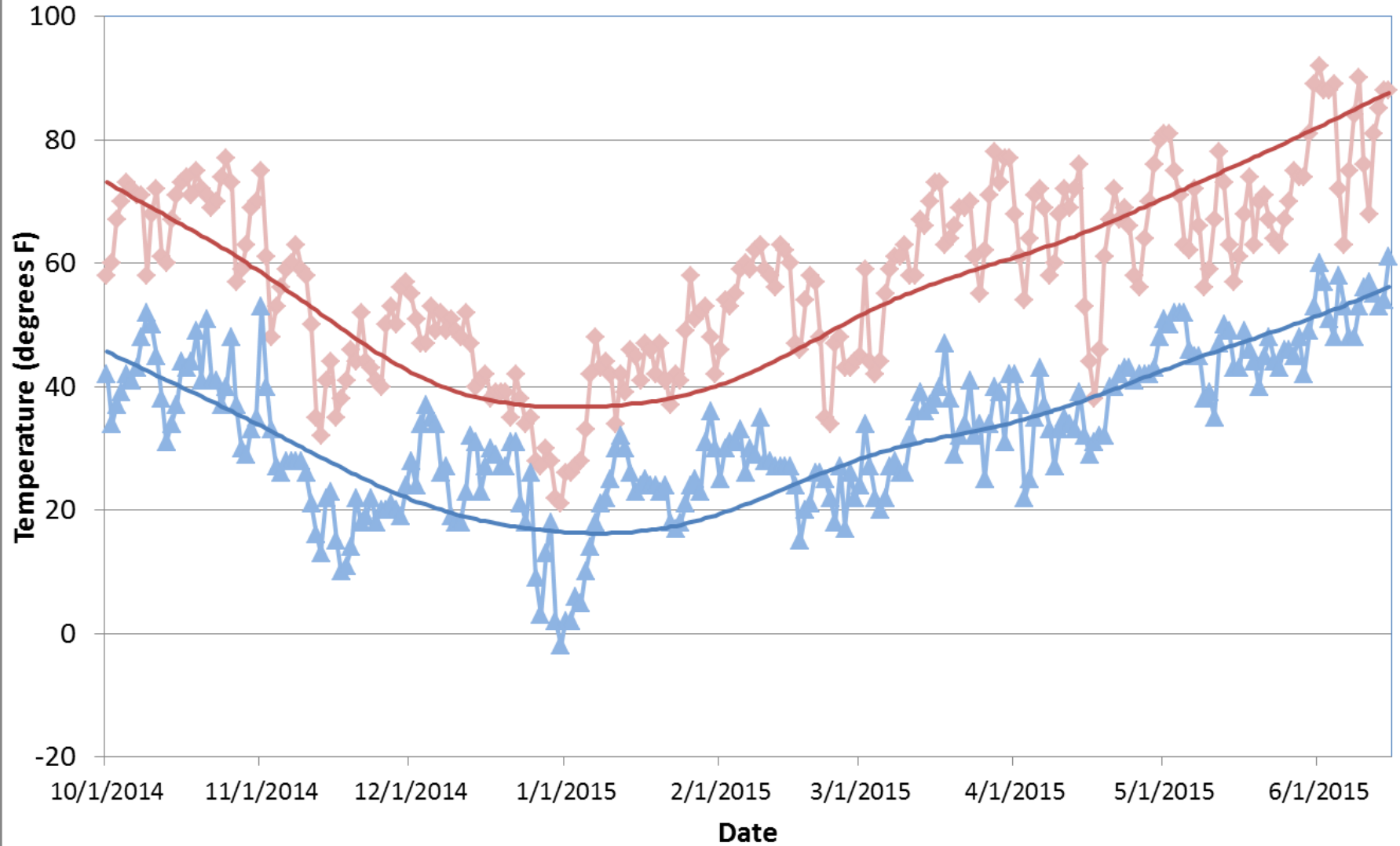
# Denver-Stapleton Daily Max/Min Temperature with Normal (Oct 1, 2014 - Present)

MaxTemperature Normal Max MinTemperature Normal Min

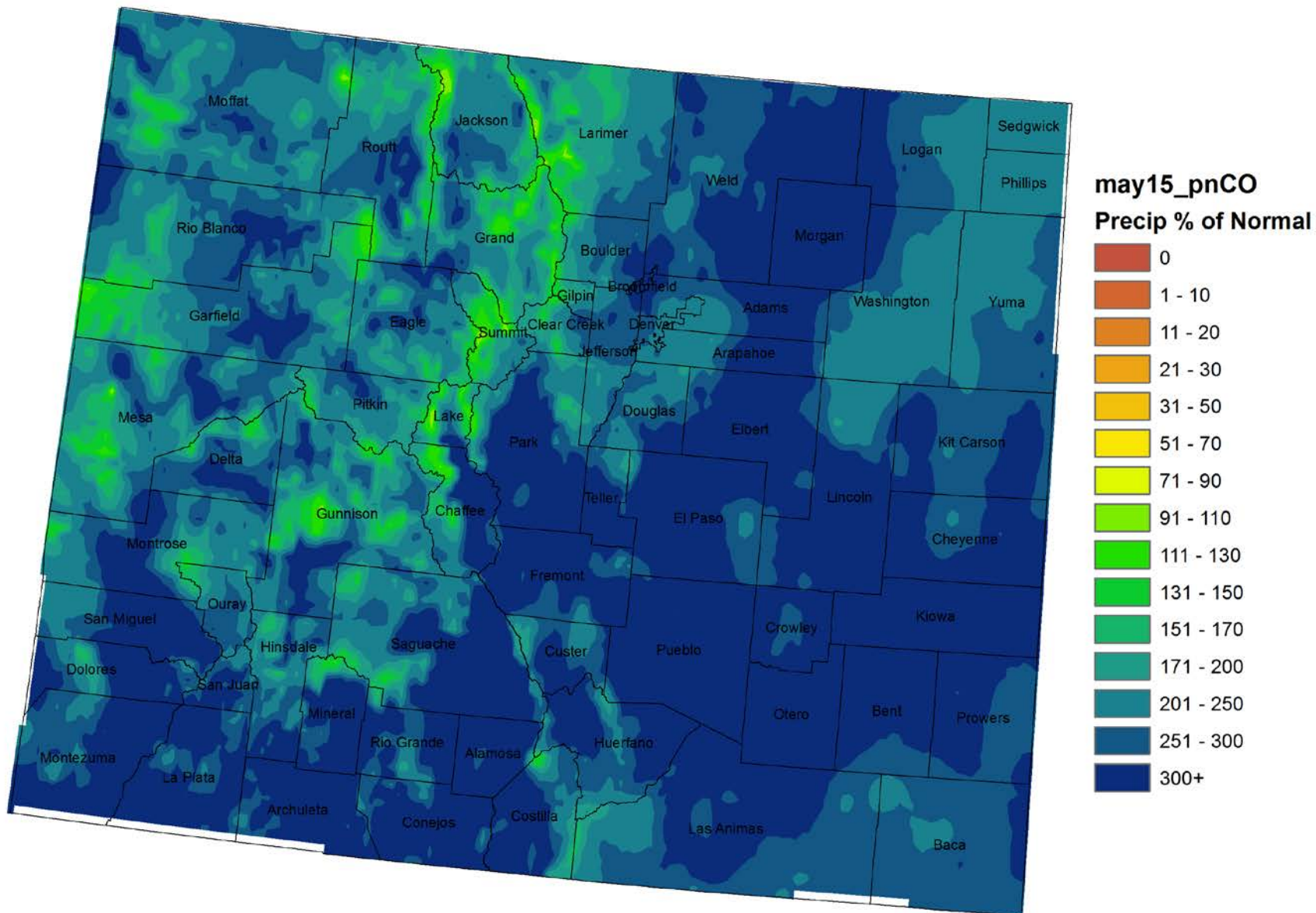


# Grand Junction Daily Max/Min Temperature with Normals (Oct 1, 2014 - Present)

Max Temperature      Normal Max      Min Temperature      Normal Min



# Colorado May 2015 Precipitation as a Percentage of Normal



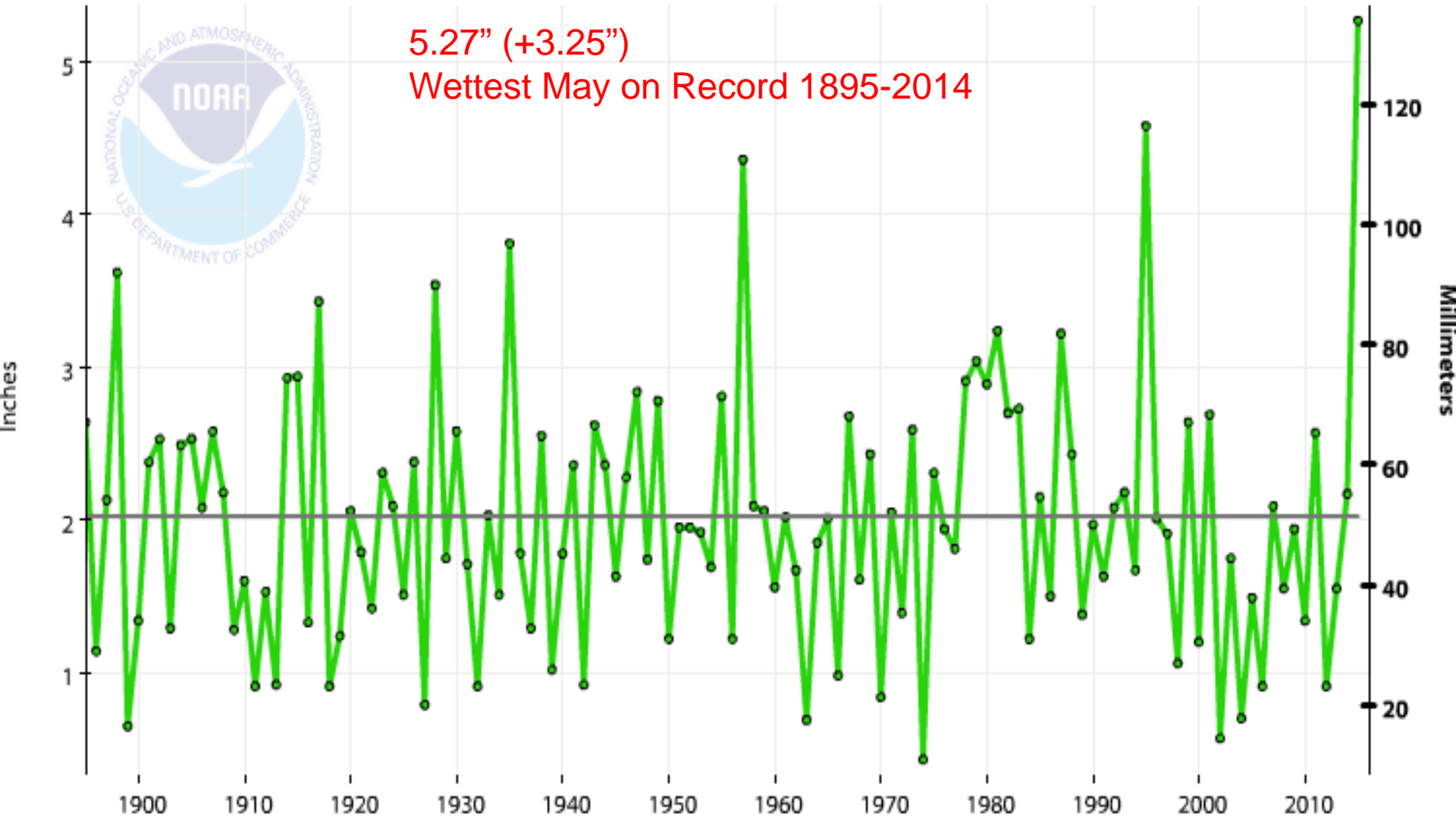


# May 2015 Statewide Precipitation

## Colorado, Precipitation, May

— 1901-2000 Avg: 2.02"      —●— Precip

5.27" (+3.25")  
Wettest May on Record 1895-2014

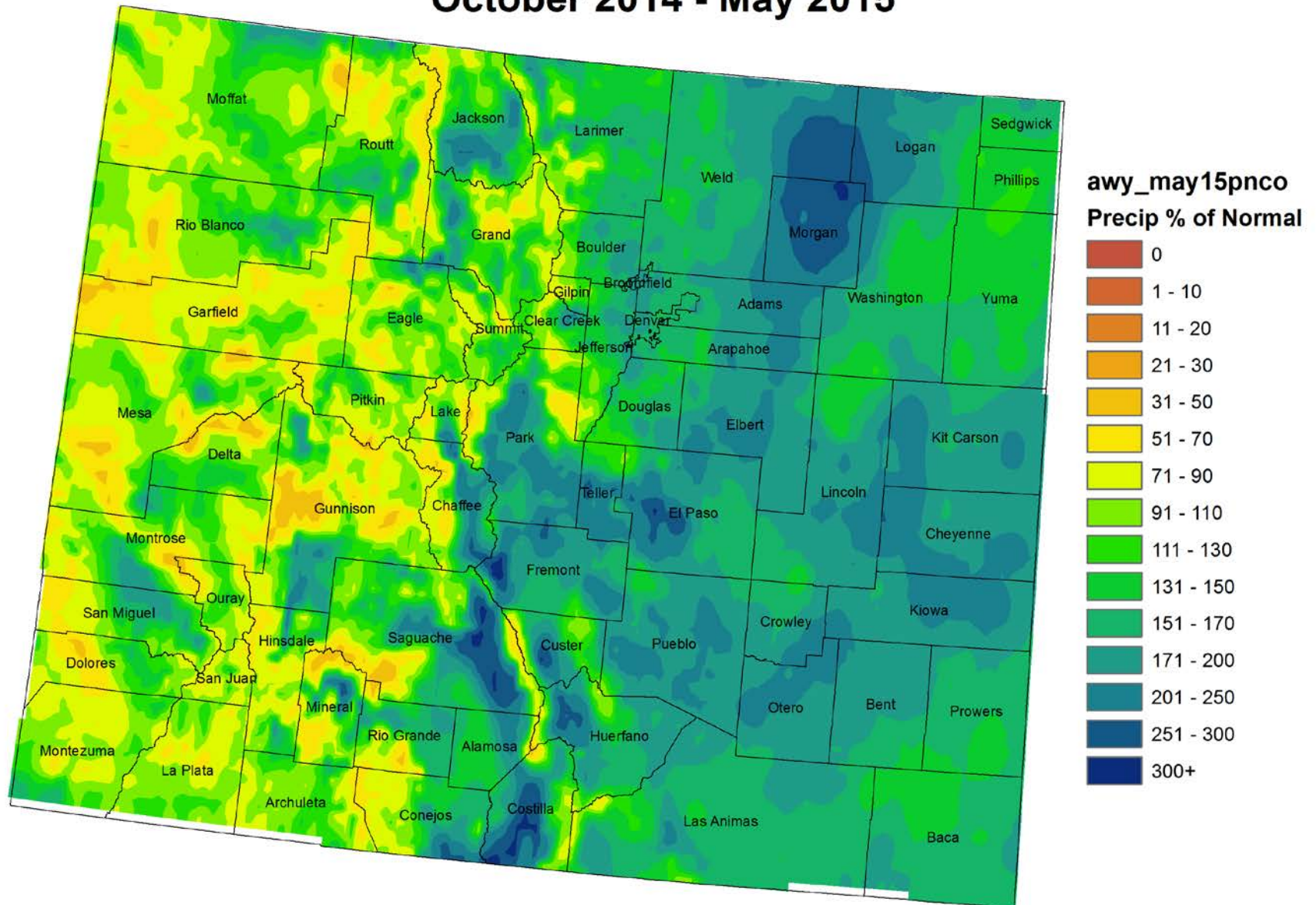


# Record rains

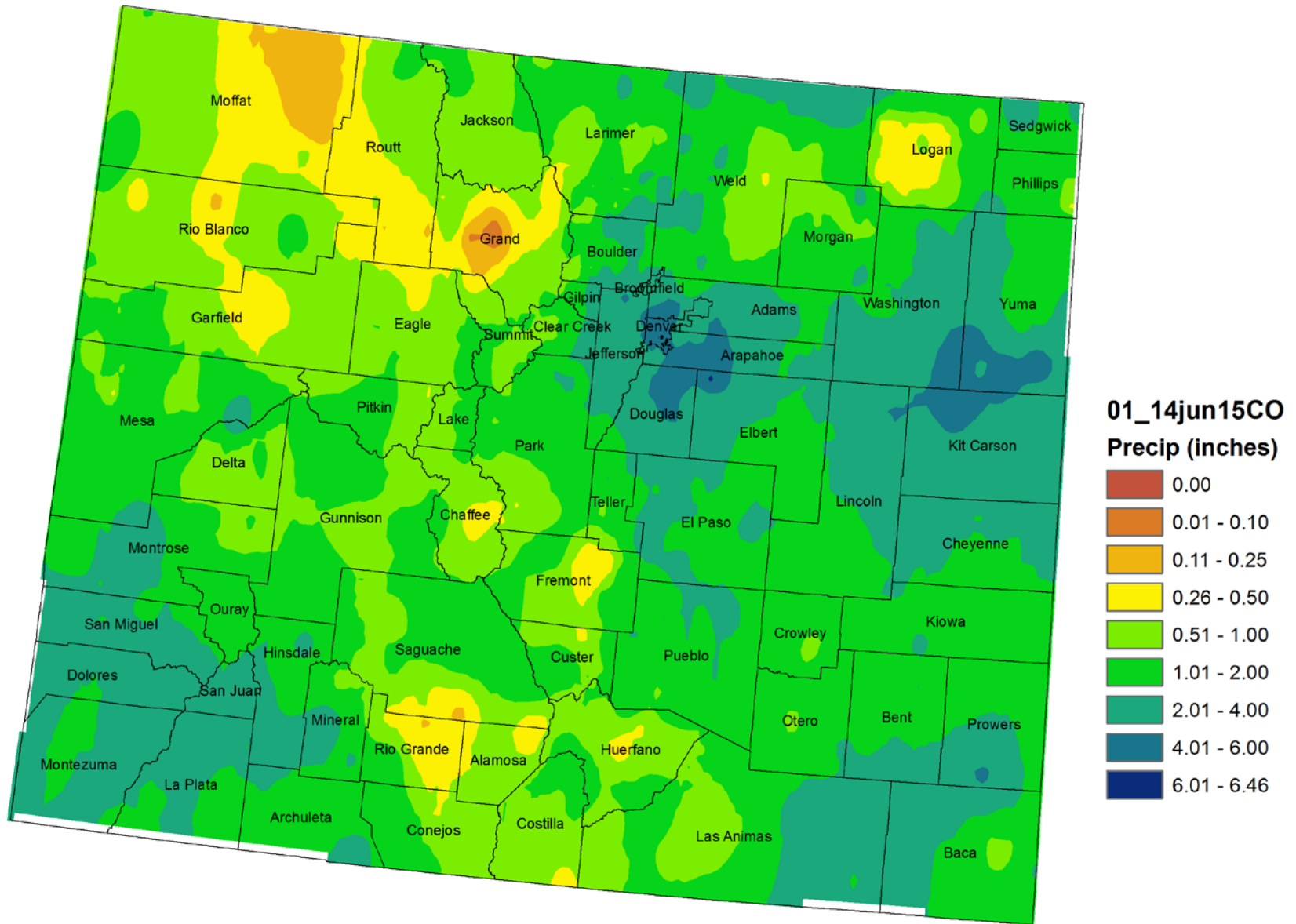
- 31 NWS Coop Stations with the wettest MONTH on record
- 102 NWS Coop Stations with the wettest MAY on record.



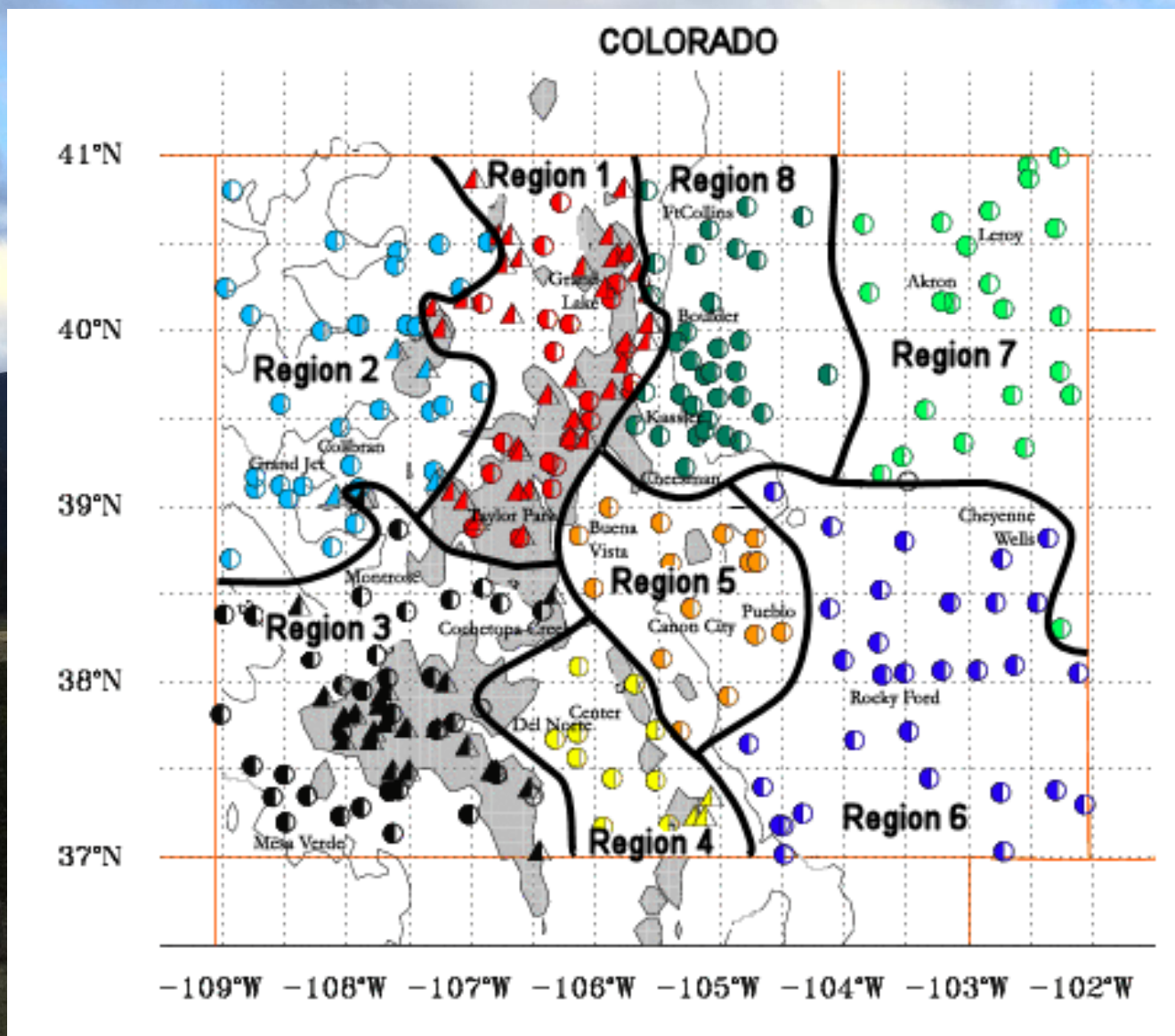
# Colorado Water Year 2015 Precipitation as a Percentage of Normal October 2014 - May 2015



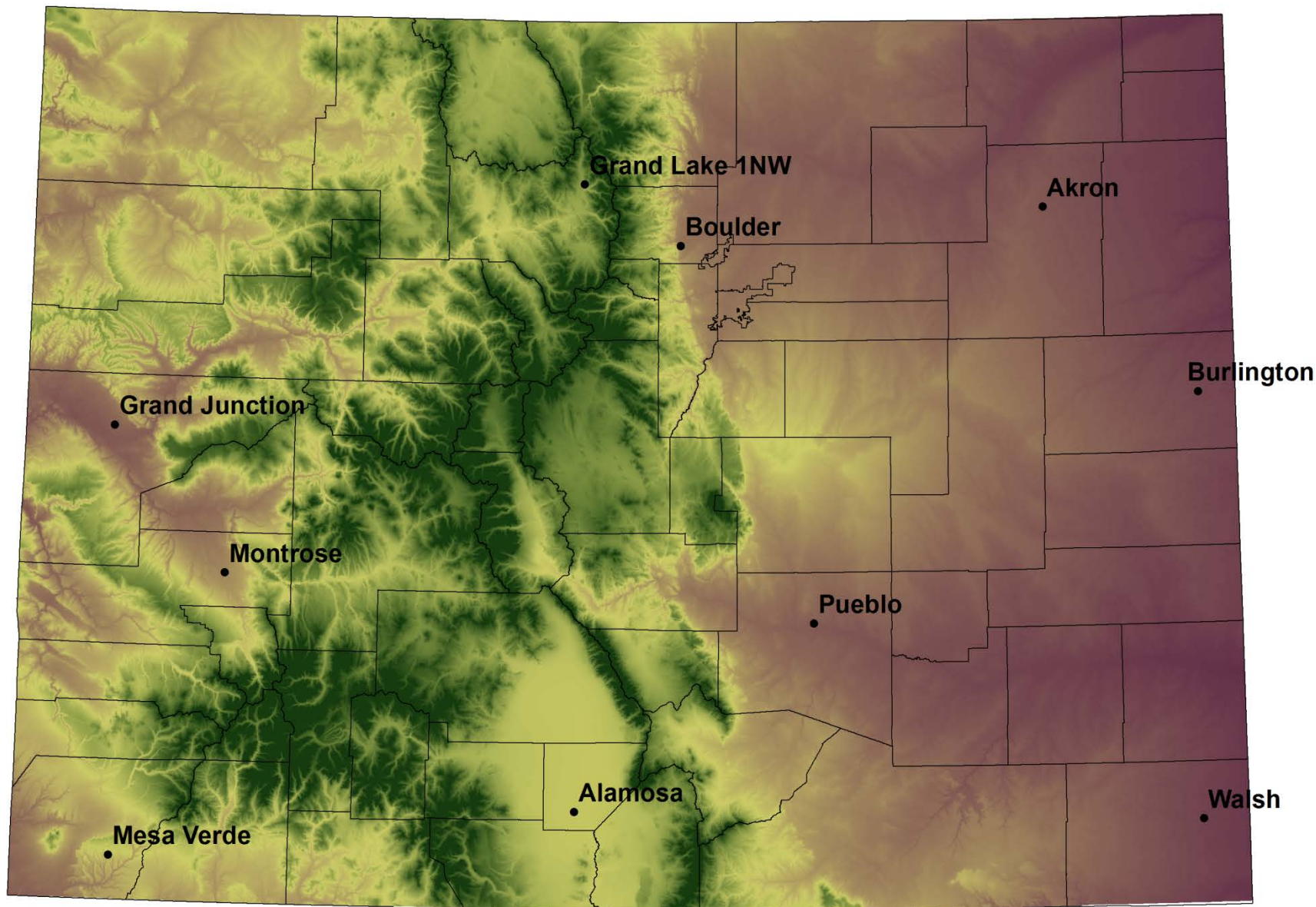
# Colorado Month to Date Precipitation 1 - 14 June 2015



# Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO

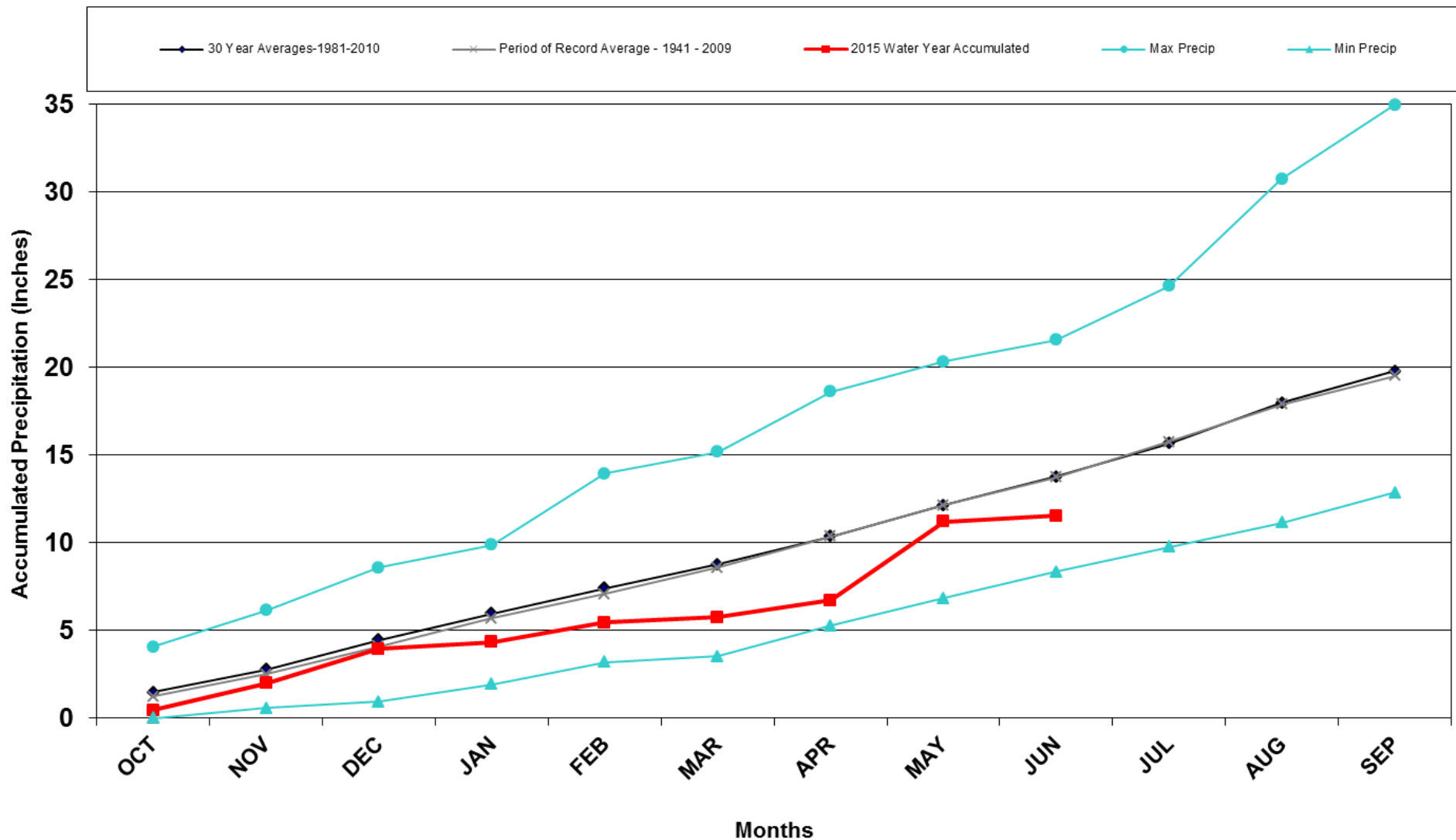


# NWS Cooperative Stations for WATF



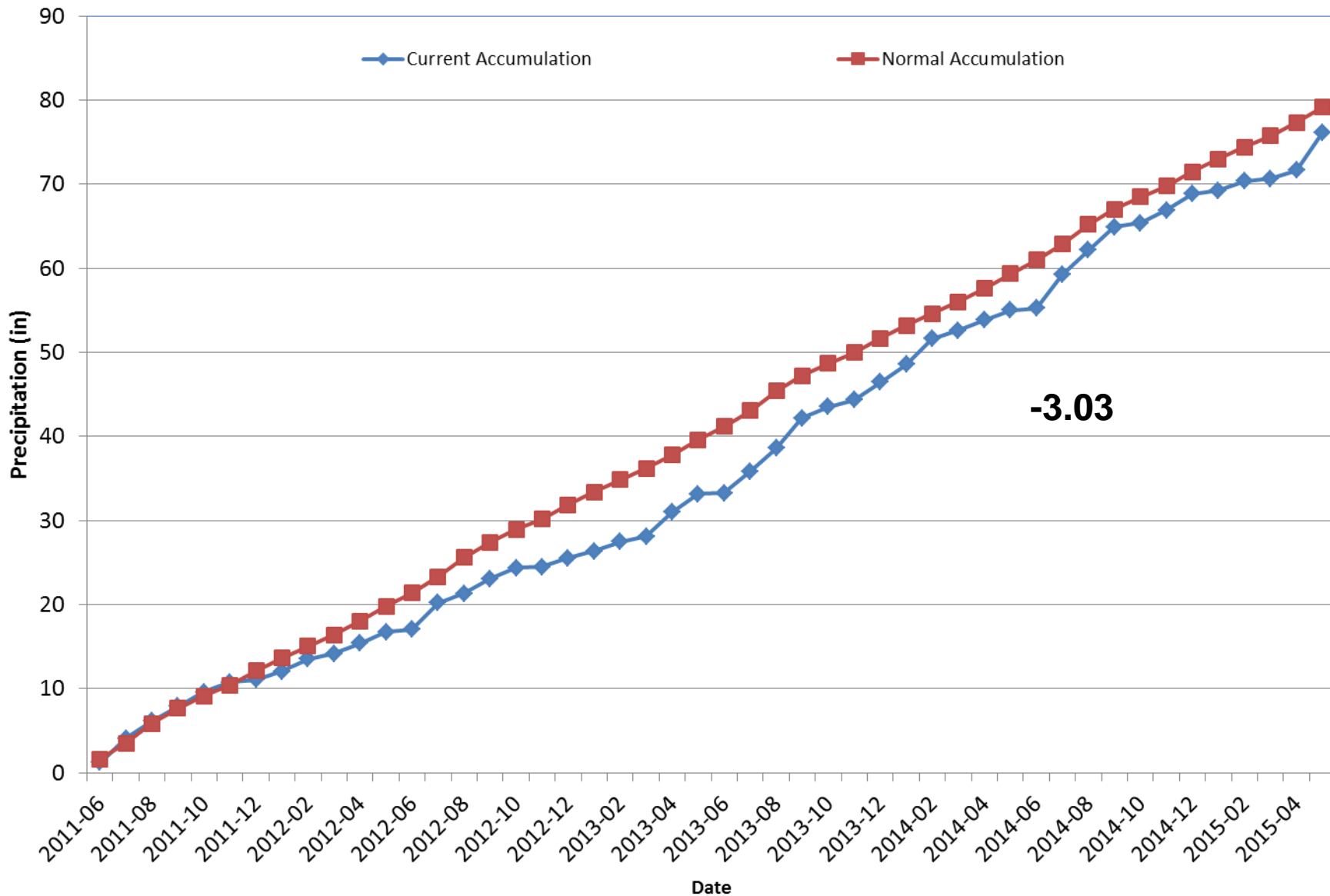
# Division 1 – Grand Lake 1NW

## Grand Lake 1 NW 2015 Water Year



# Division 1 – Grand Lake 1NW

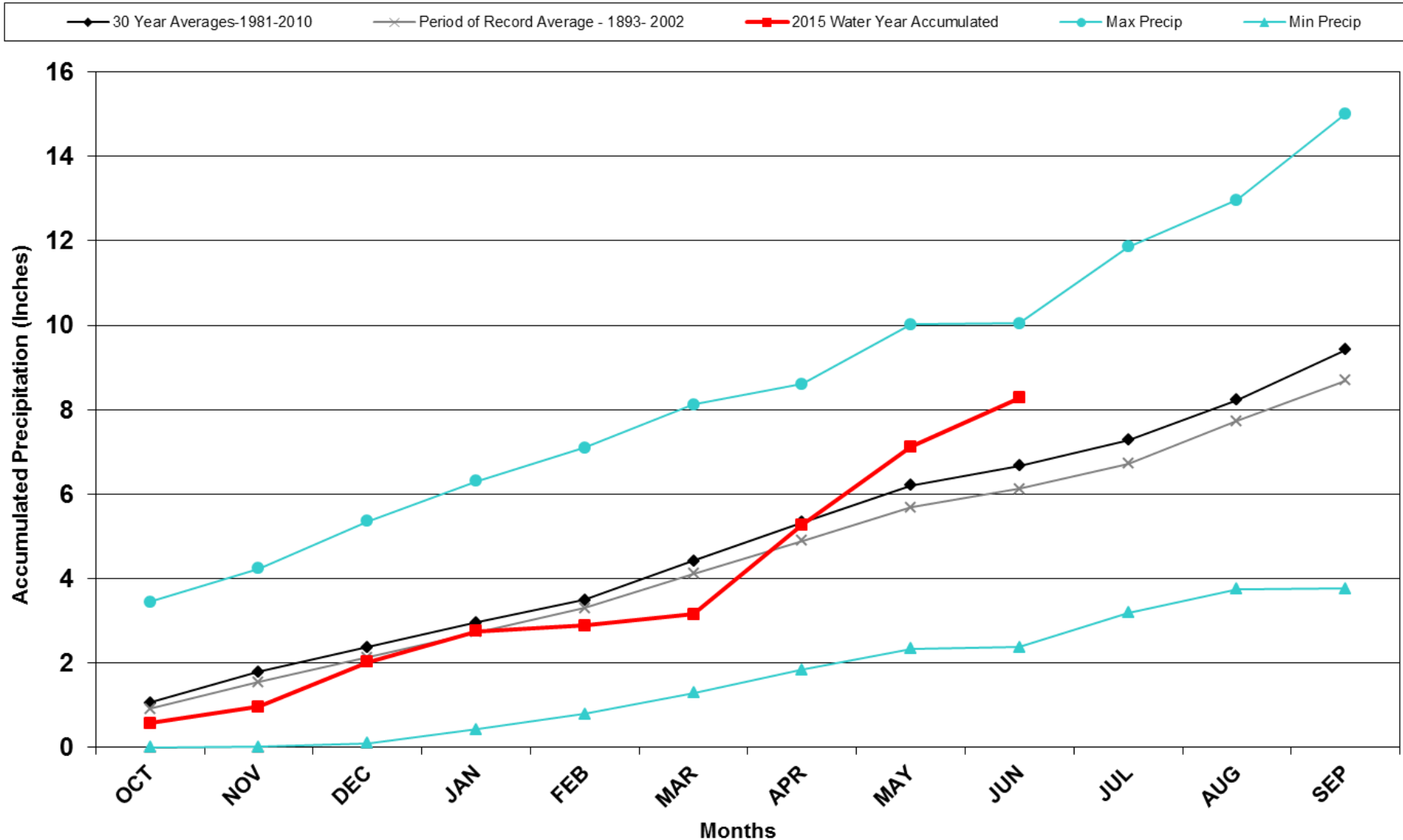
## Grand Lake 1NW Precipitation Accumulation





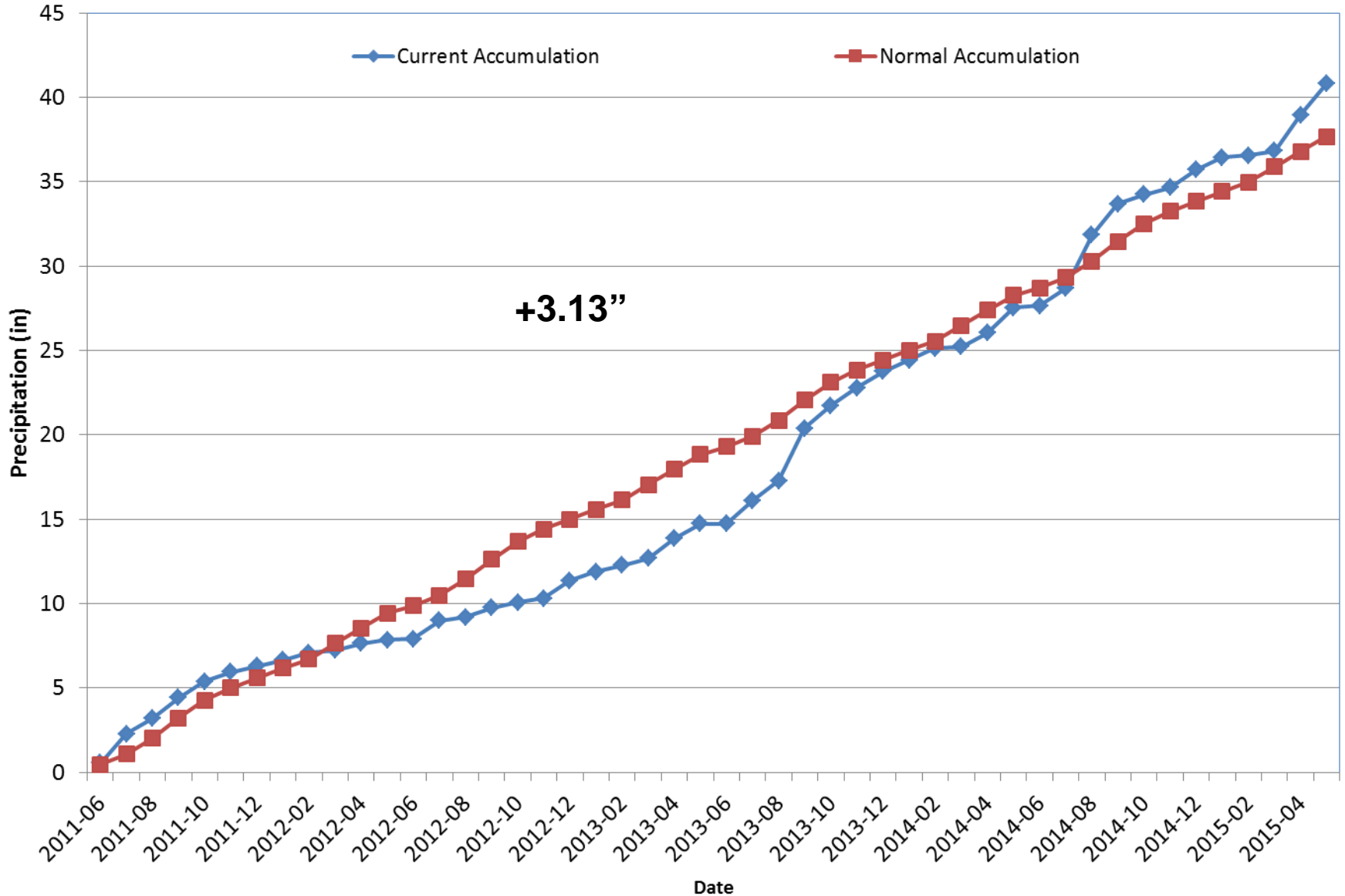
# Division 2 – Grand Junction

## Grand Junction WSFO 2015 Water Year



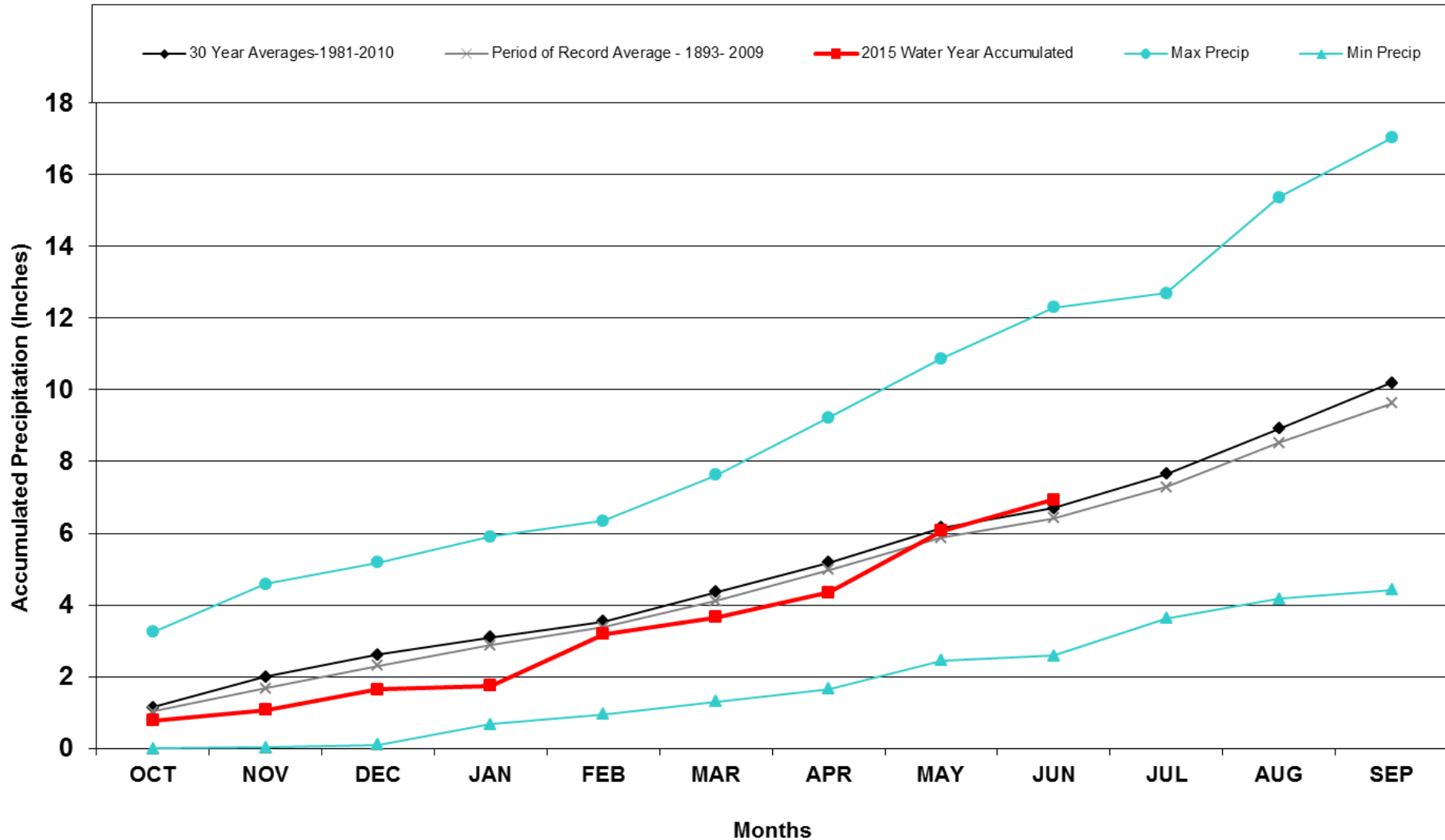
# Division 2 – Grand Junction

## Grand Junction Precipitation Accumulation



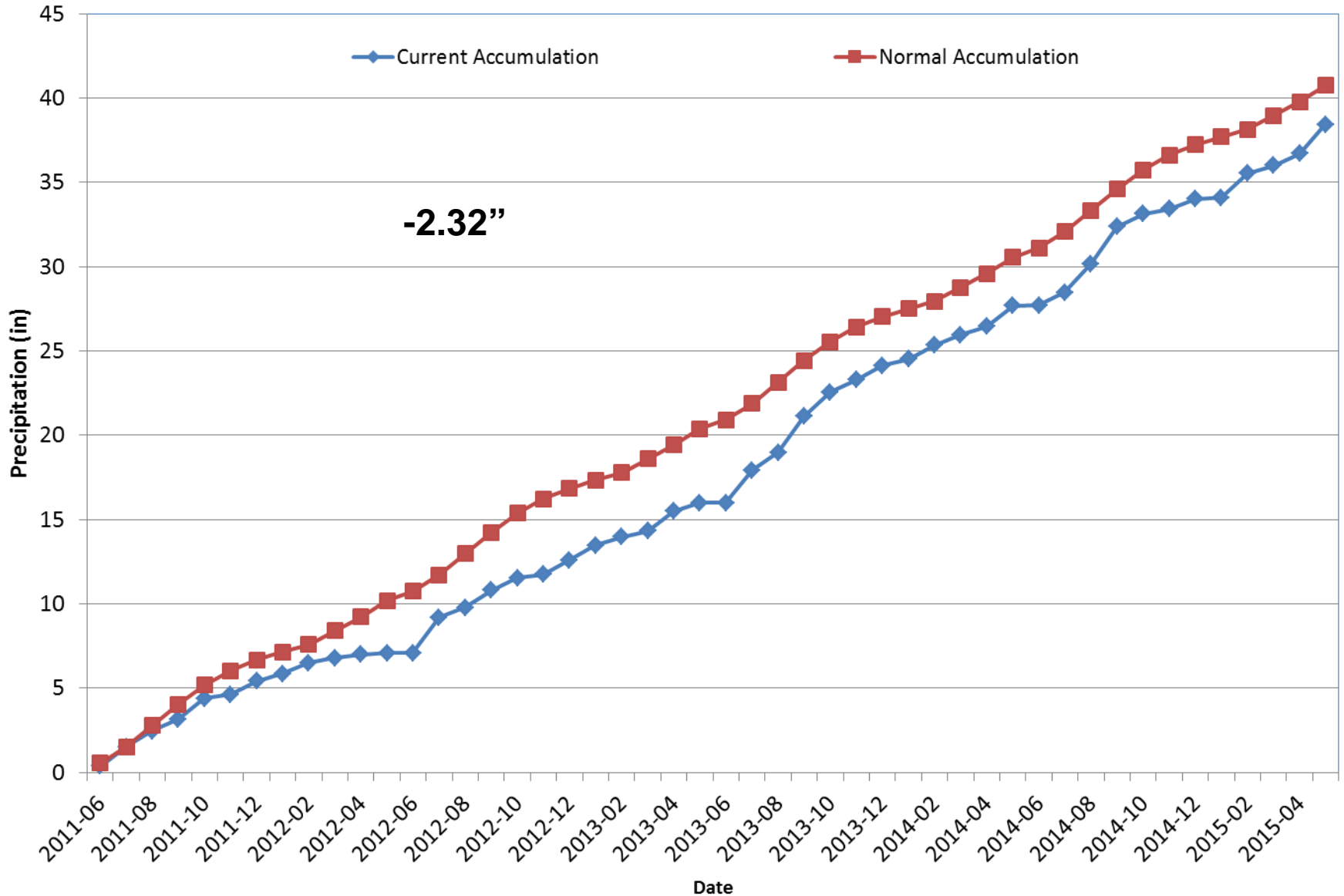
# Division 3 – Montrose

## Montrose #2 2015 Water Year



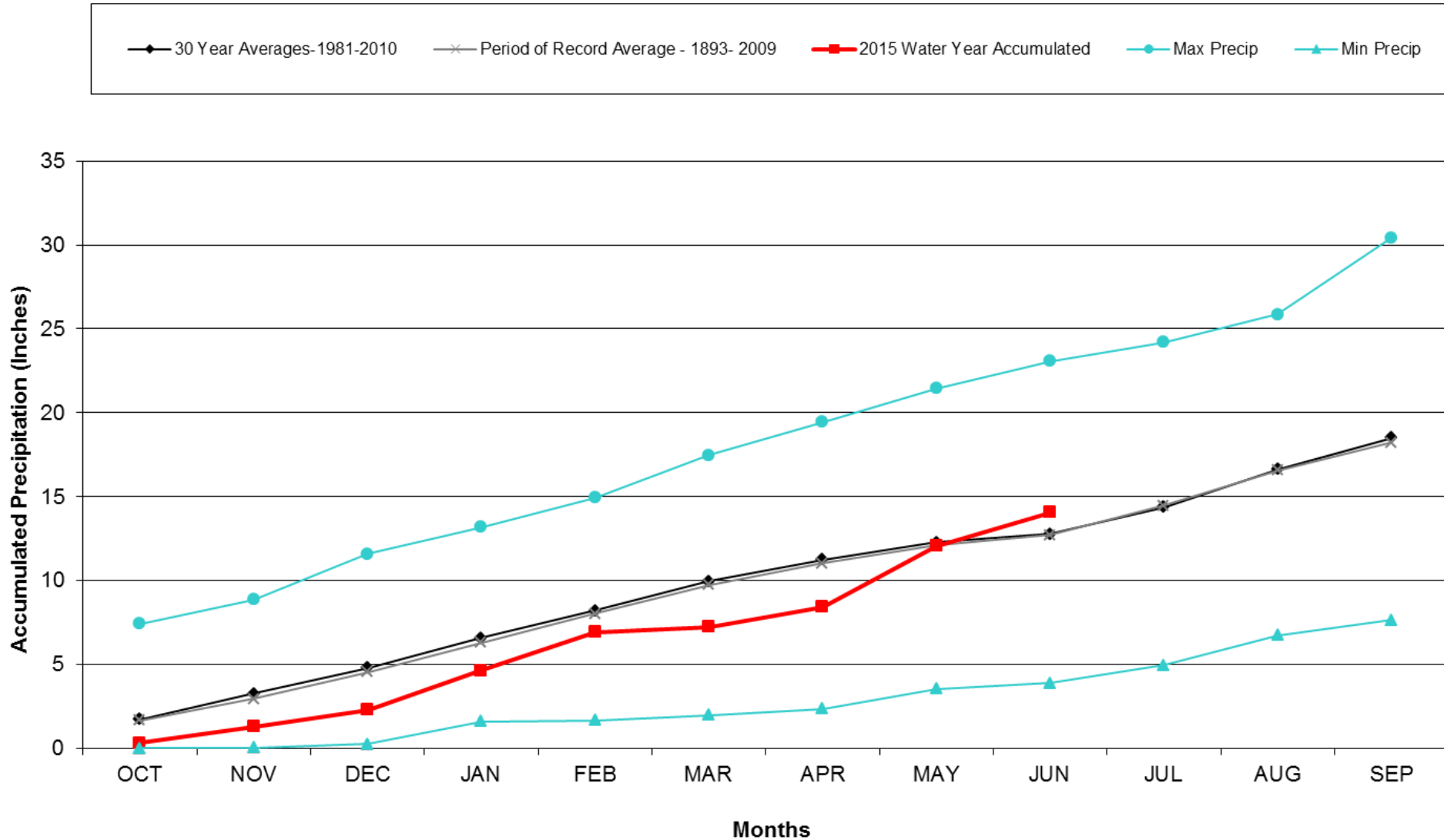
# Division 3 – Montrose

## Montrose #2 Precipitation Accumulation



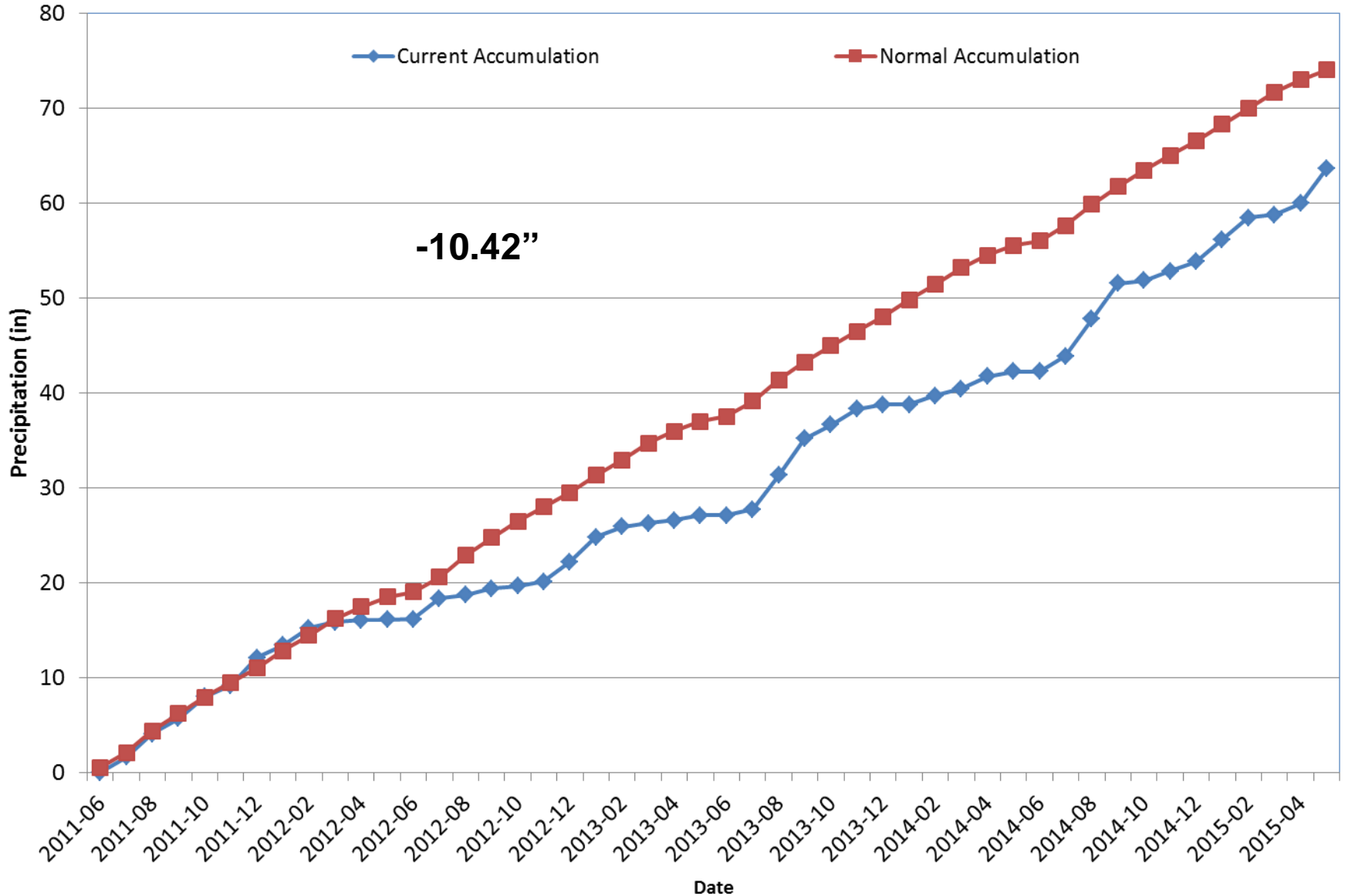
# Division 3 – Mesa Verde NP

## Mesa Verde NP 2015 Water Year



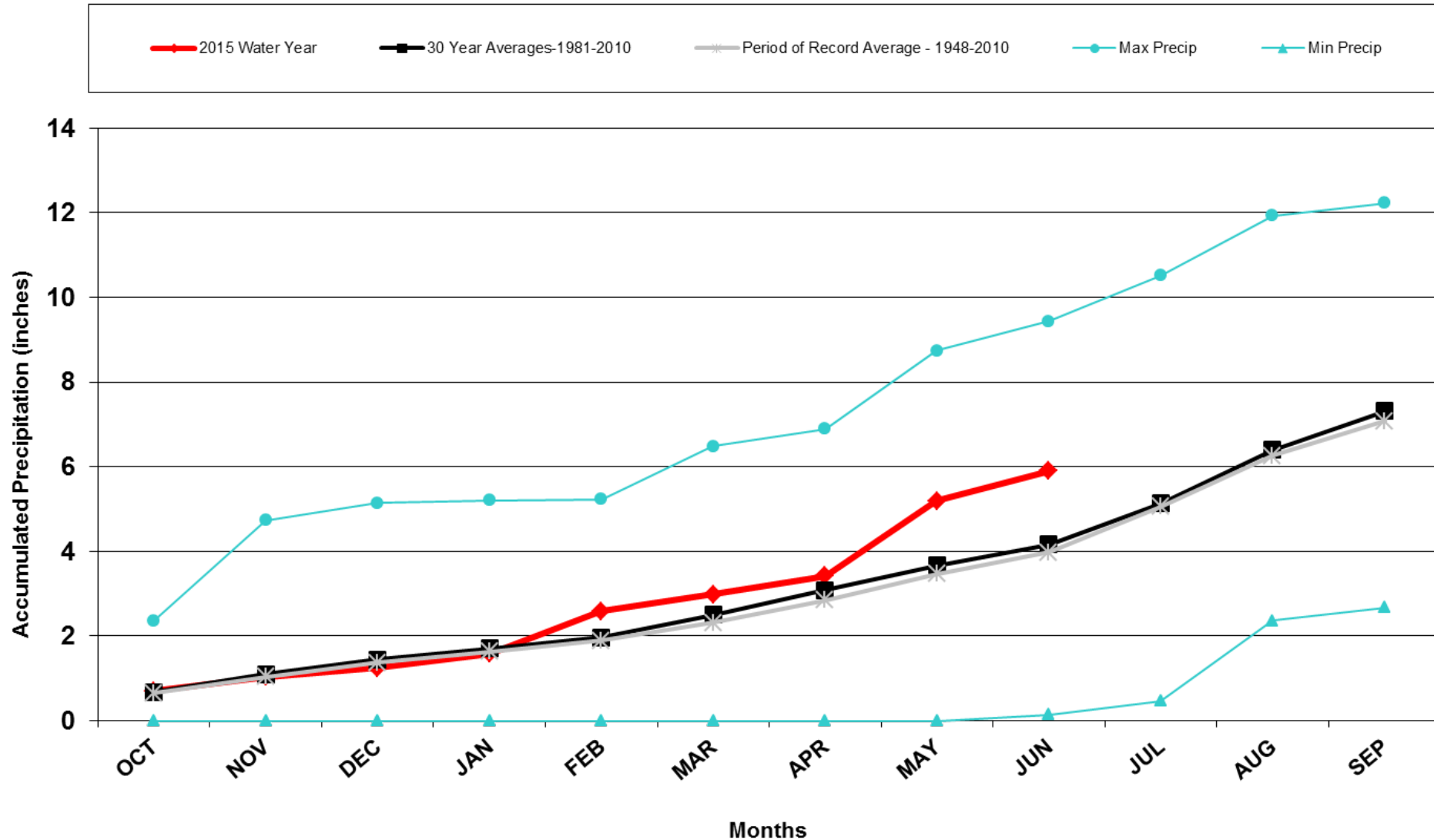
# Division 3 – Mesa Verde NP

## Mesa Verde NP Precipitation Accumulation



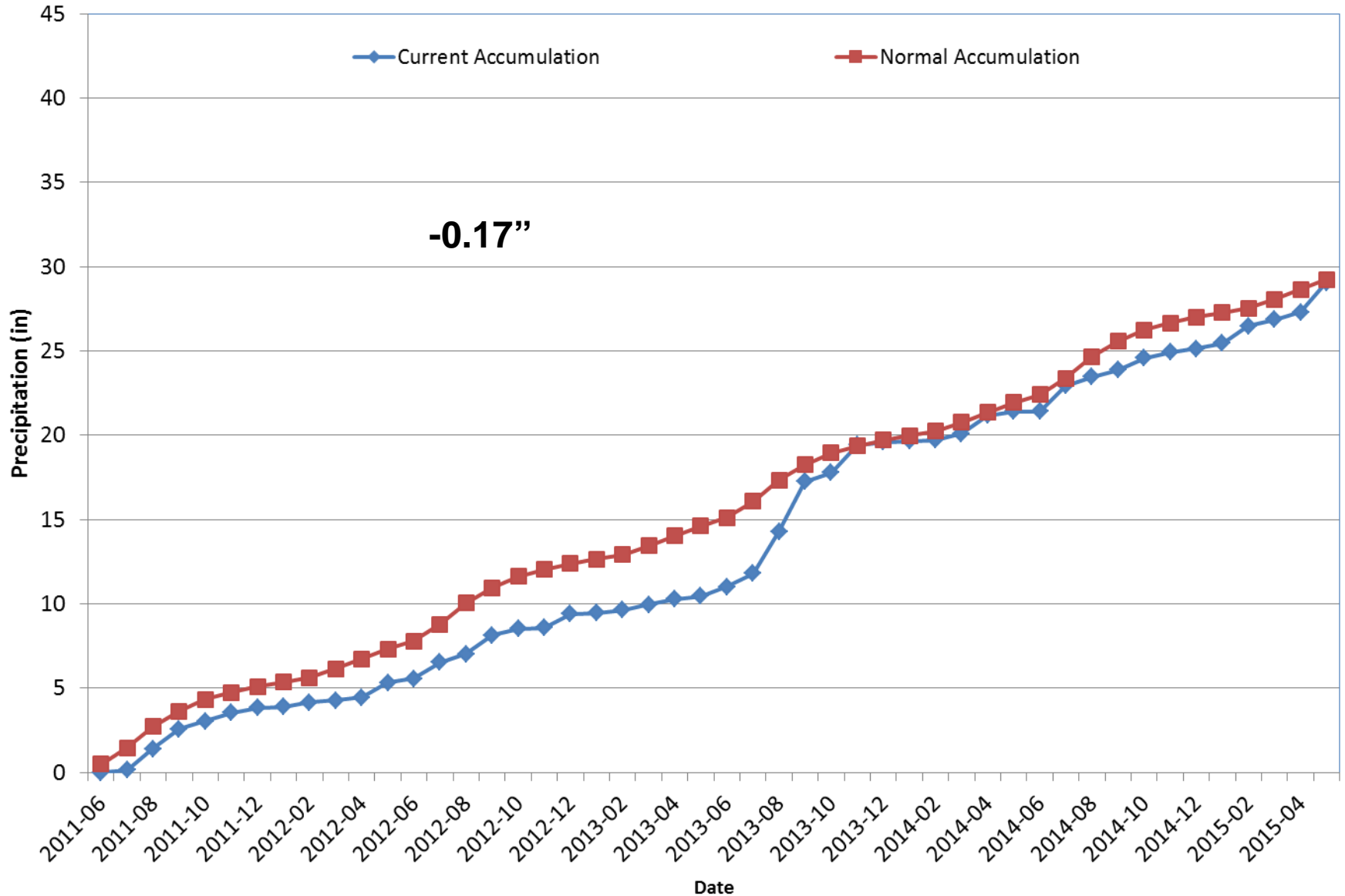
# Division 4 – Alamosa

## Alamosa WSO 2015 Water Year



# Division 4 – Alamosa

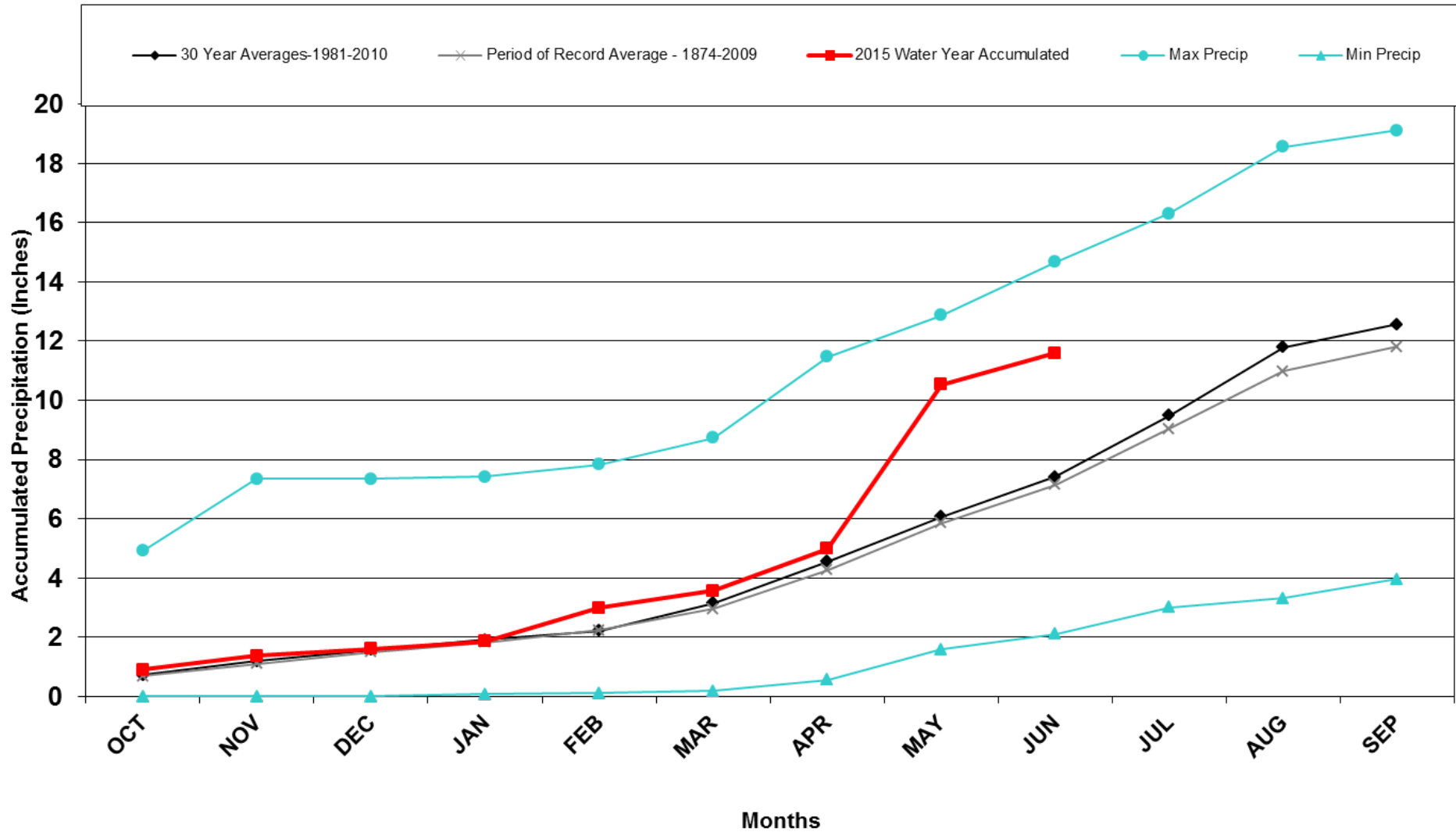
## Alamosa WSO Precipitation Accumulation





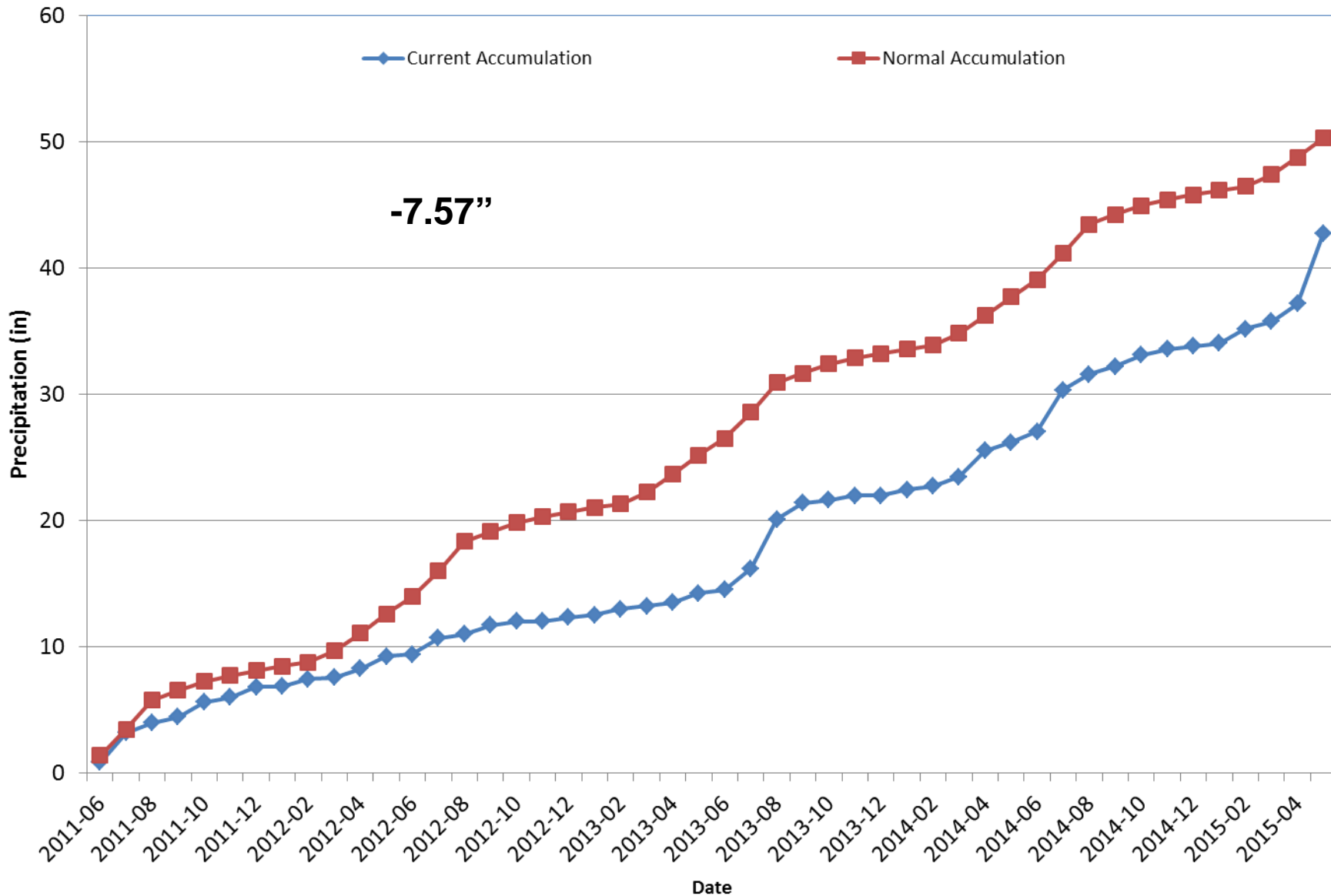
# Division 5 – Pueblo

## Pueblo WSO 2015 Water Year



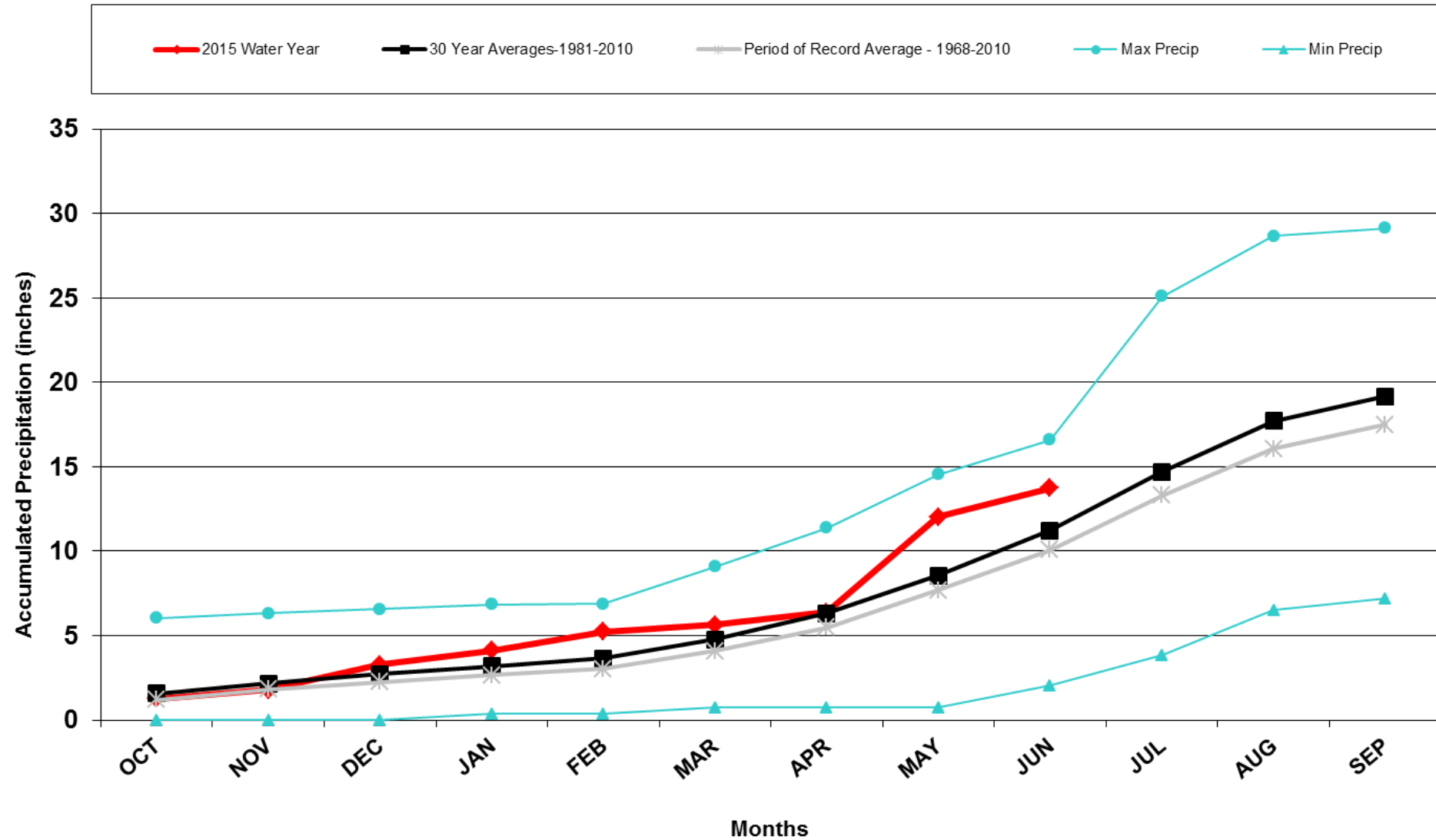
# Division 5 – Pueblo

## Pueblo Memorial AP Precipitation Accumulation



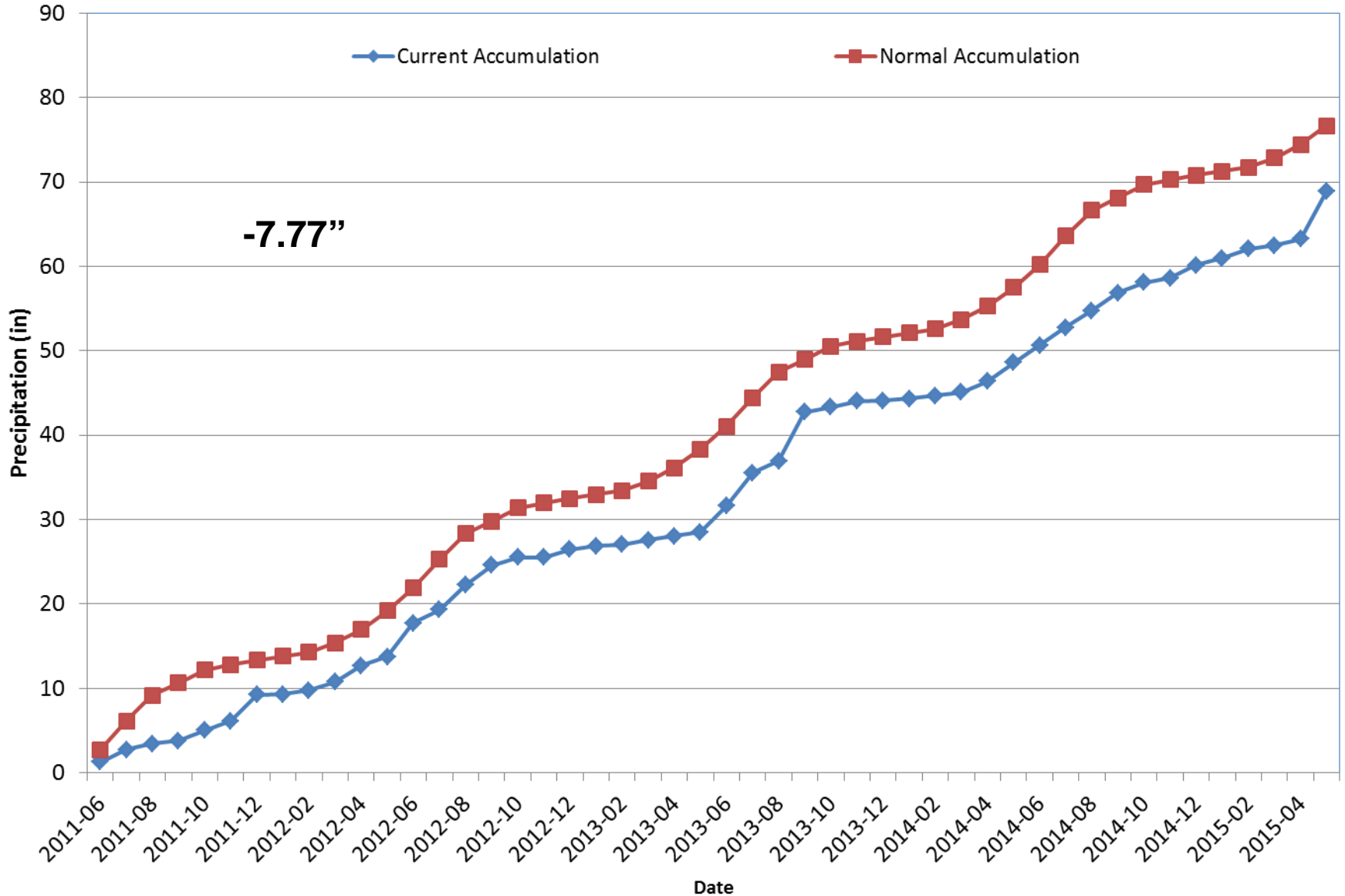
# Division 6 - Walsh

## Walsh 2015 Water Year



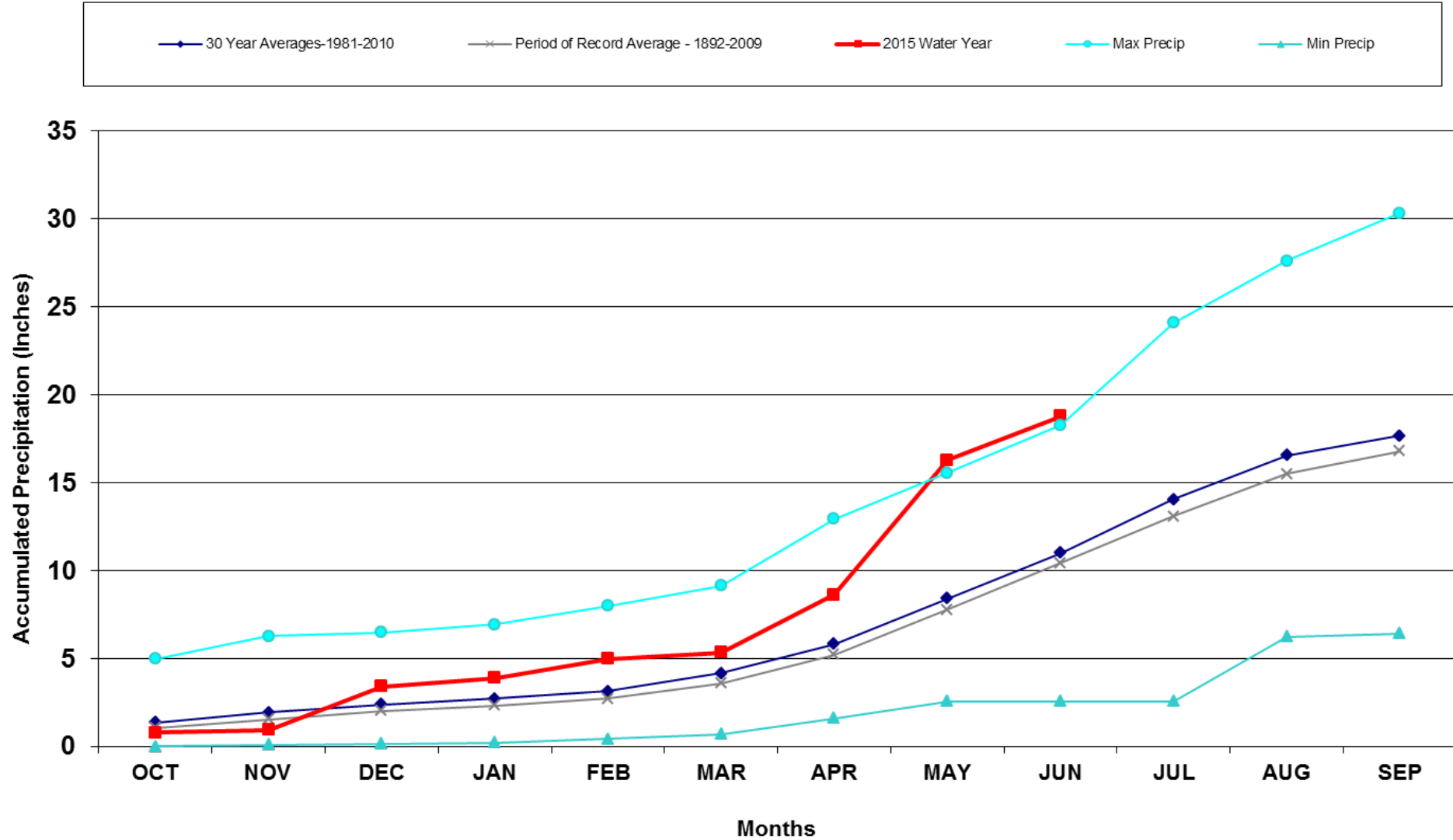
# Division 6 - Walsh

## Walsh 1W Precipitation Accumulation



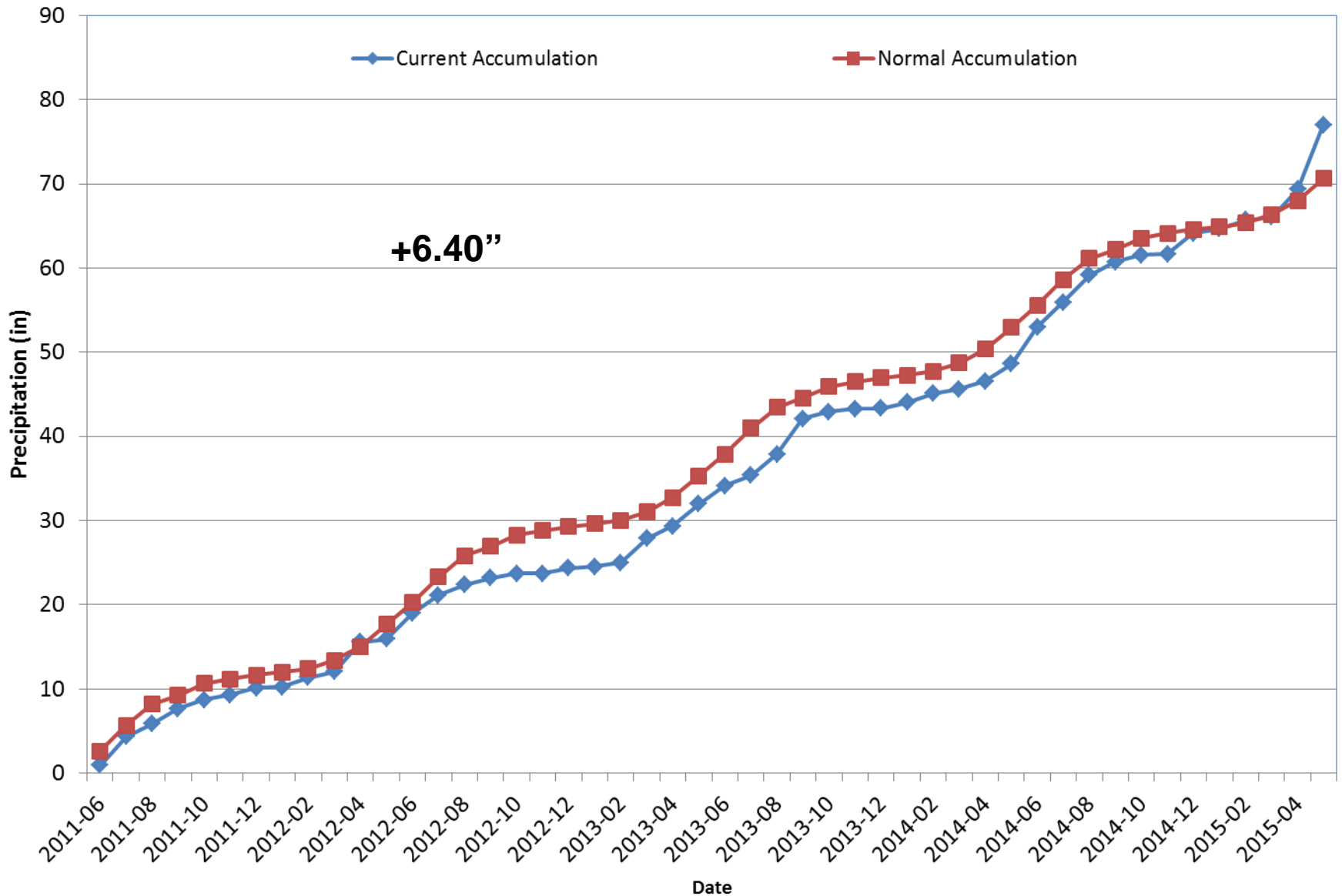
# Division 6 - Burlington

## Burlington 2015 Water Year



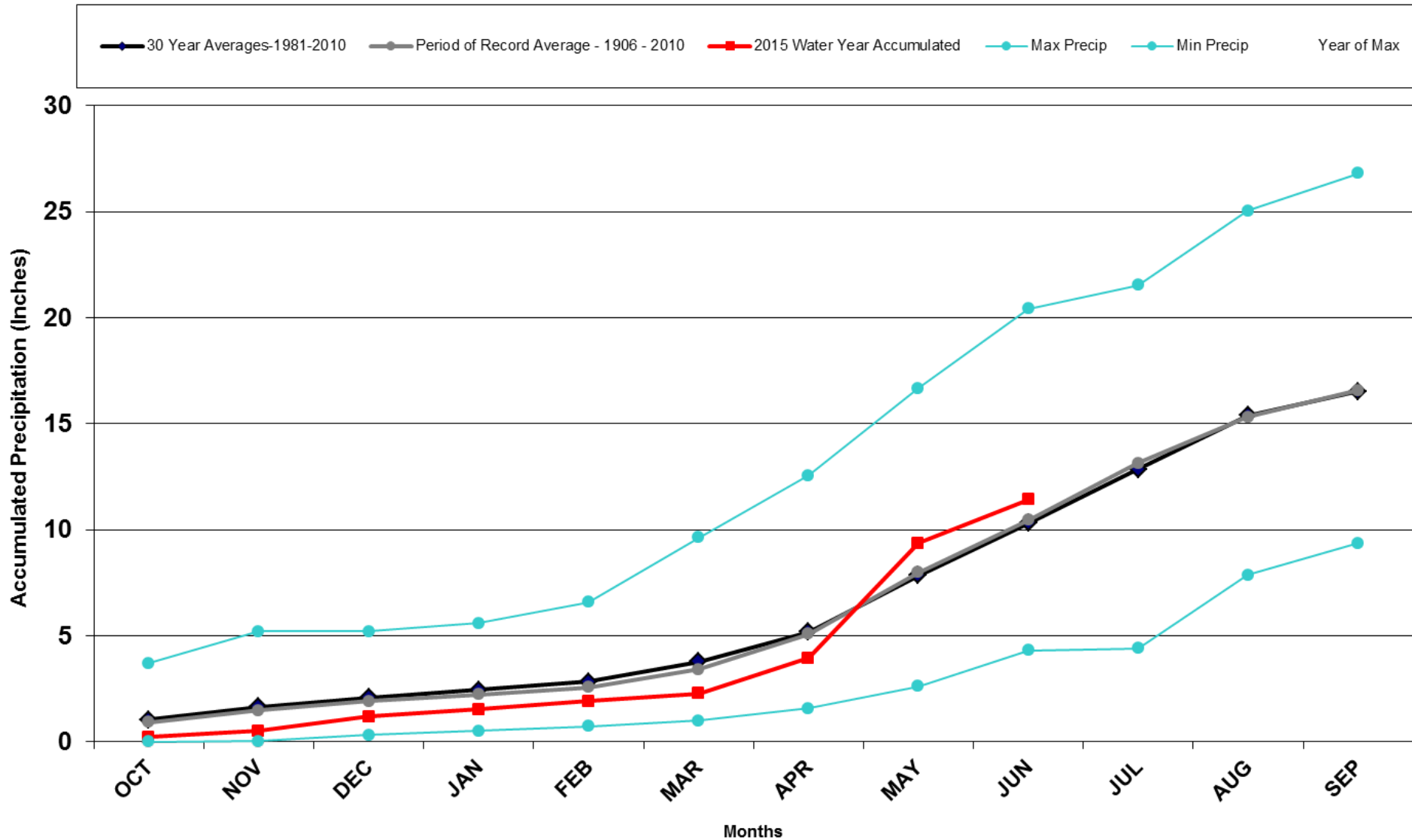
# Division 6 - Burlington

## Burlington, CO Precipitation Accumulation



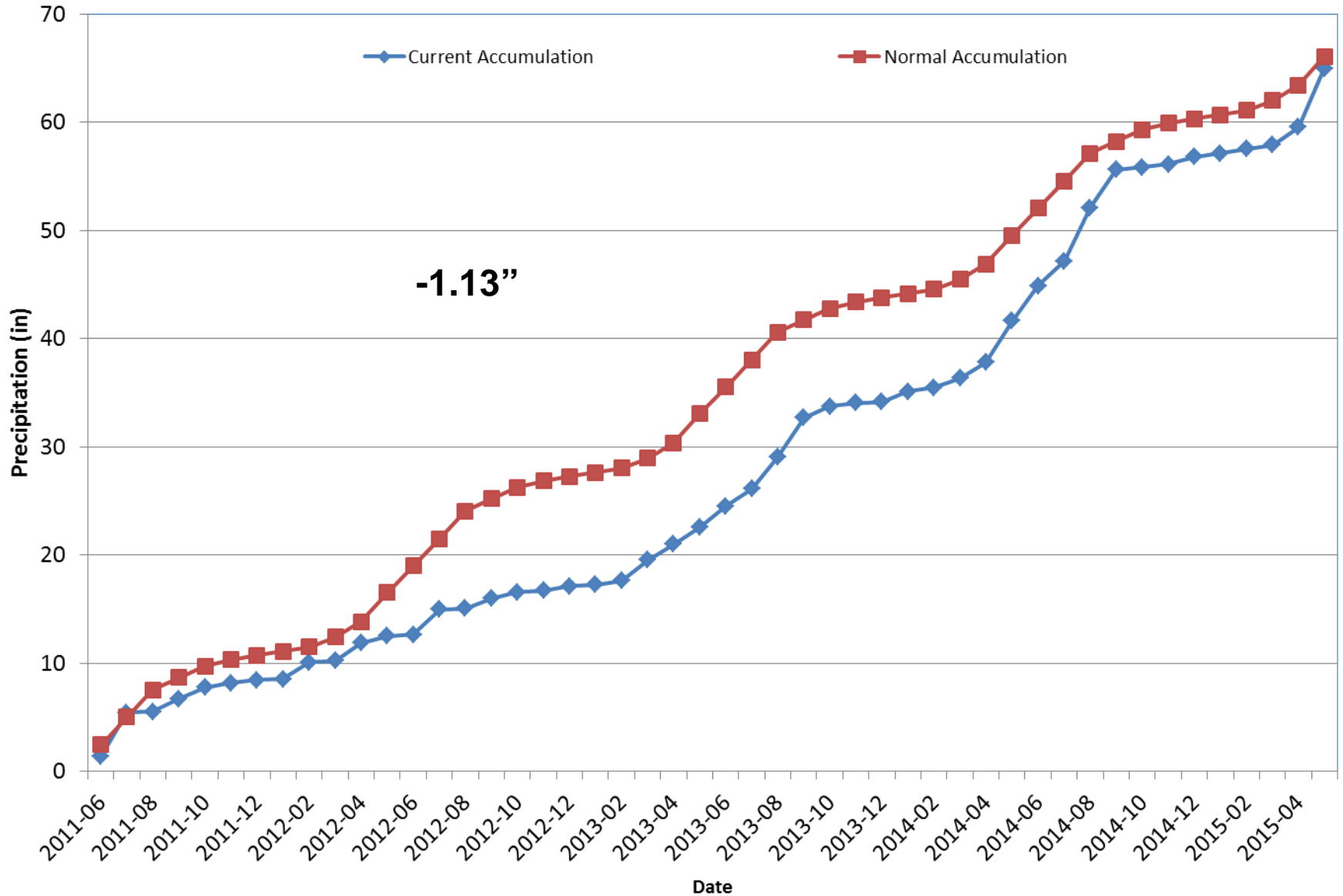
# Division 7 – Akron

## Akron 4E 2015 Water Year



# Division 7 – Akron

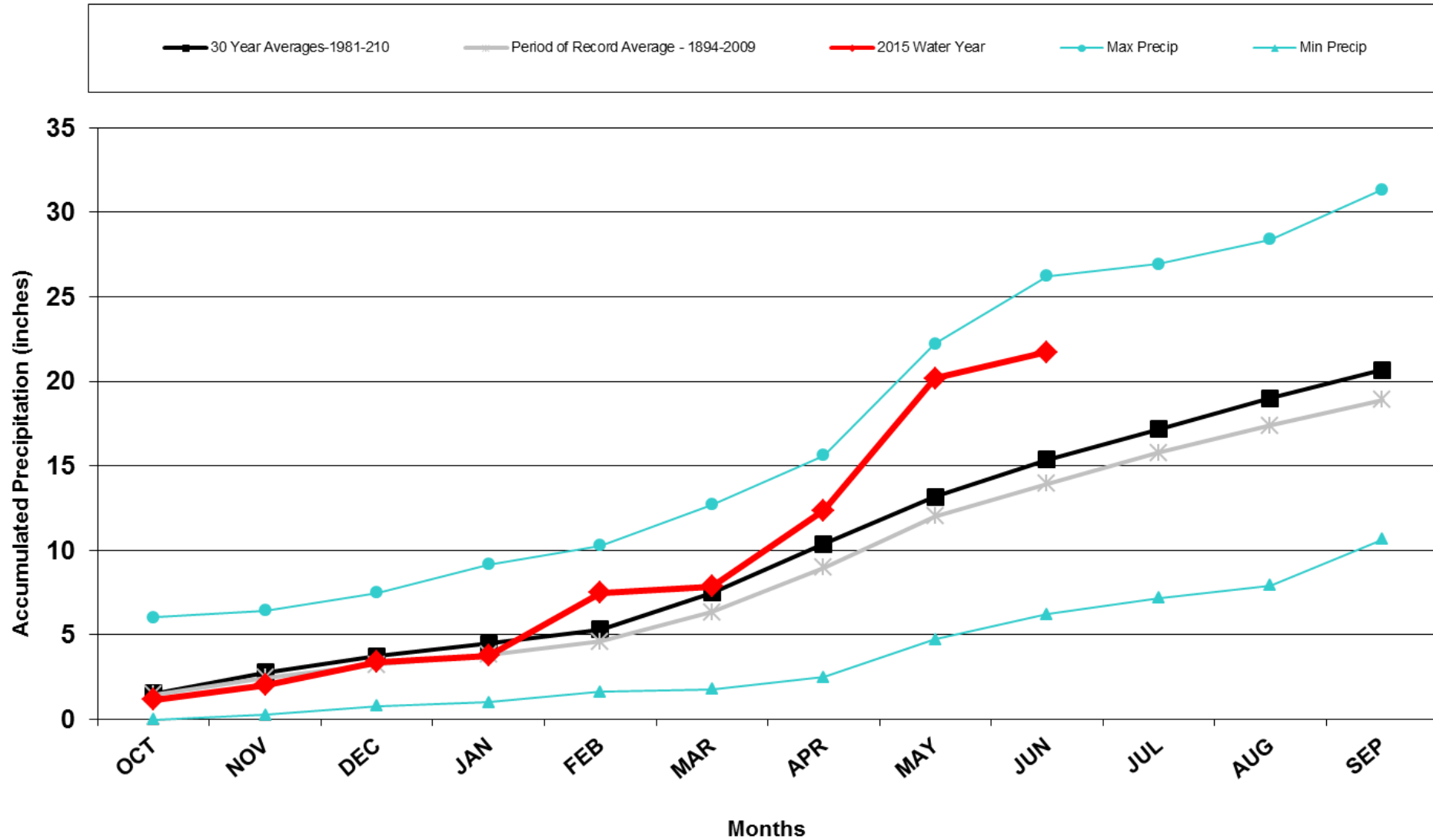
## Akron 4E Precipitation Accumulation





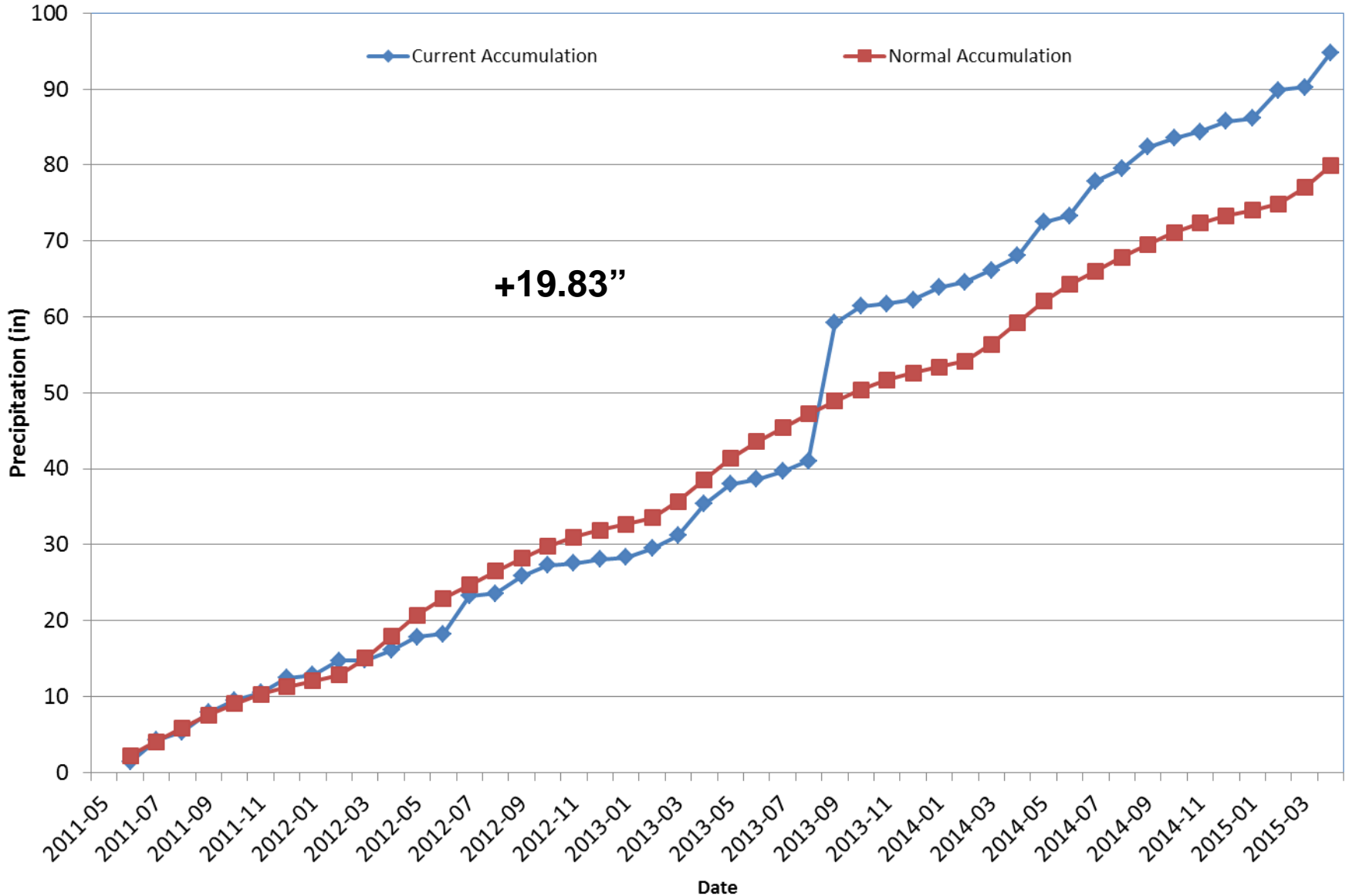
# Division 8 - Boulder

## Boulder 2015 Water Year

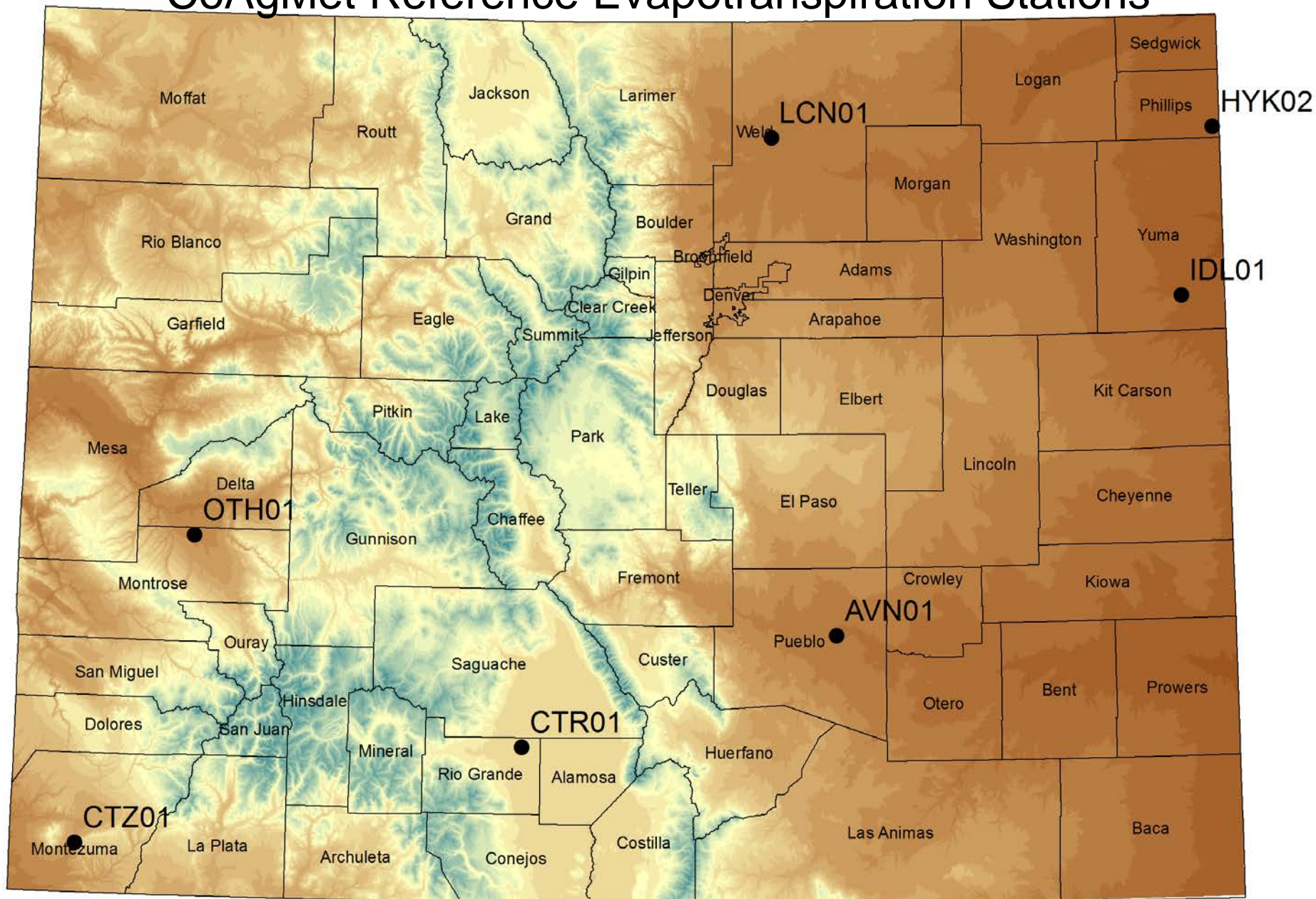


# Division 8 - Boulder

## Boulder Precipitation Accumulation

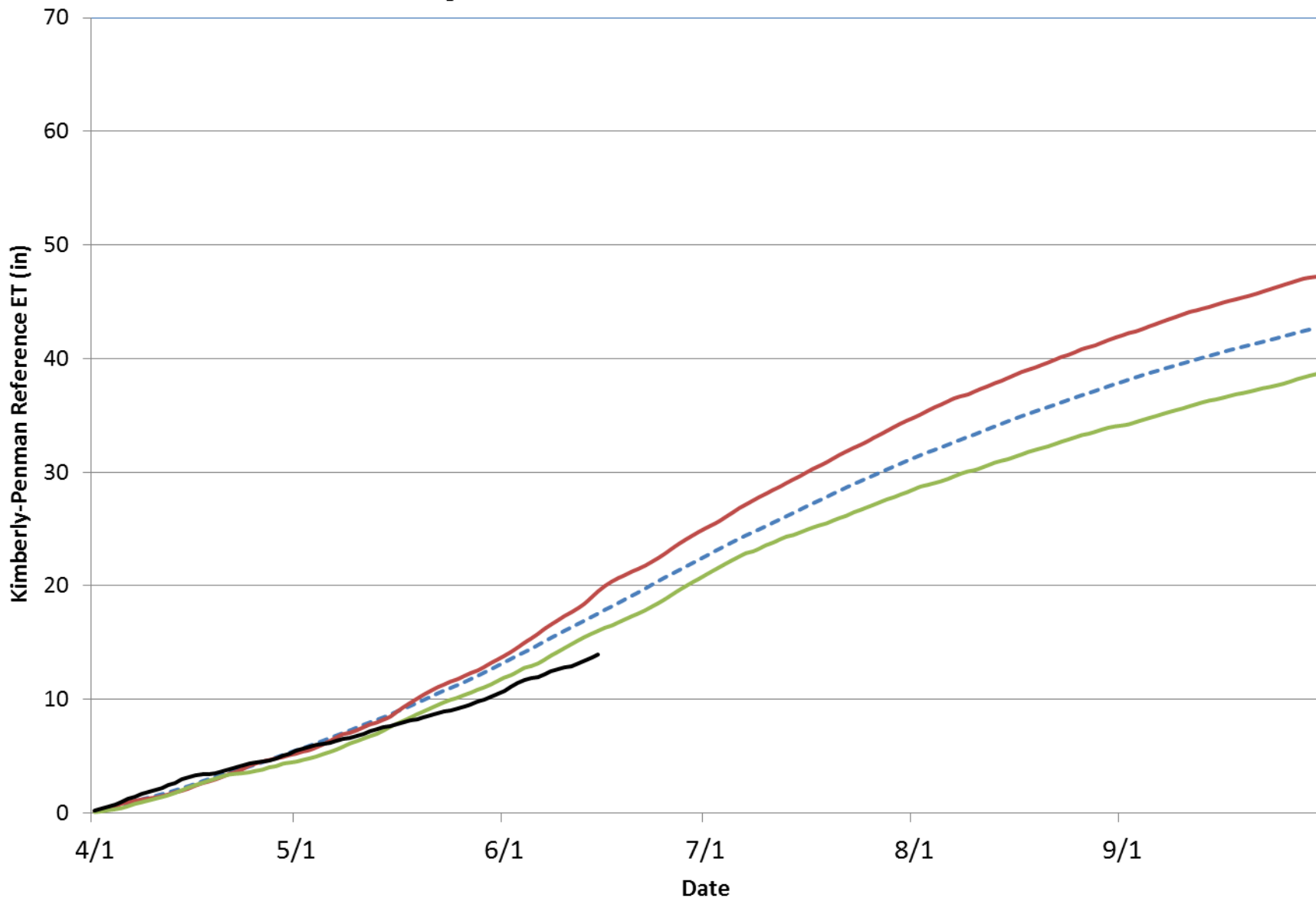


# CoAgMet Reference Evapotranspiration Stations



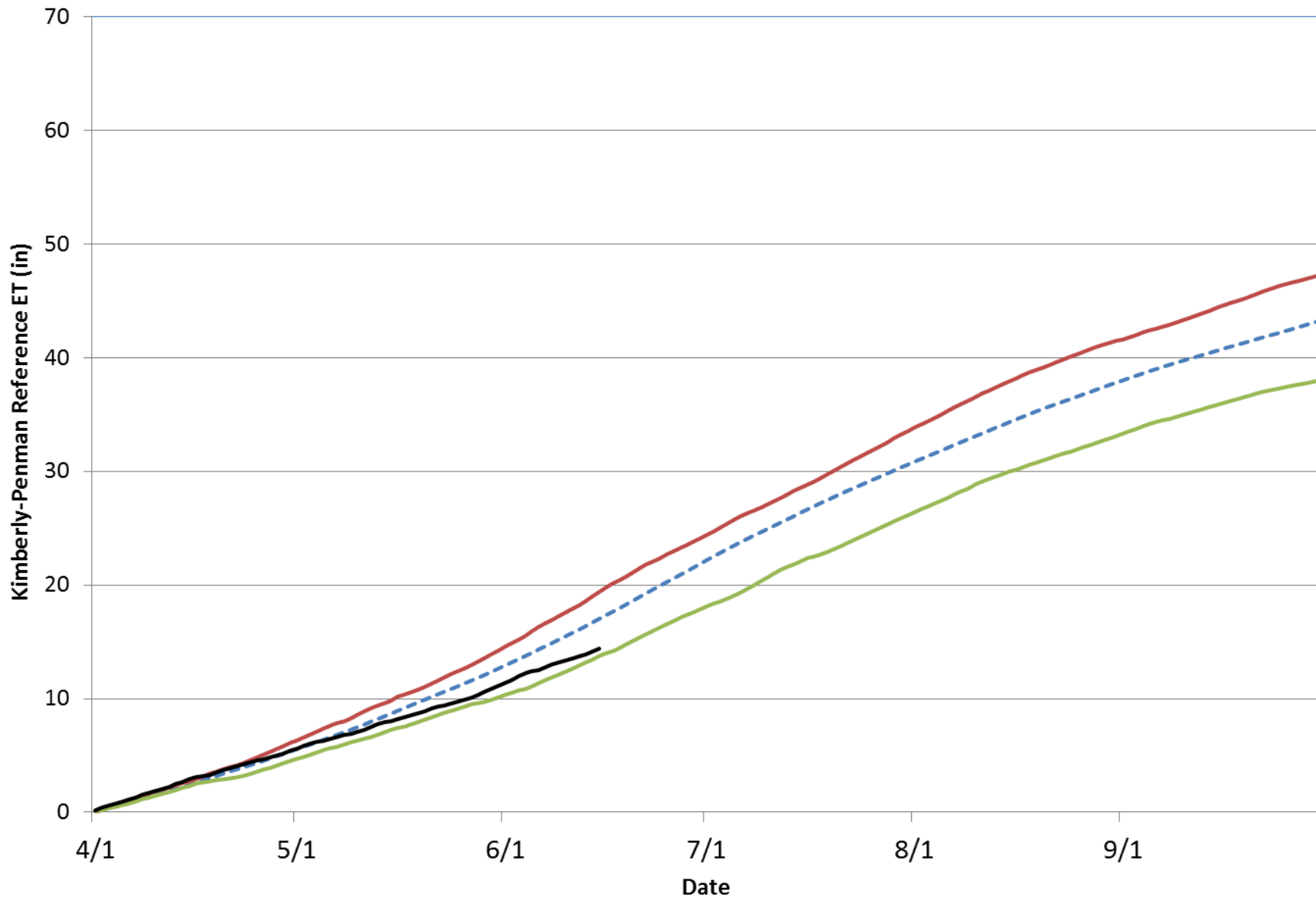
# Olathe Kimberly-Penman Reference ET (1993 - 2015)

--- Average    — 1994    — 1999    — 2015



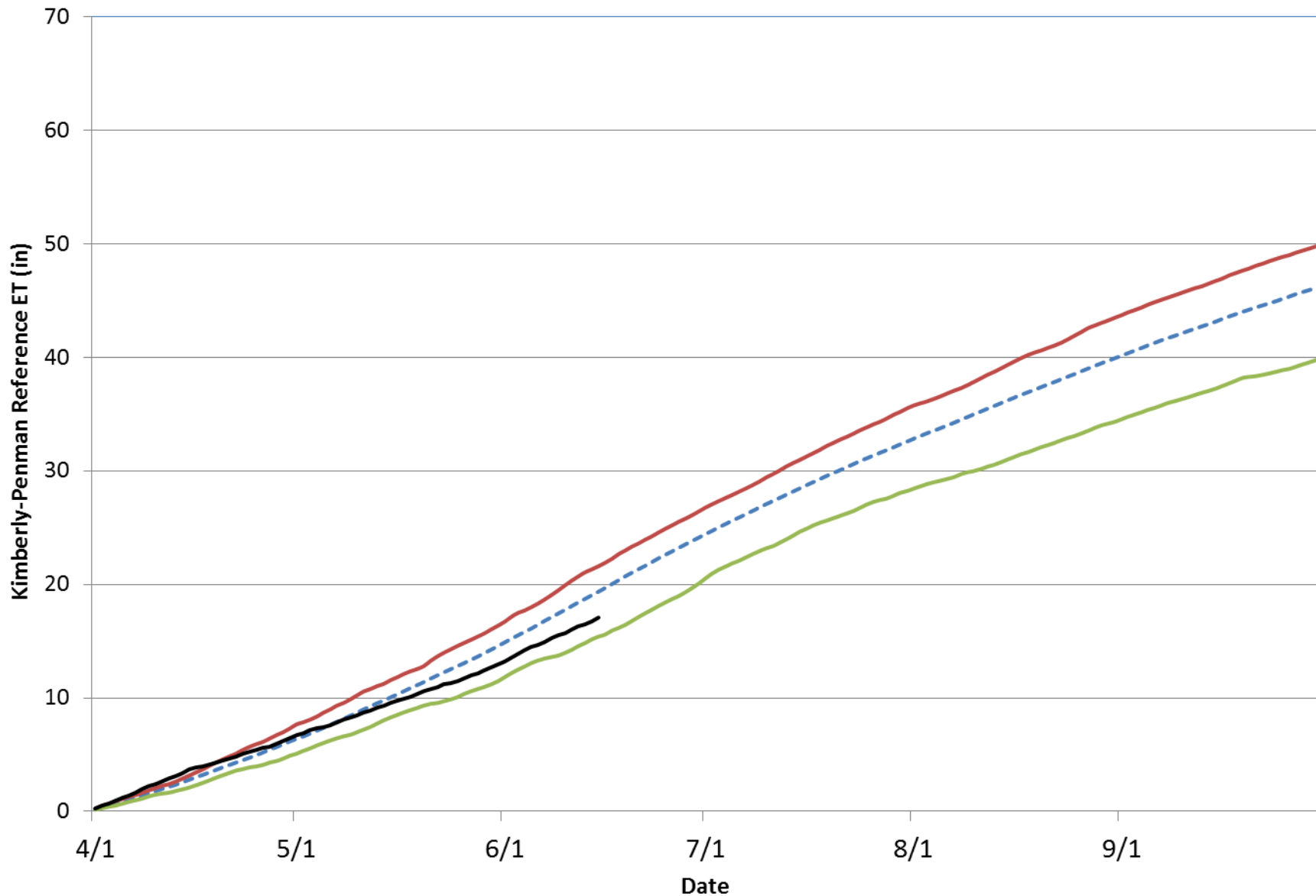
# Cortez Kimberly-Penman Reference ET (1992 - 2015)

--- Average    — 2000    — 1995    — 2015

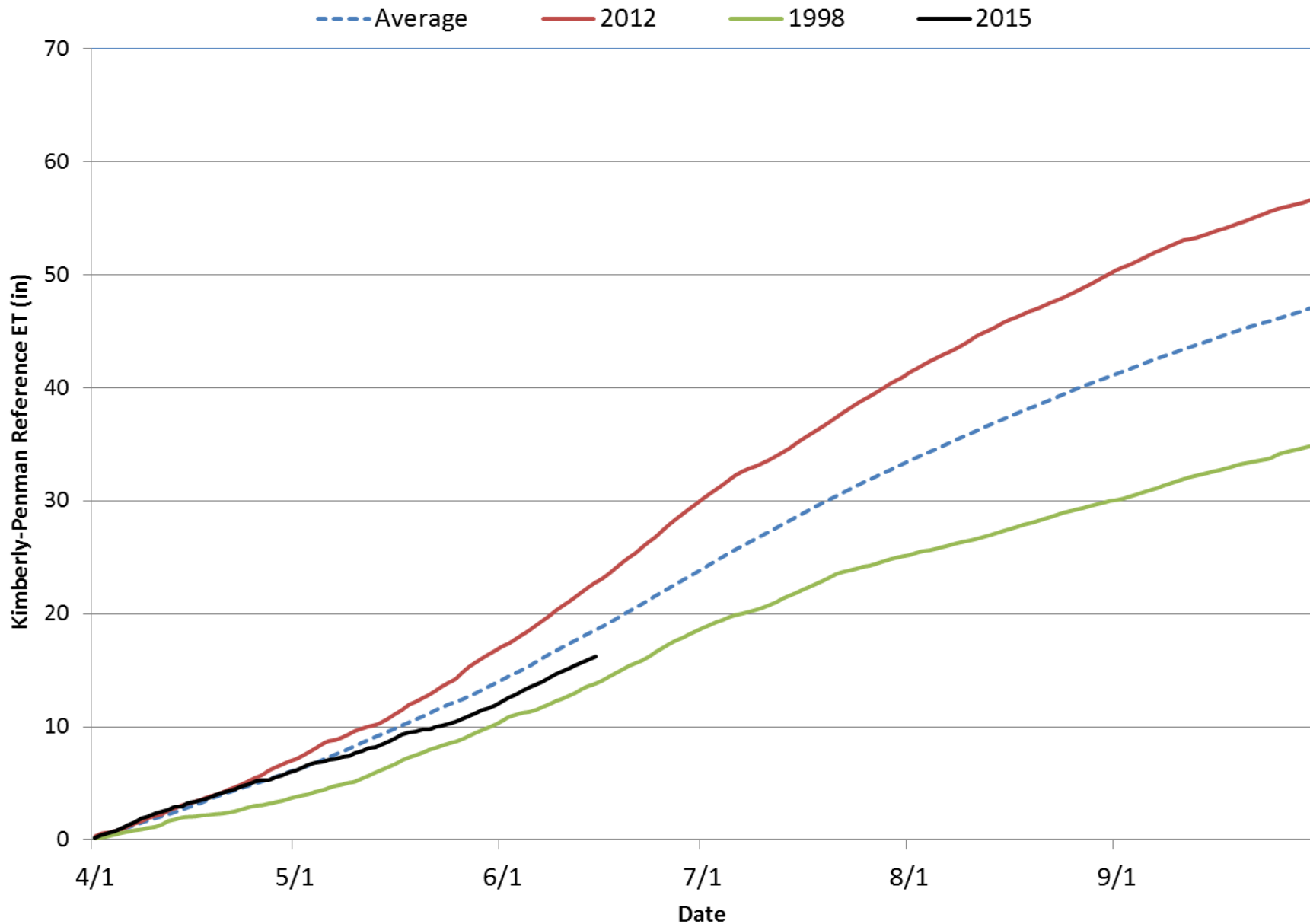


# Center Kimberly-Penman Reference ET (1994 - 2015)

--- Average    — 2002    — 1997    — 2015

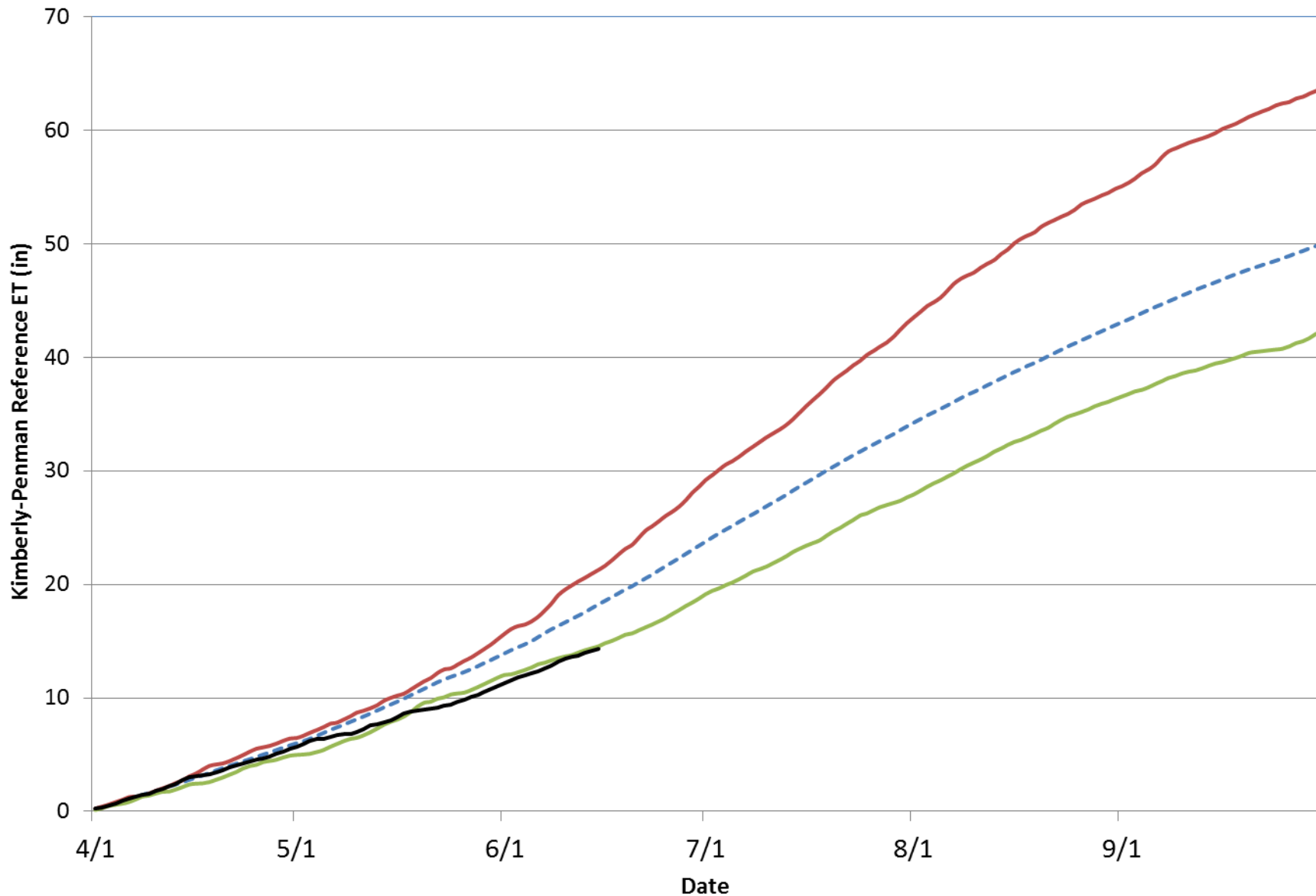


# Avondale Kimberly-Penman Reference ET (1993 - 2015)



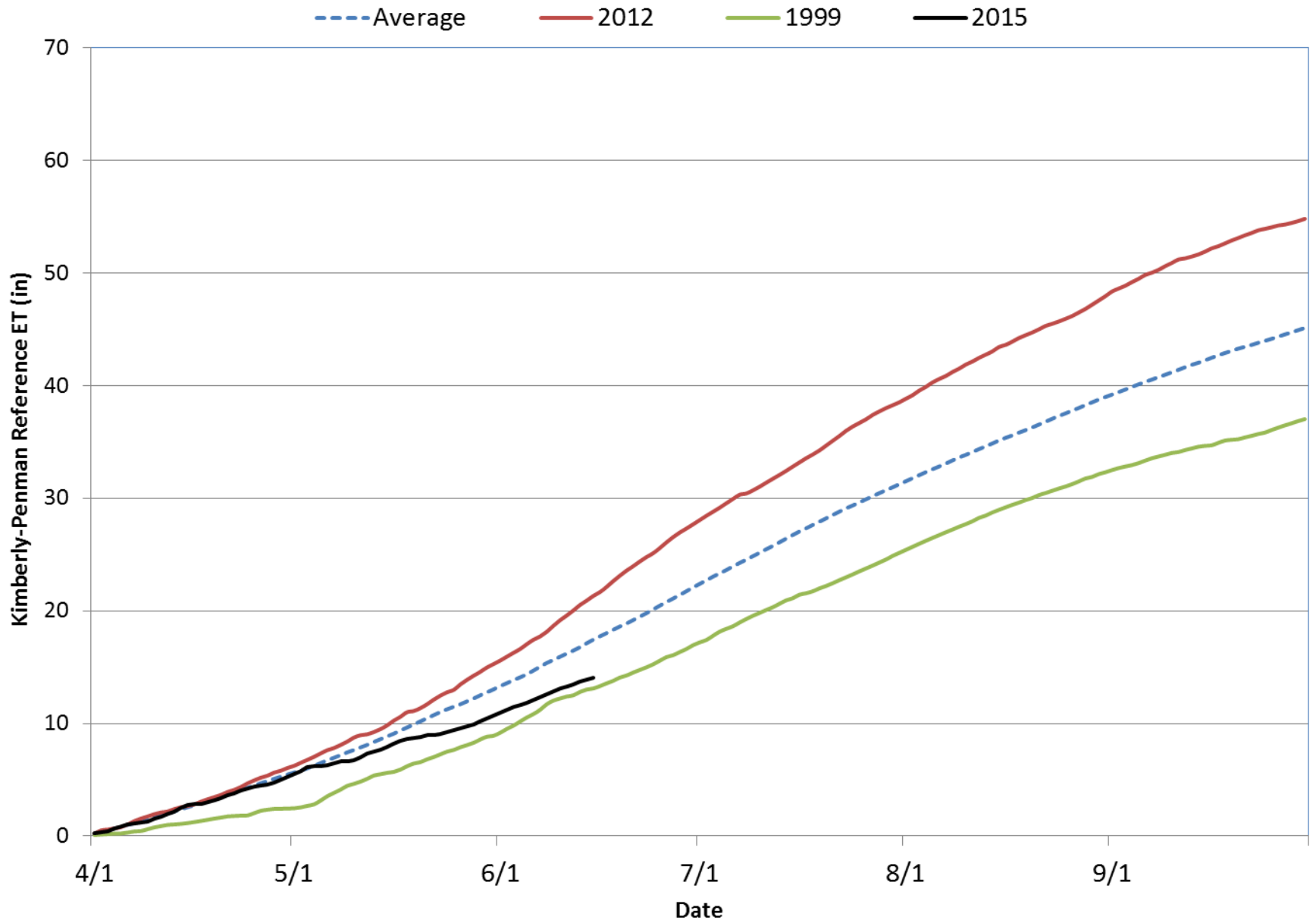
# Idalia Kimberly-Penman Reference ET (1992 - 2015)

--- Average    — 2002    — 2009    — 2015



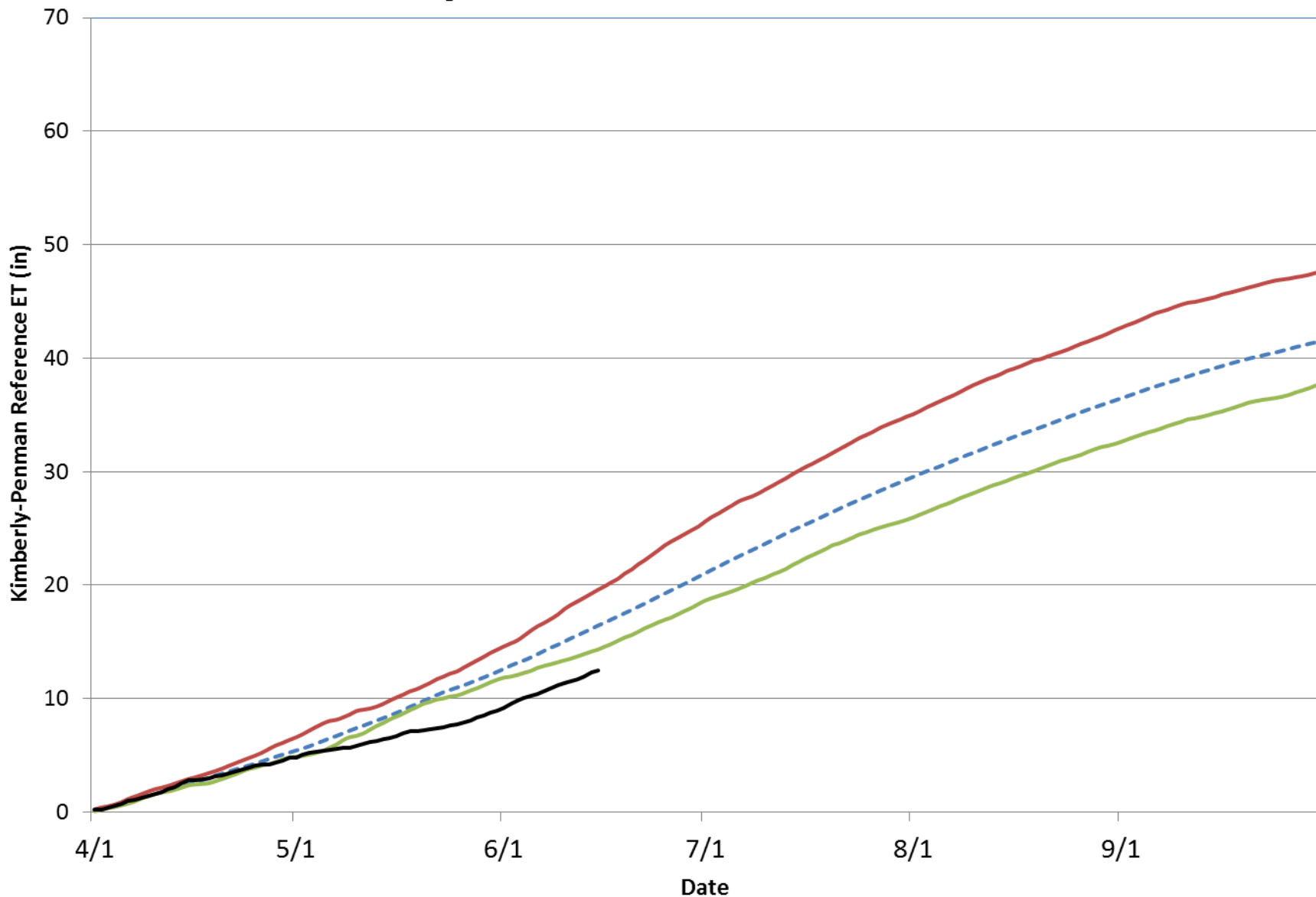


# Holyoke Kimberly-Penman Reference ET (1992 - 2015)



# Lucerne Kimberly-Penman Reference ET (1992 - 2015)

--- Average    — 2012    — 2009    — 2015

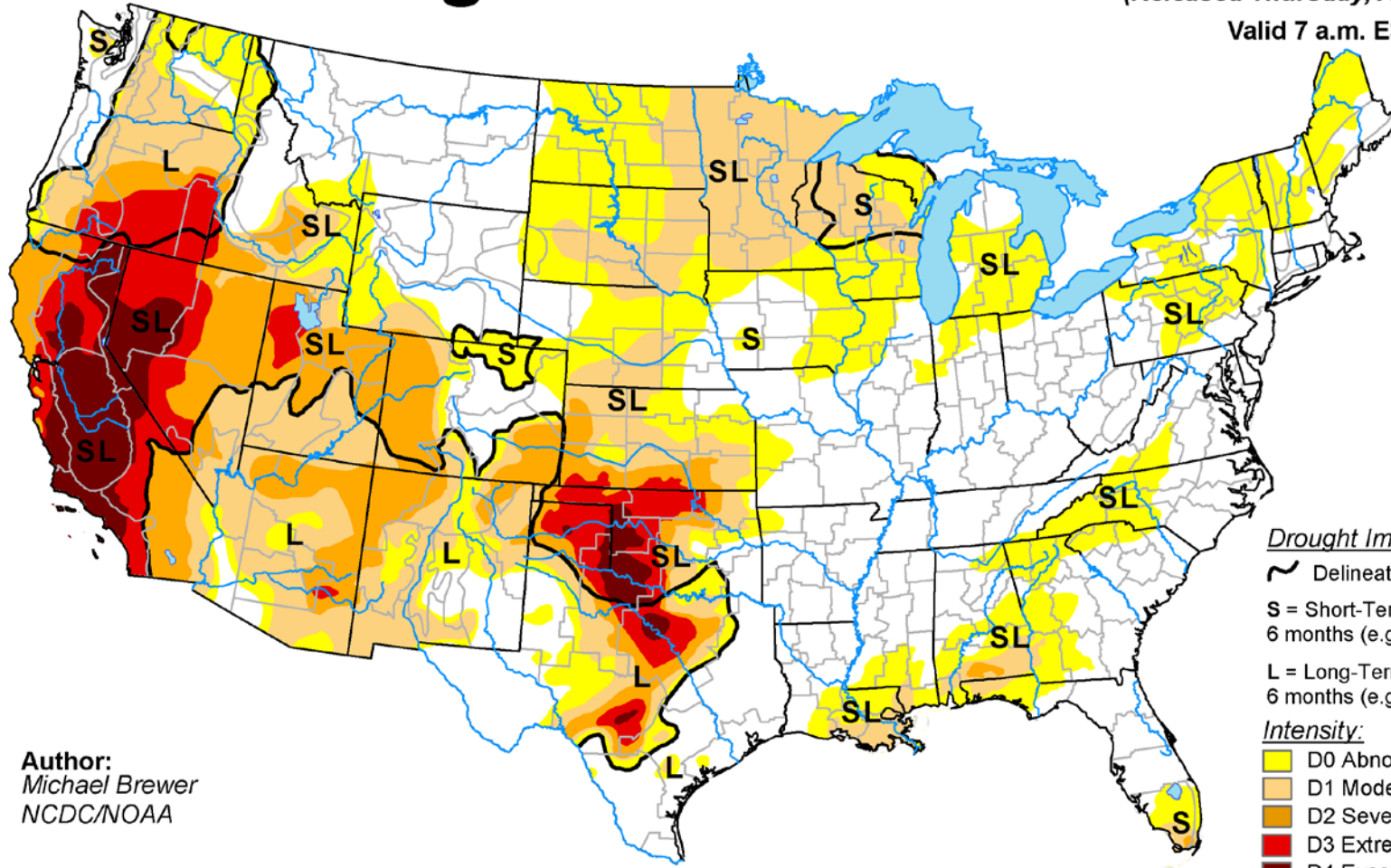


# U.S. Drought Monitor

April 7, 2015

(Released Thursday, Apr. 9, 2015)

Valid 7 a.m. EST



Author:  
Michael Brewer  
NCDC/NOAA

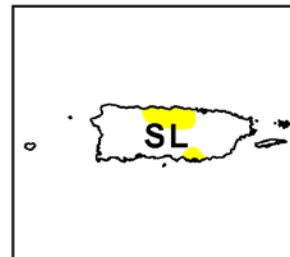
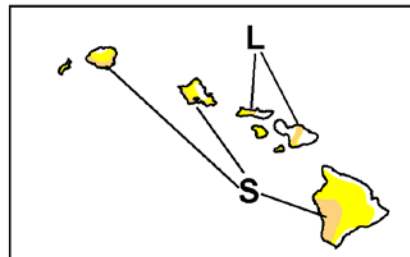
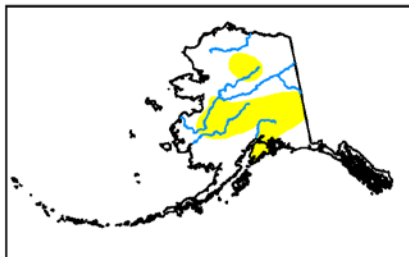
Drought Impact Types:

- ~ 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.



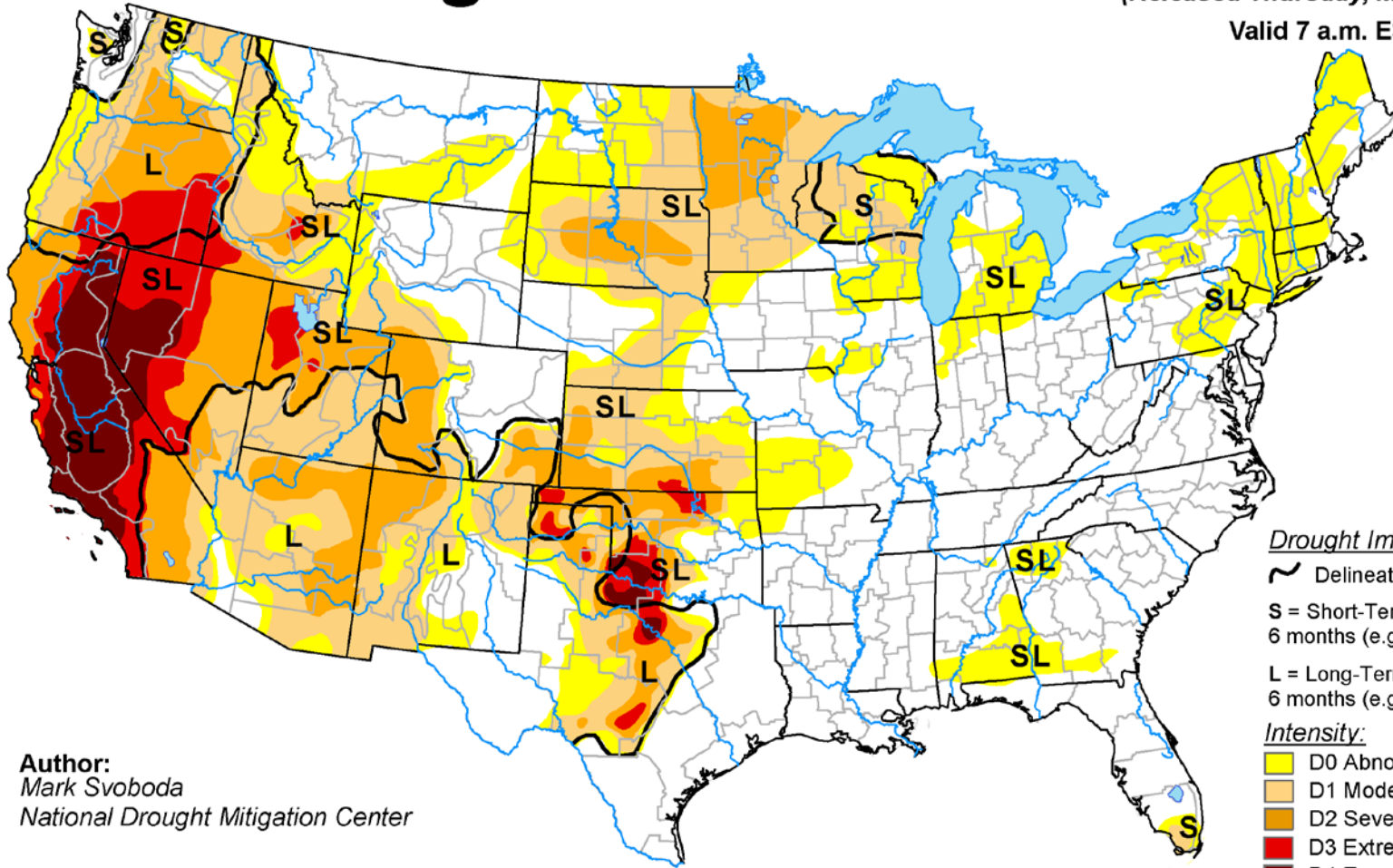
<http://droughtmonitor.unl.edu/>

# U.S. Drought Monitor

May 5, 2015


(Released Thursday, May. 7, 2015)

Valid 7 a.m. EST








**Author:**  
Mark Svoboda  
National Drought Mitigation Center

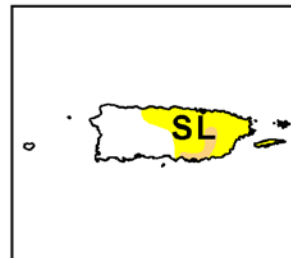
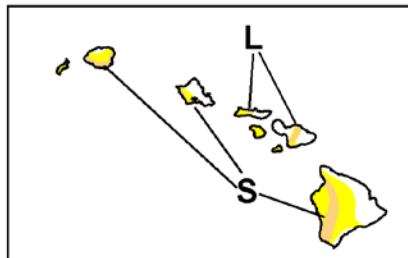
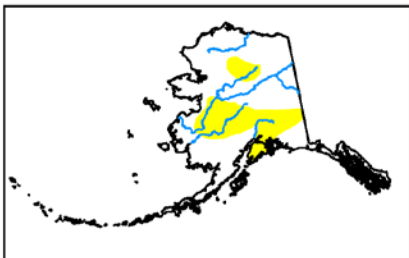
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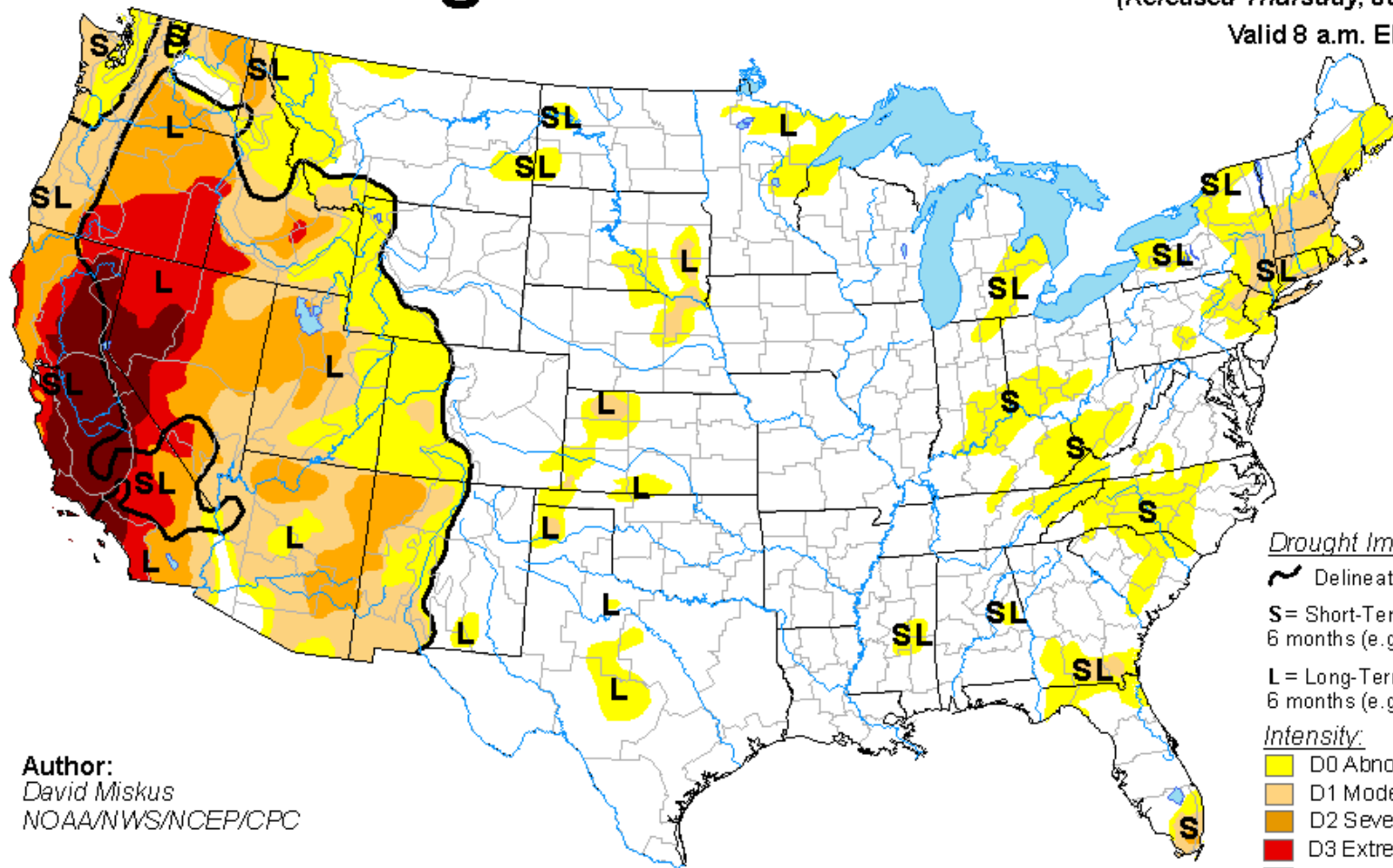
<http://droughtmonitor.unl.edu/>

# U.S. Drought Monitor

June 9, 2015

(Released Thursday, Jun. 11, 2015)

Valid 8 a.m. EDT



Author:  
David Miskus  
NOAA/NWS/NCEP/CPC

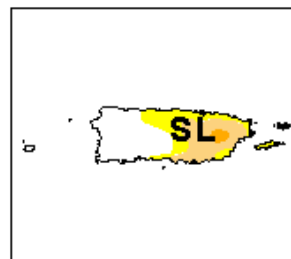
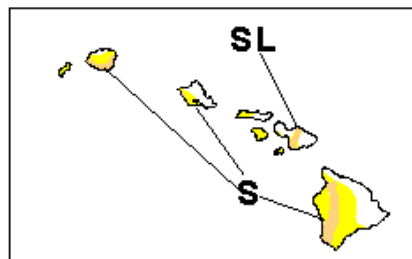
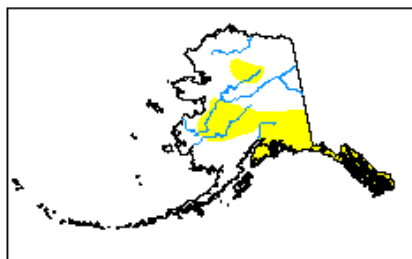
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The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

# U.S. Drought Monitor

## Colorado

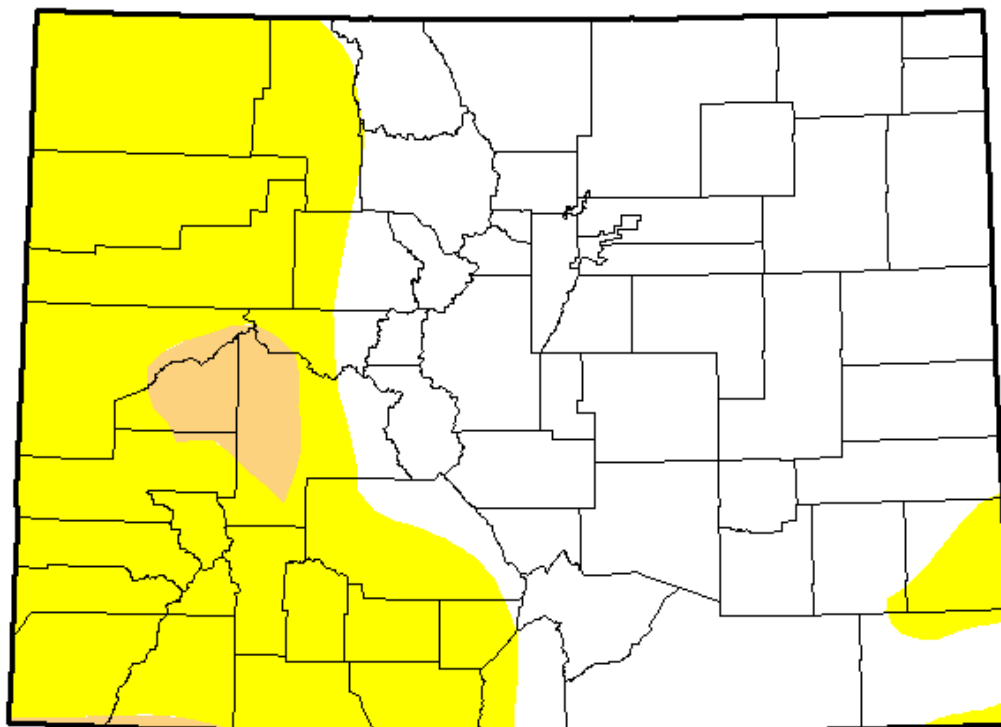
**June 9, 2015**

(Released Thursday, Jun. 11, 2015)

Valid 8 a.m. EDT

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	60.25	39.75	2.81	0.00	0.00	0.00
<b>Last Week</b> <i>6/2/2015</i>	60.25	39.75	16.73	0.00	0.00	0.00
<b>3 Months Ago</b> <i>3/10/2015</i>	36.97	63.03	51.51	12.20	0.00	0.00
<b>Start of Calendar Year</b> <i>12/31/2014</i>	69.87	30.13	21.26	12.26	0.00	0.00
<b>Start of Water Year</b> <i>9/30/2014</i>	68.96	31.04	22.94	13.82	2.31	0.00
<b>One Year Ago</b> <i>6/10/2014</i>	50.86	49.14	25.38	16.56	9.33	1.89



### Intensity:



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

### **Author:**

David Miskus

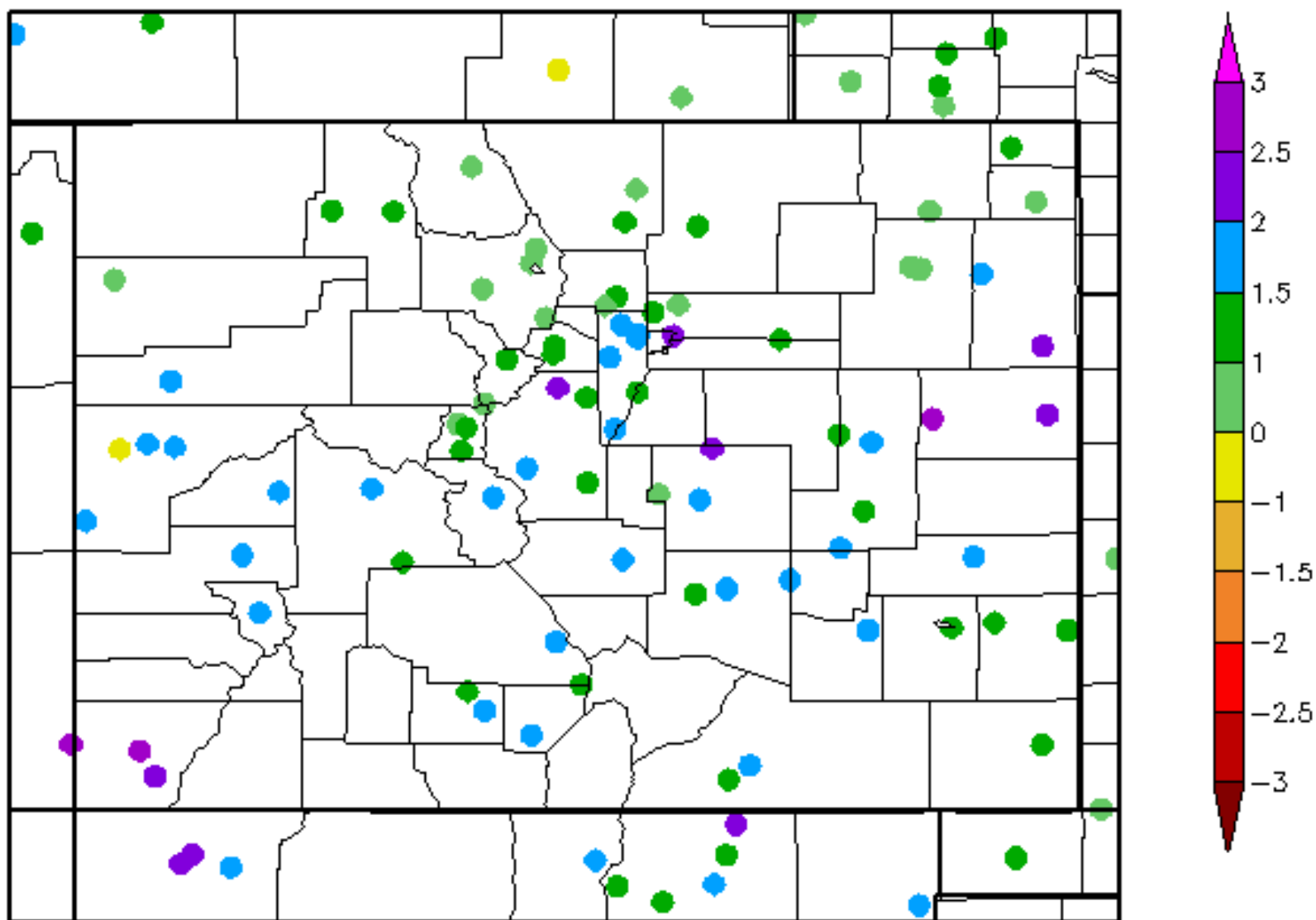
NOAA/NWS/NCEP/CPC



<http://droughtmonitor.unl.edu/>

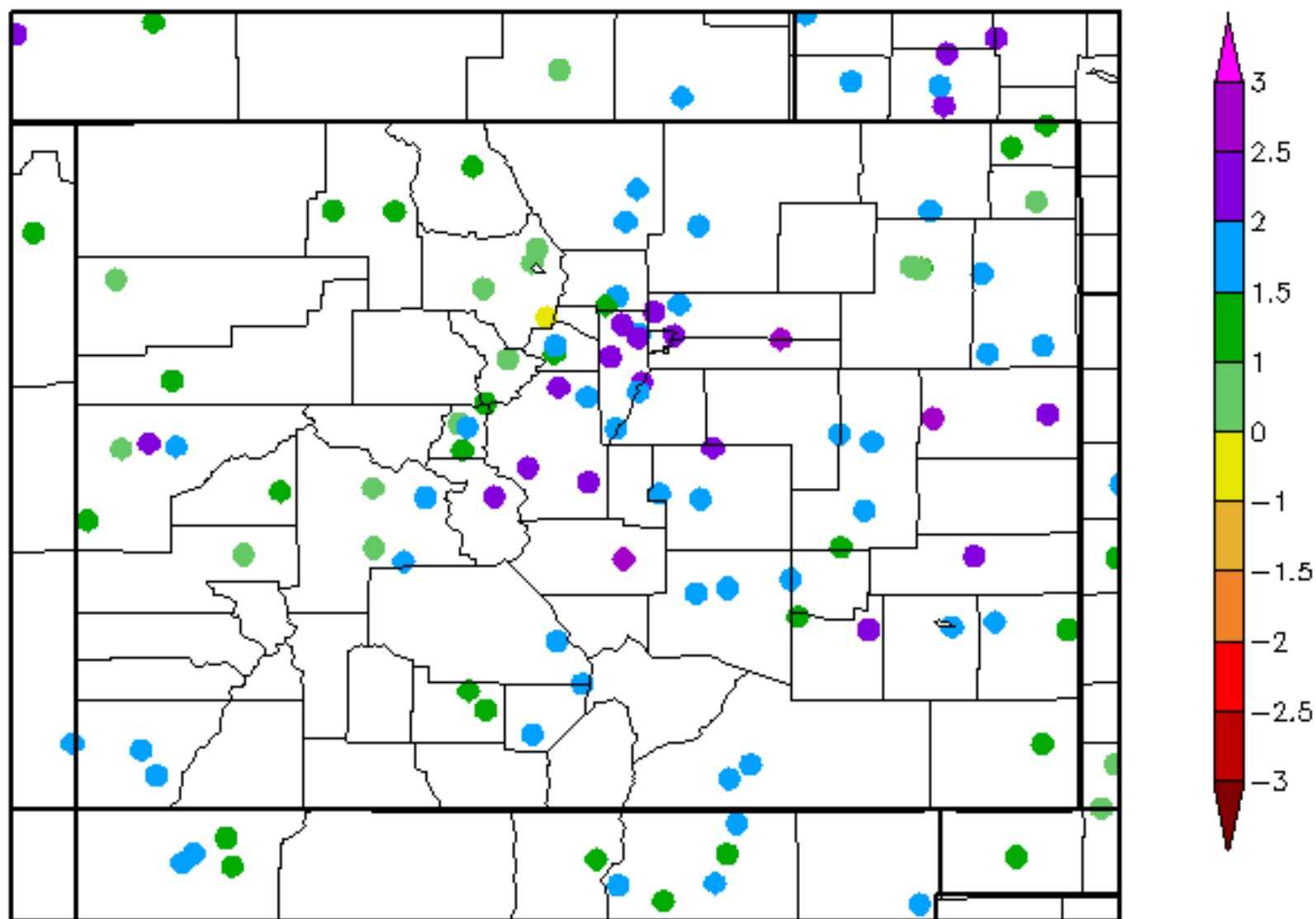
# 30 Day SPI

5/17/2015 - 6/15/2015



# 90 Day SPI

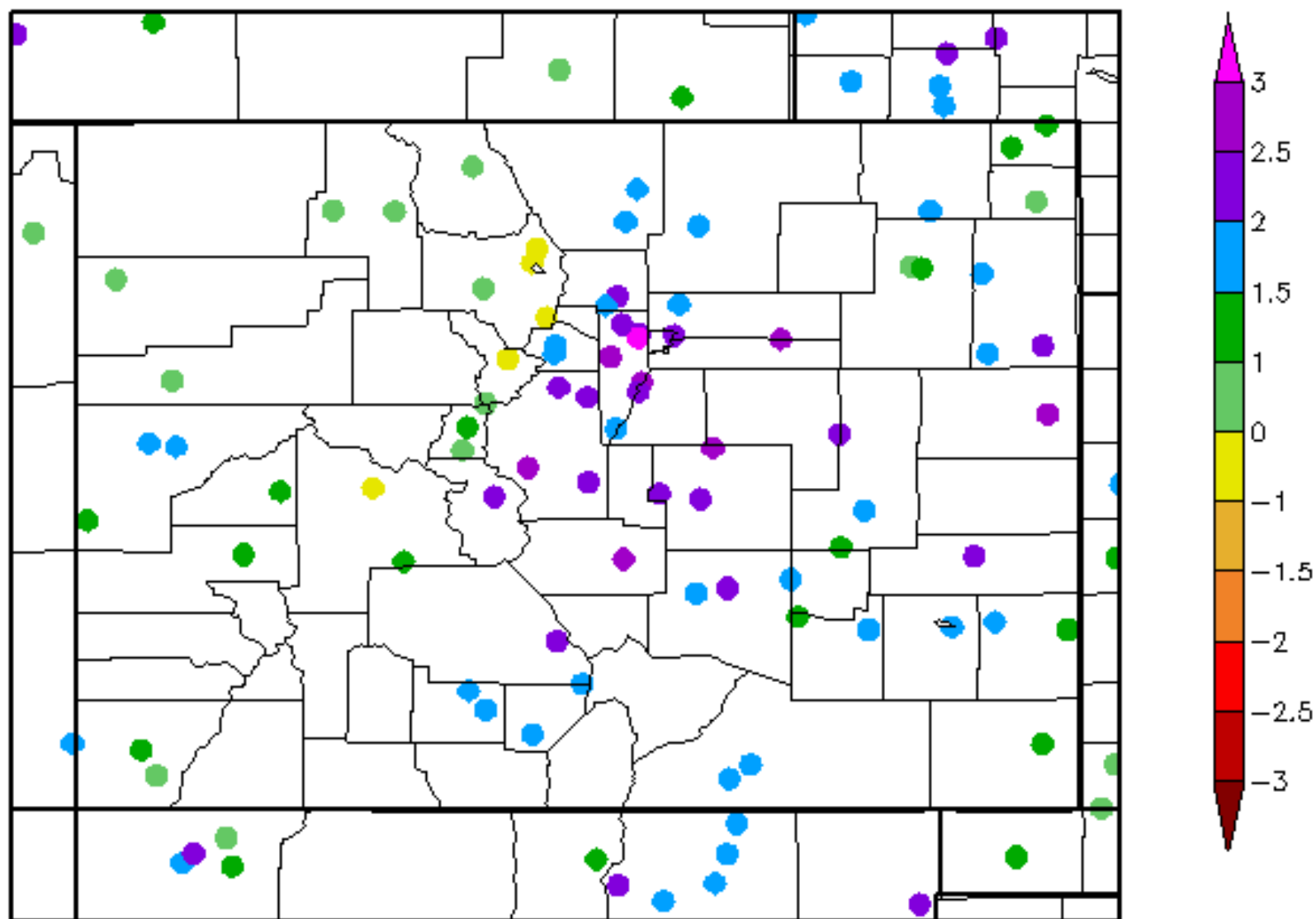
3/18/2015 - 6/15/2015





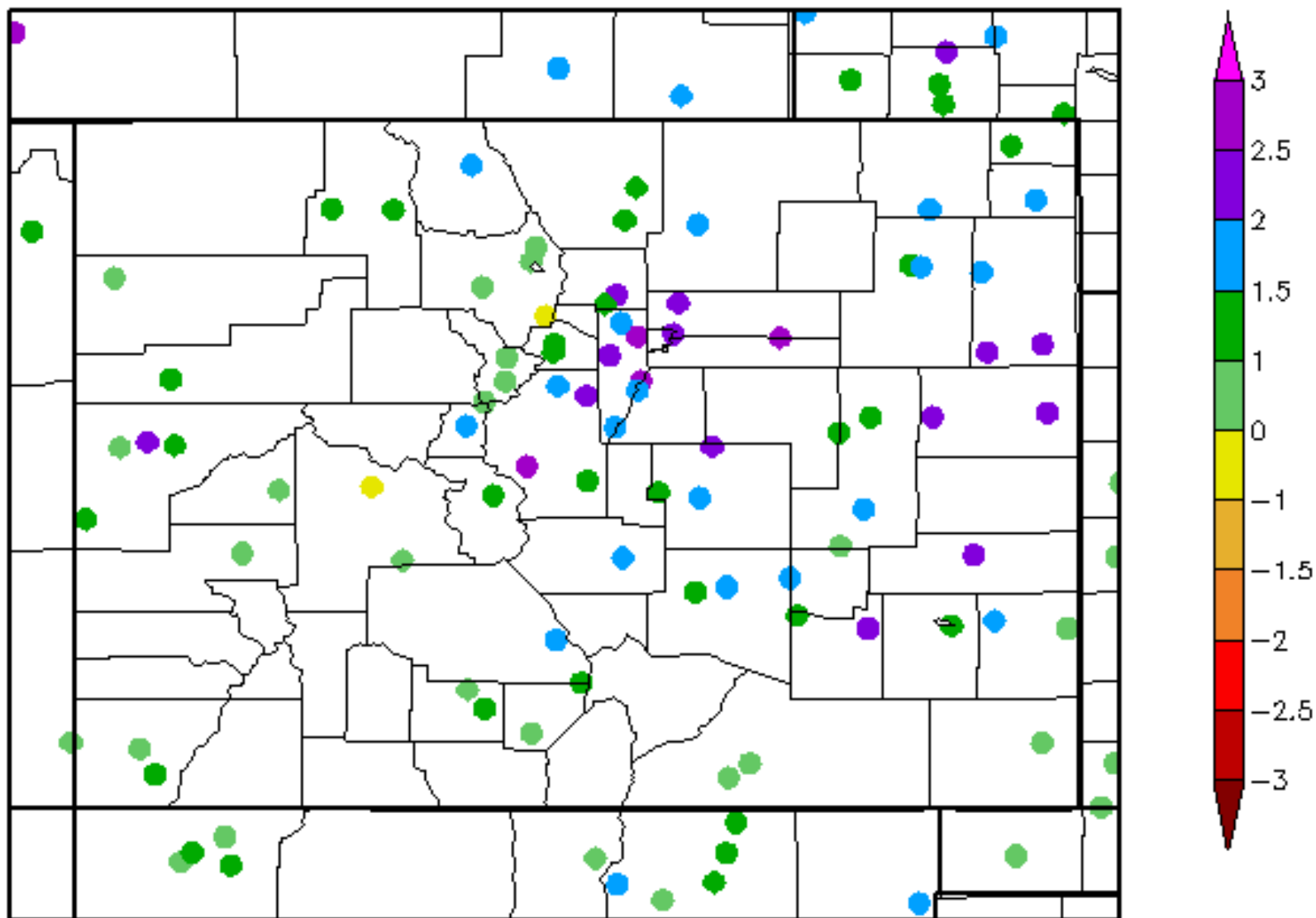
# 6 Month SPI

12/16/2014 - 6/15/2015



# 12 Month SPI

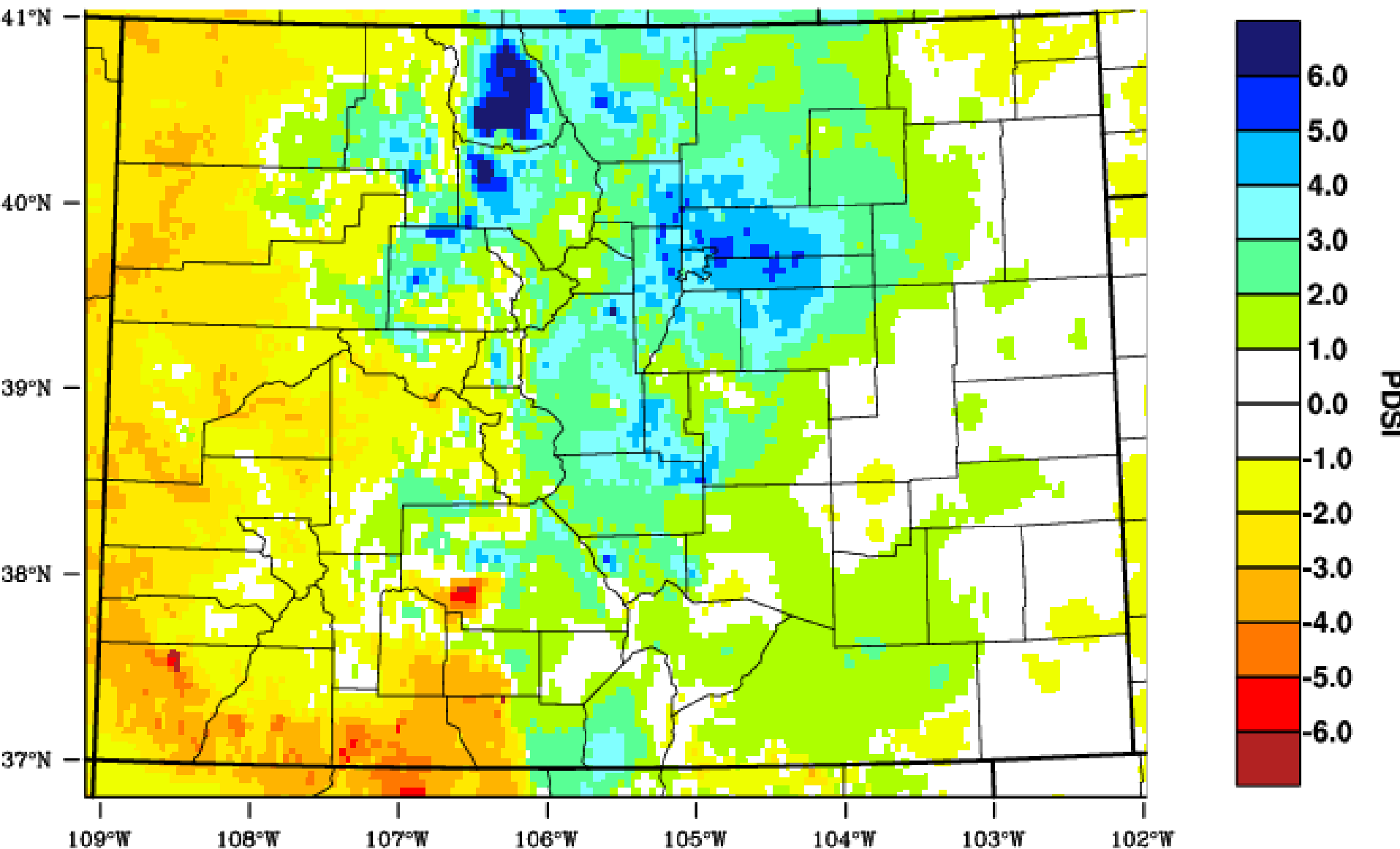
6/16/2014 - 6/15/2015



# Palmer

Colorado - PDSI

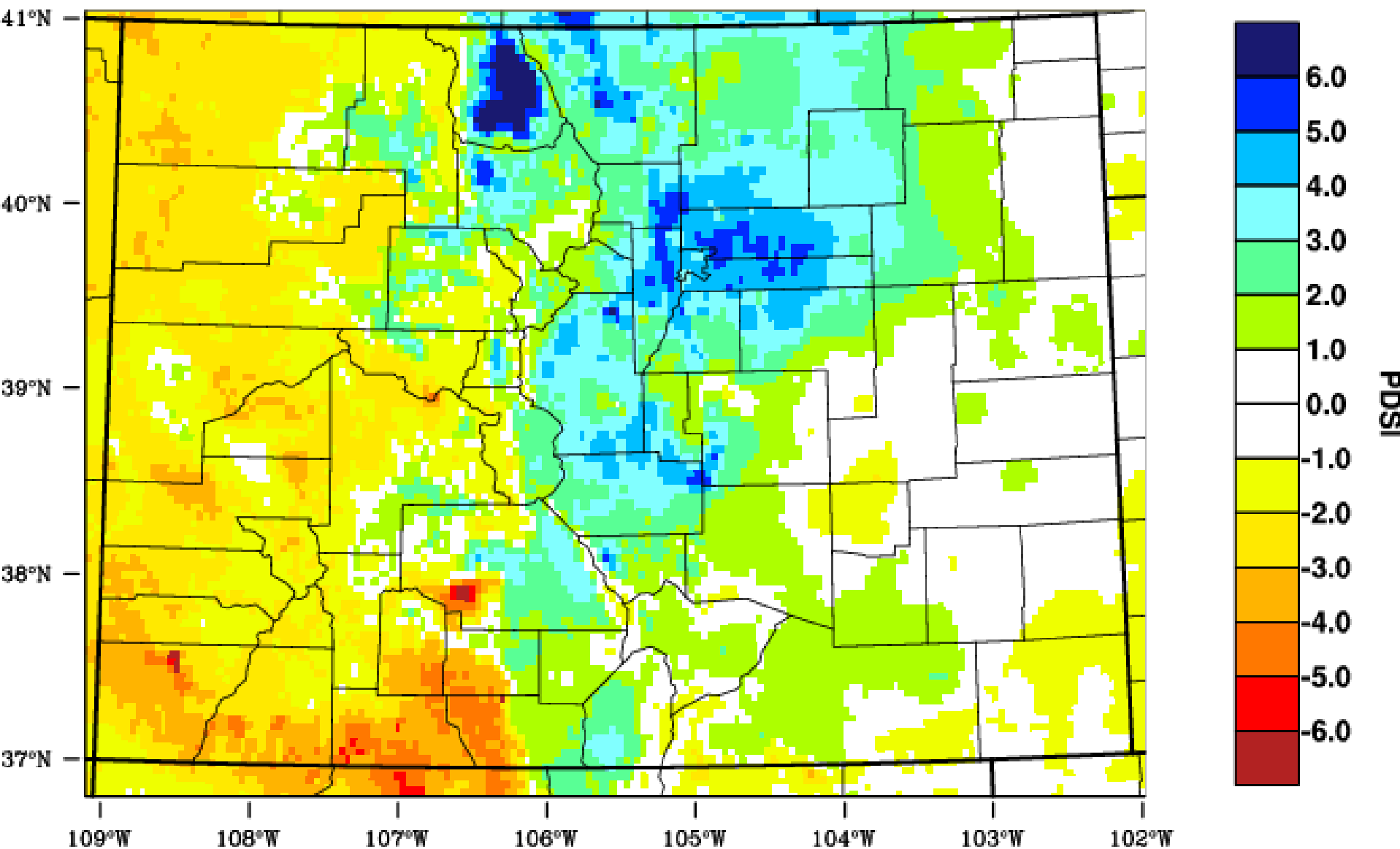
March 2015



WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Prelim), created 11 APR 2015

# Colorado - PDSI

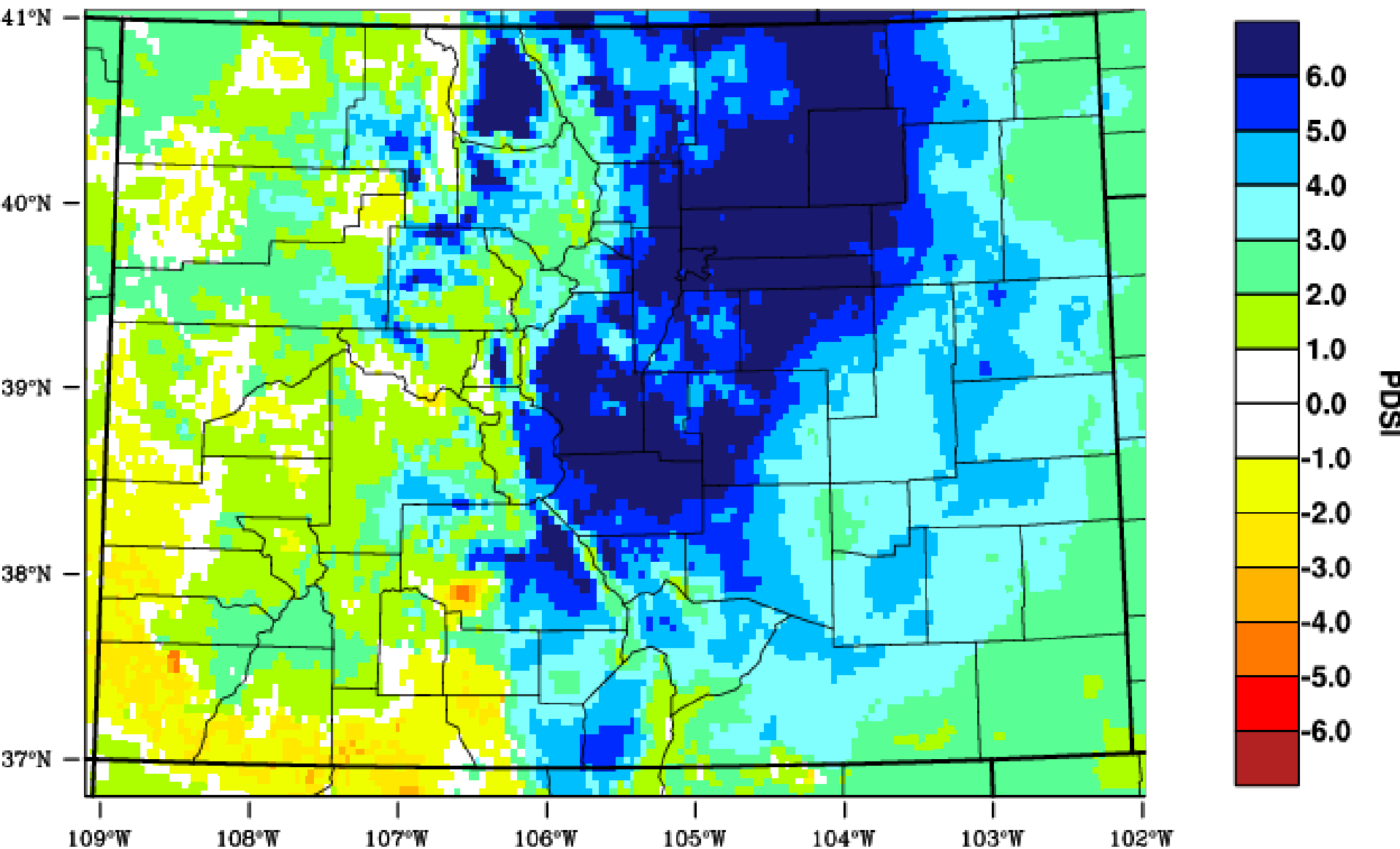
April 2015



WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Prelim), created 11 MAY 2015

# Colorado - PDSI

May 2015



WestWide Drought Tracker - WRCC/UI Data Source - PRISM (Prelim), created 16 JUN 2015

# Colorado Climate Center

Data and Power Point Presentations available for downloading

<http://ccc.atmos.colostate.edu/droughtpresentations.php>

