



Climate Update

(but sorry – no photo update – still a cow)

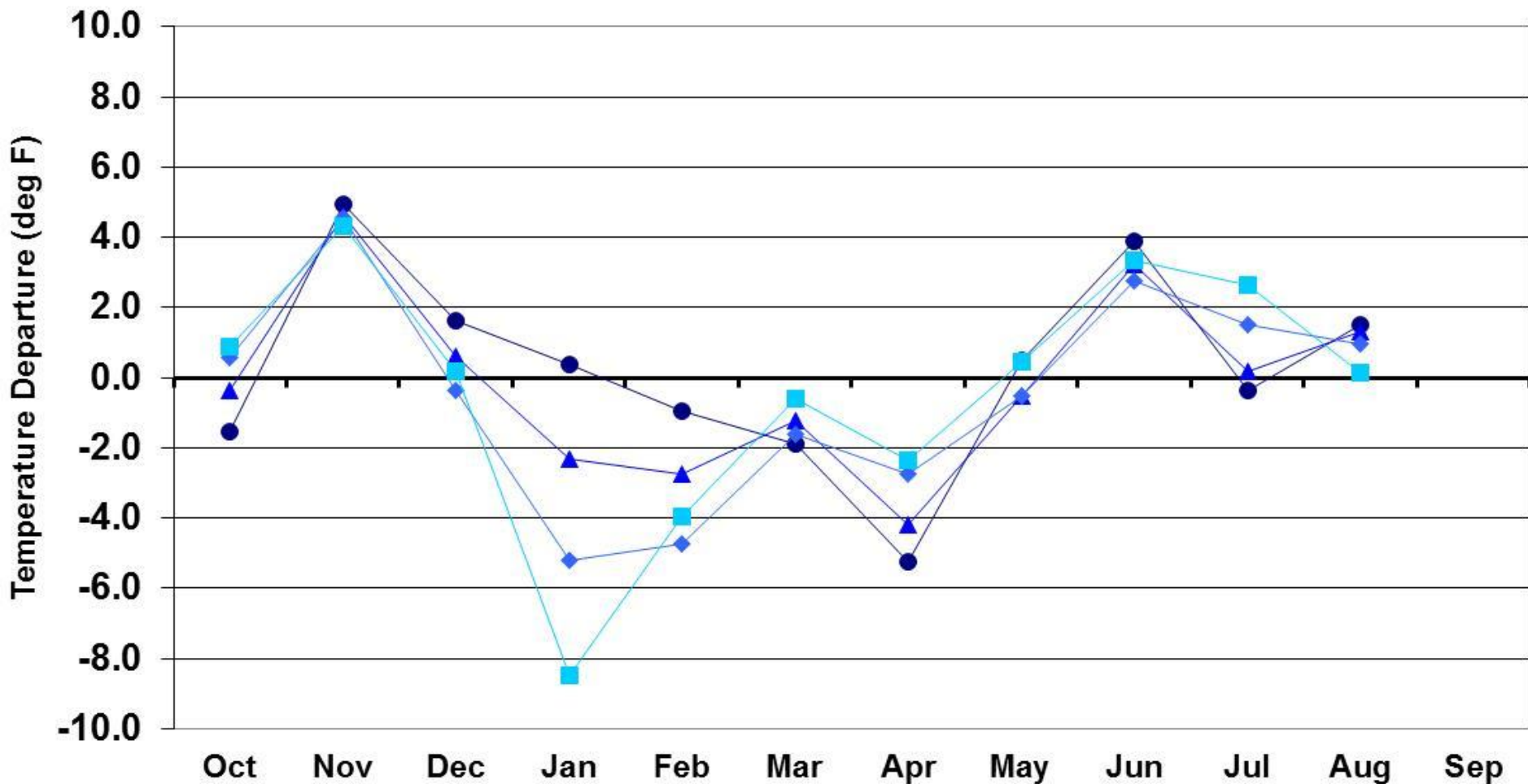
Nolan Doesken
Colorado Climate Center

Colorado State Climatologist
Colorado State University

Presented to
Water Availability Task Force
18 September 2013
Denver, CO

Water Year 2013 Temperature Departures

Water Year 2013



● Eastern Plains

▲ Foothills

◆ Mountains

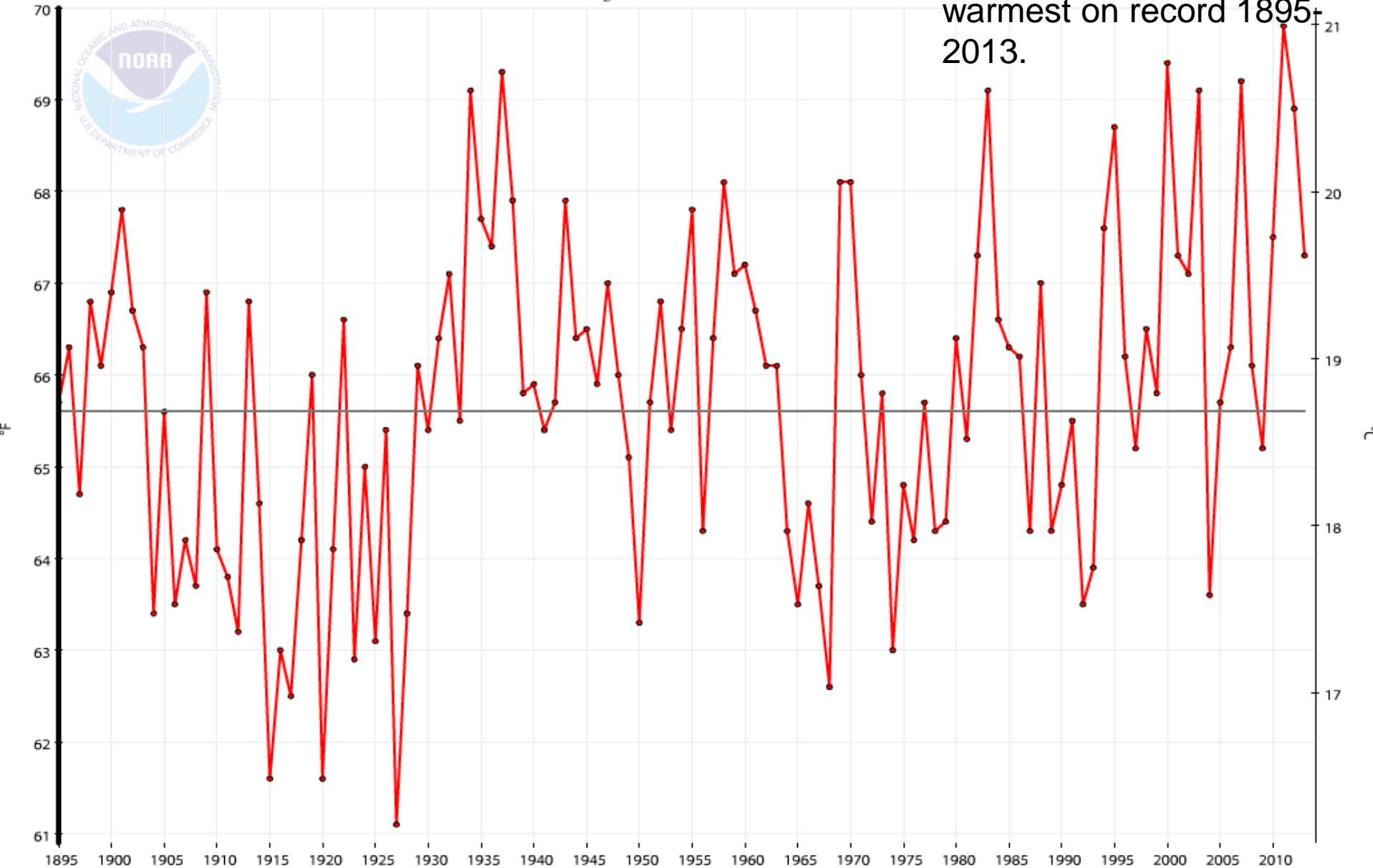
■ Western Valleys

August Average Temperature History for Colorado (NCDC)

Colorado, Temperature, August

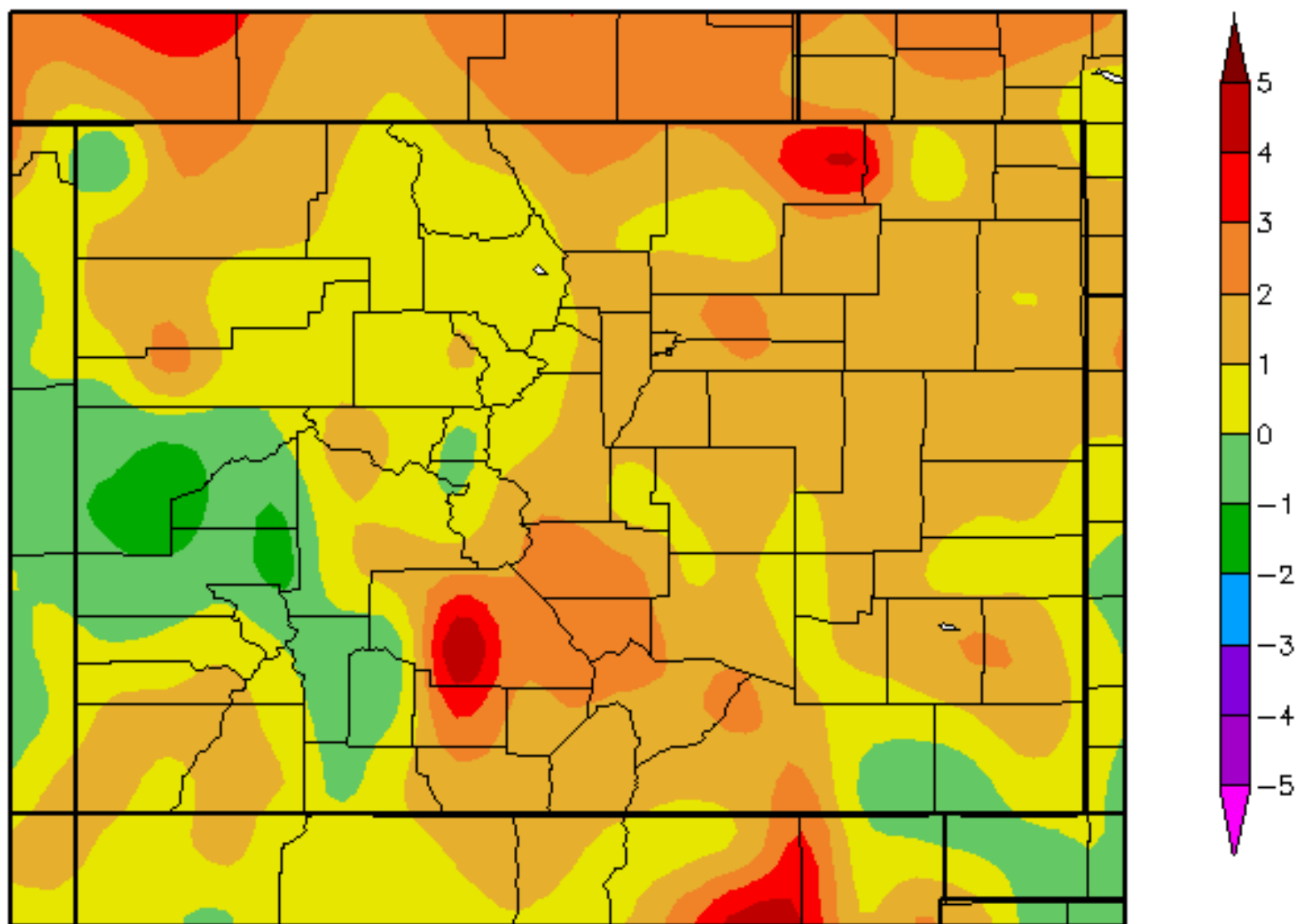
— 1901-2000 Avg: 65.6°F —•— Temperature

67.3 Ranks as the 23rd warmest on record 1895-2013.



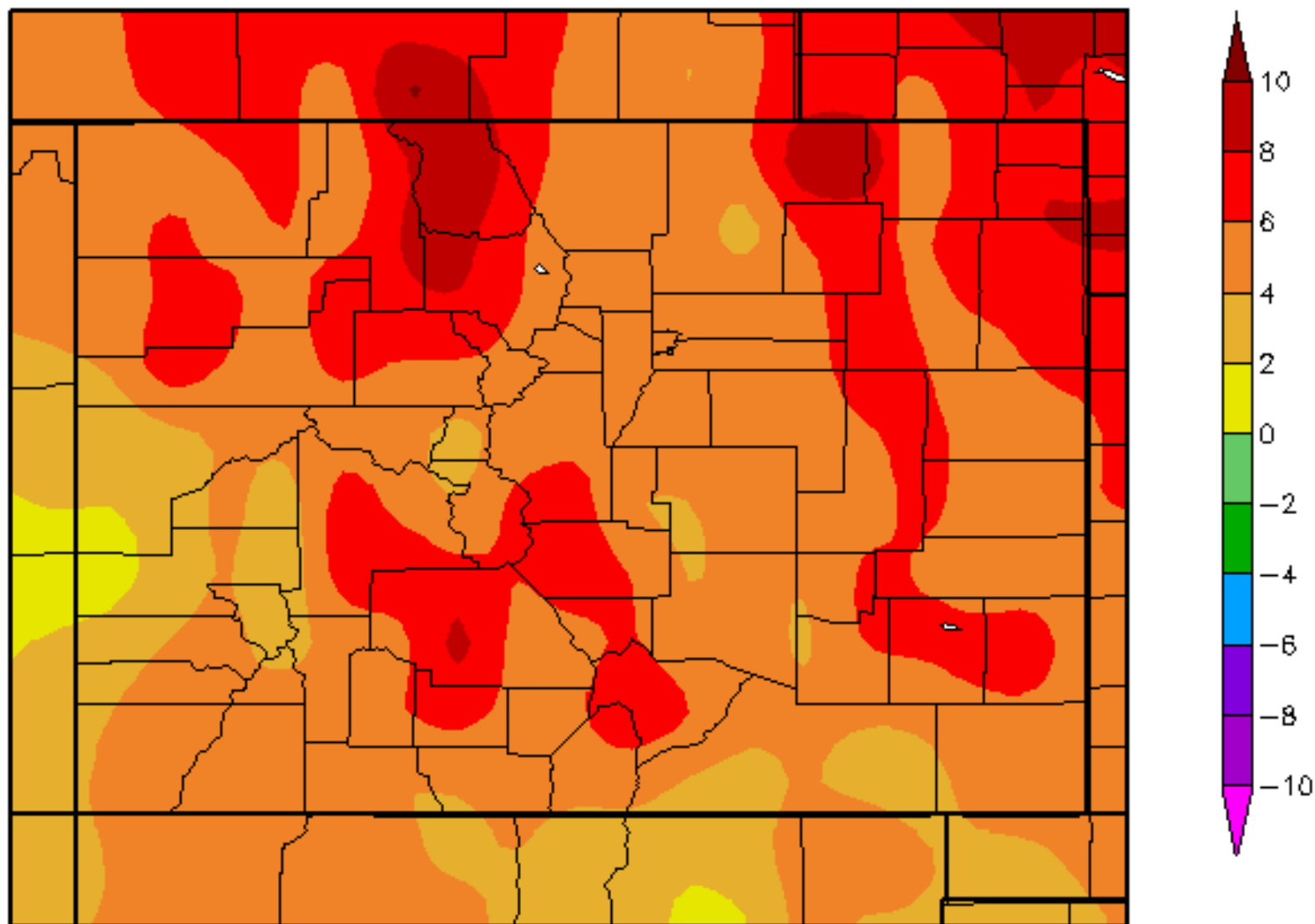
Departure from Normal Temperature (F)

8/1/2013 - 8/31/2013

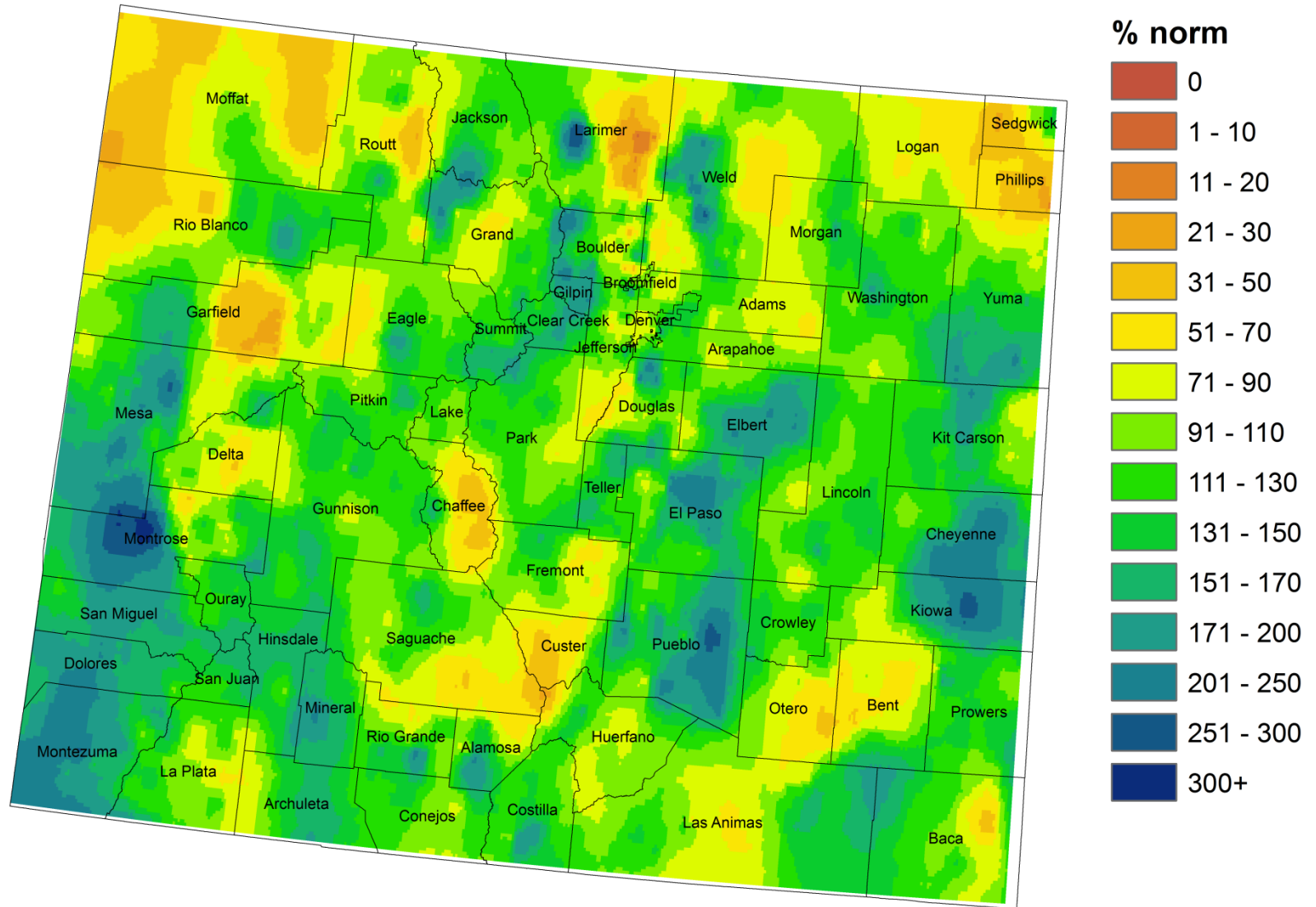


Departure from Normal Temperature (F)

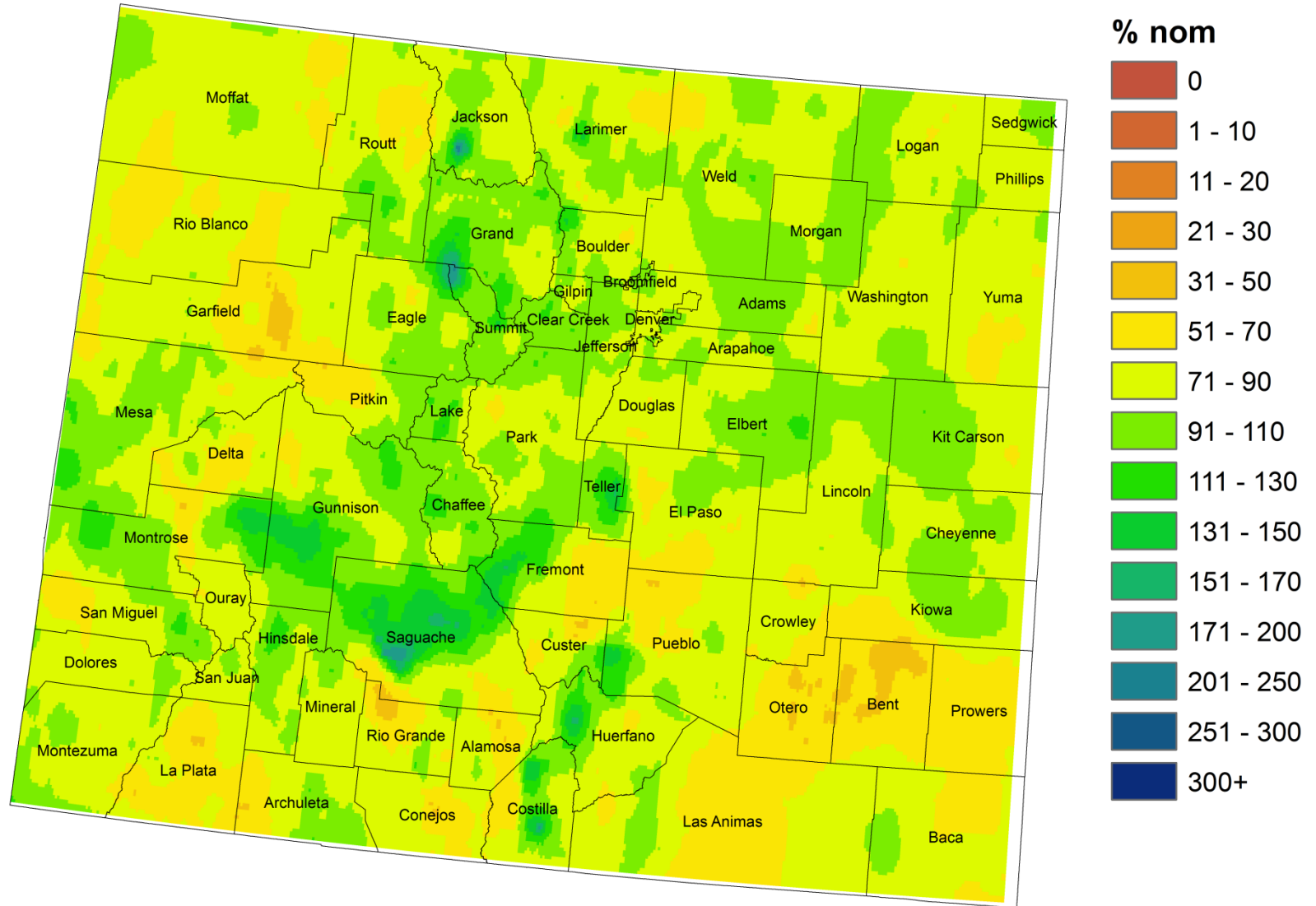
9/1/2013 - 9/16/2013



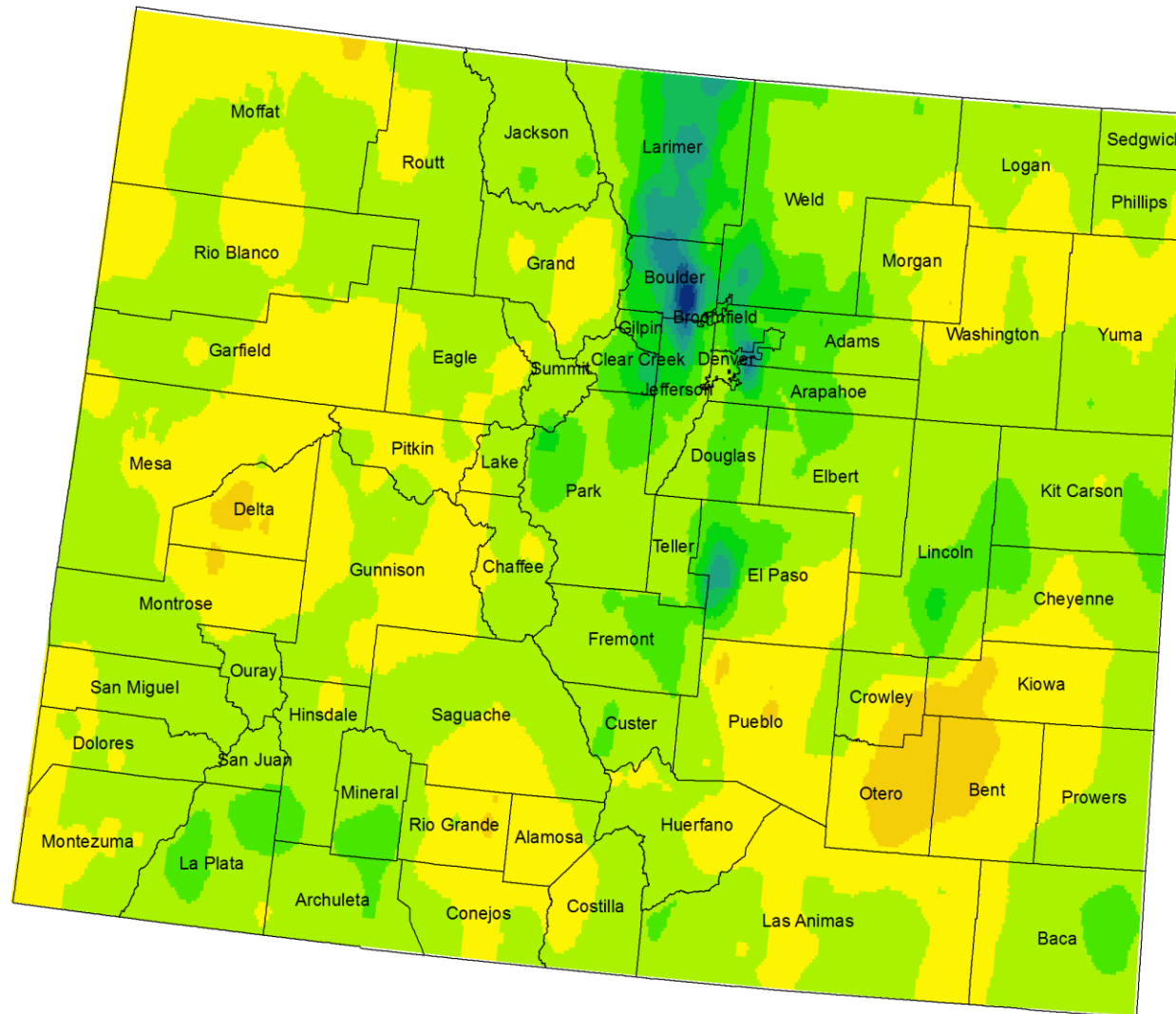
Colorado August 2013 Precipitation as Percentage of Normal



Colorado Water Year 2013 Precipitation as Percentage of Normal (October 2012 - August 2013)

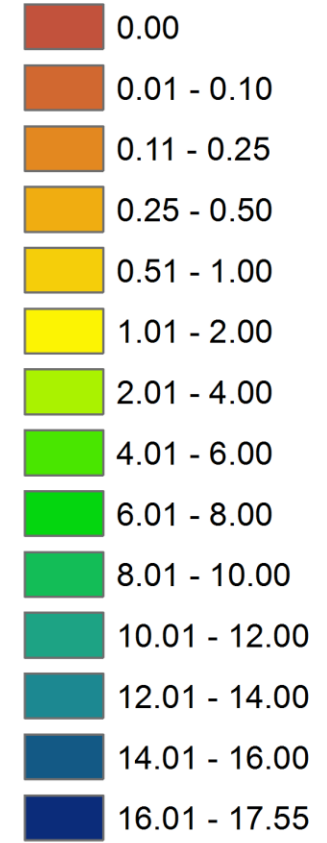


Colorado Month to Date Precipitation (in) 1- 15 September 2013

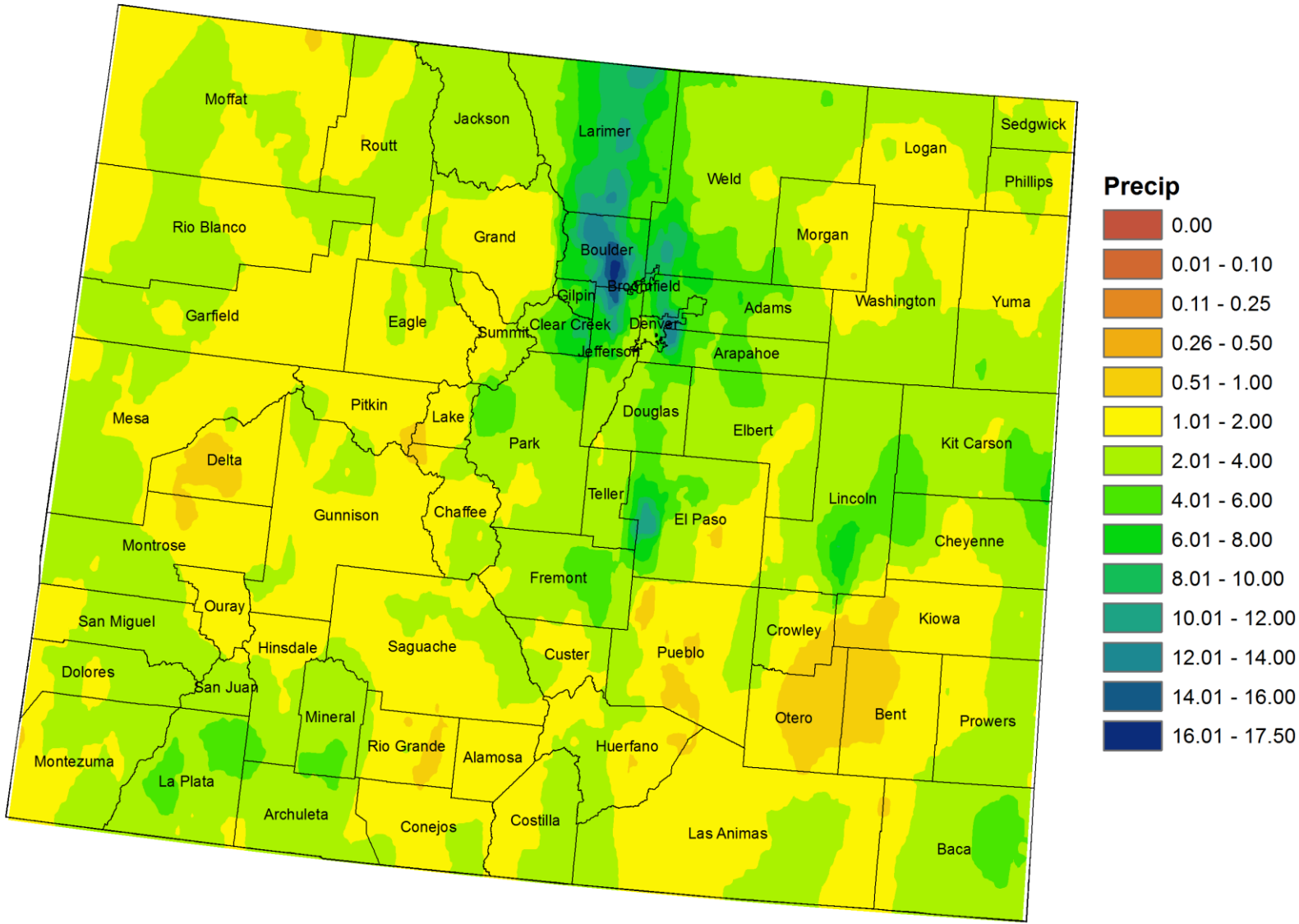


01_15sep13co

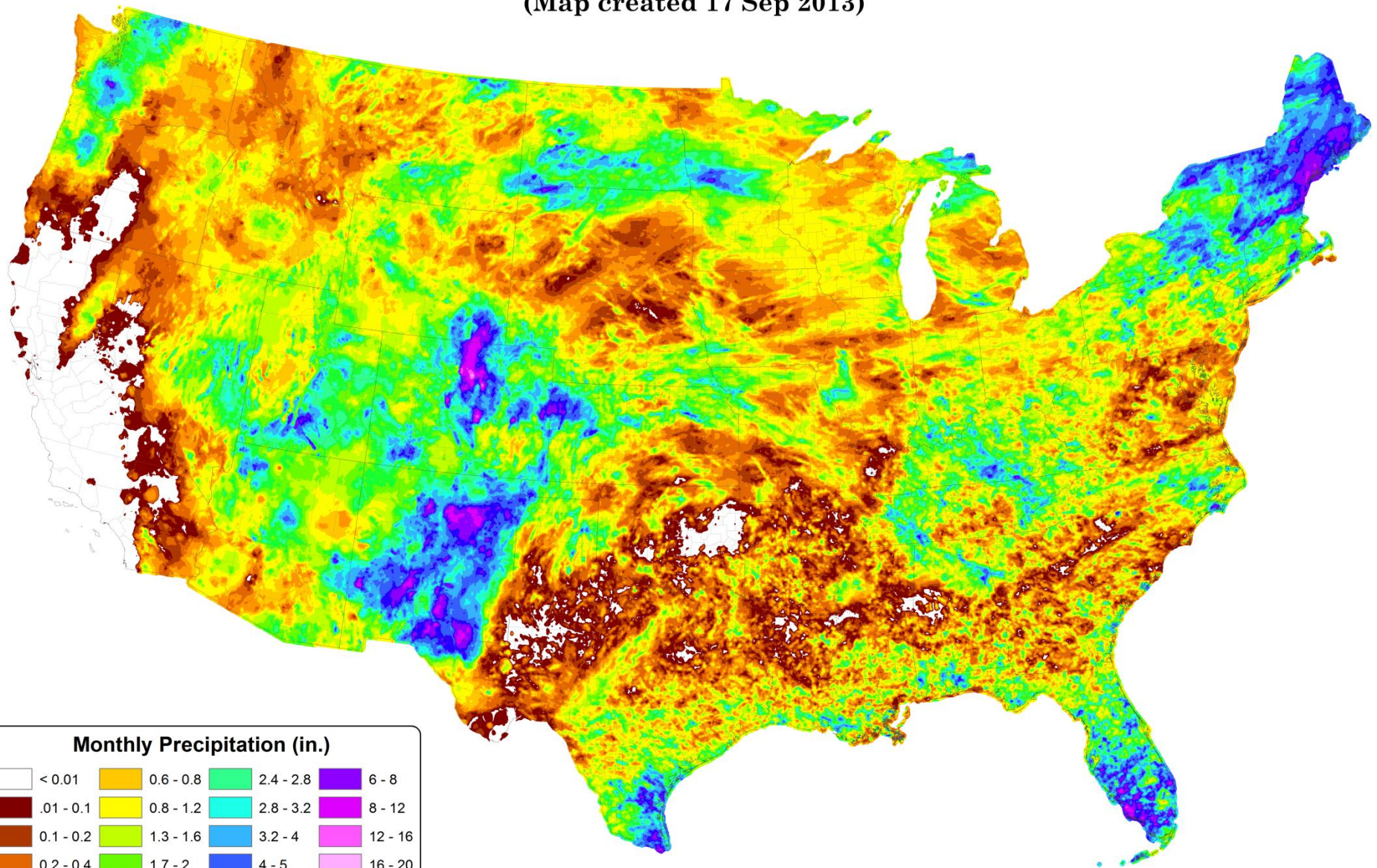
Precip



Preliminary Precipitation Accumulation for Colorado (inches) 8 - 15 September 2013

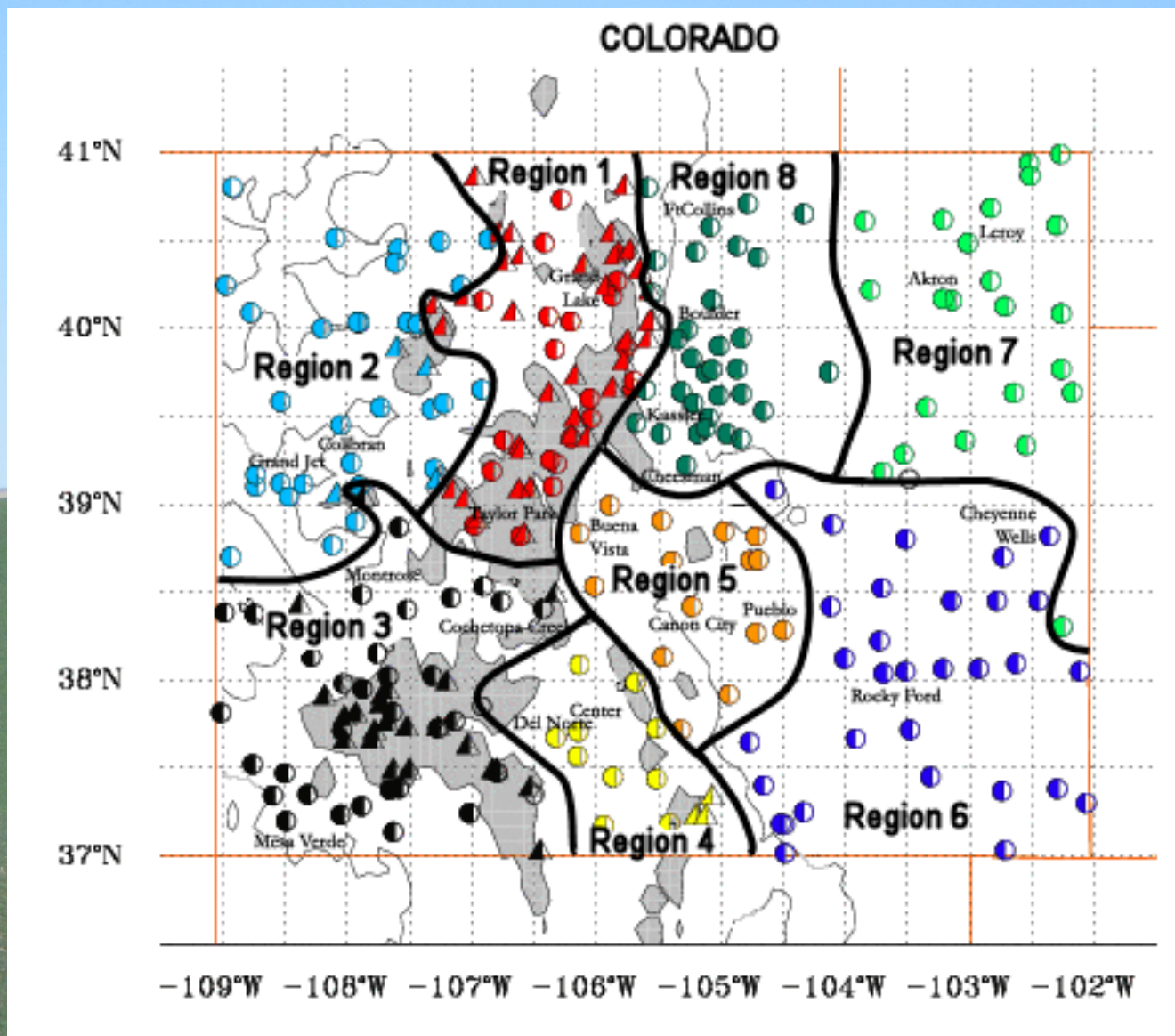


Total Precipitation: 01 September 2013 - 16 September 2013
Period ending 7 AM EST 16 Sep 2013
(Map created 17 Sep 2013)



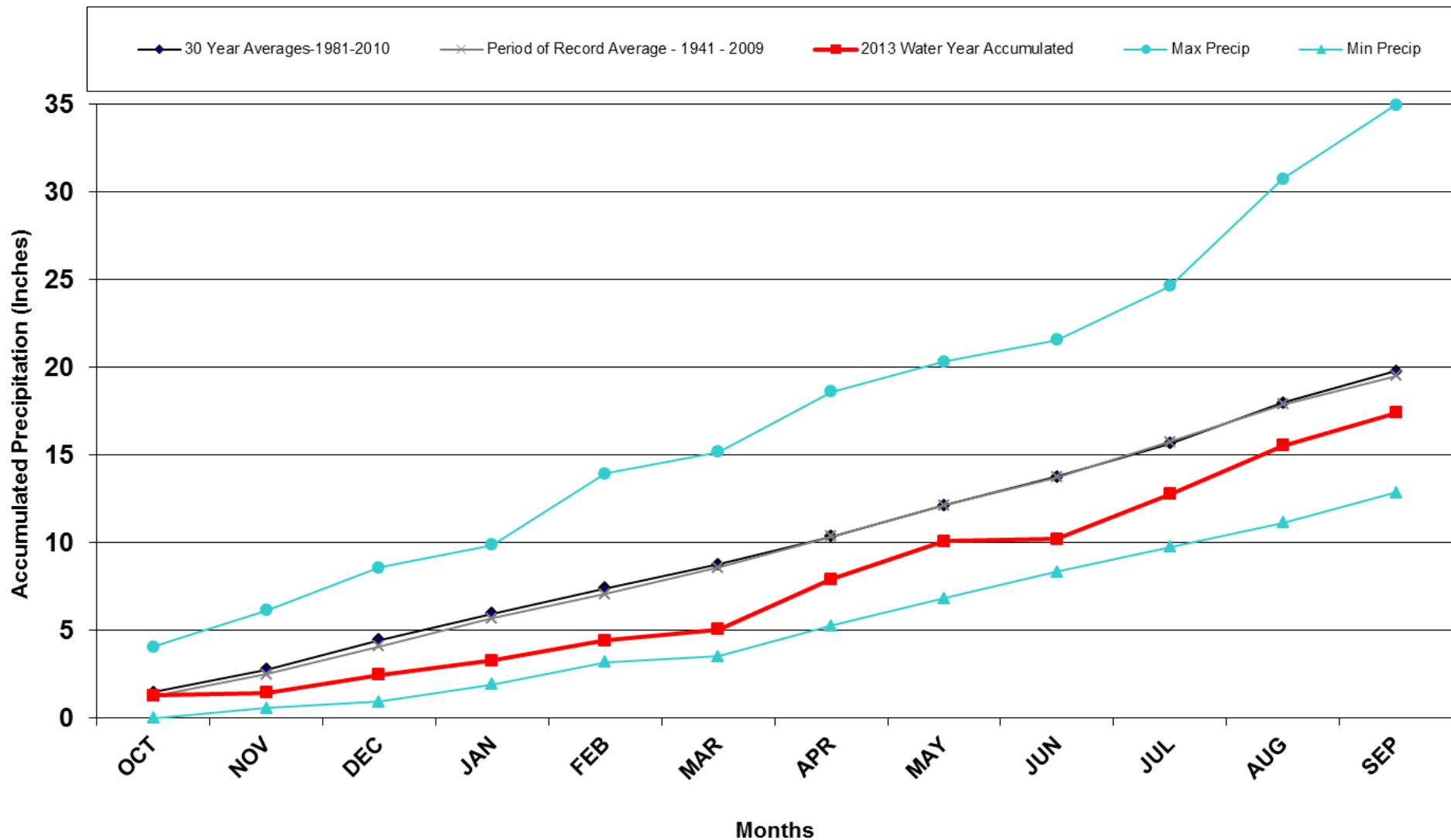
Monthly Precipitation (in.)			
< 0.01	0.6 - 0.8	2.4 - 2.8	6 - 8
.01 - 0.1	0.8 - 1.2	2.8 - 3.2	8 - 12
0.1 - 0.2	1.3 - 1.6	3.2 - 4	12 - 16
0.2 - 0.4	1.7 - 2	4 - 5	16 - 20
0.4 - 0.6	2 - 2.4	5 - 6	> 20

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



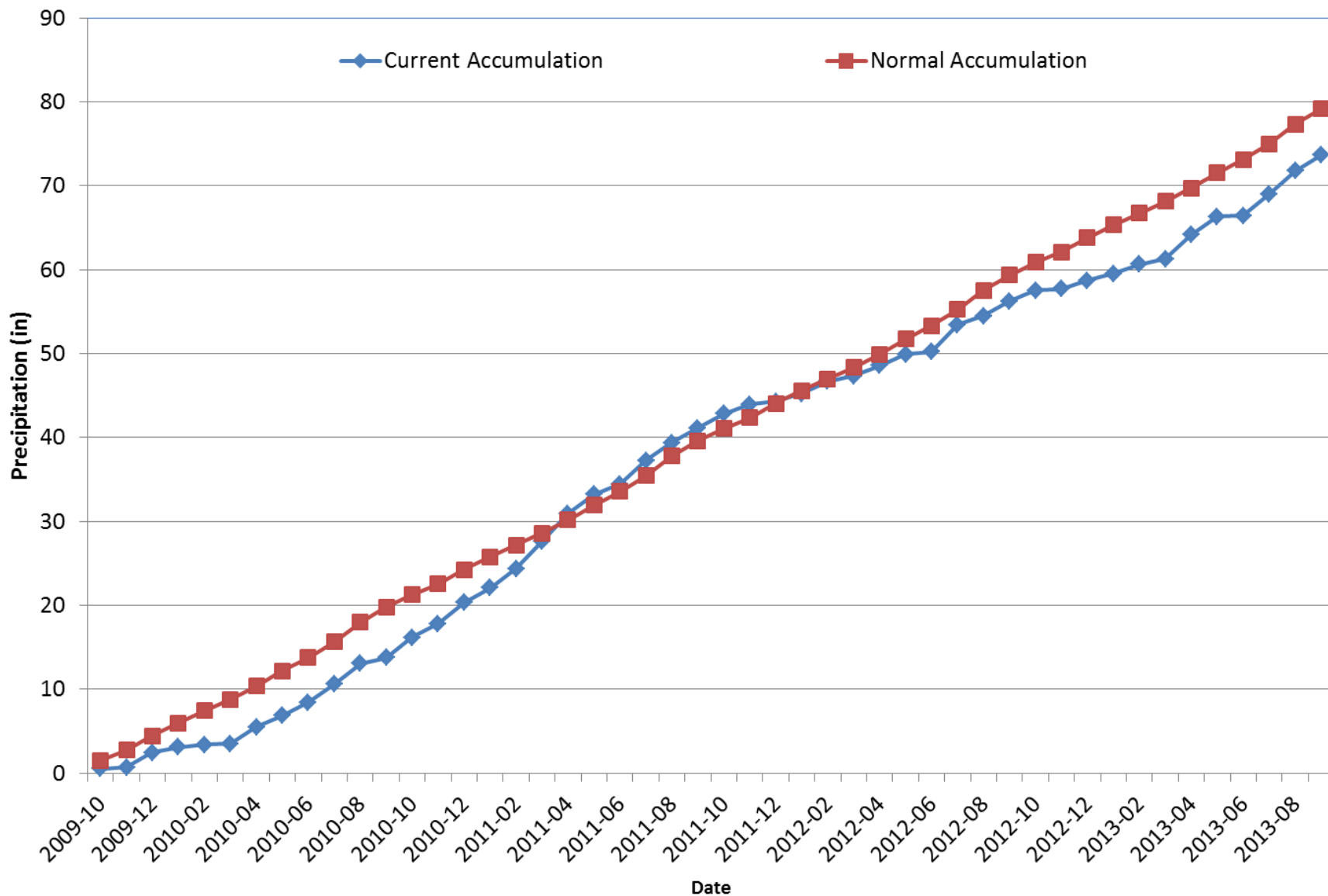
Division 1 – Grand Lake 1NW

Grand Lake 1 NW 2013 Water Year



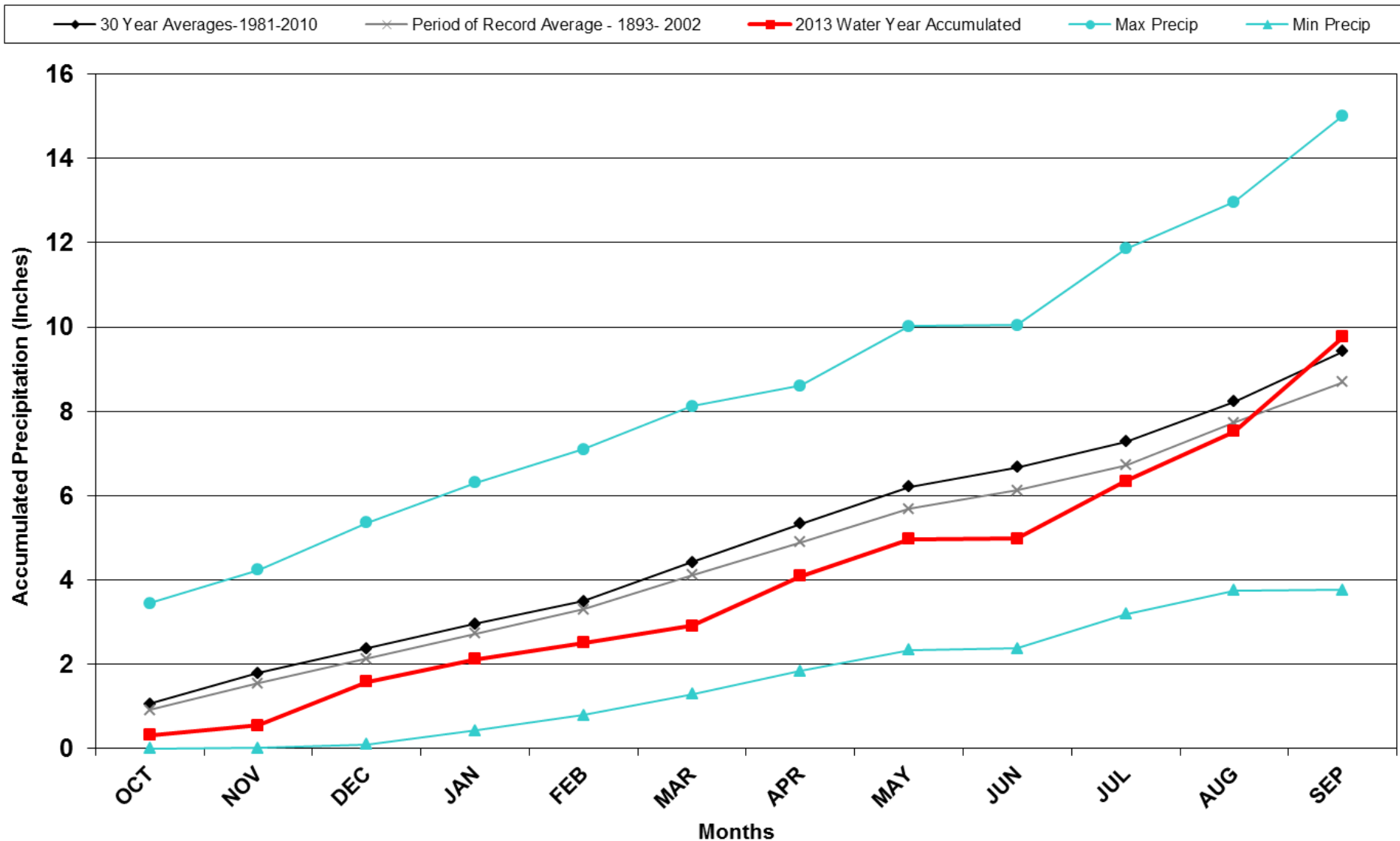
Division 1 – Grand Lake 1NW

Grand Lake 1NW Precipitation Accumulation



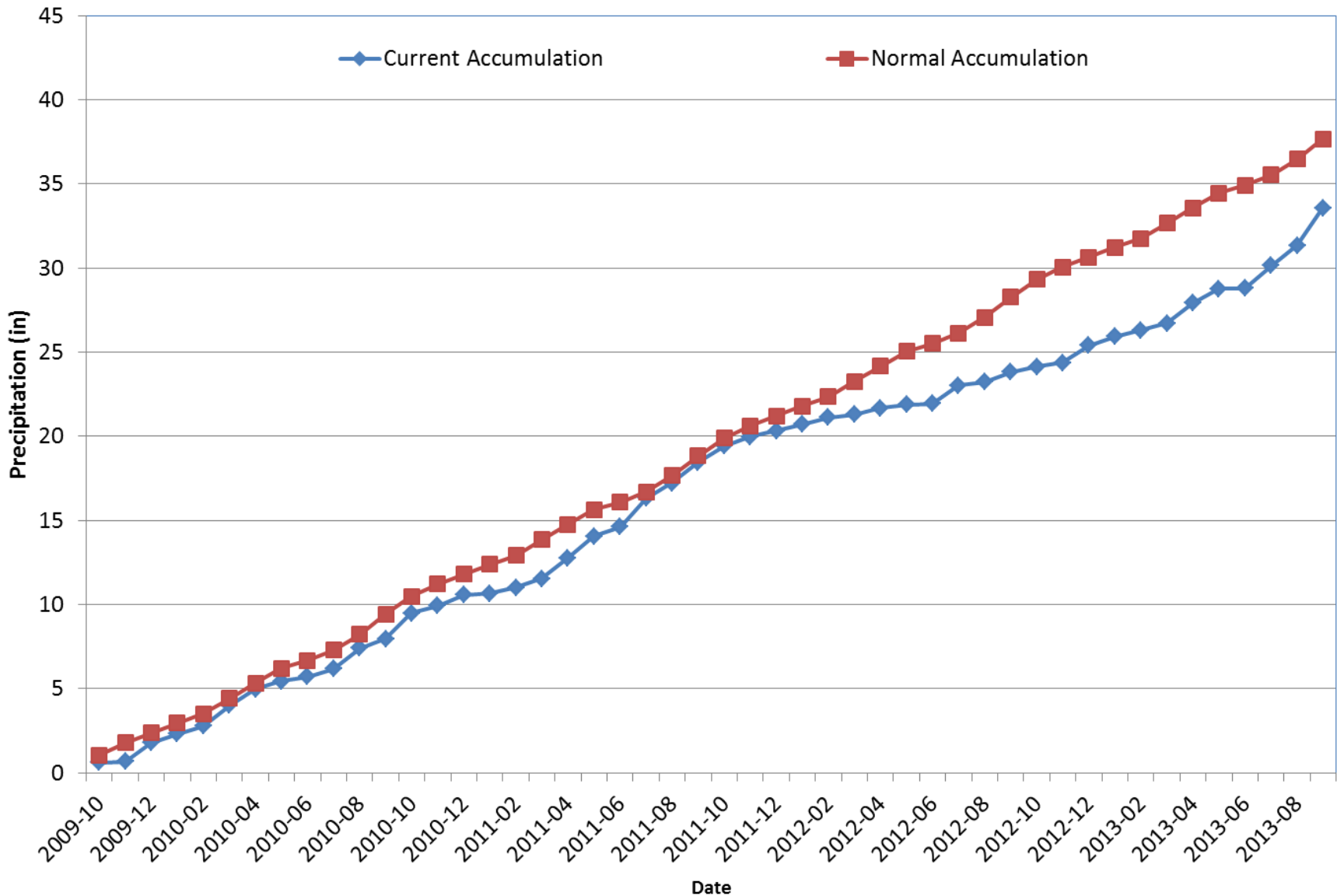
Division 2 – Grand Junction

Grand Junction WSFO 2013 Water Year



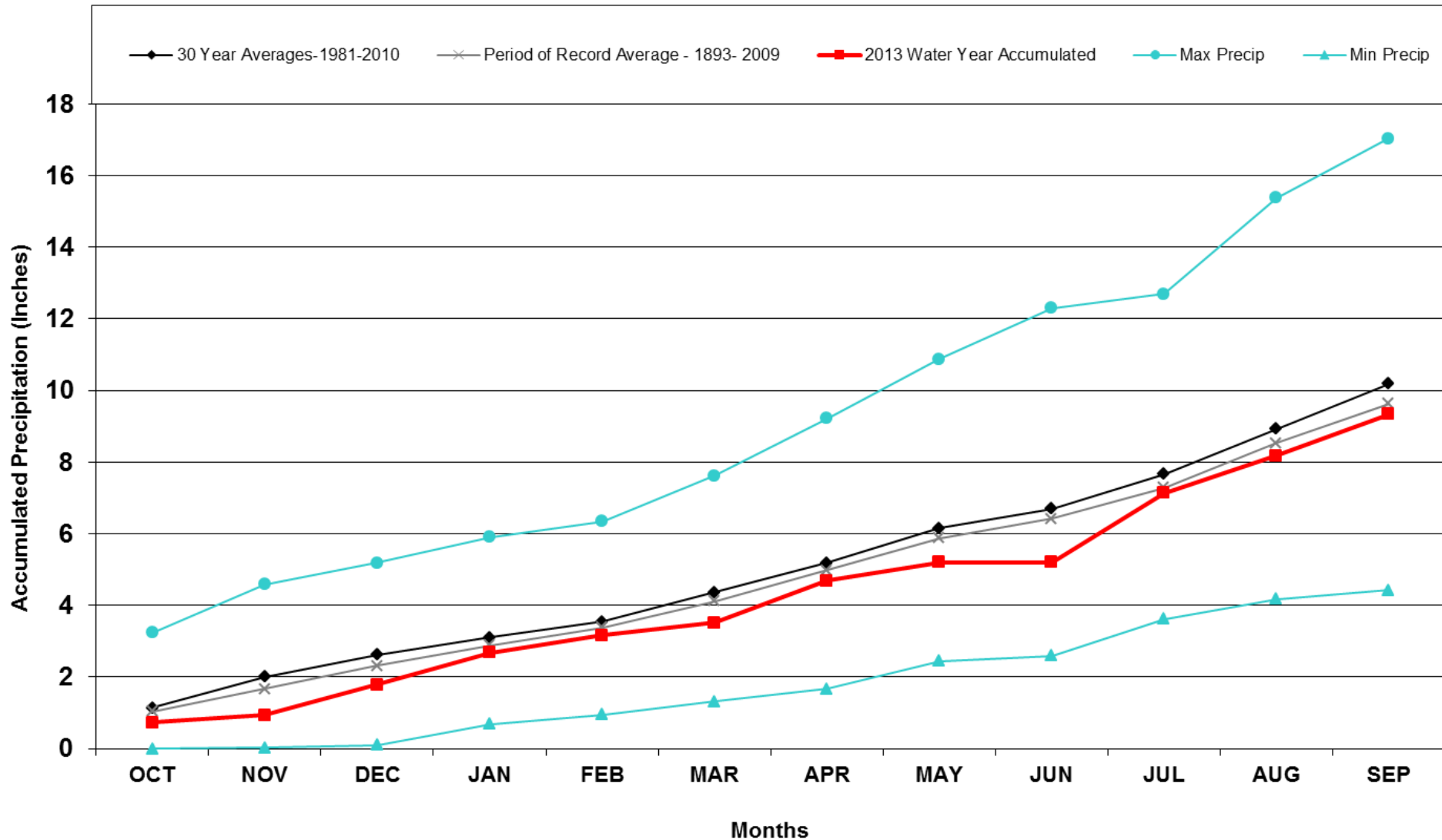
Division 2 – Grand Junction

Grand Junction Precipitation Accumulation



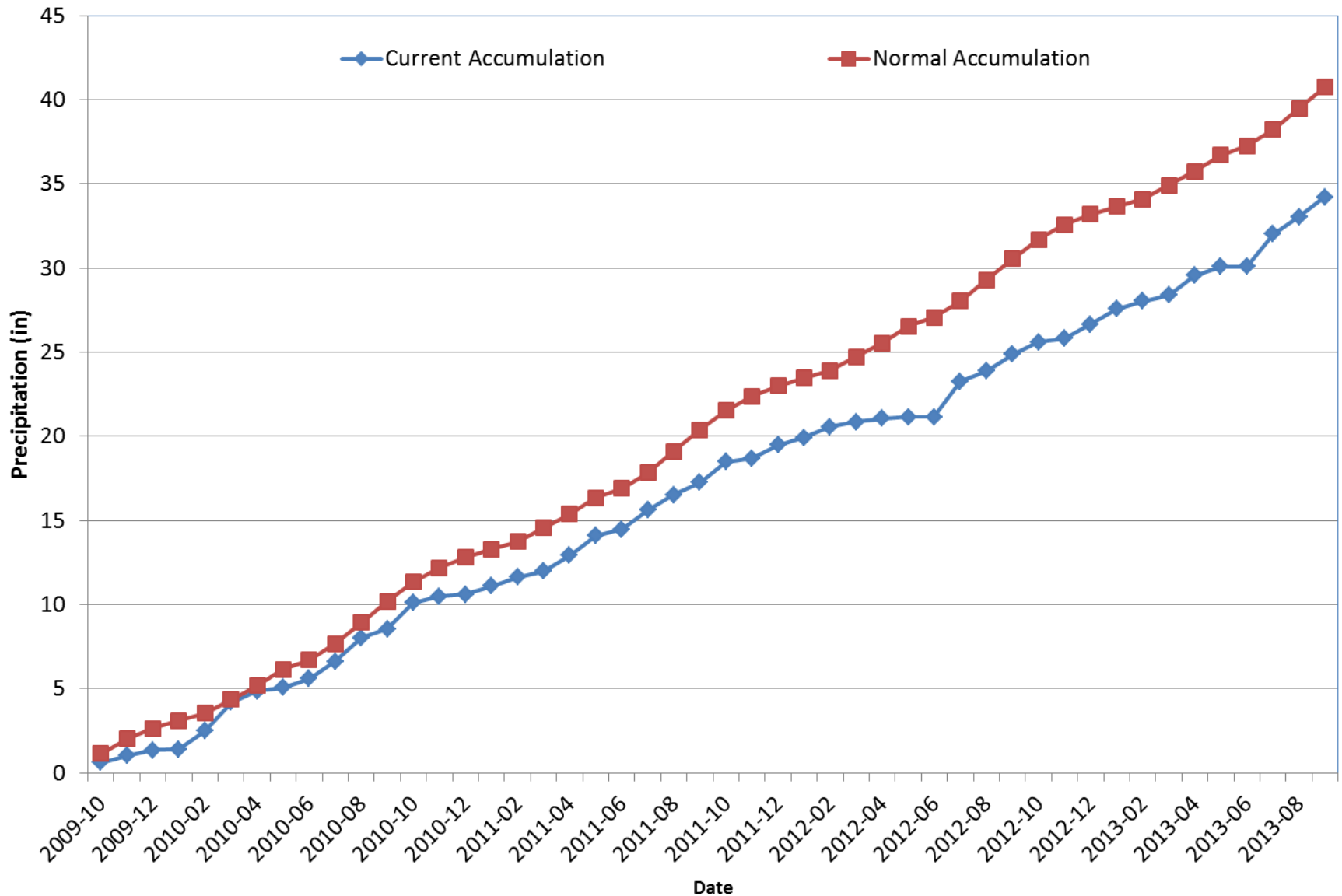
Division 3 – Montrose

Montrose #2 2013 Water Year



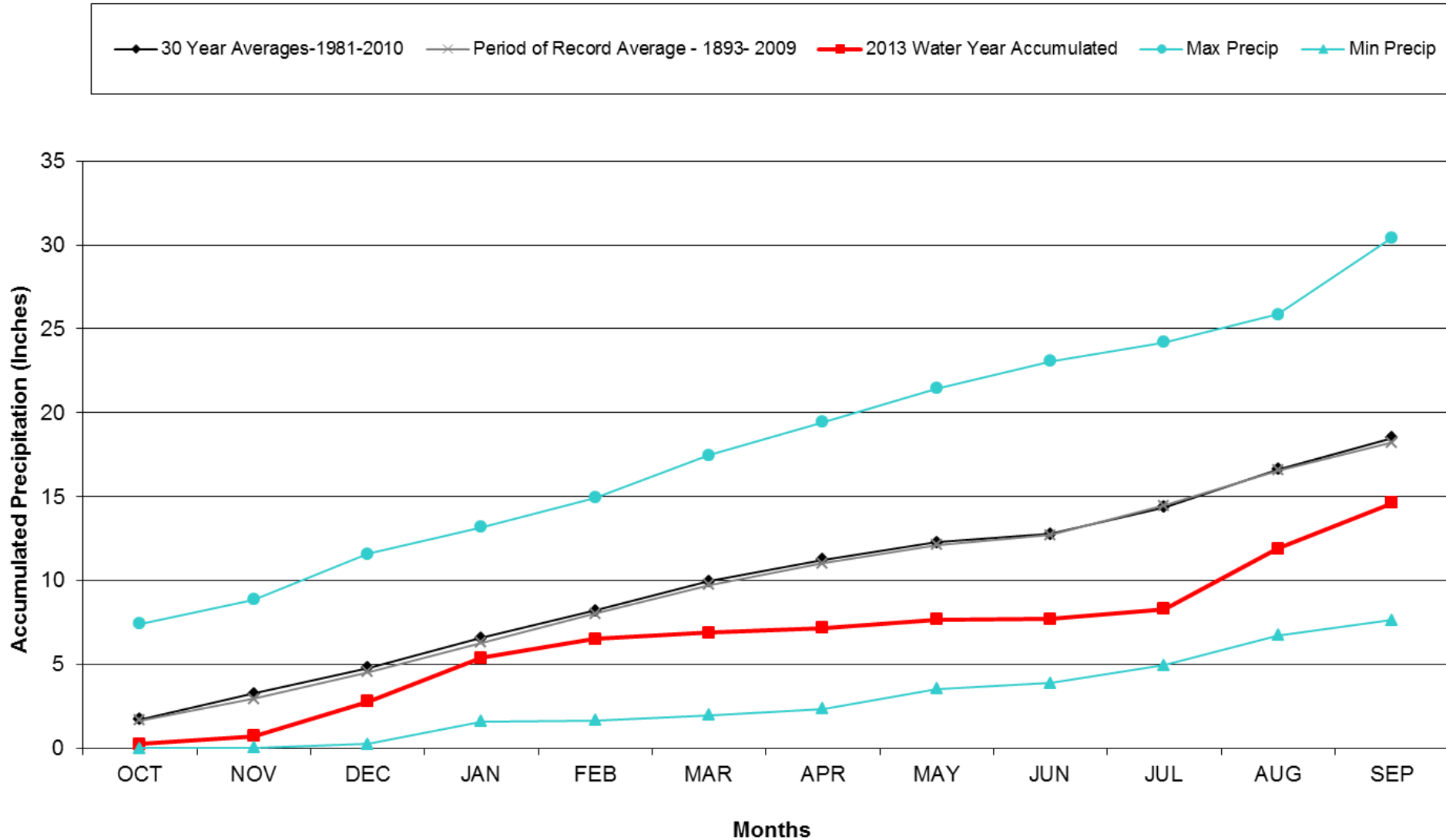
Division 3 – Montrose

Montrose #2 Precipitation Accumulation



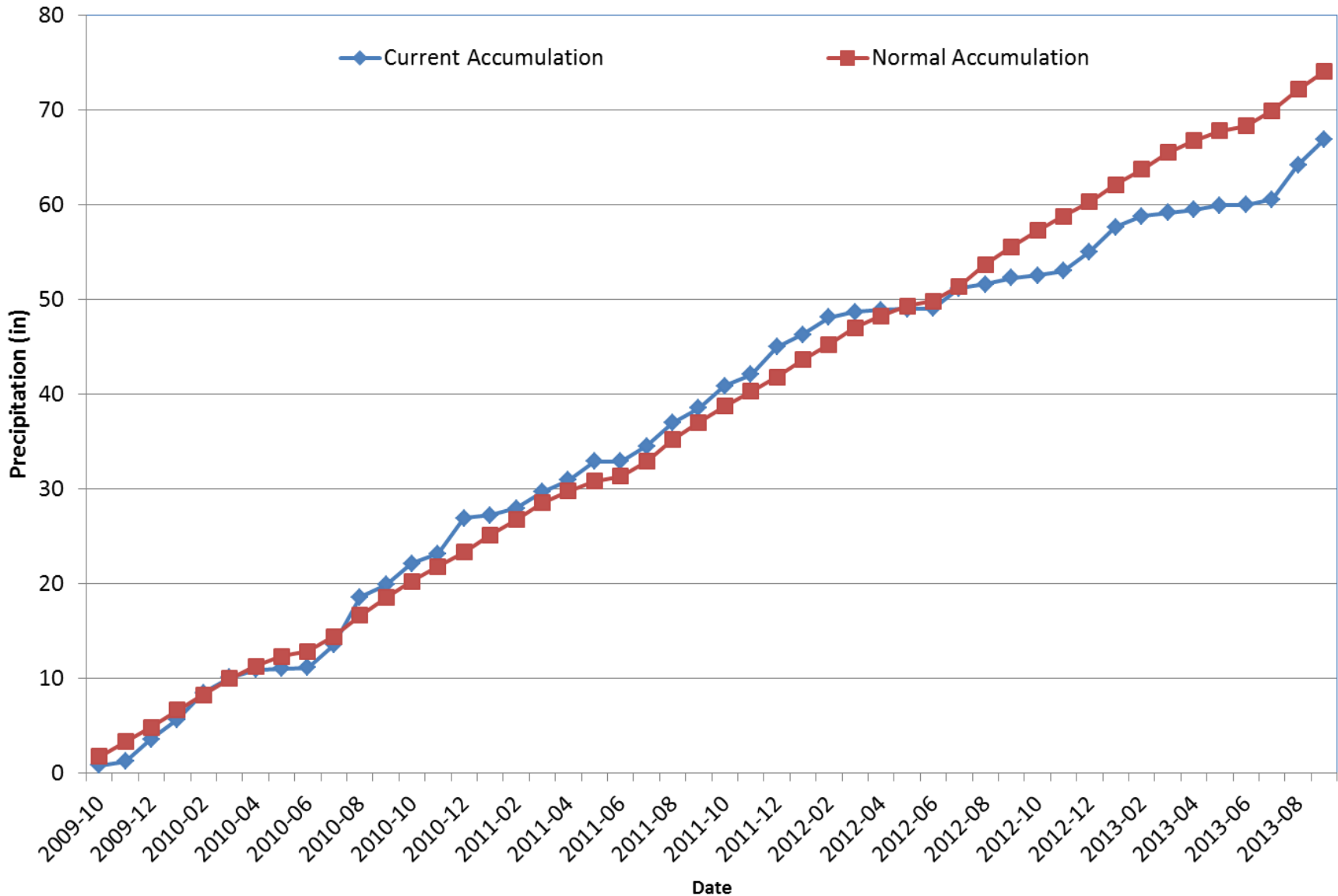
Division 3 – Mesa Verde NP

Mesa Verde NP 2013 Water Year



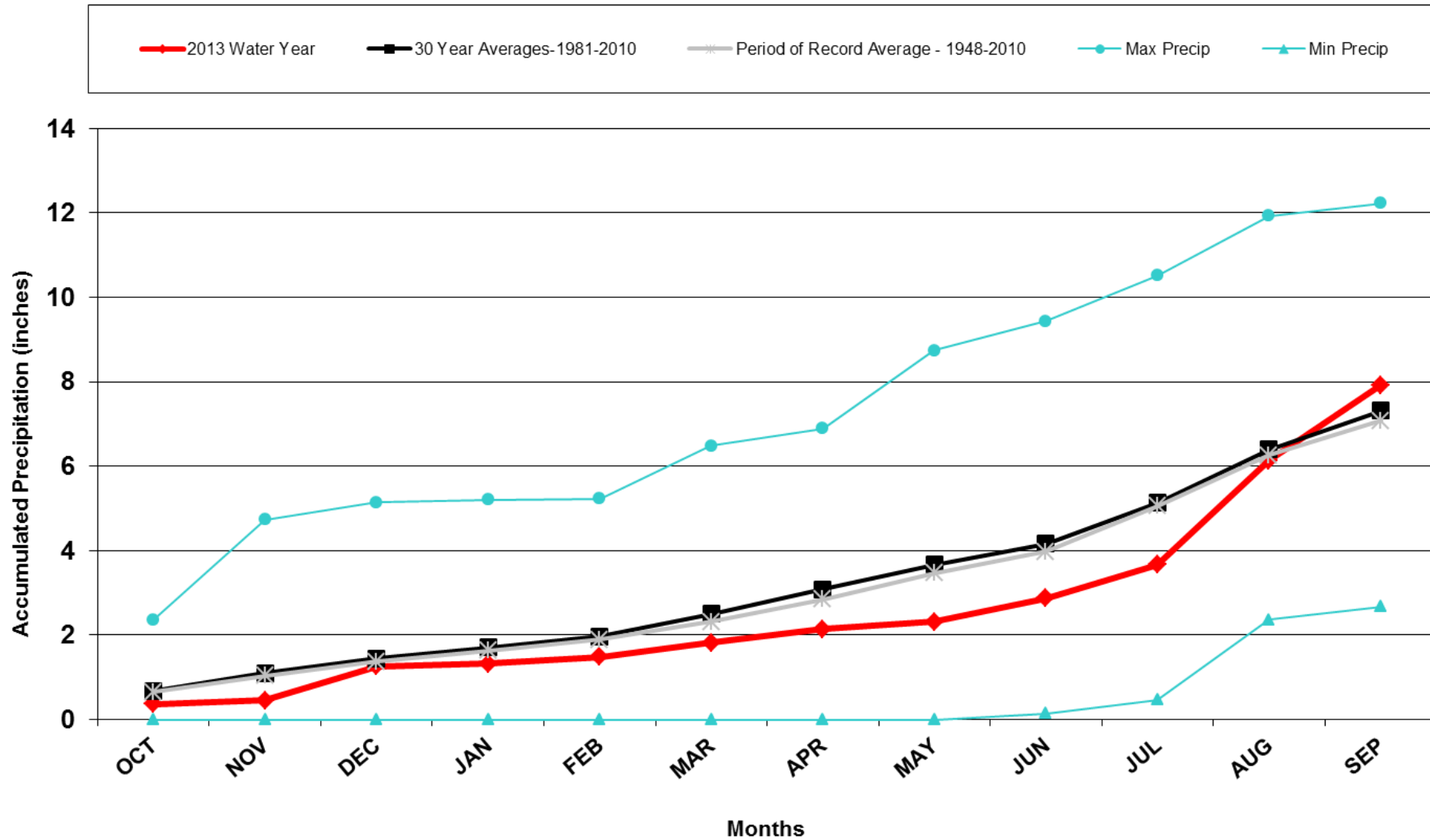
Division 3 – Mesa Verde NP

Mesa Verde NP Precipitation Accumulation



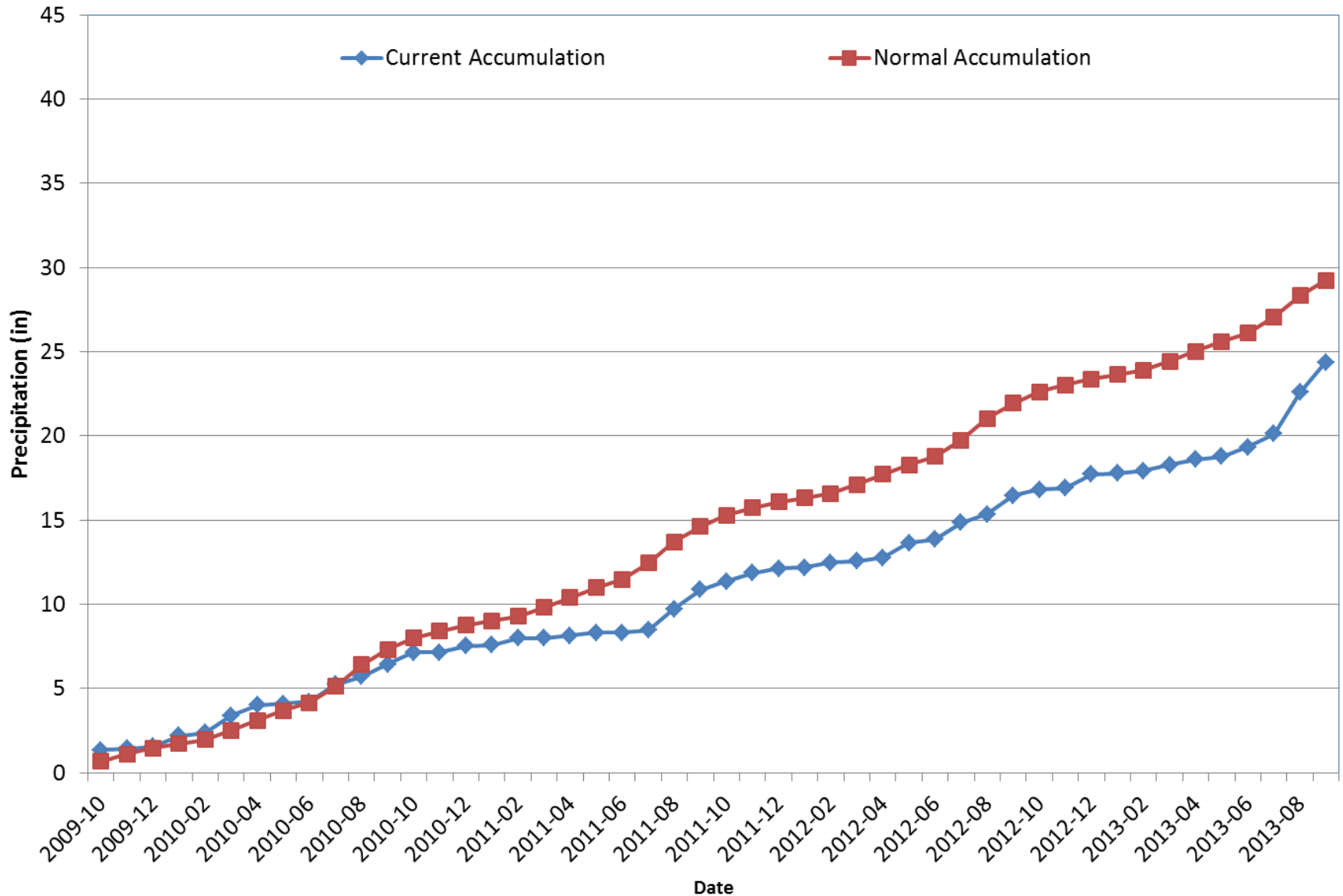
Division 4 – Alamosa

Alamosa WSO 2013 Water Year



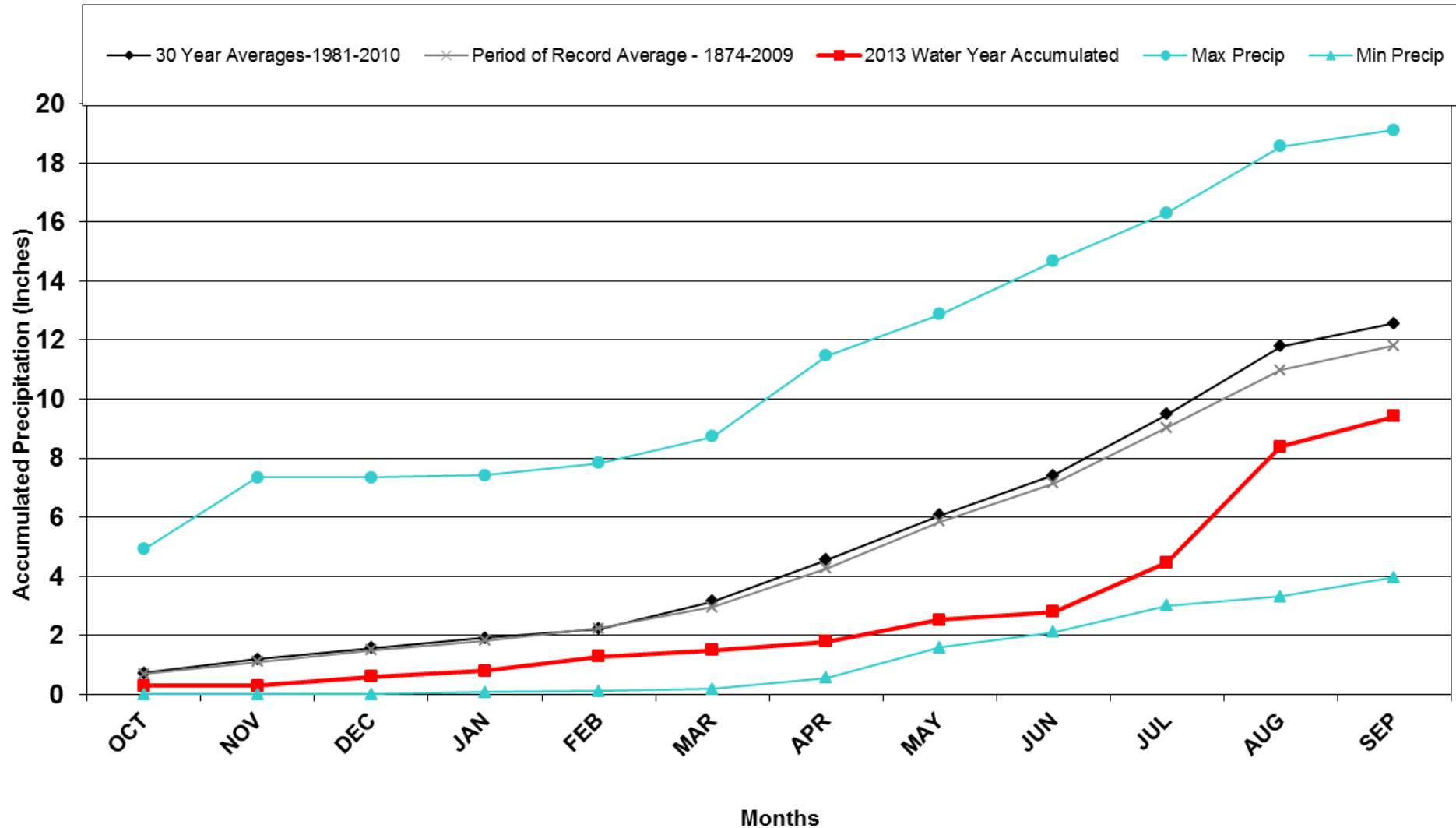
Division 4 – Alamosa

Alamosa WSO Precipitation Accumulation



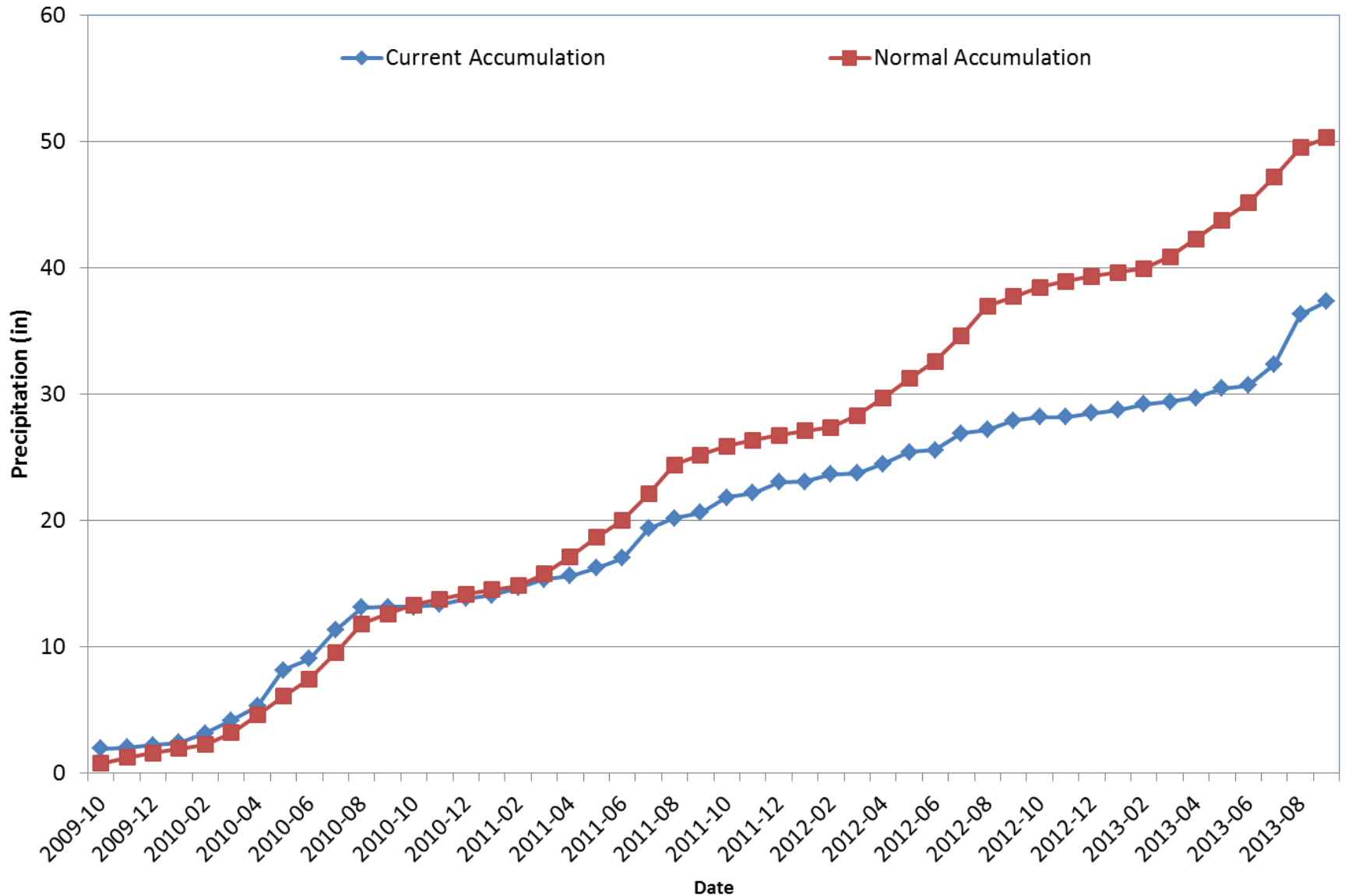
Division 5 – Pueblo

Pueblo WSO 2013 Water Year



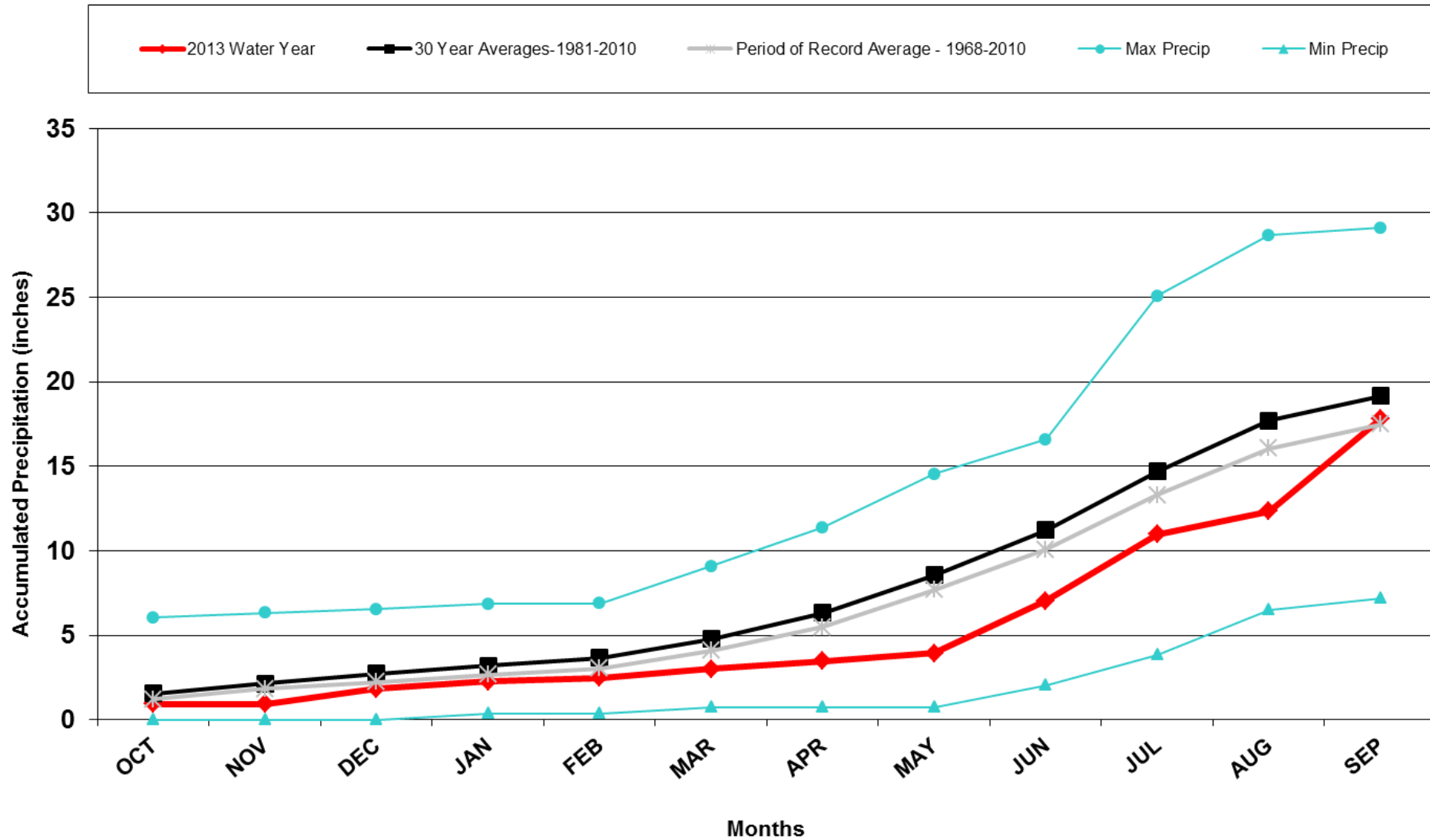
Division 5 – Pueblo

Pueblo Memorial AP Precipitation Accumulation



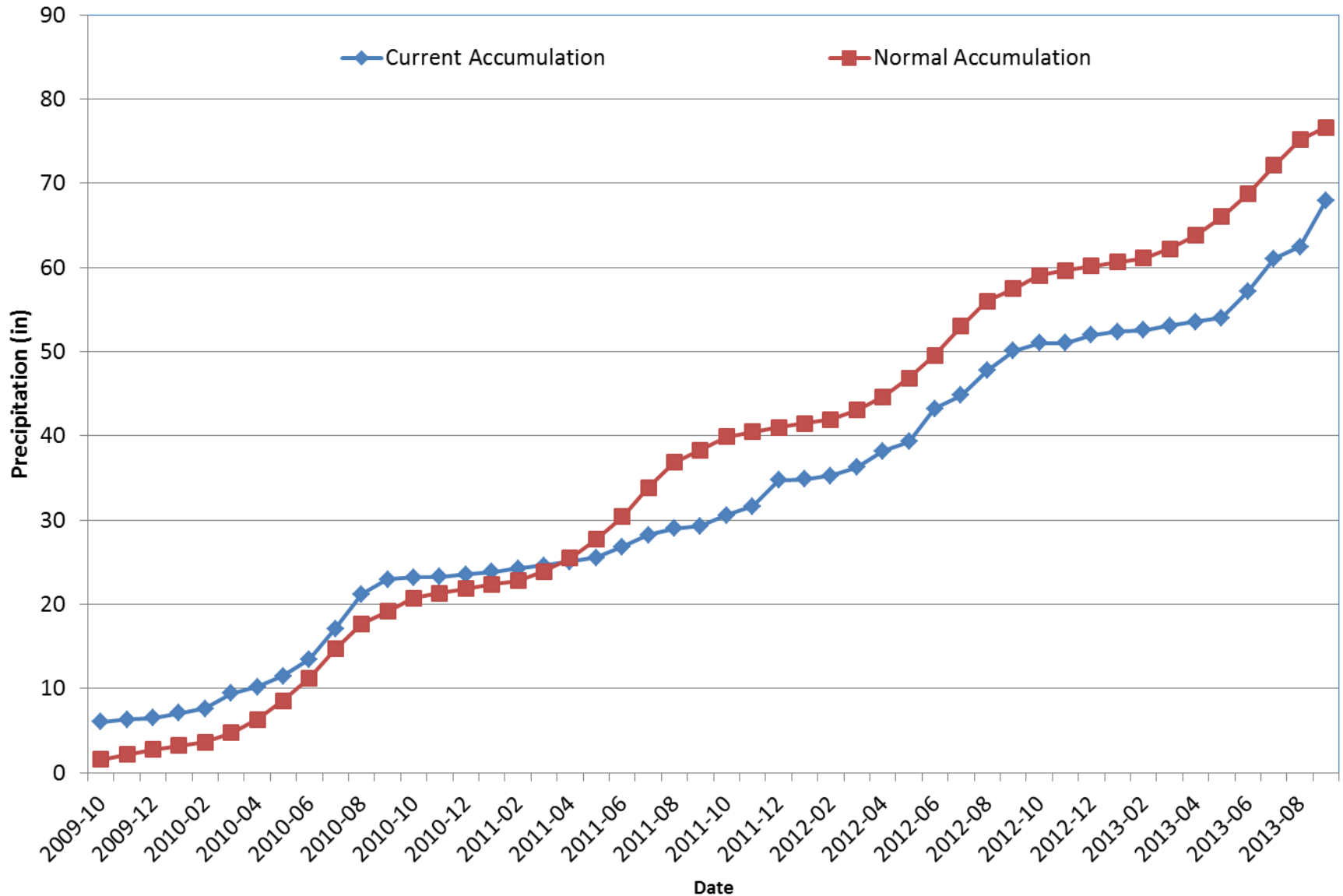
Division 6 - Walsh

Walsh 2013 Water Year



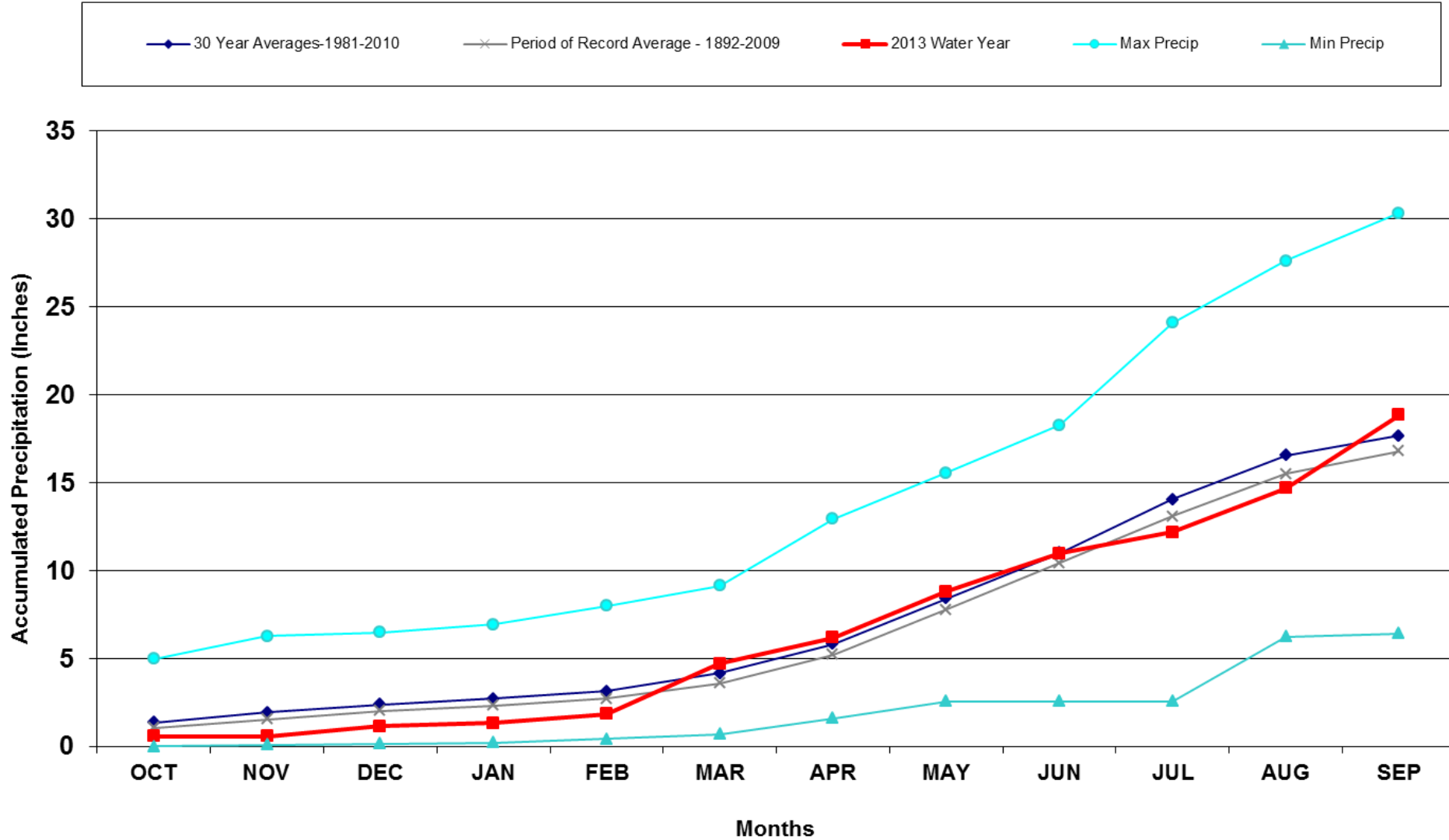
Division 6 - Walsh

Walsh 1W Precipitation Accumulation



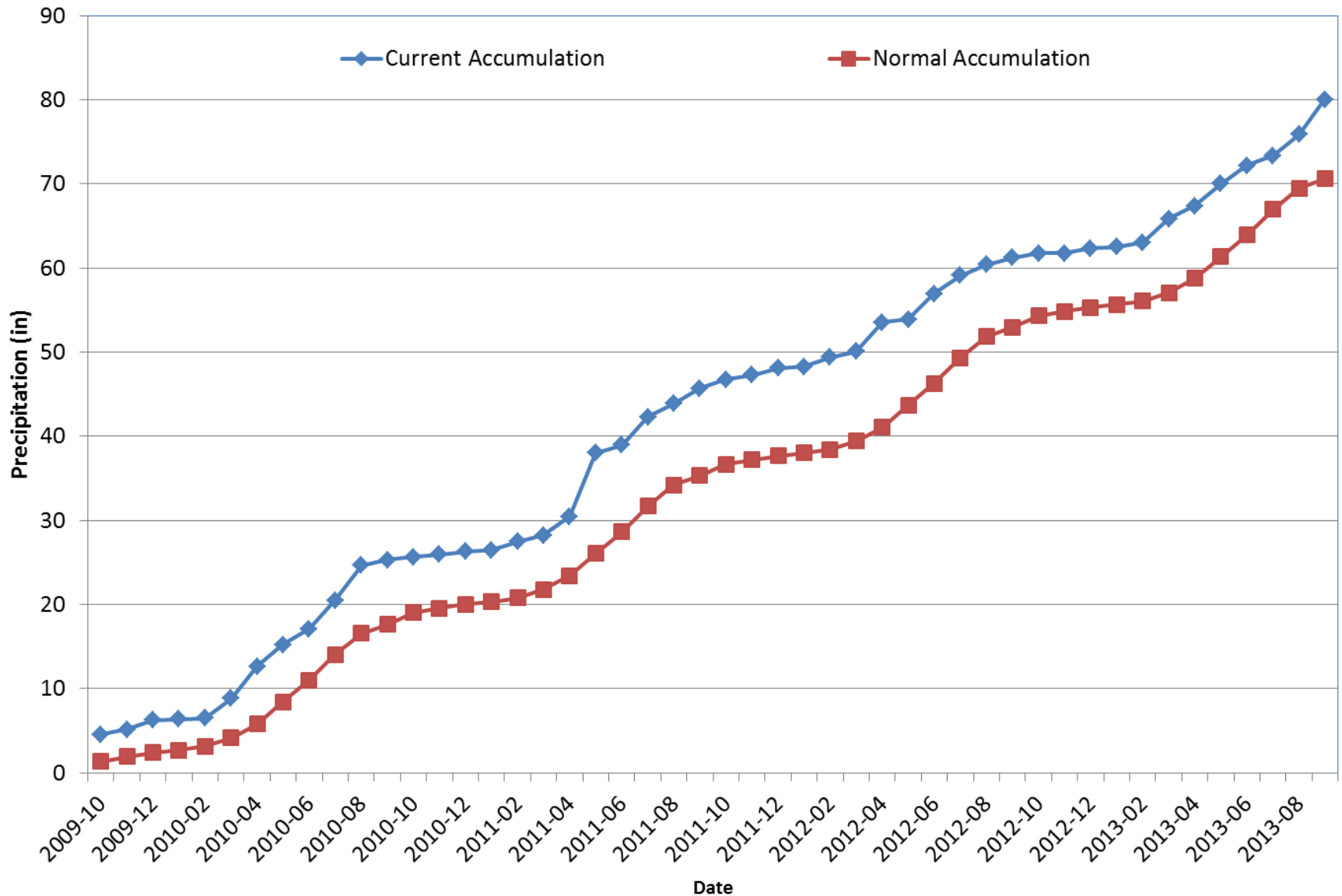
Division 6 - Burlington

Burlington 2013 Water Year



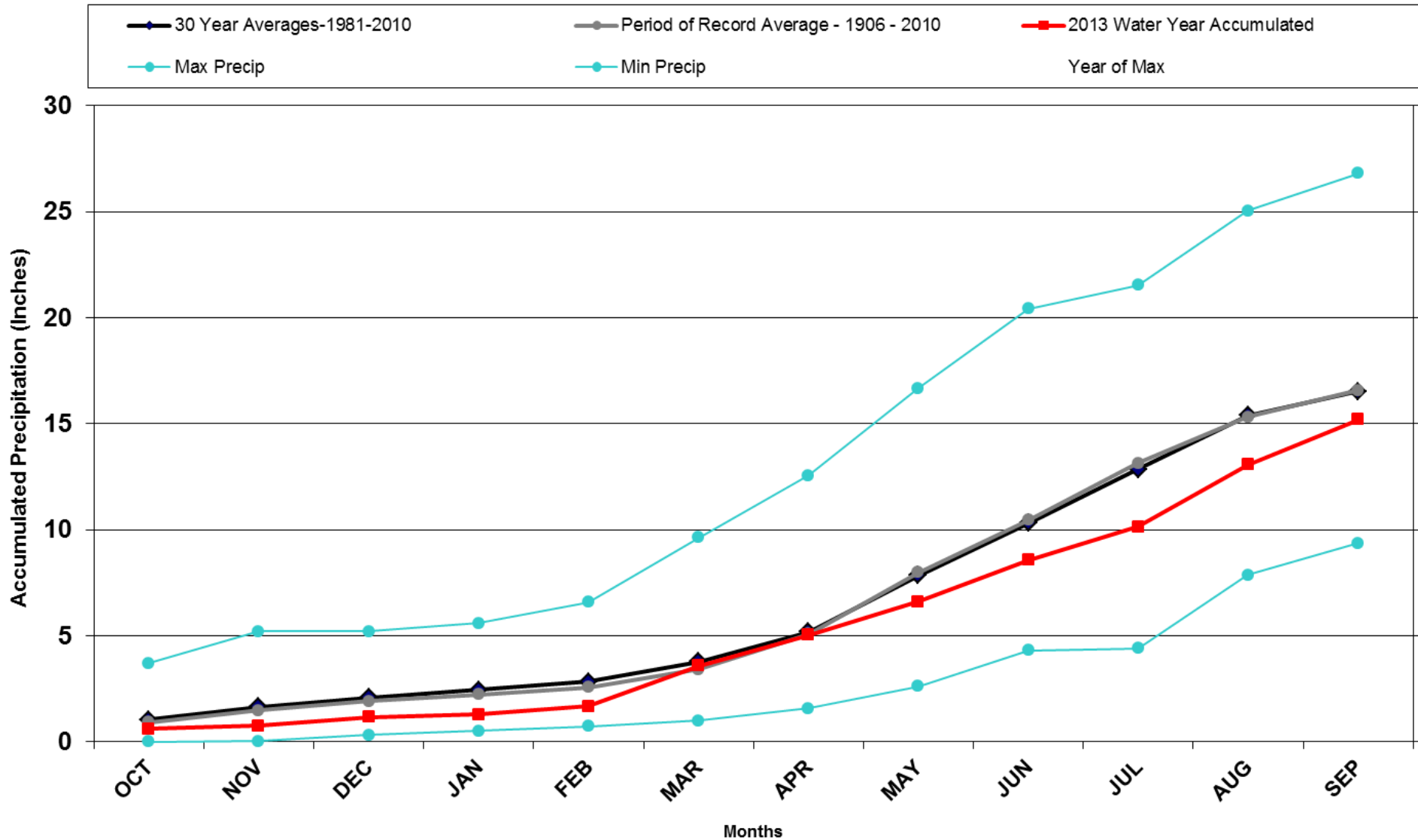
Division 6 - Burlington

Burlington, CO Precipitation Accumulation



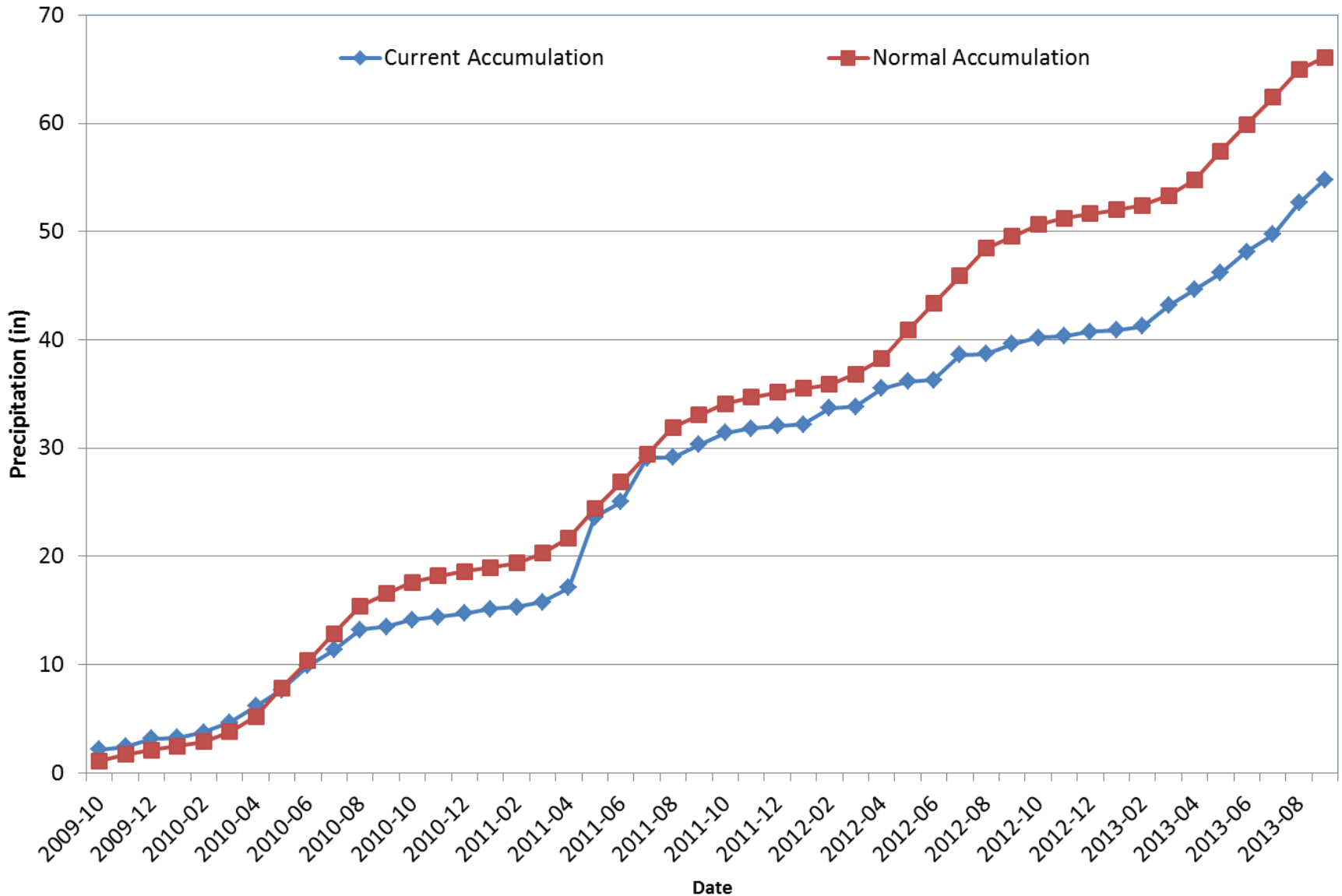
Division 7 – Akron

Akron 4E 2013 Water Year



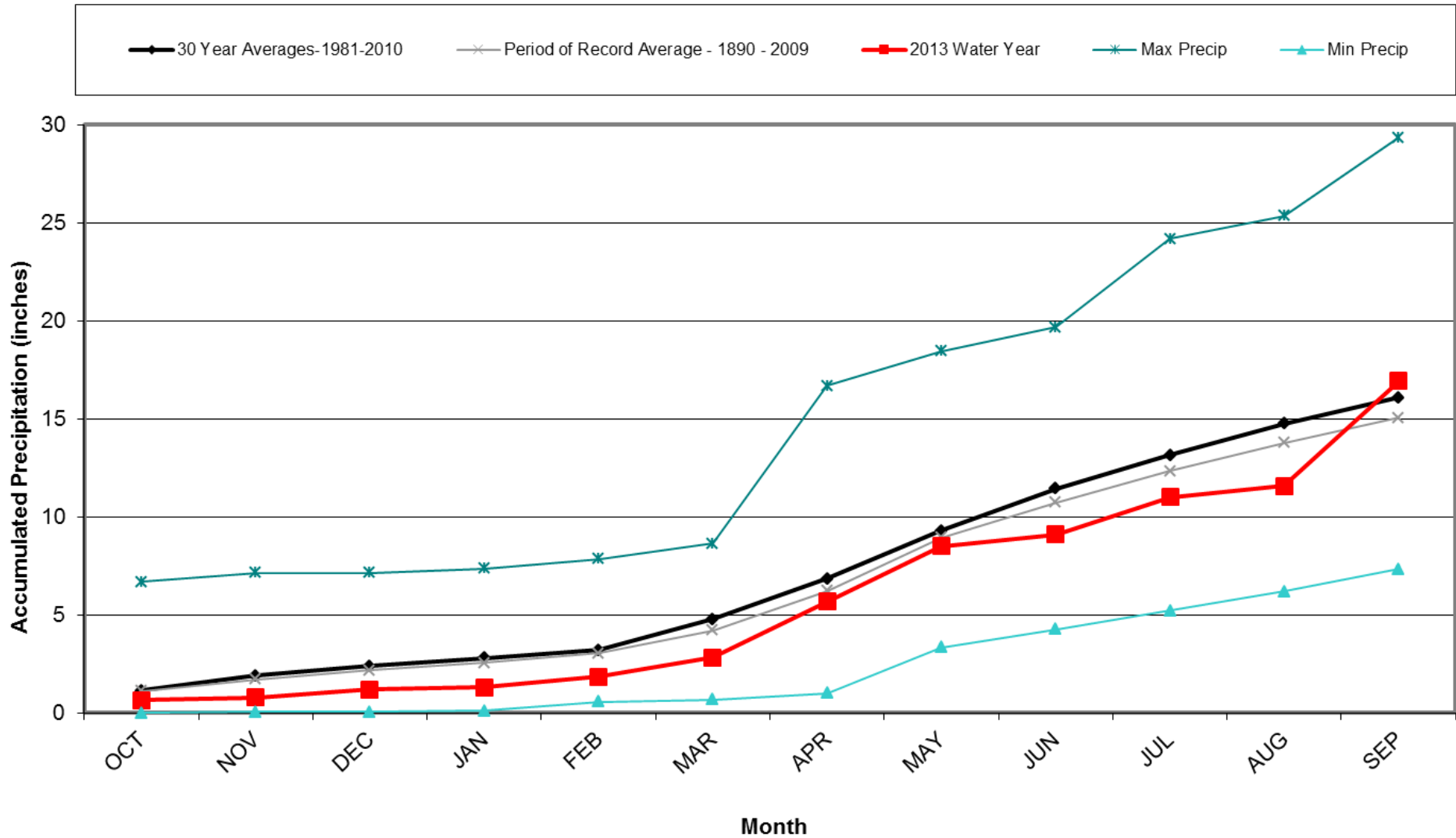
Division 7 – Akron

Akron 4E Precipitation Accumulation



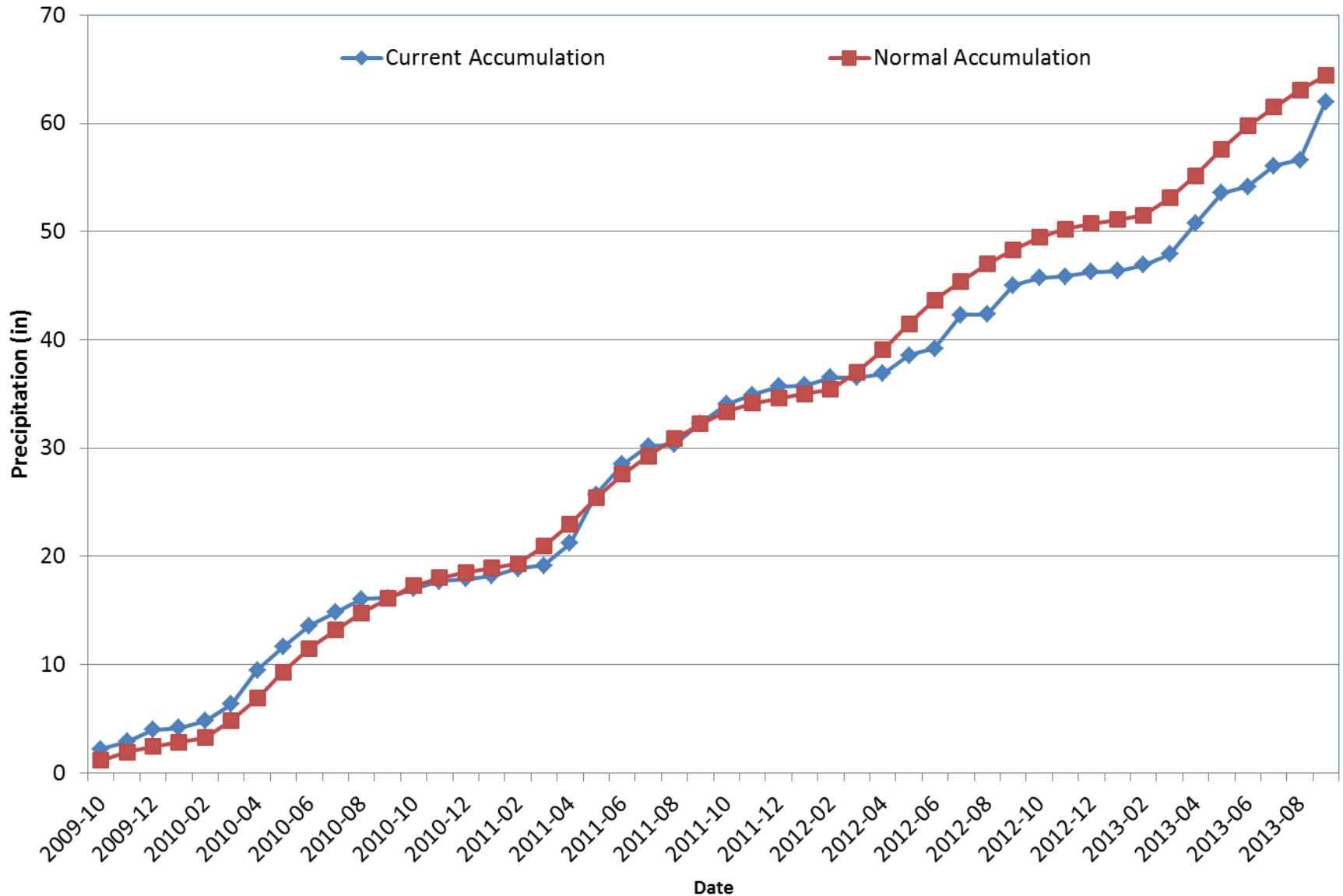
Division 8 – Fort Collins

Fort Collins 2013 Water Year



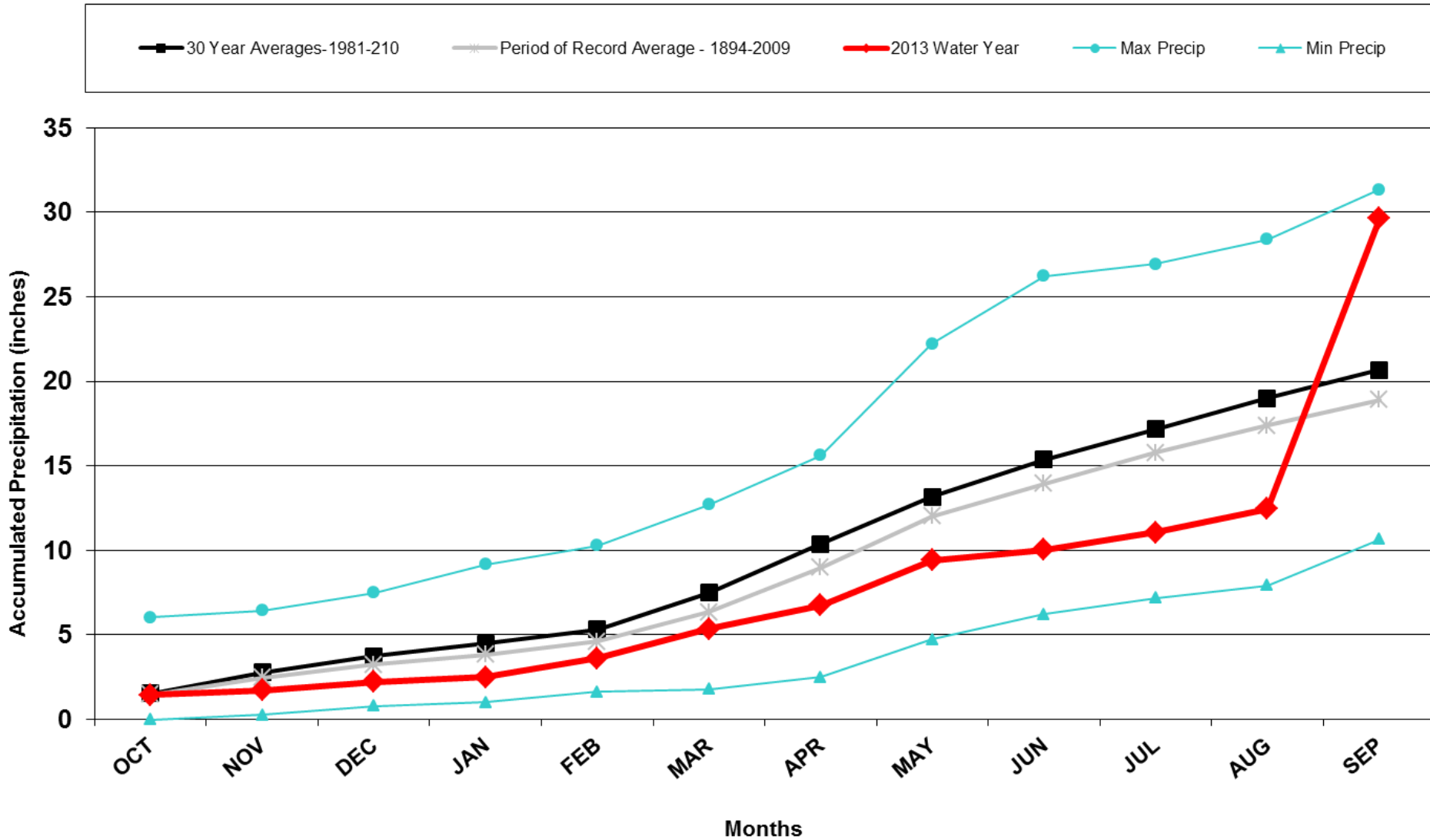
Division 8 – Fort Collins

Fort Collins Precipitation Accumulation



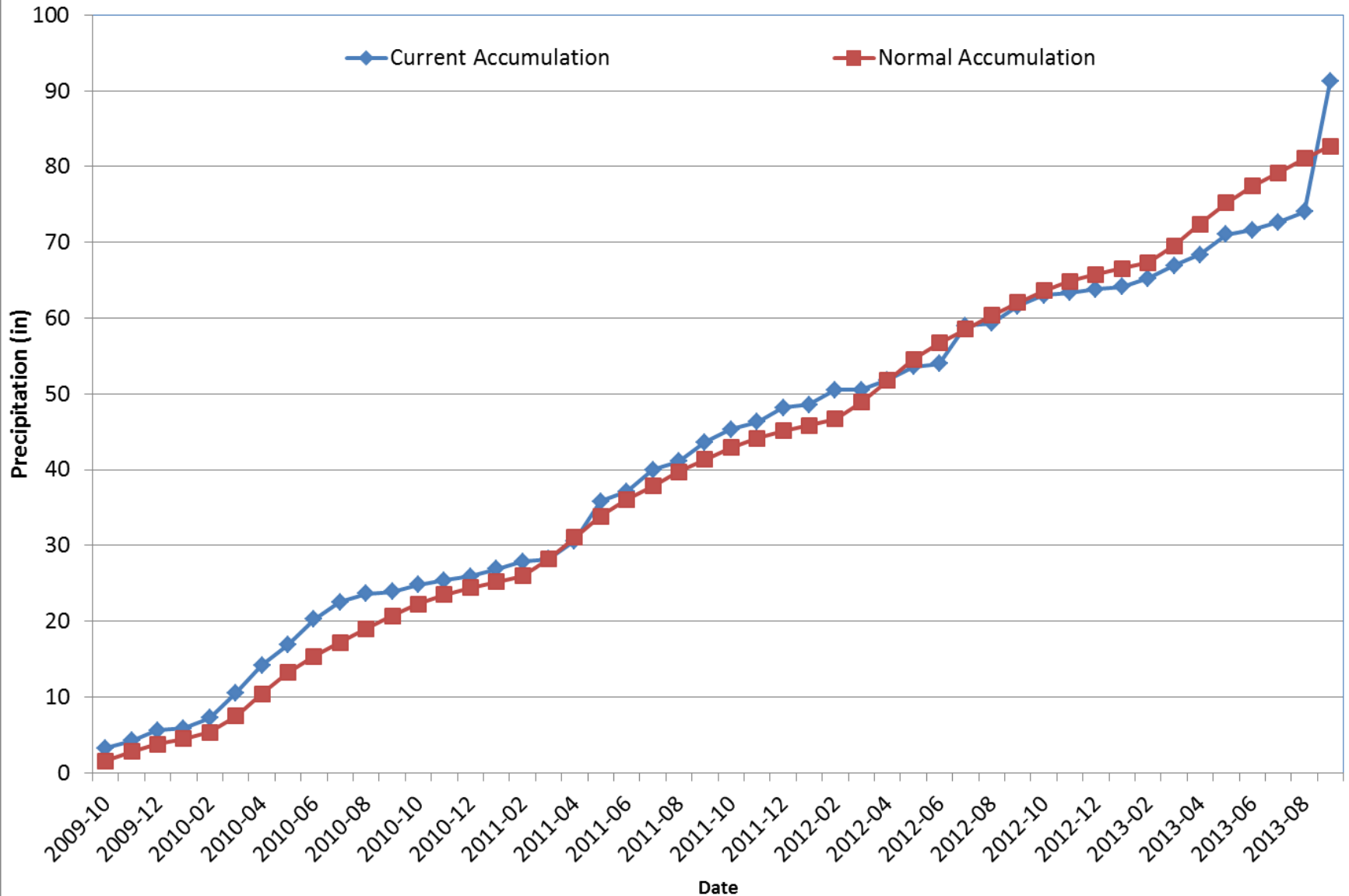
Division 8 - Boulder

Boulder 2013 Water Year



Division 8 - Boulder

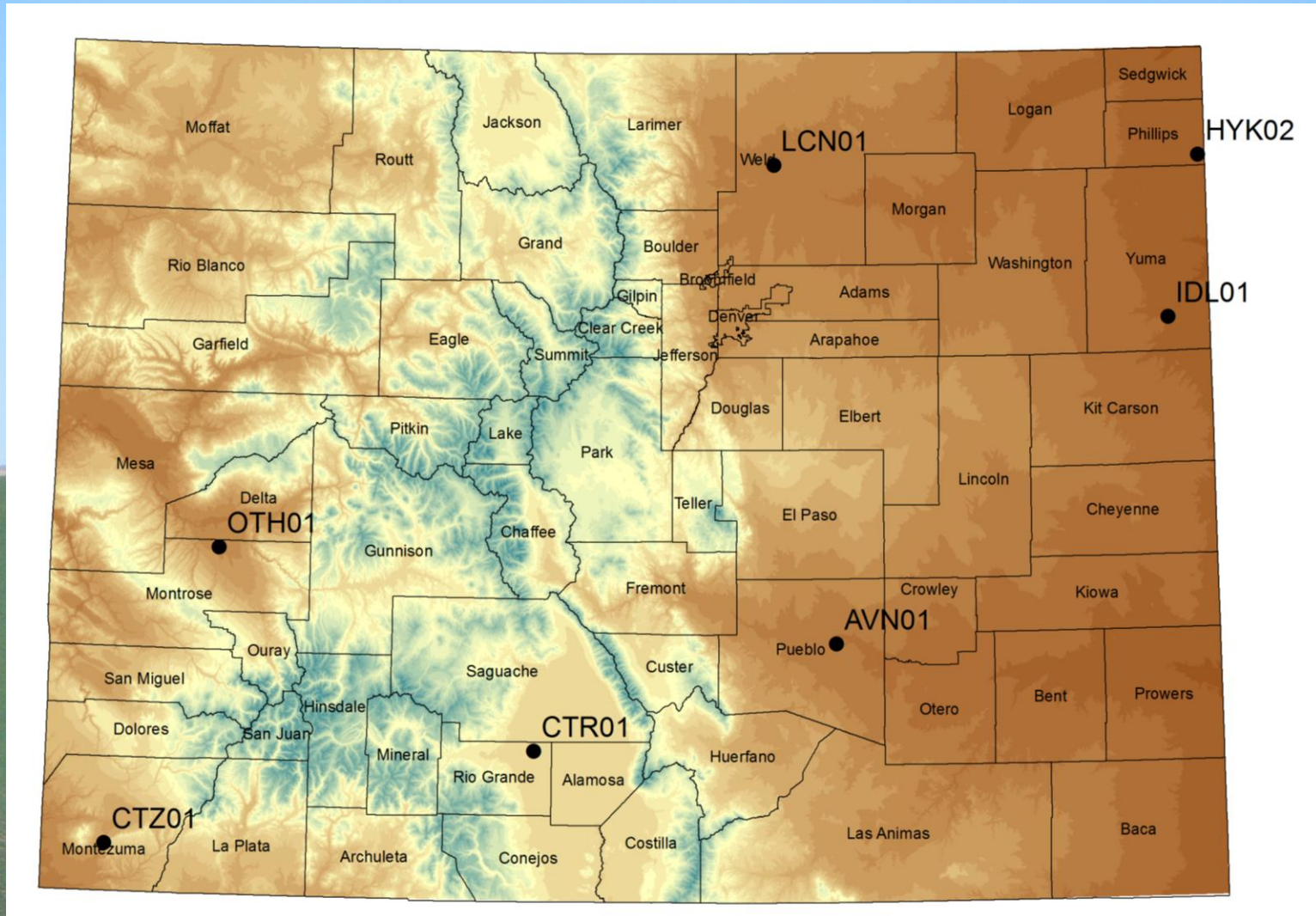
Boulder Precipitation Accumulation



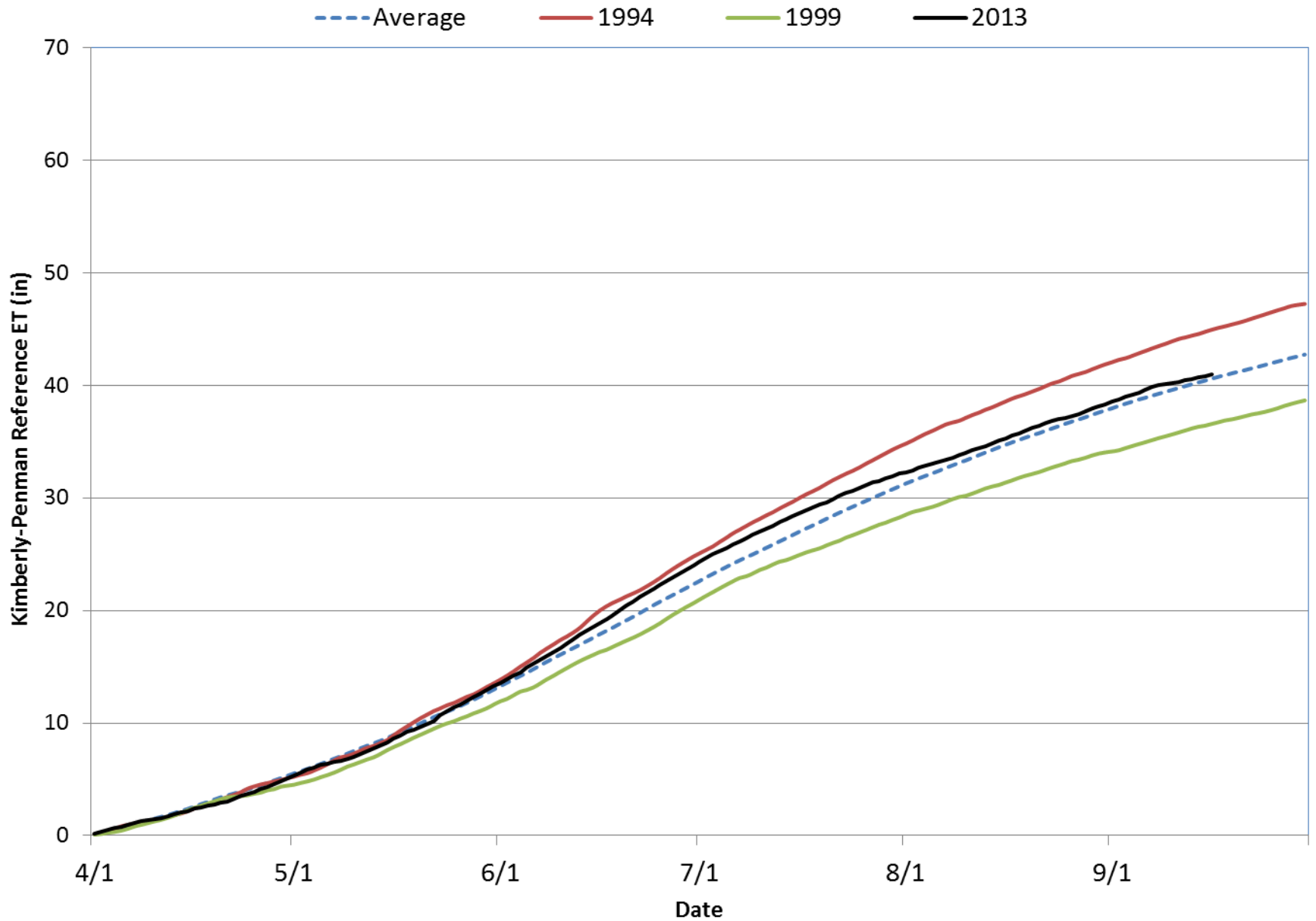
Evapotranspiration



CoAgMet Reference Evapotranspiration Stations

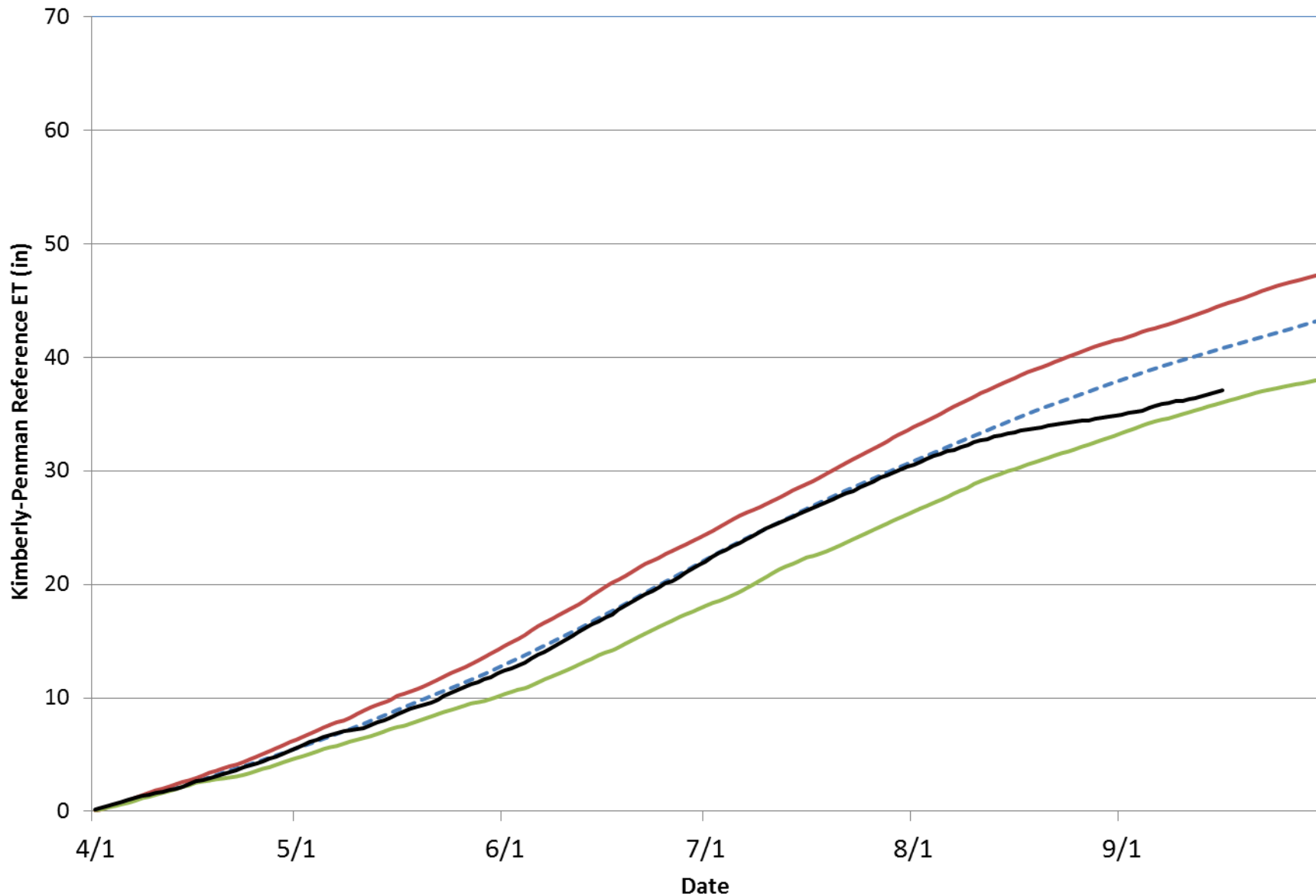


Olathe Kimberly-Penman Reference ET (1993 - 2013)



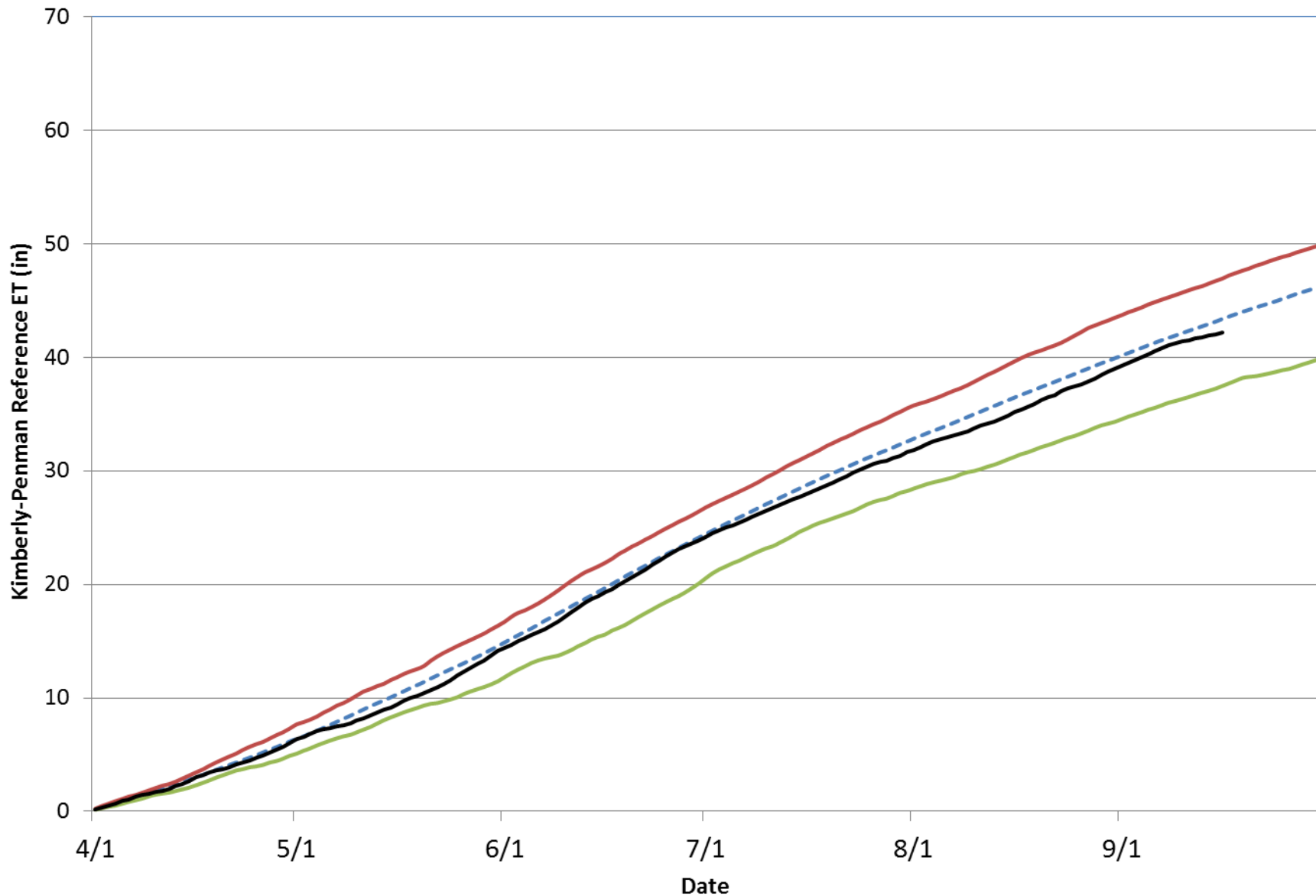
Cortez Kimberly-Penman Reference ET (1992 - 2013)

--- Average — 2000 — 1995 — 2013

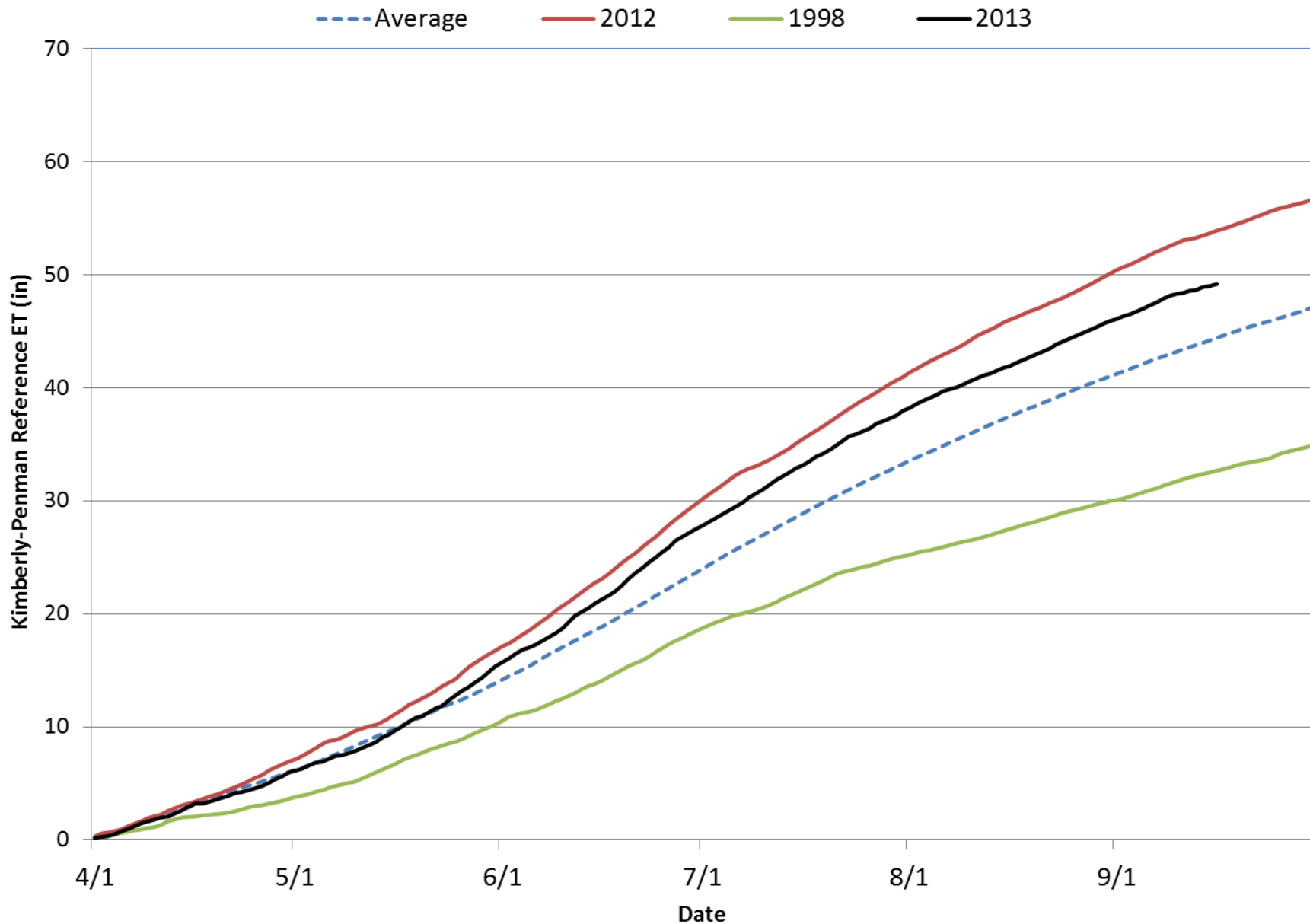


Center Kimberly-Penman Reference ET (1994 - 2013)

--- Average — 2002 — 1997 — 2013

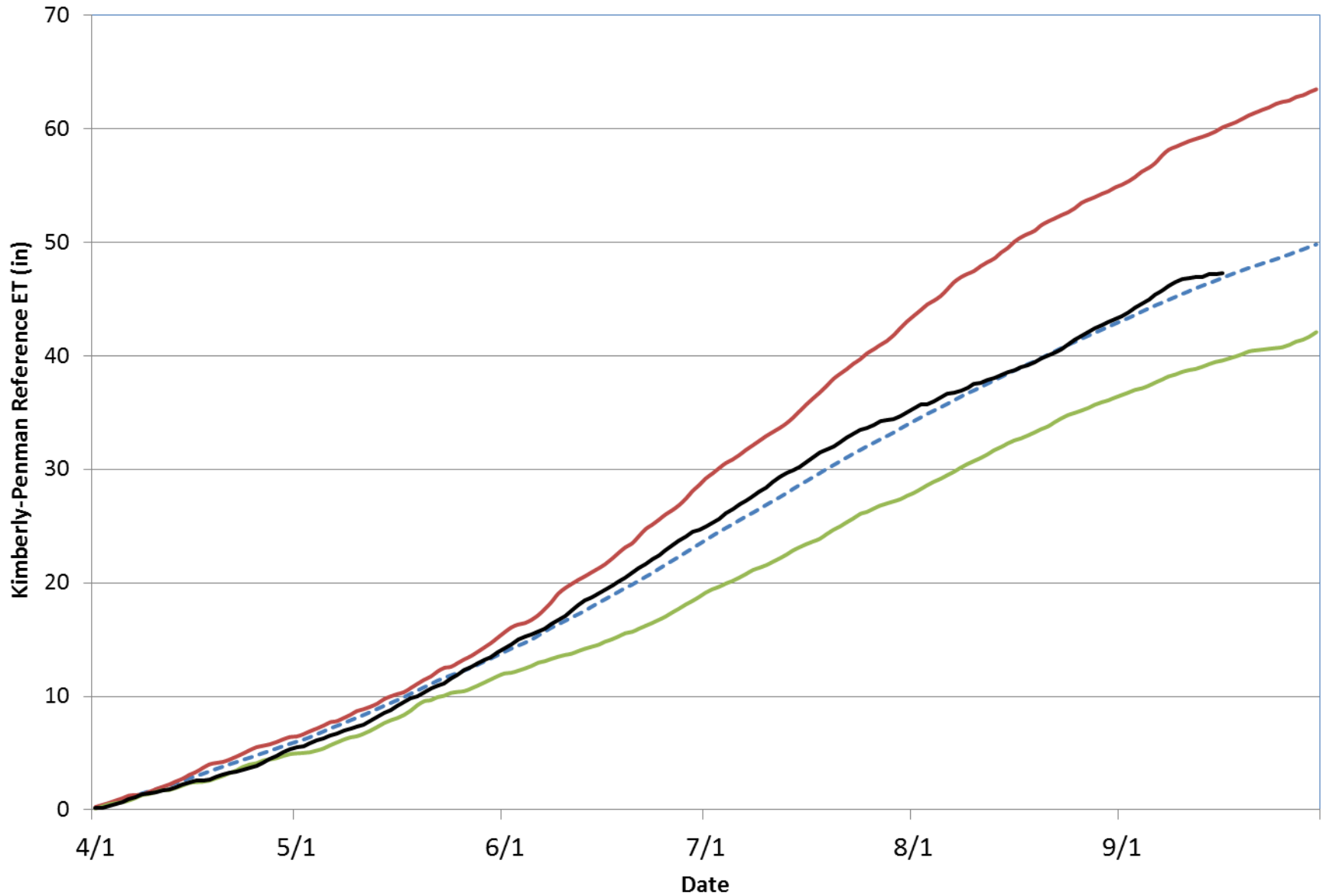


Avondale Kimberly-Penman Reference ET (1993 - 2013)

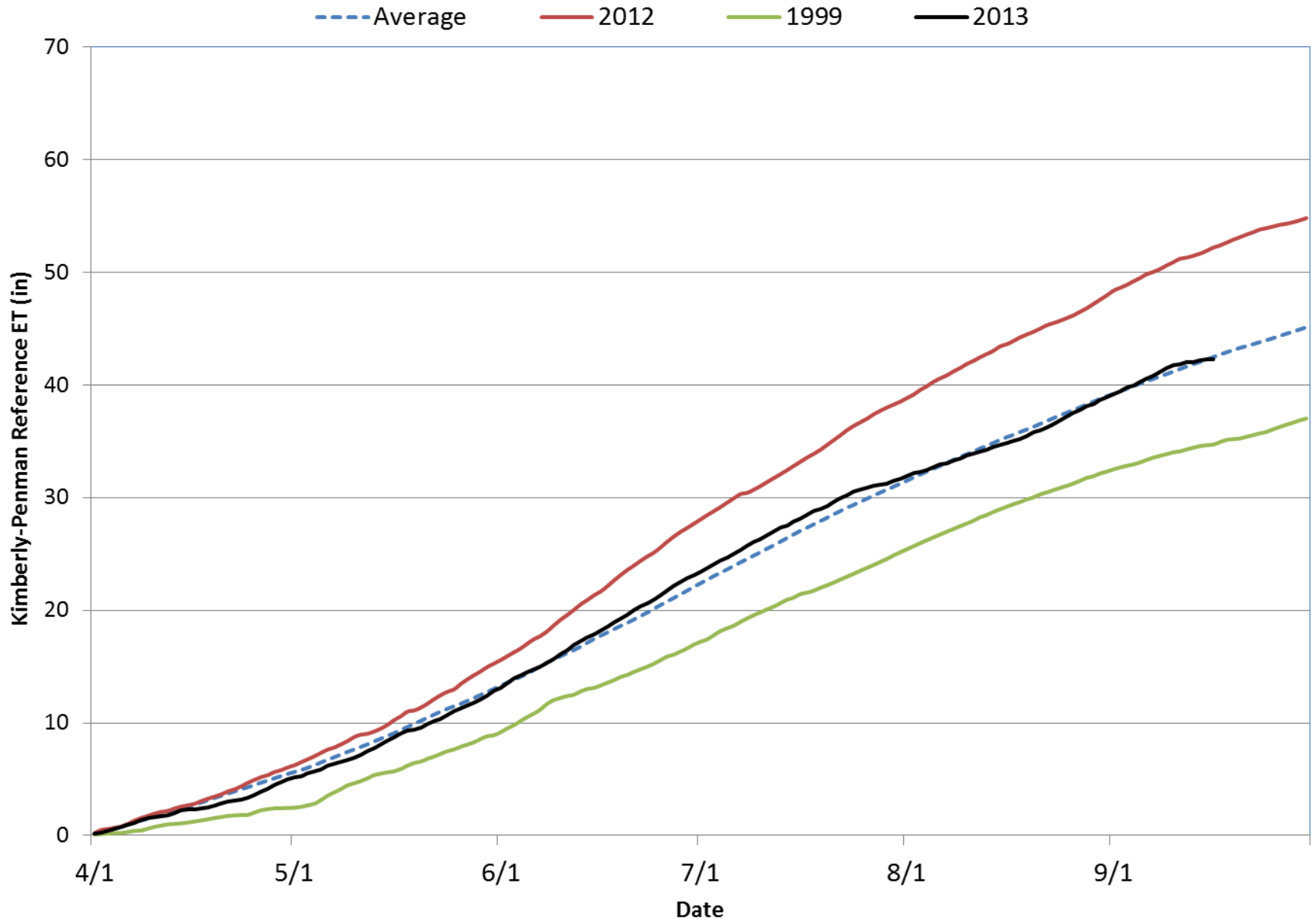


Idalia Kimberly-Penman Reference ET (1992 - 2013)

--- Average — 2002 — 2009 — 2013

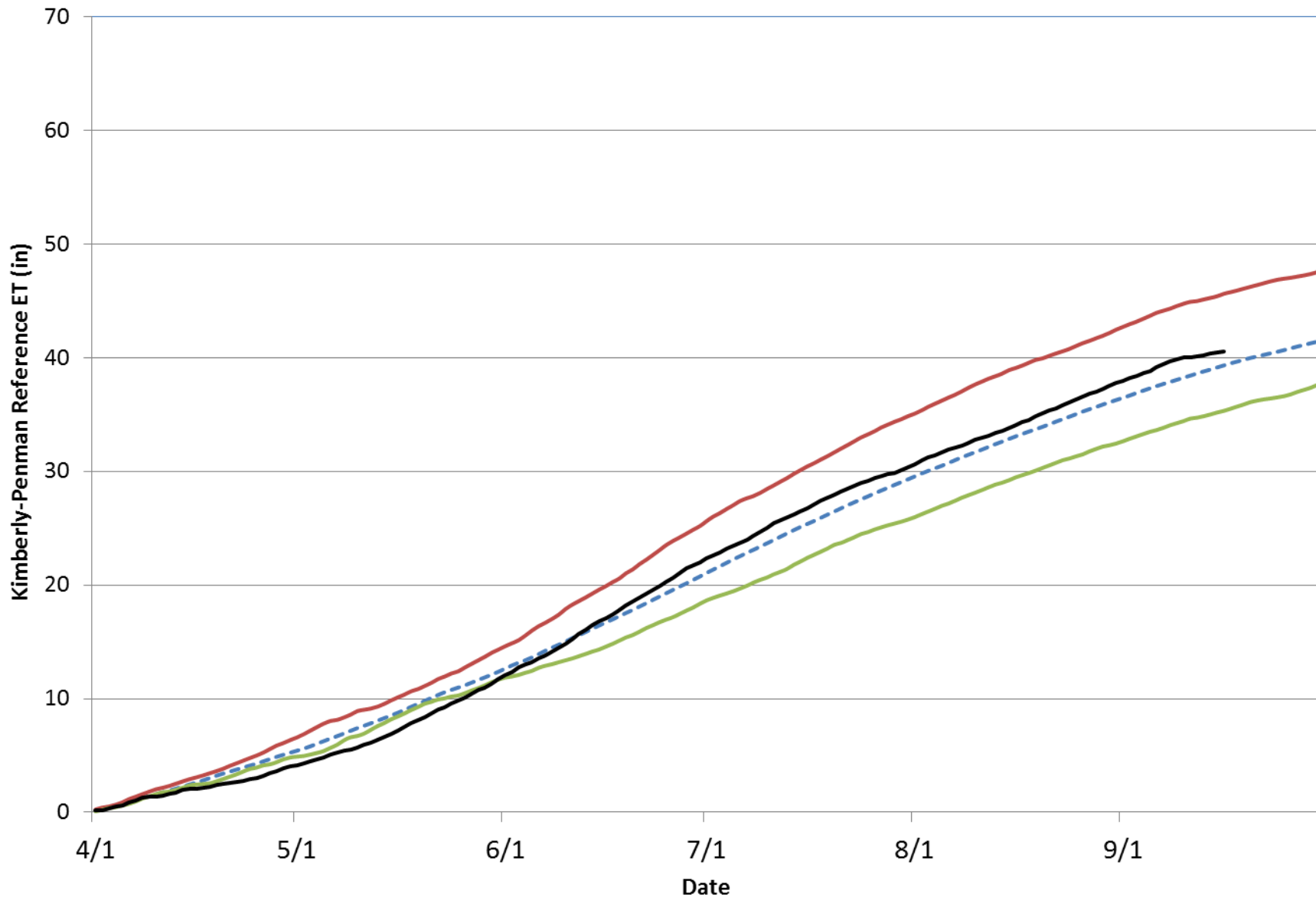


Holyoke Kimberly-Penman Reference ET (1992 - 2013)



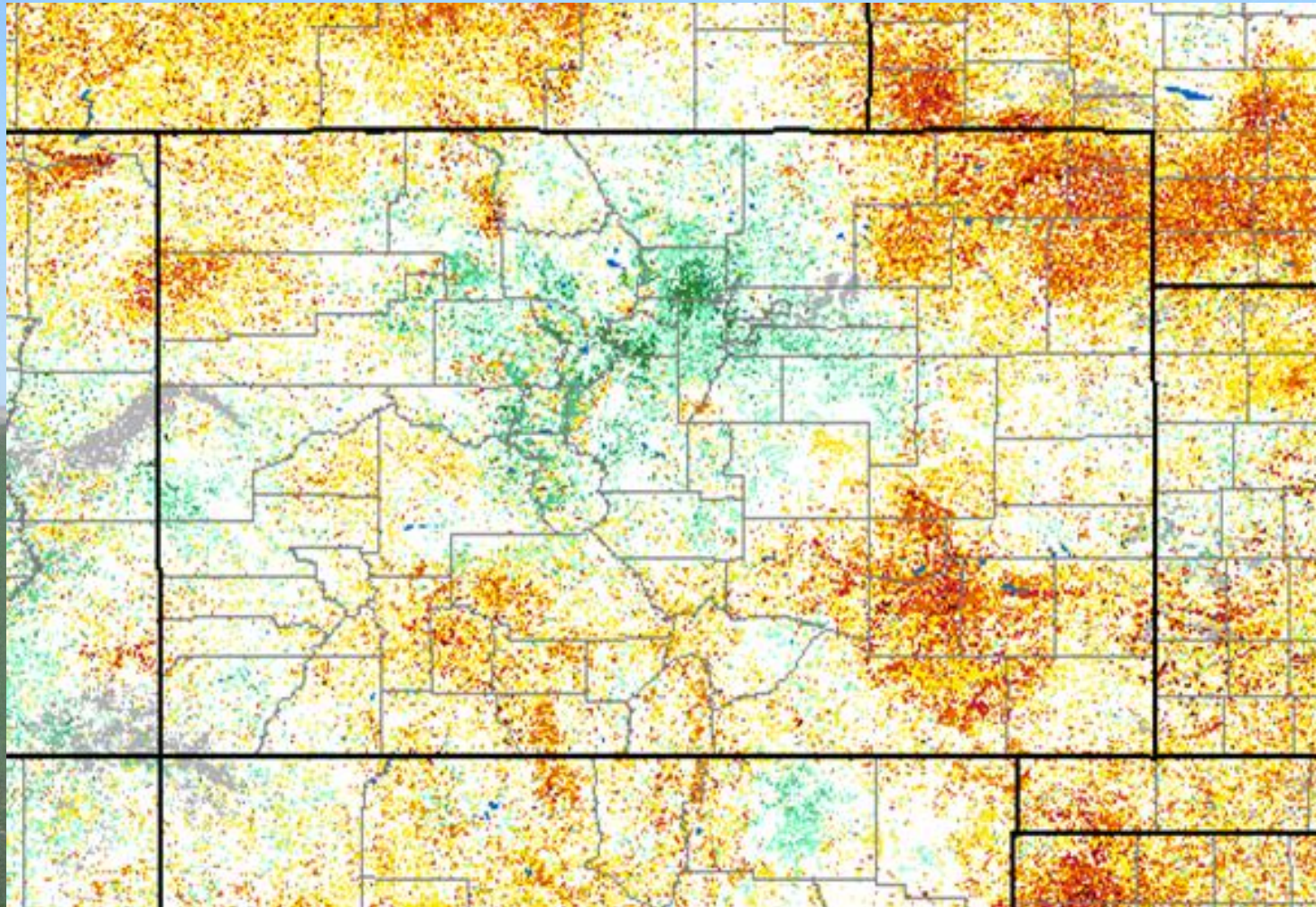
Lucerne Kimberly-Penman Reference ET (1992 - 2013)

--- Average — 2012 — 2009 — 2013

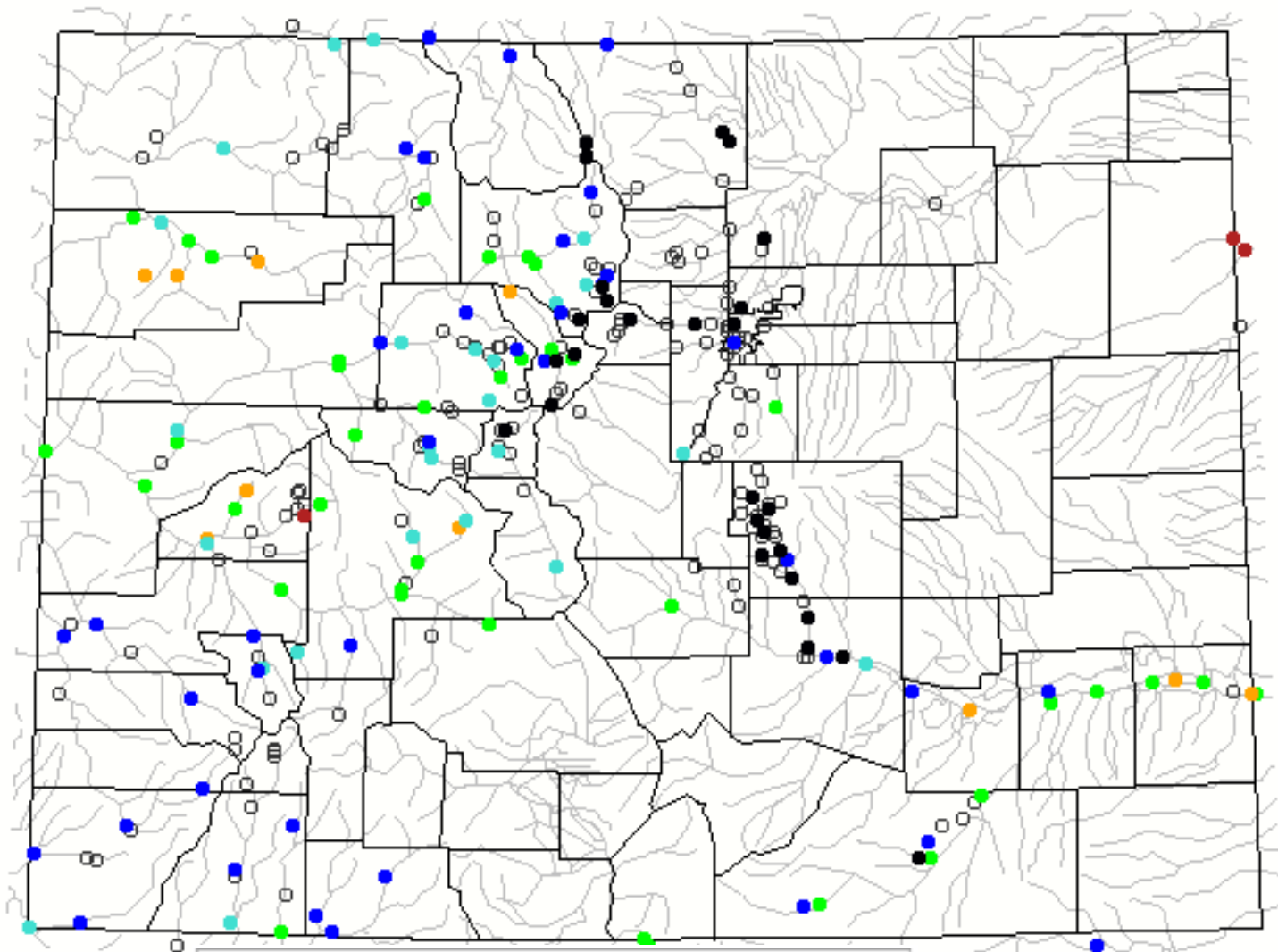


VegDRI

15 September 2013



Monday, September 16, 2013



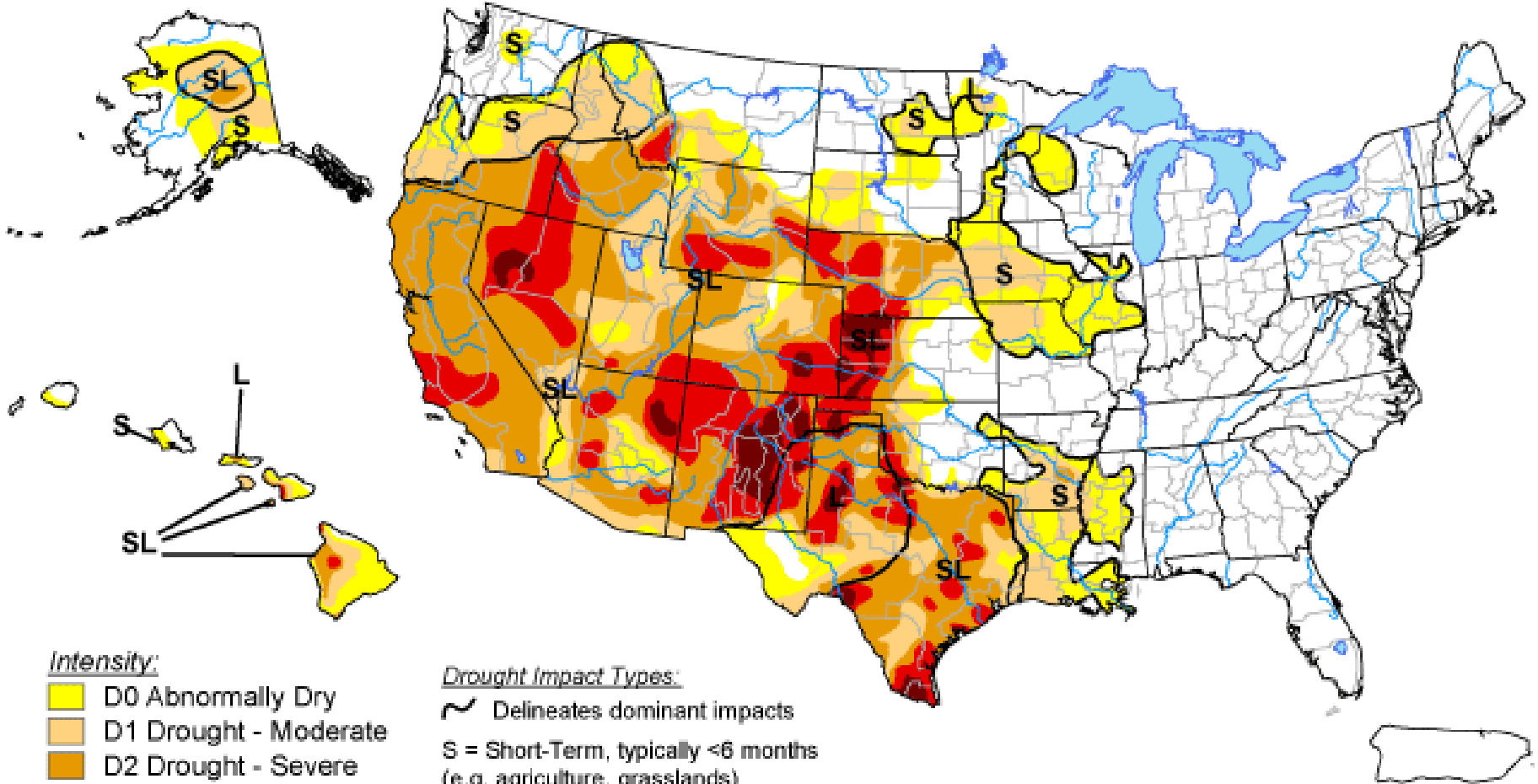
Explanation - Percentile classes

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








U.S. Drought Monitor


August 13, 2013
Valid 7 a.m. EDT



Intensity:

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

Drought Impact Types:

-  Delineates dominant impacts
- S = Short-Term, typically <6 months
(e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months
(e.g. hydrology, ecology)

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



Released Thursday, August 15, 2013

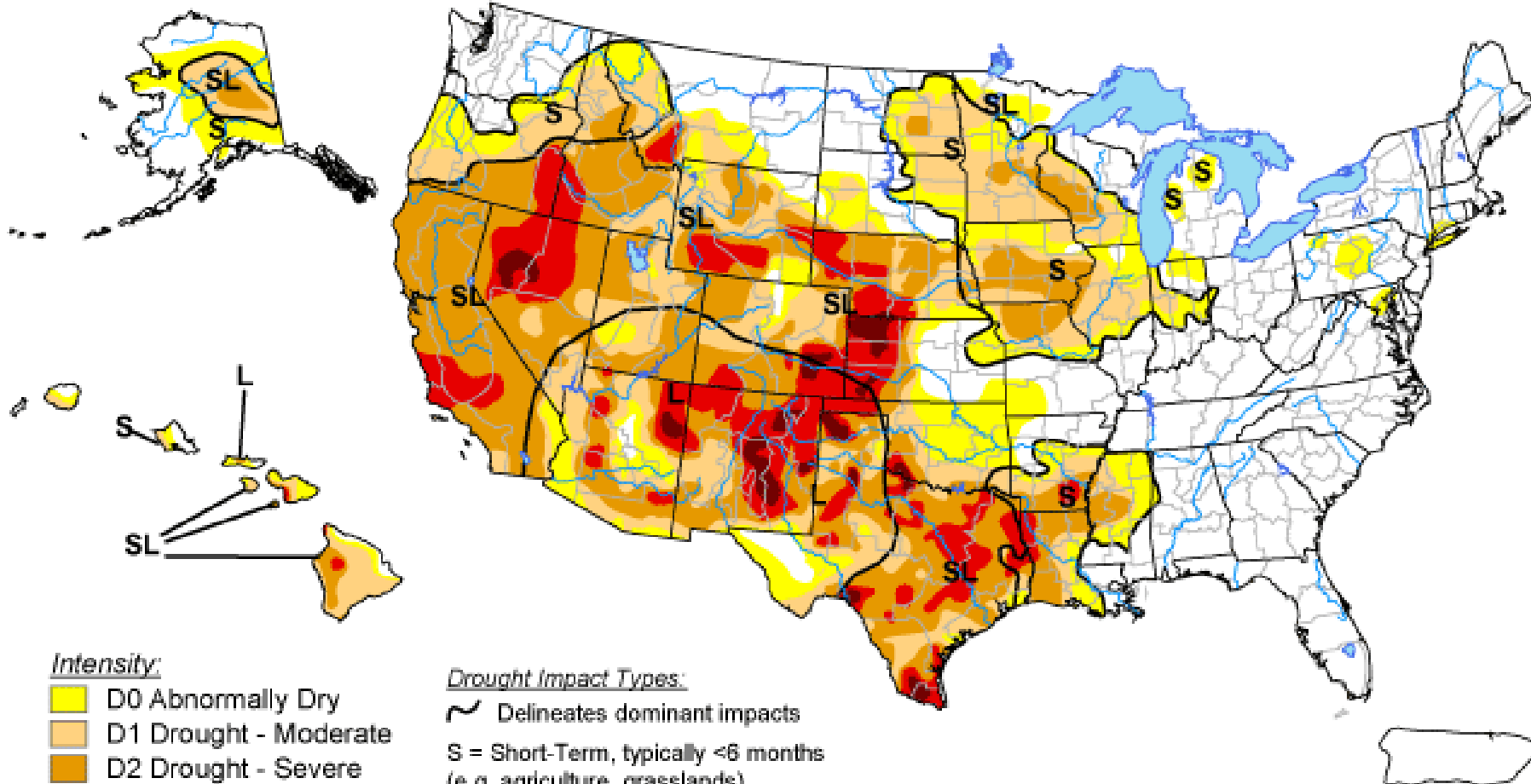
Author: Michael Brewer/L. Love-Brotak, NOAA/NESDIS/NCDC

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

U.S. Drought Monitor

September 10, 2013

Valid 7 a.m. EDT



Intensity:

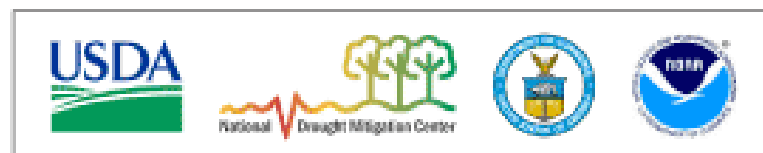
- D0 Abnormally Dry
- D1 Drought - Moderate
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(e.g. hydrology, ecology)

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

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



Released Thursday, September 12, 2013

Author: Anthony Artusa, NOAA/NWS/NCEP/CPC

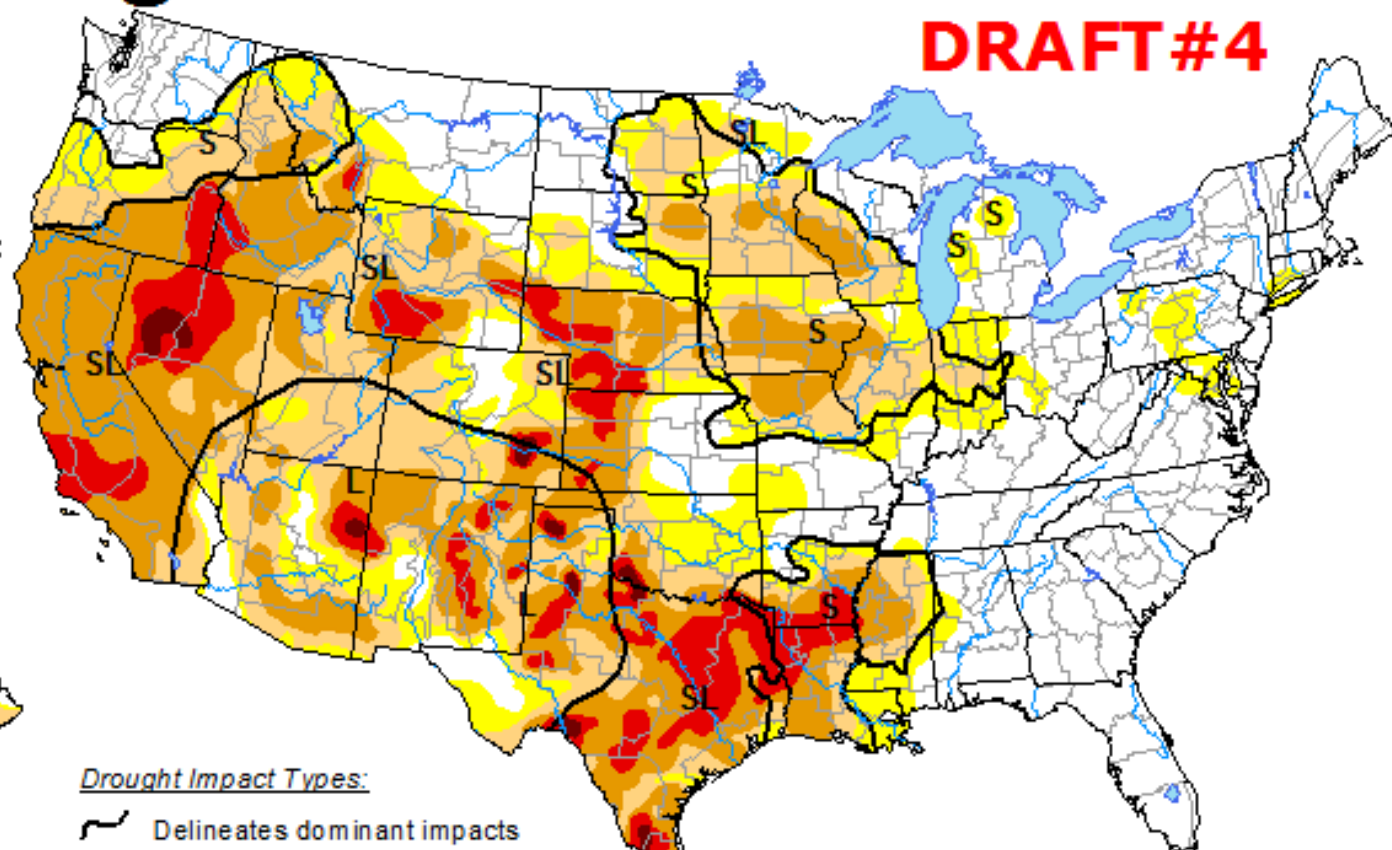
U.S. Drought Monitor

September 17, 2013


Valid 8 a.m. EDT

DRAFT #4

DRAFT #4








Drought Impact Types:

 Delineates dominant impacts

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

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

Intensity:

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

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

DRAFT #4



Released Thursday, September 19, 2013

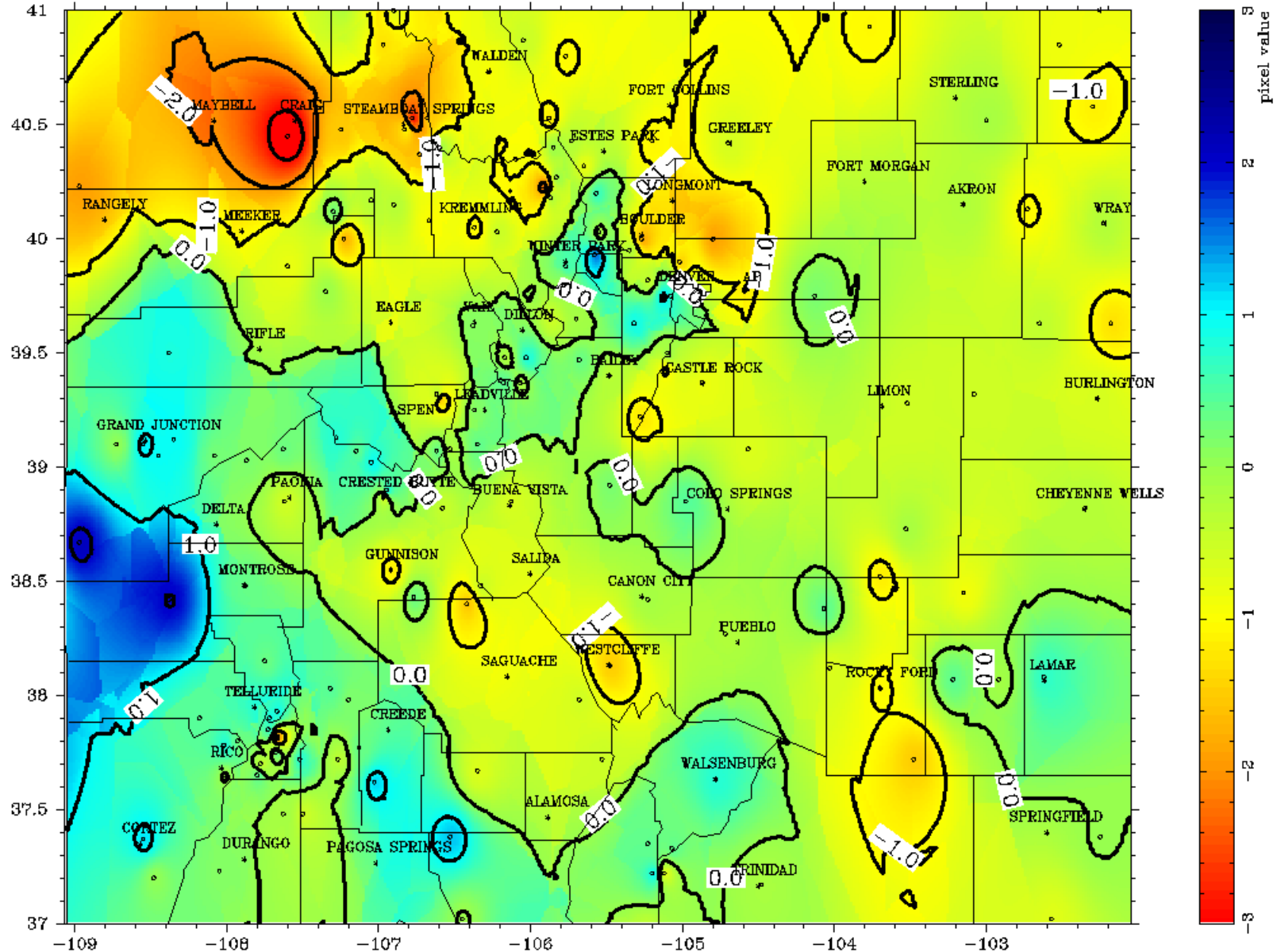
Author: David Miskus, NOAA/NWS/NCEP/CPC

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

Colorado

8/2013 3 mon. SPI

JULESBURG



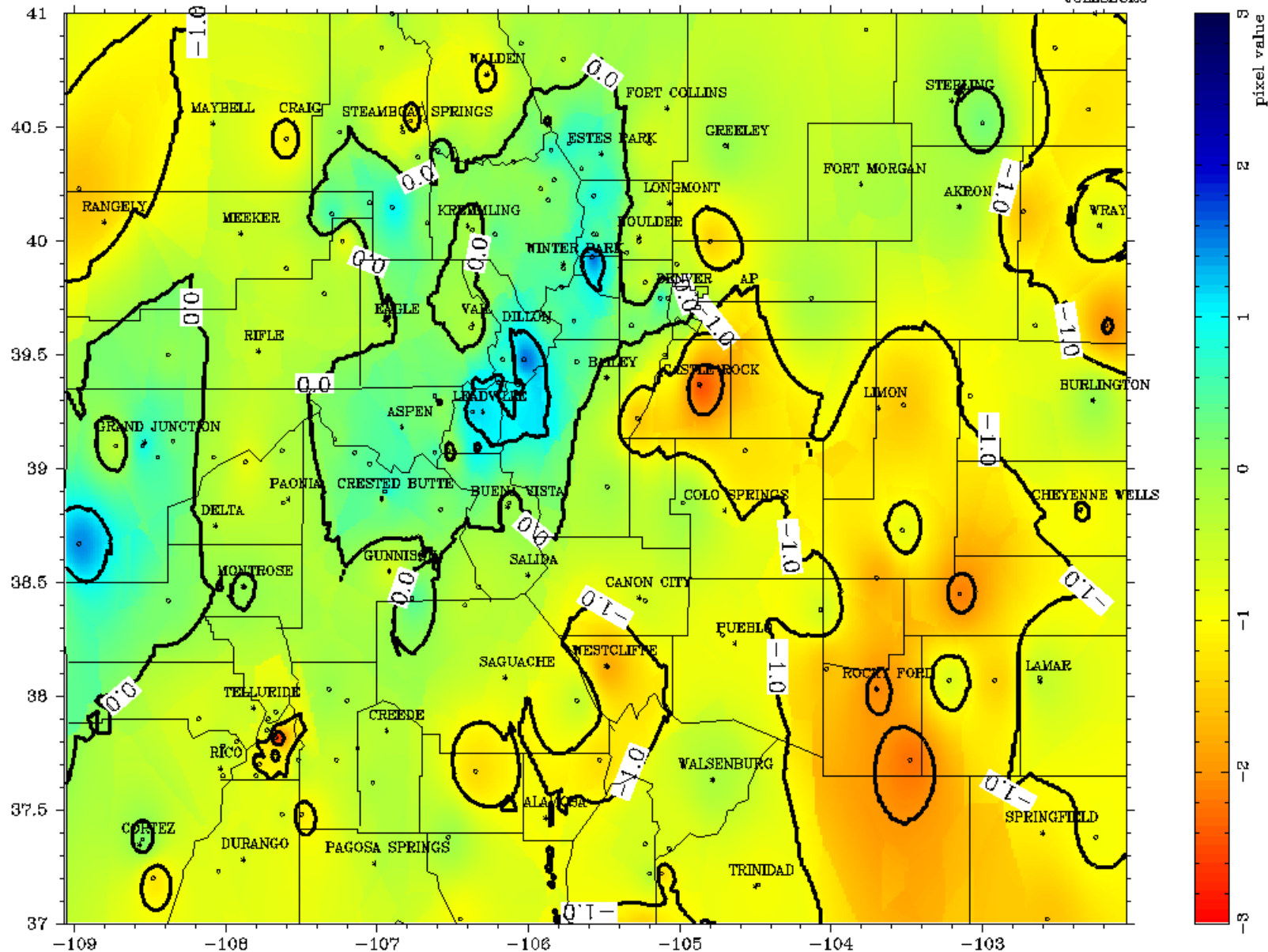
100 % < 2.0	12 % < -1.0
97 % < 1.0	2 % < -2.0
68 % < 0.0	0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

Colorado

8/2013 6 mon. SPI

JULESBURG



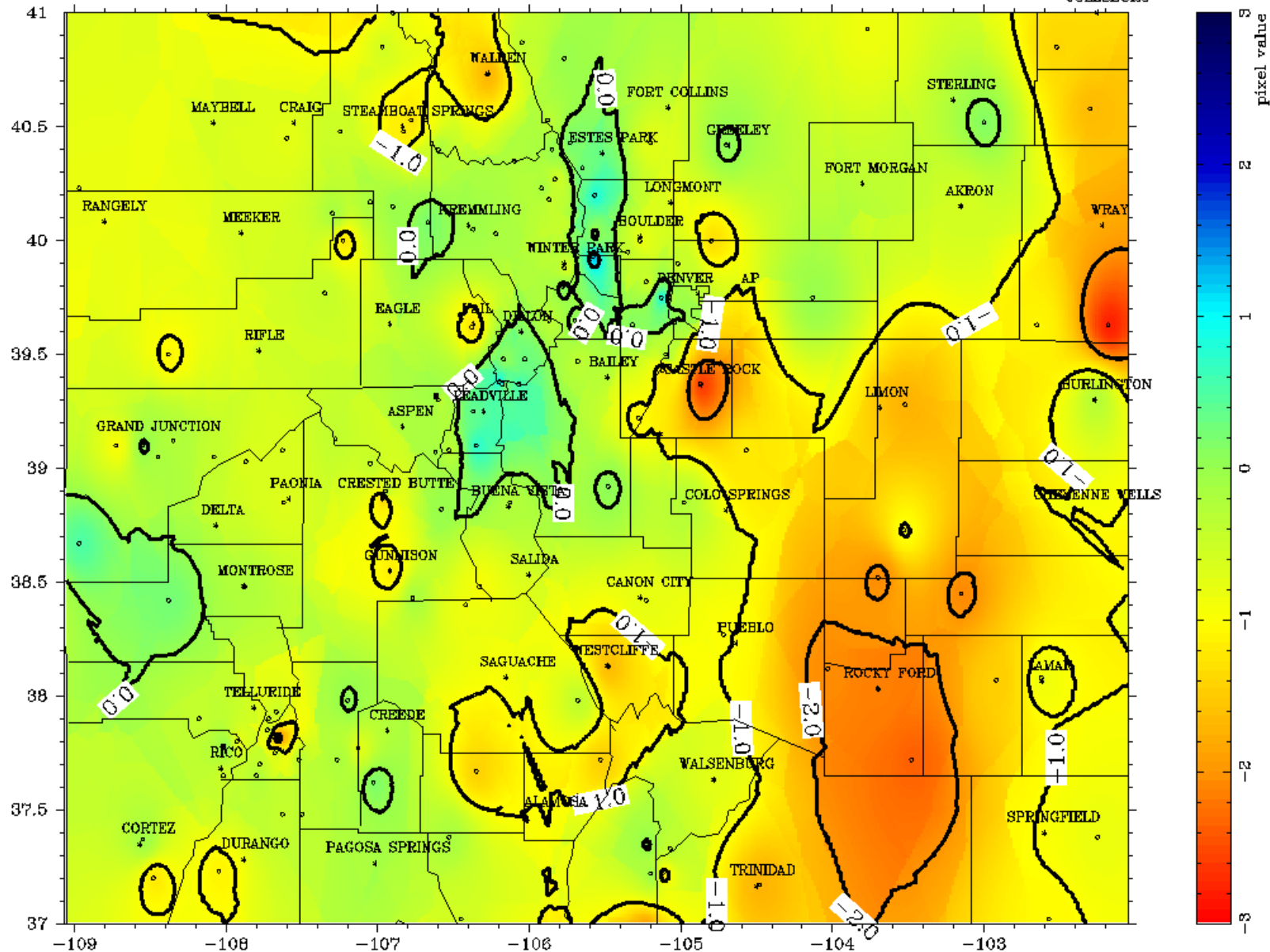
100 % < 2.0	24 % < -1.0
99 % < 1.0	1 % < -2.0
83 % < 0.0	0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

Colorado

8/2013 12 mon. SPI

JULESBURG



100 % < 2.0 30 % < -1.0
100 % < 1.0 4 % < -2.0
95 % < 0.0 0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

Colorado Climate Center

Data and Power Point Presentations available for downloading

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

