



Climate Update

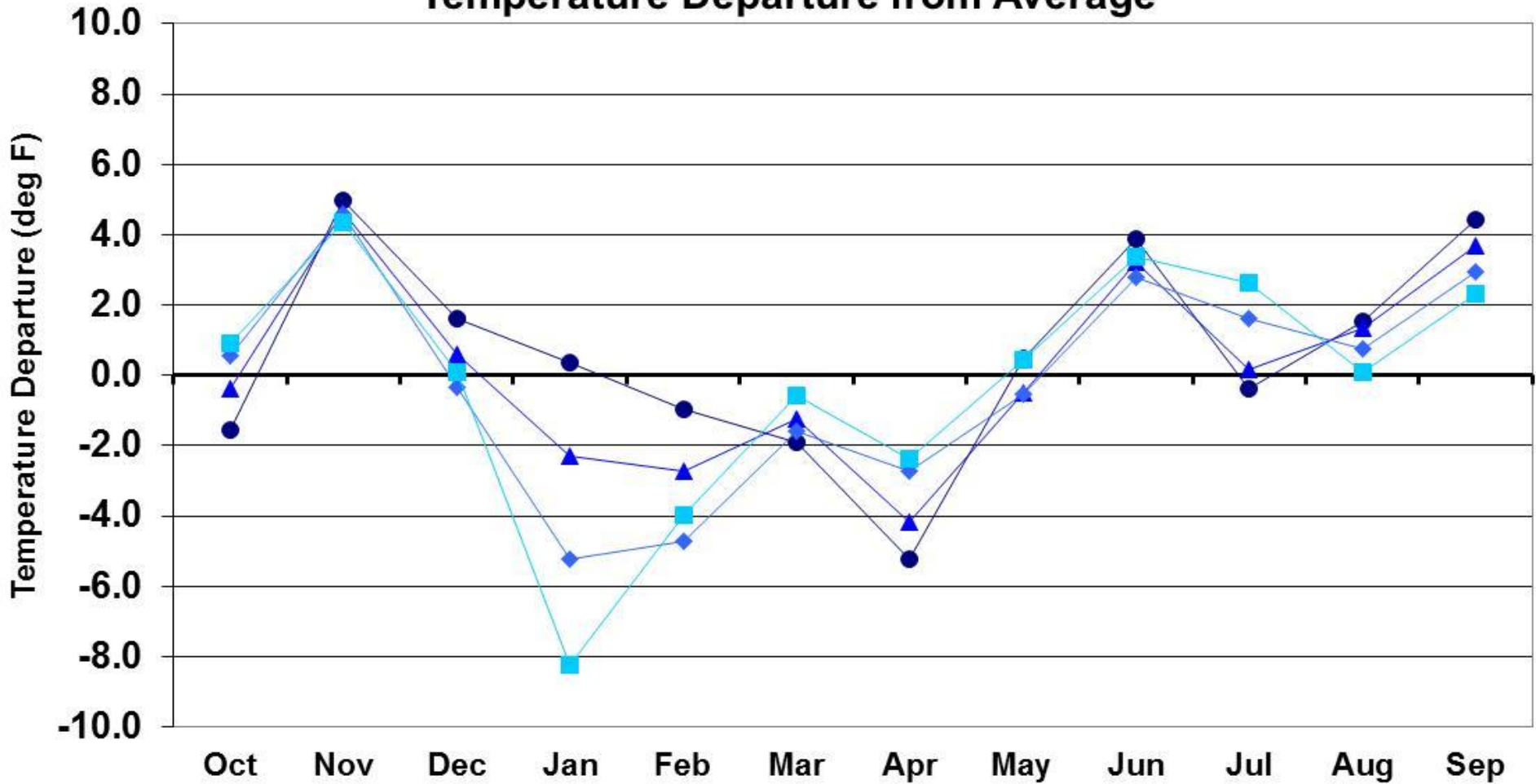
Wendy Ryan
Colorado Climate Center

Colorado Assistant State Climatologist
Colorado State University

Presented to
Water Availability Task Force
21 November 2013
Denver, CO

Water Year 2013 Temperature Departures

Water Year 2013
Temperature Departure from Average



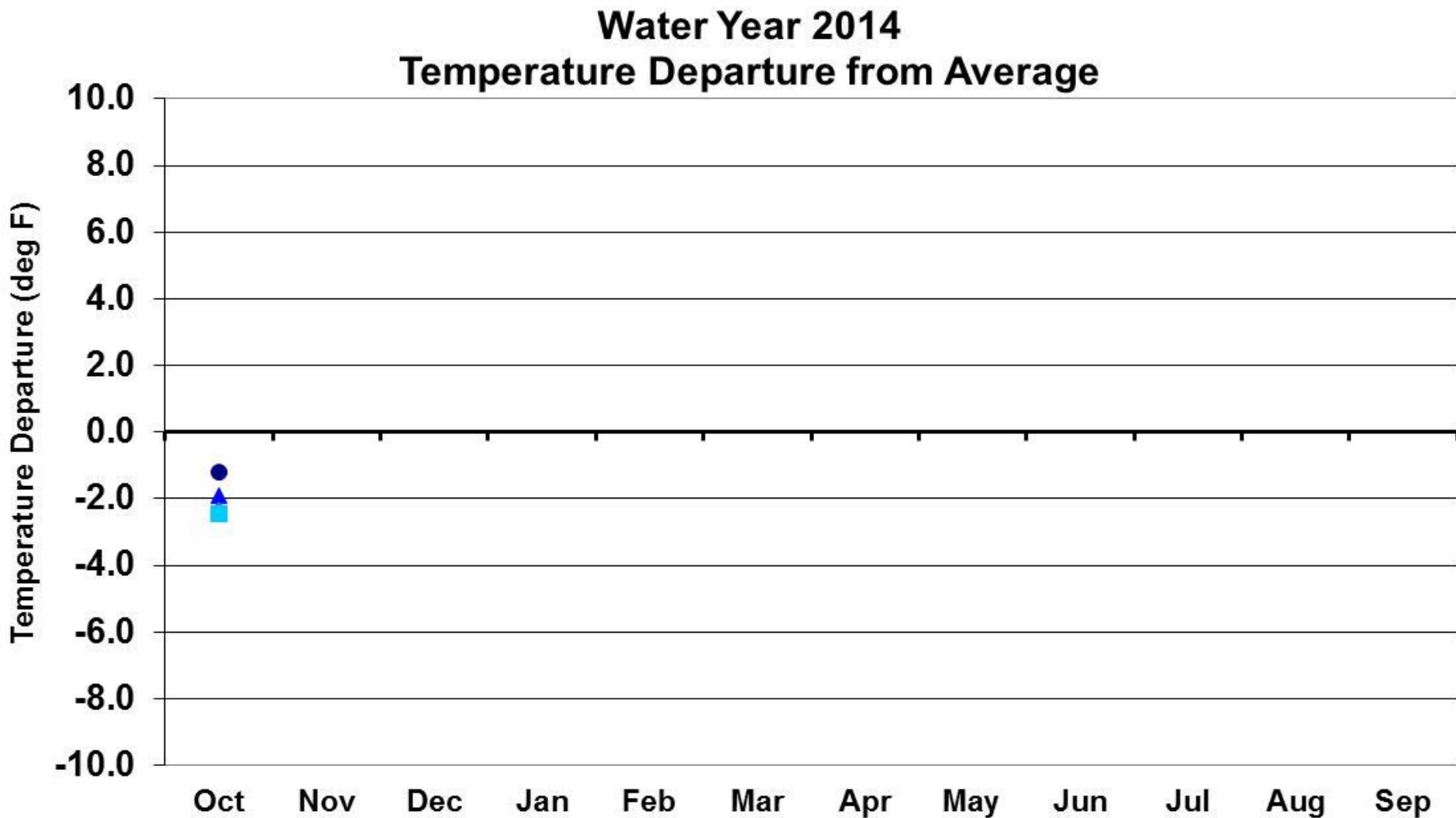
● Eastern Plains

▲ Foothills

◆ Mountains

■ Western Valleys

Water Year 2014 Temperature Departures



● Eastern Plains

▲ Foothills

◆ Mountains

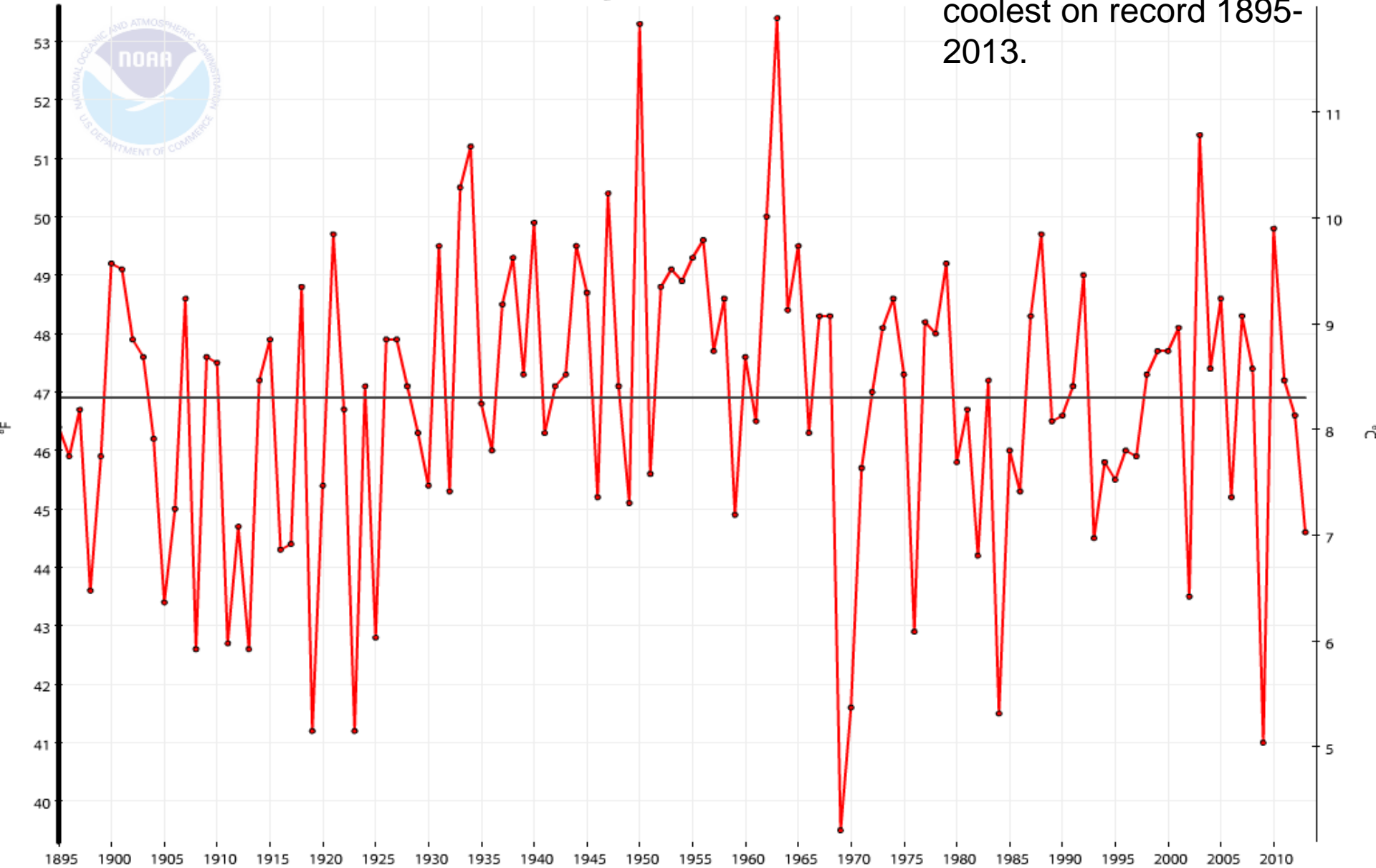
■ Western Valleys

October Average Temperature History for Colorado (NCDC)

Colorado, Temperature, October

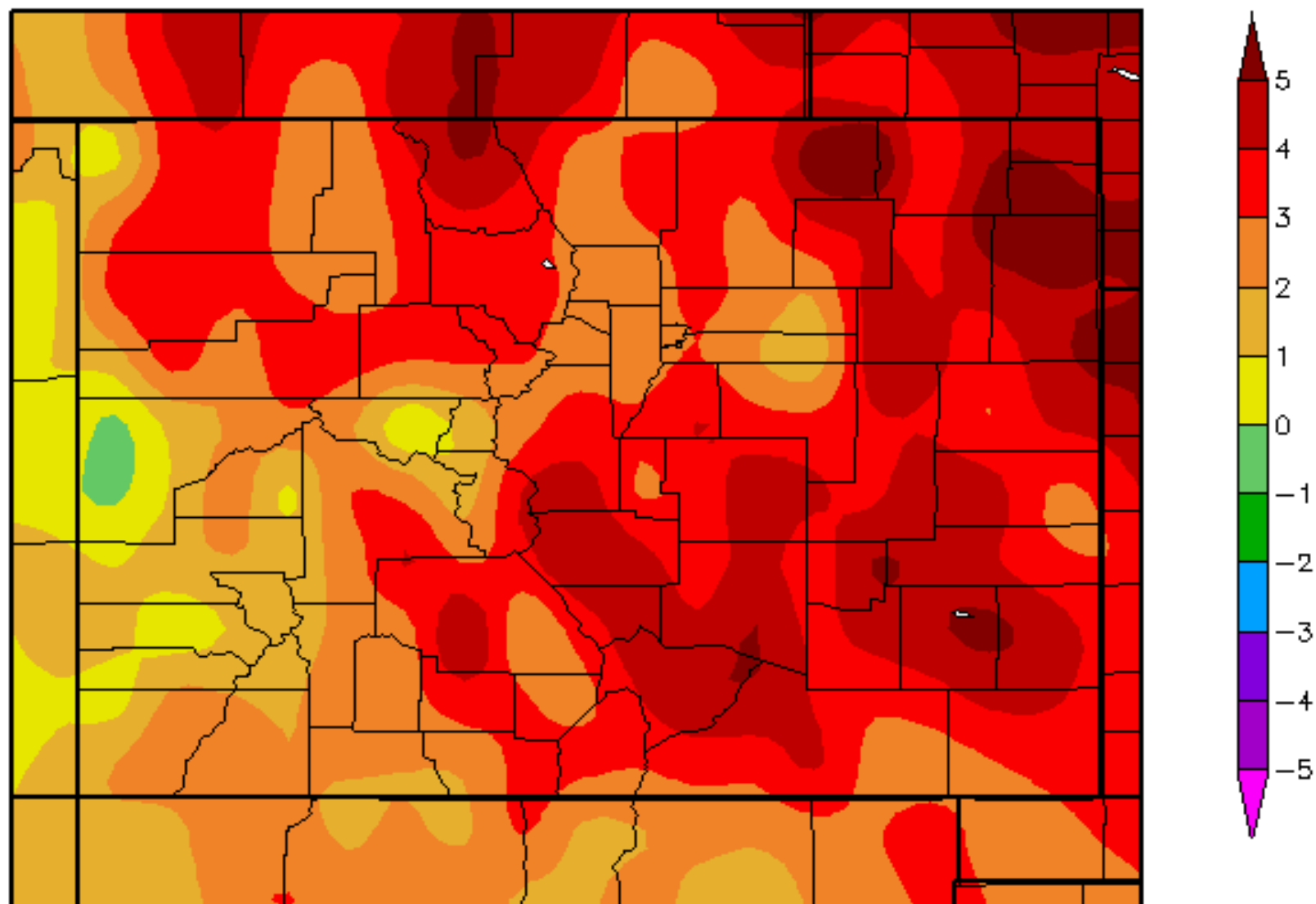
— 1901-2000 Avg: 46.9°F ●— Temperature

44.6 Ranks as the 19th coolest on record 1895-2013.



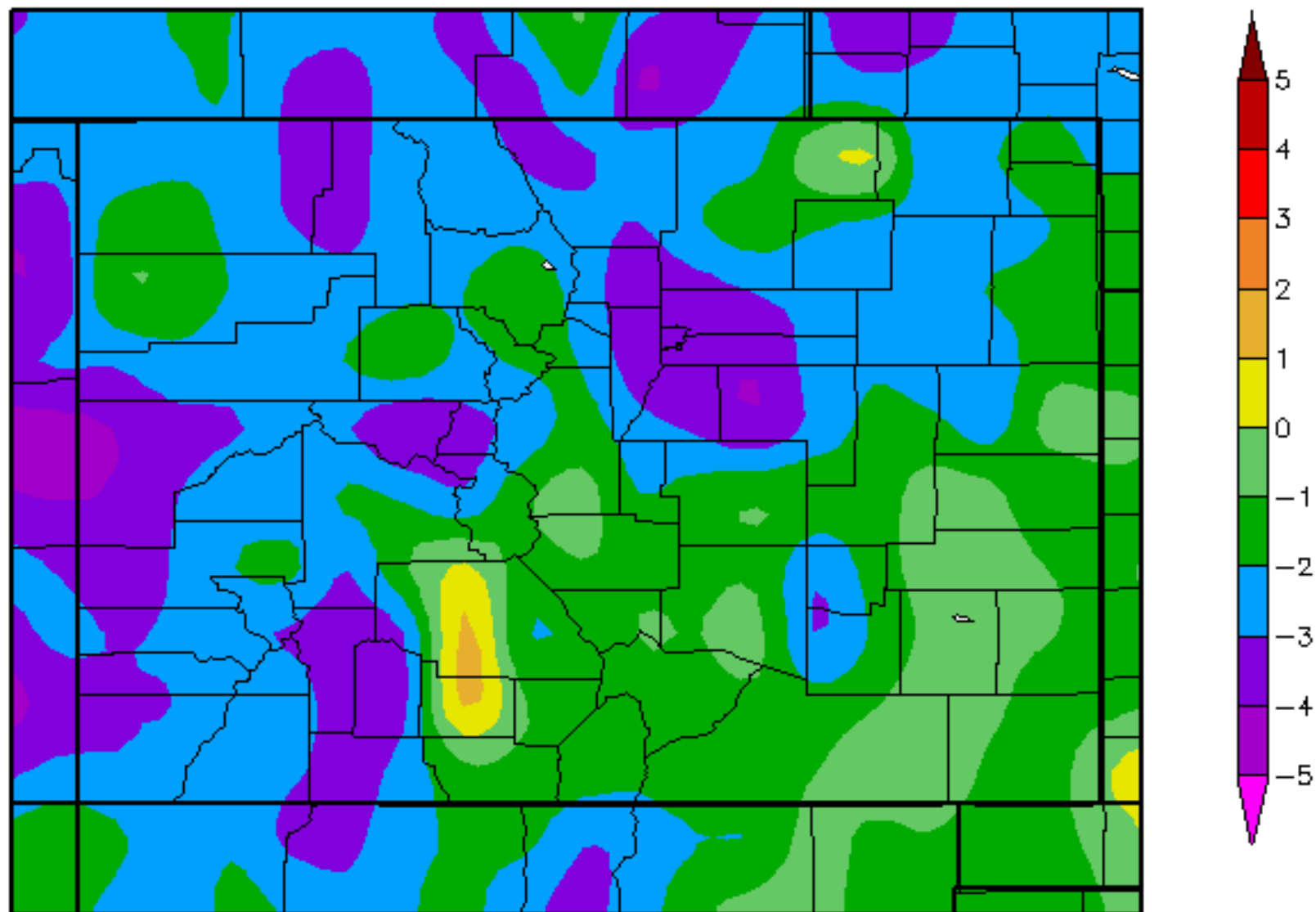
Departure from Normal Temperature (F)

9/1/2013 – 9/30/2013



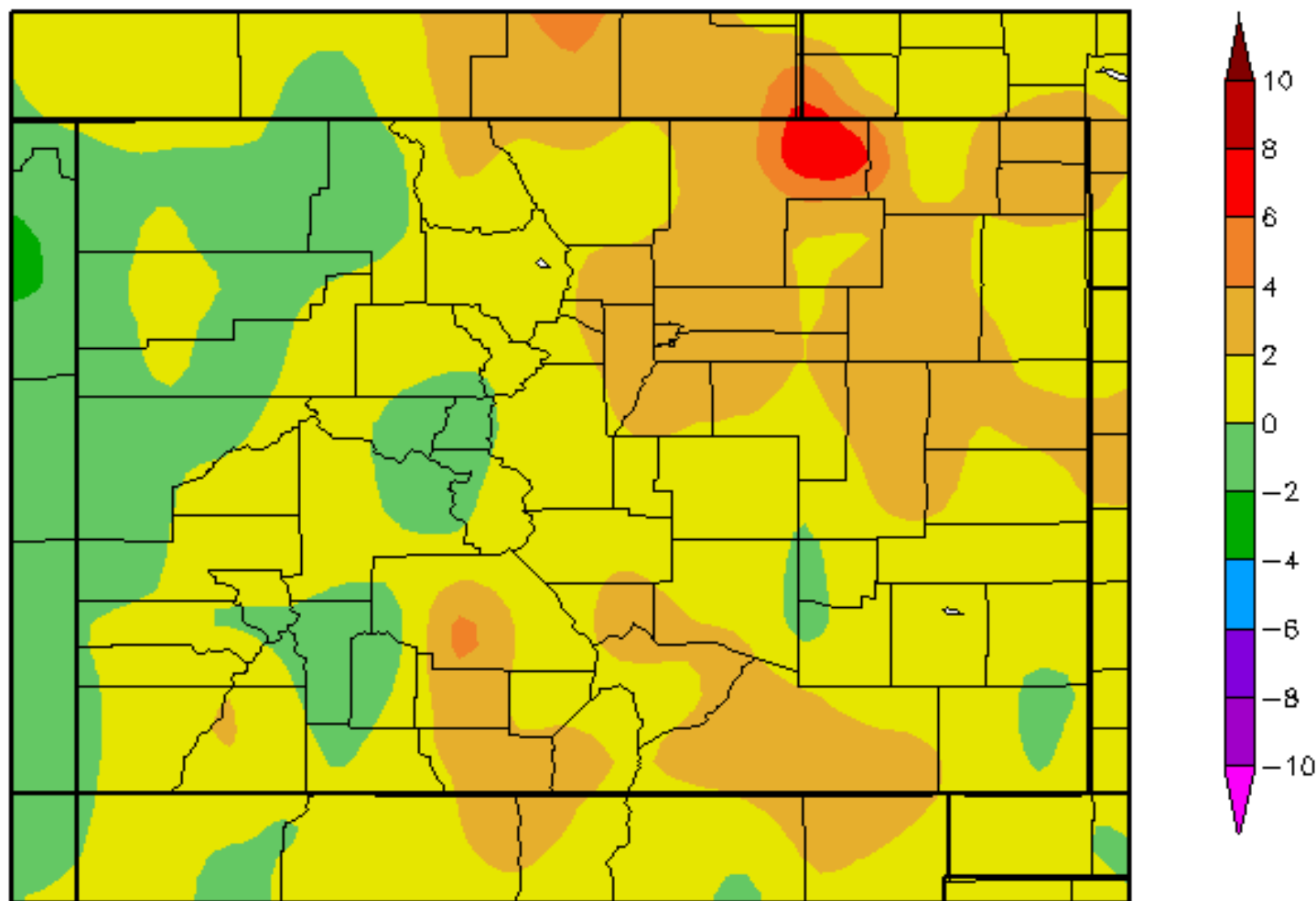
Departure from Normal Temperature (F)

10/1/2013 – 10/31/2013

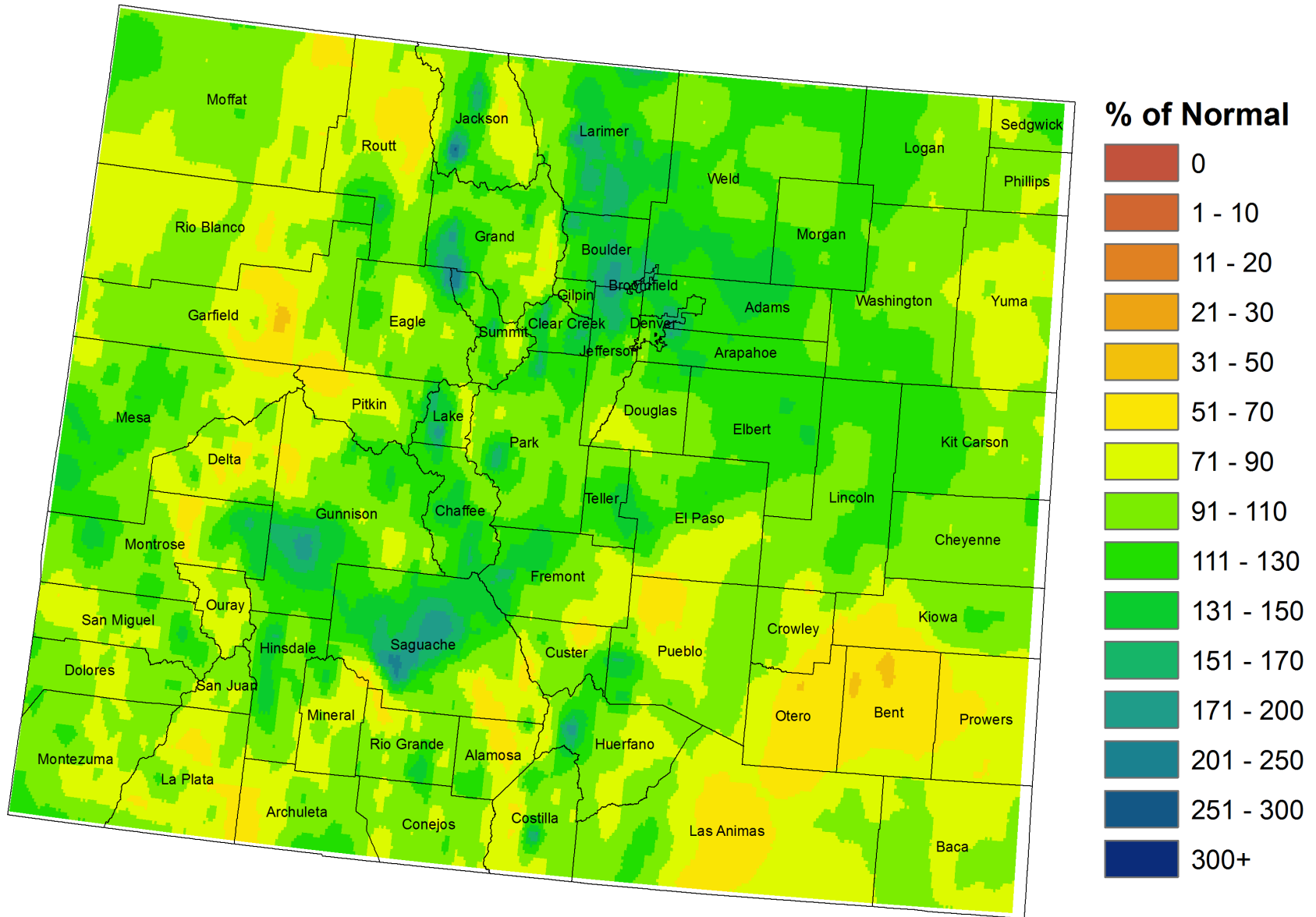


Departure from Normal Temperature (F)

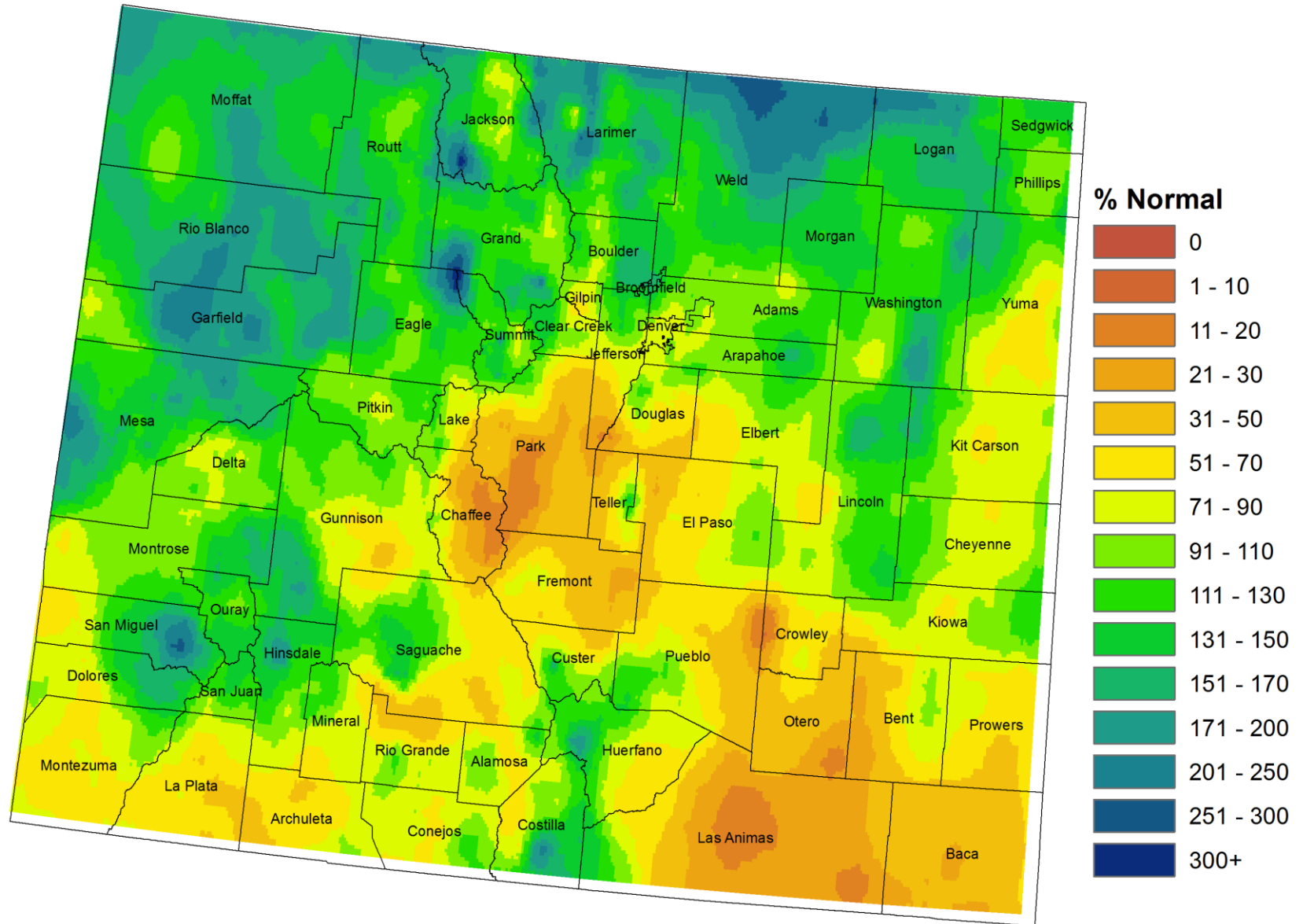
11/1/2013 – 11/19/2013



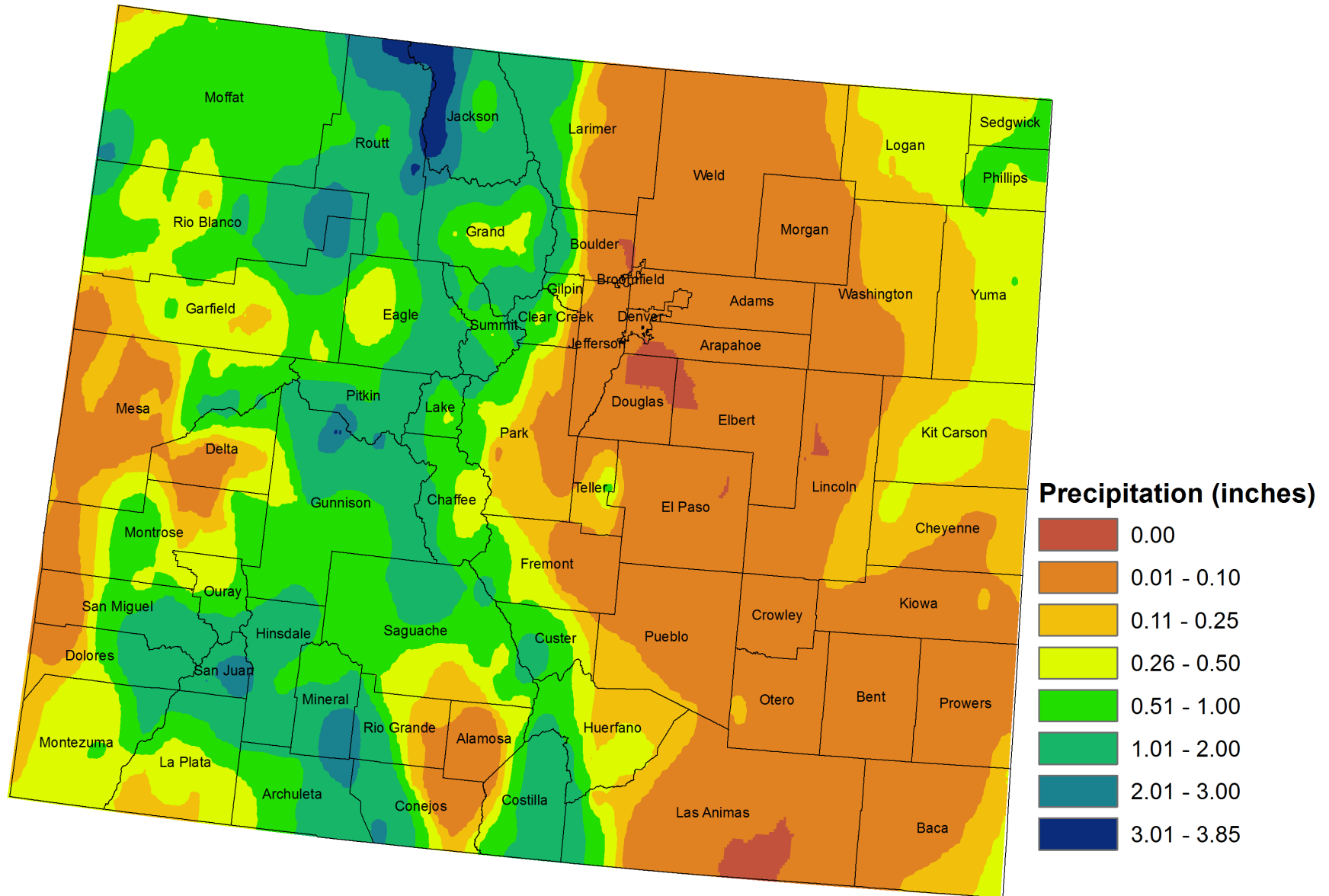
Colorado Water Year 2013 Precipitation as Percentage of Normal (October 2012 - September 2013)



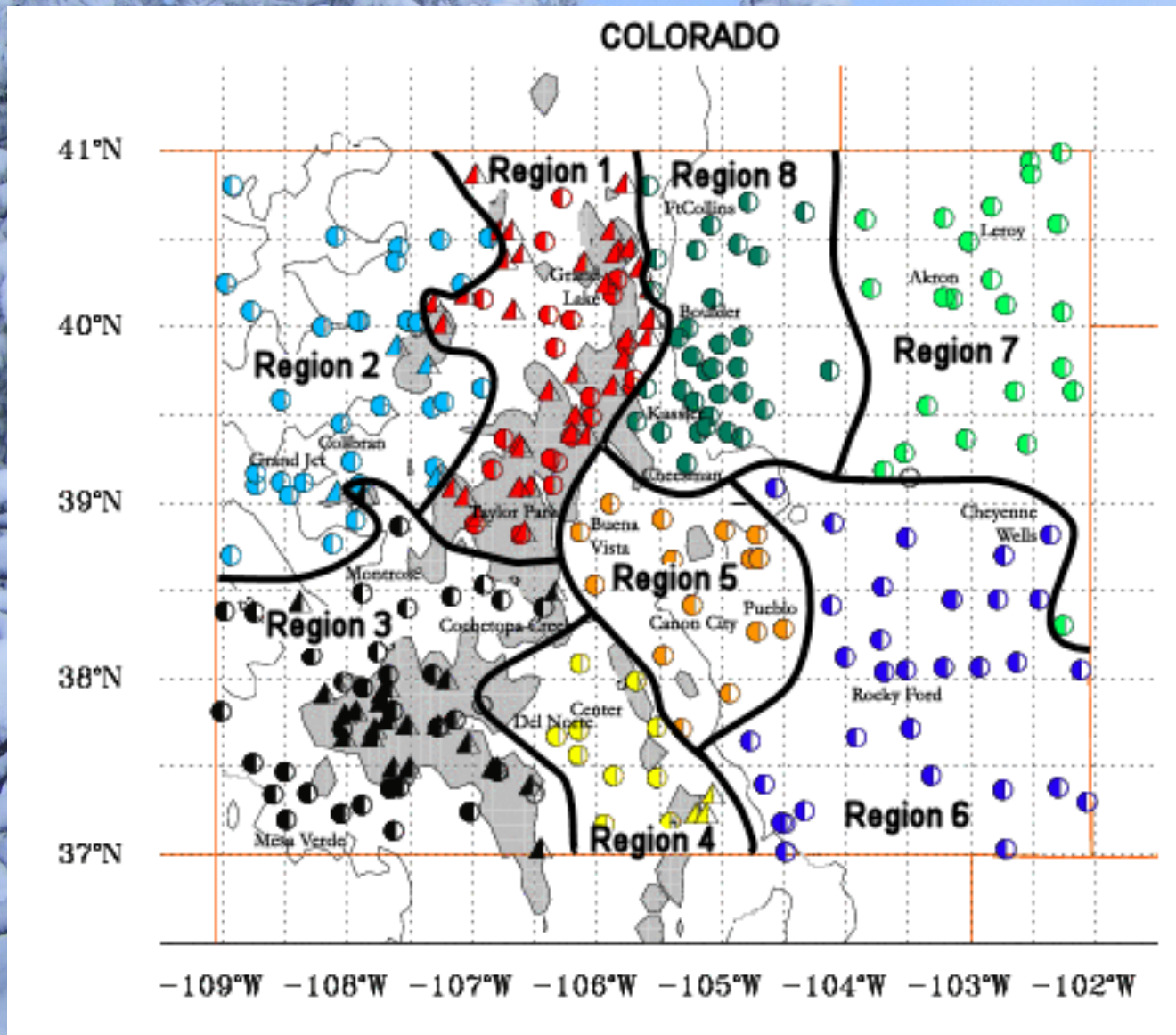
Colorado October 2013 Precipitation as Percentage of Normal



Colorado Month to Date Precipitation 1 - 18 November 2013

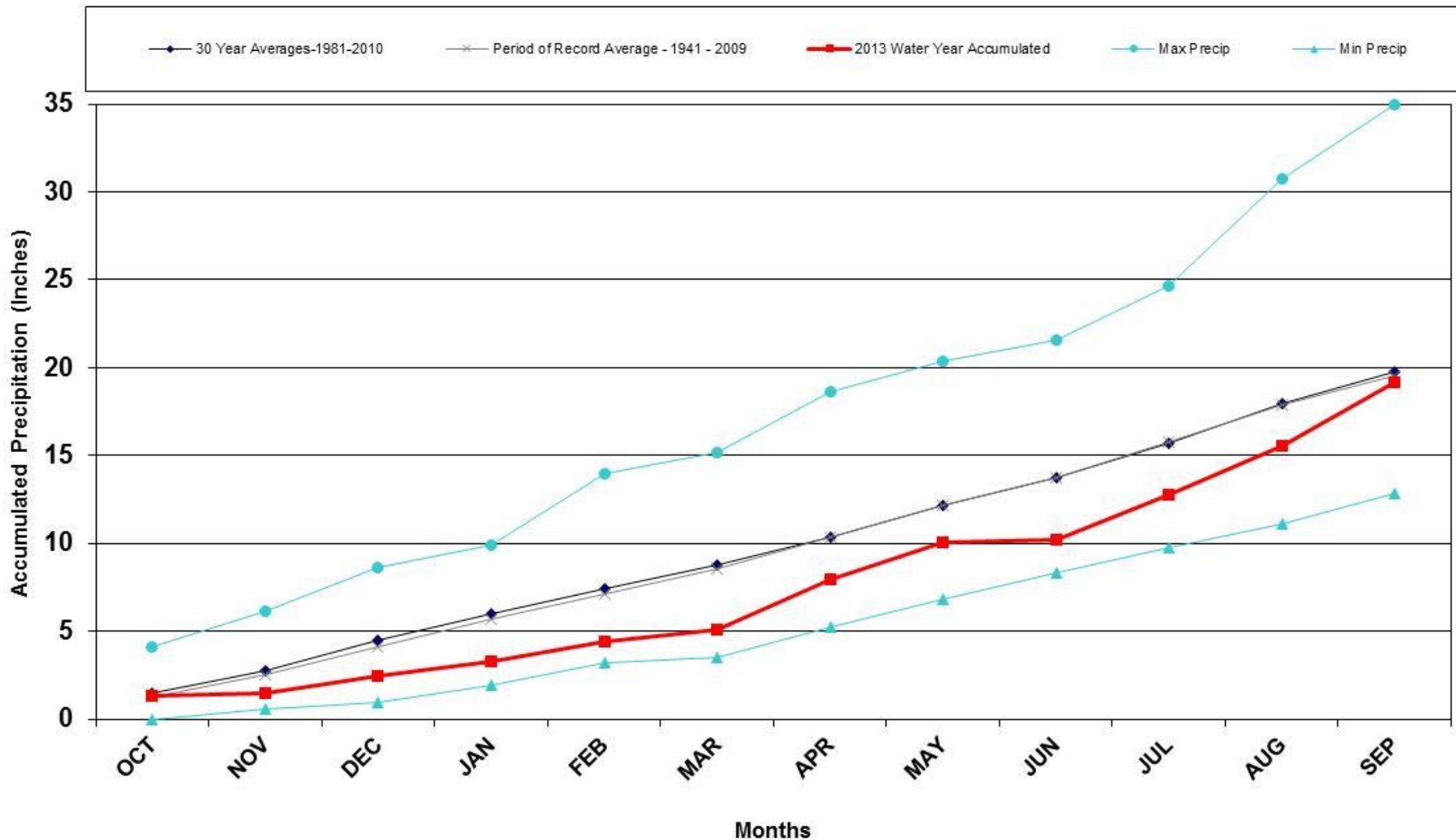


Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO



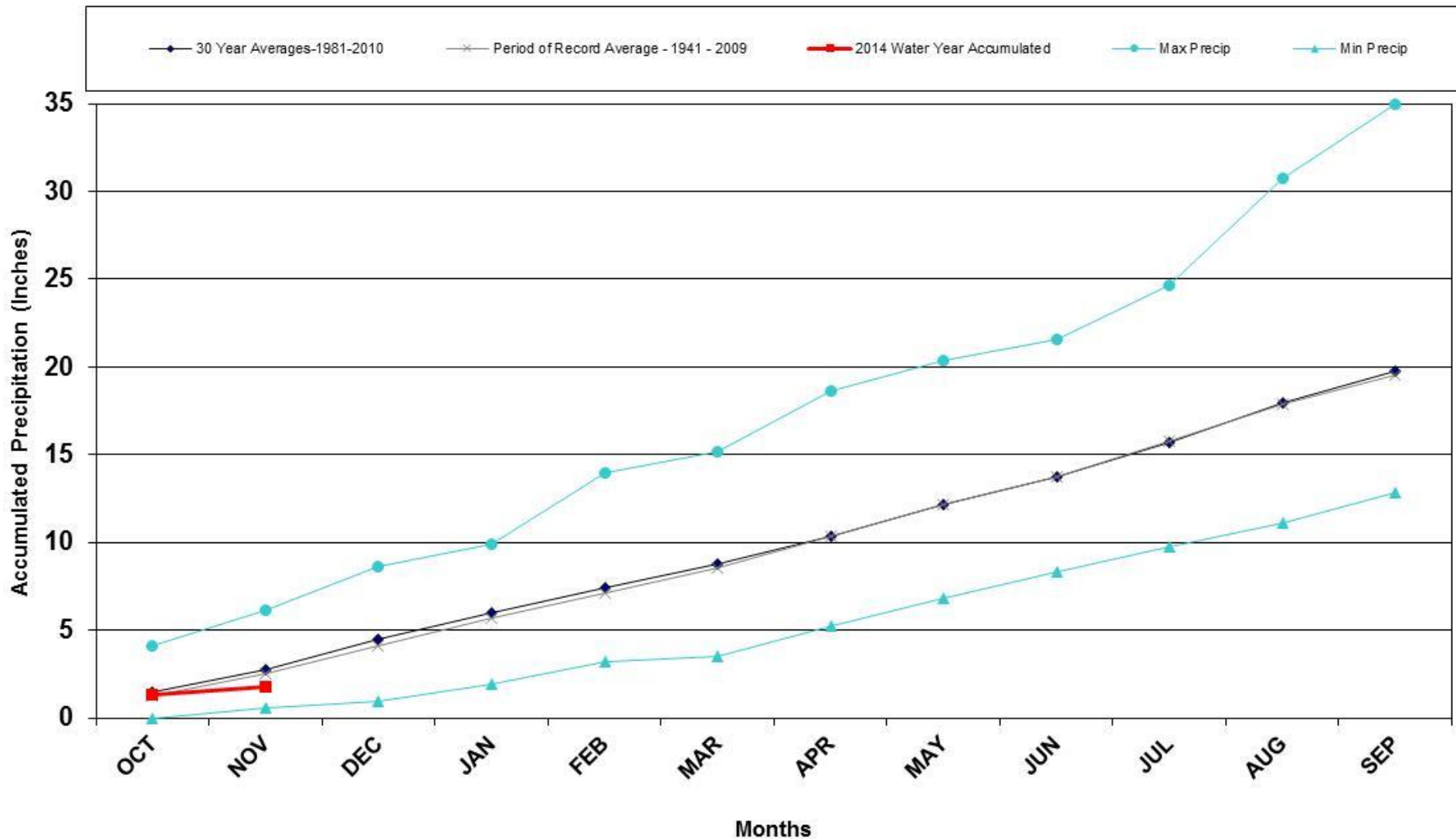
Division 1 – Grand Lake 1NW

Grand Lake 1 NW 2013 Water Year



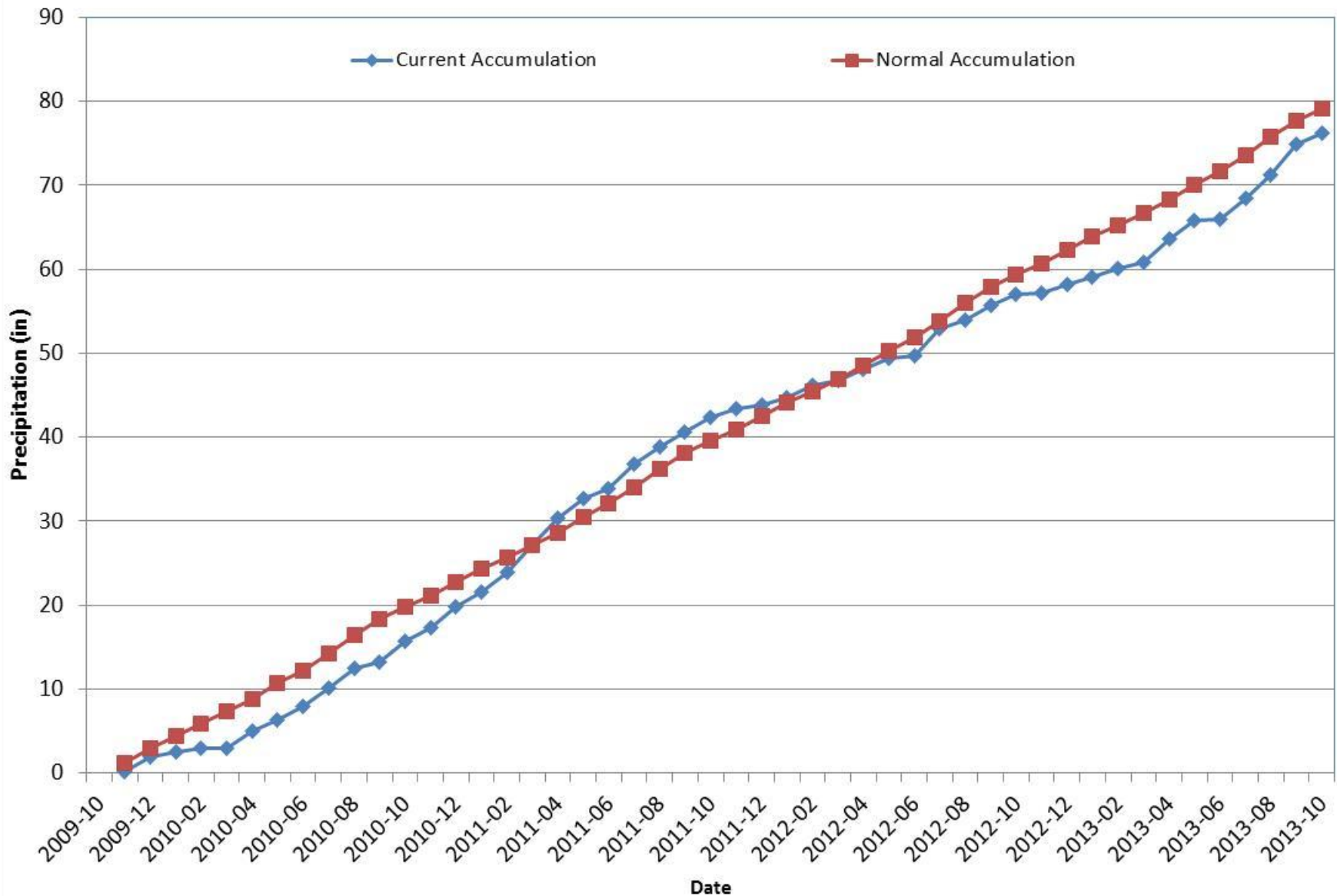
Division 1 – Grand Lake 1NW

Grand Lake 1 NW 2014 Water Year



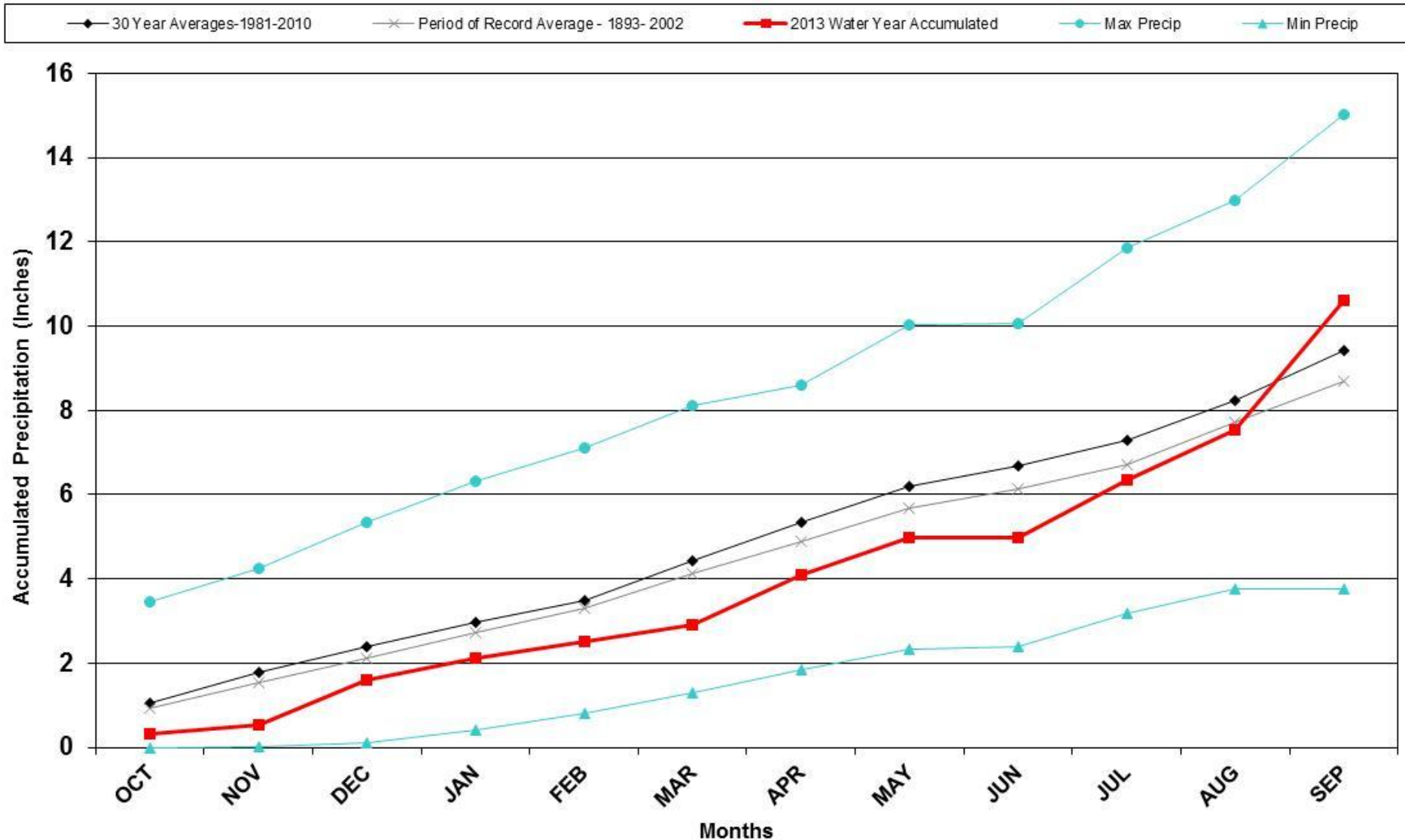
Division 1 – Grand Lake 1NW

Grand Lake 1NW Precipitation Accumulation



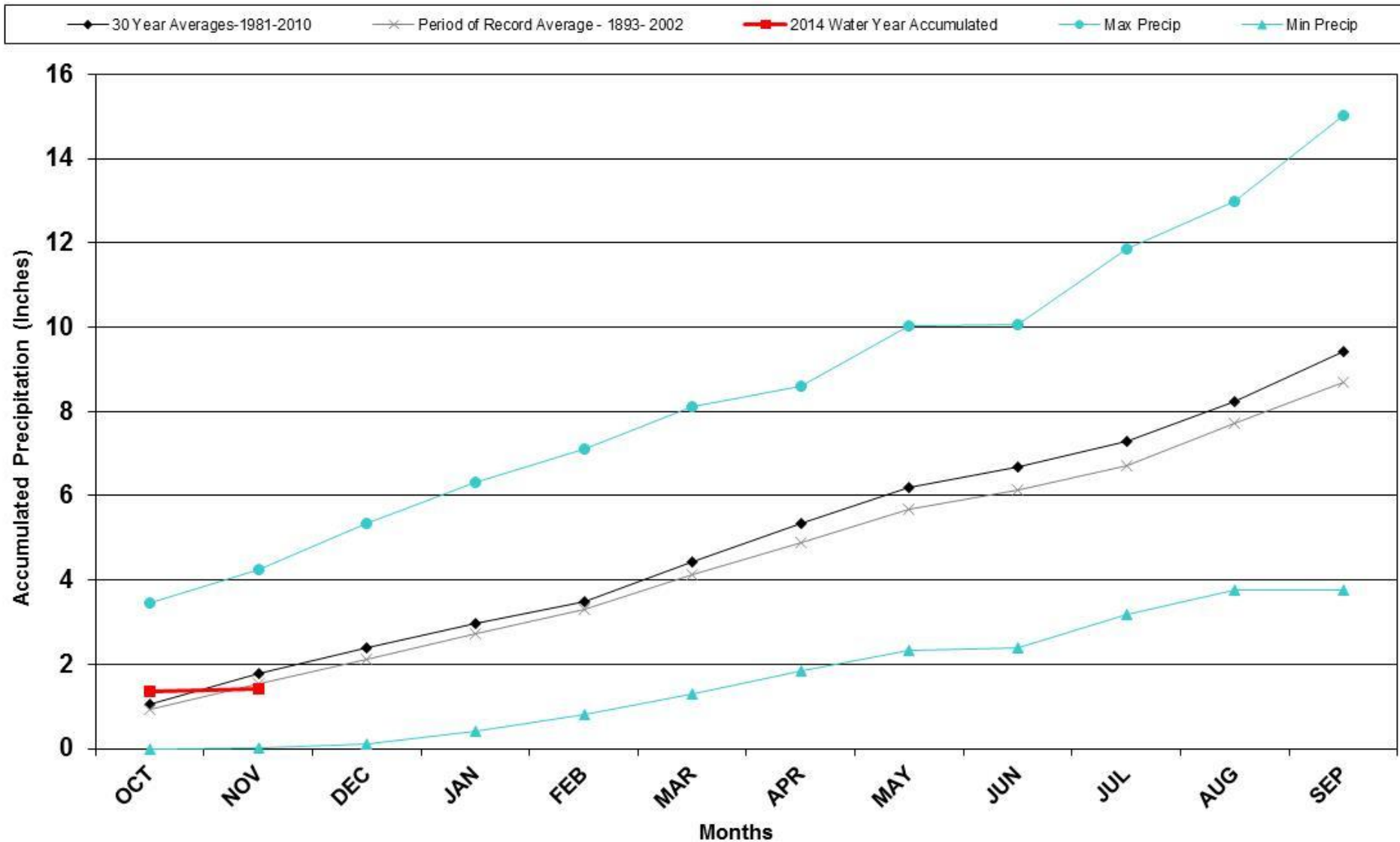
Division 2 – Grand Junction

Grand Junction WSFO 2013 Water Year



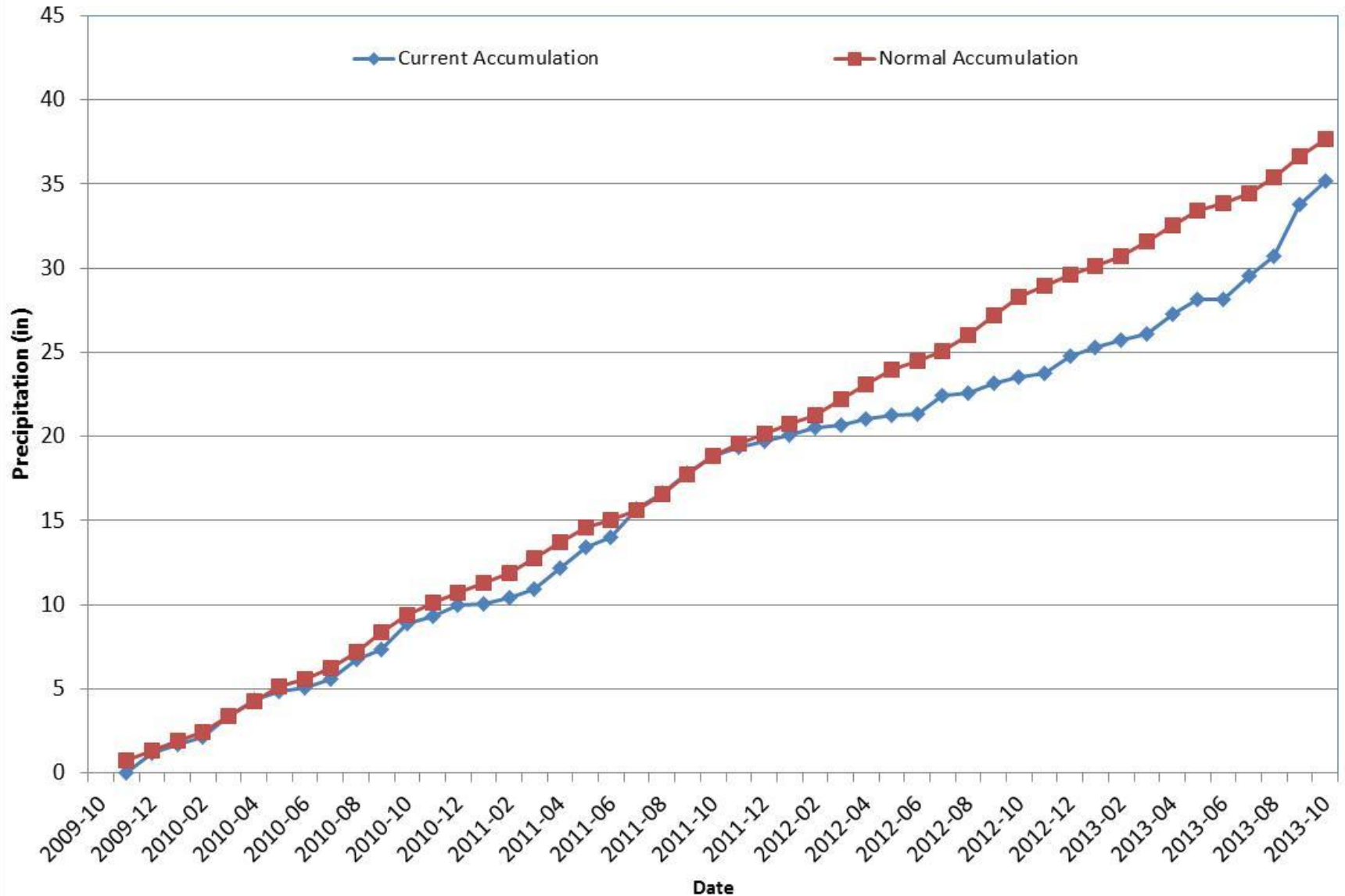
Division 2 – Grand Junction

Grand Junction WSFO 2014 Water Year



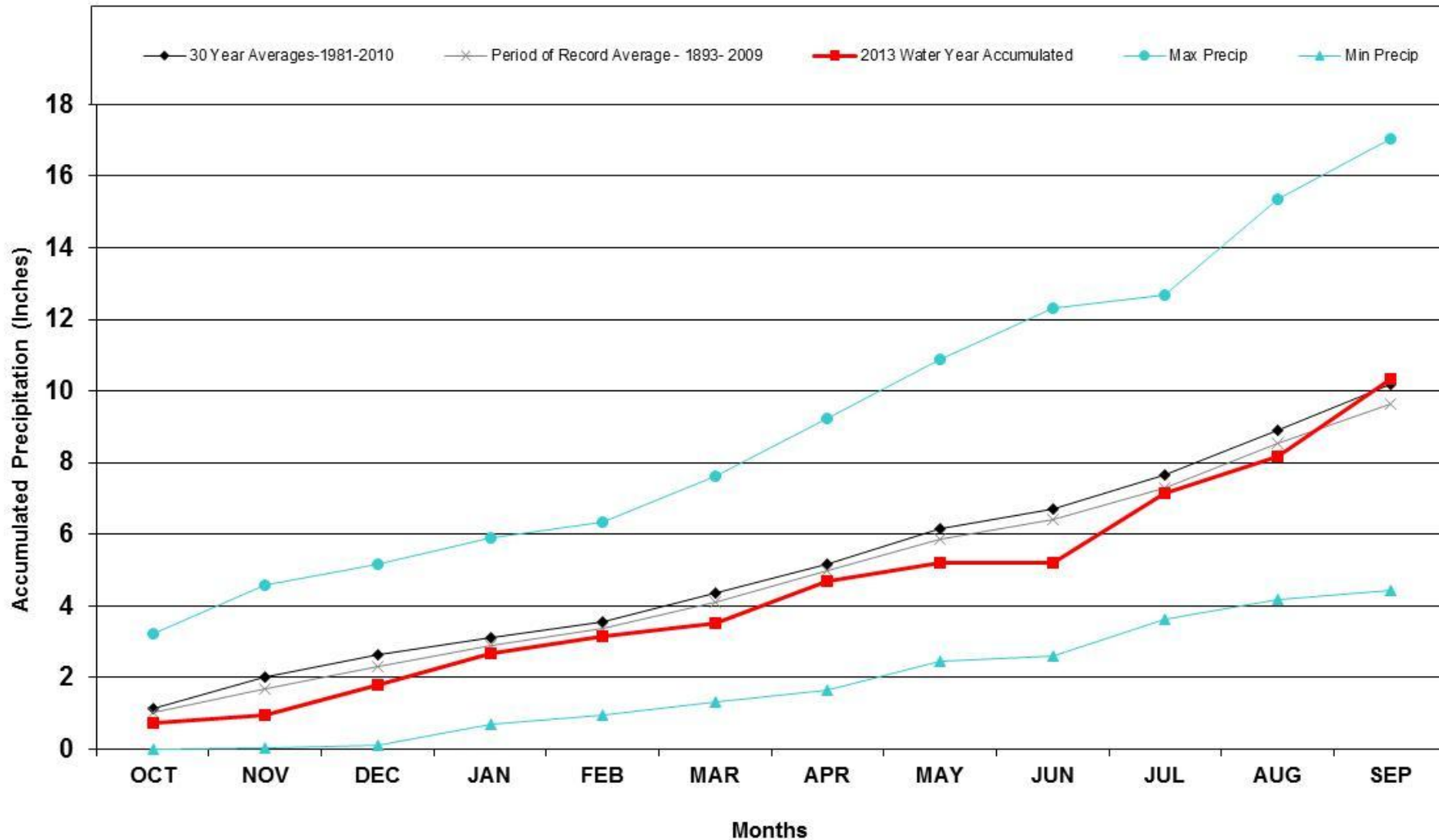
Division 2 – Grand Junction

Grand Junction Precipitation Accumulation



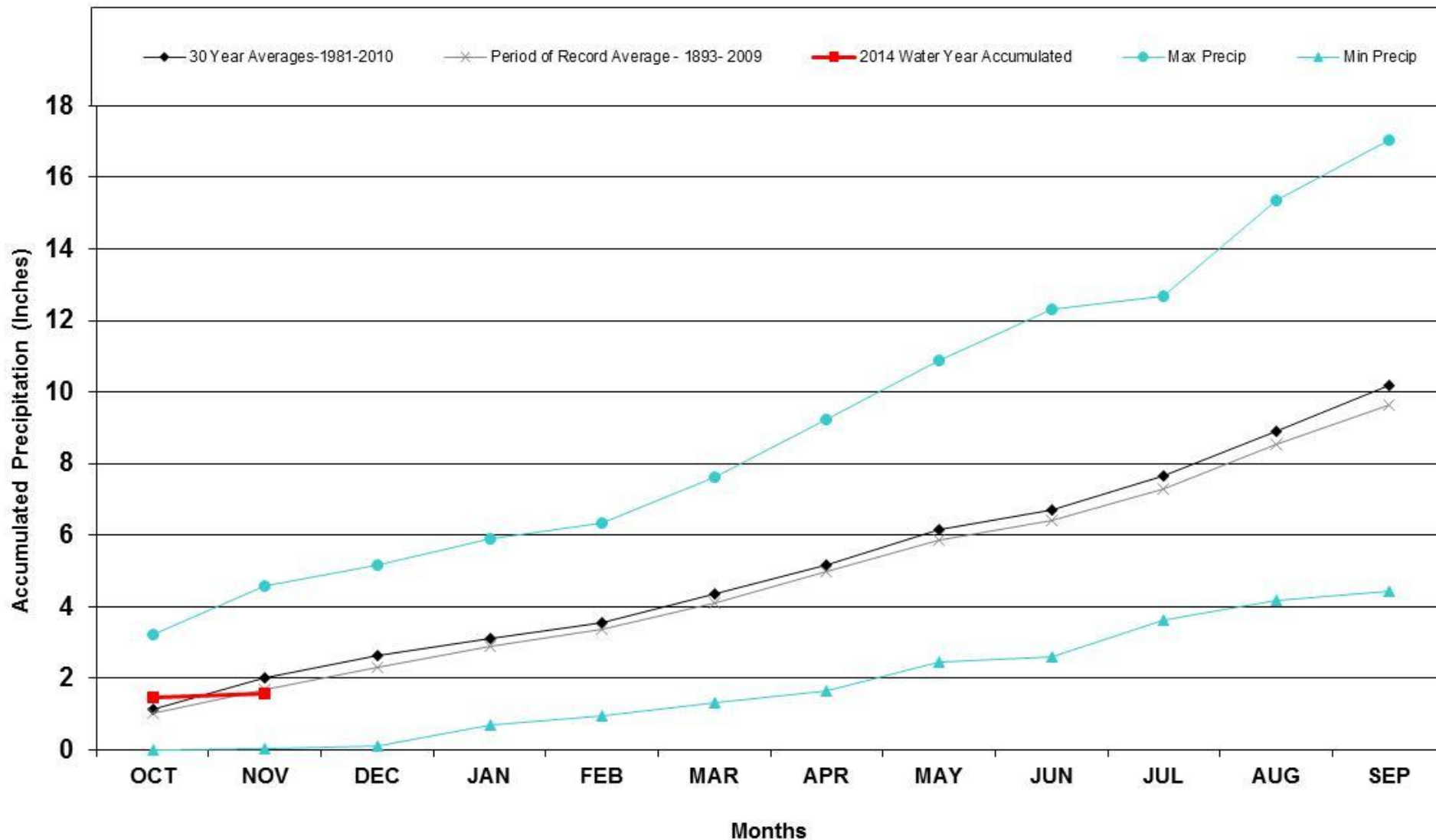
Division 3 – Montrose

Montrose #2 2013 Water Year

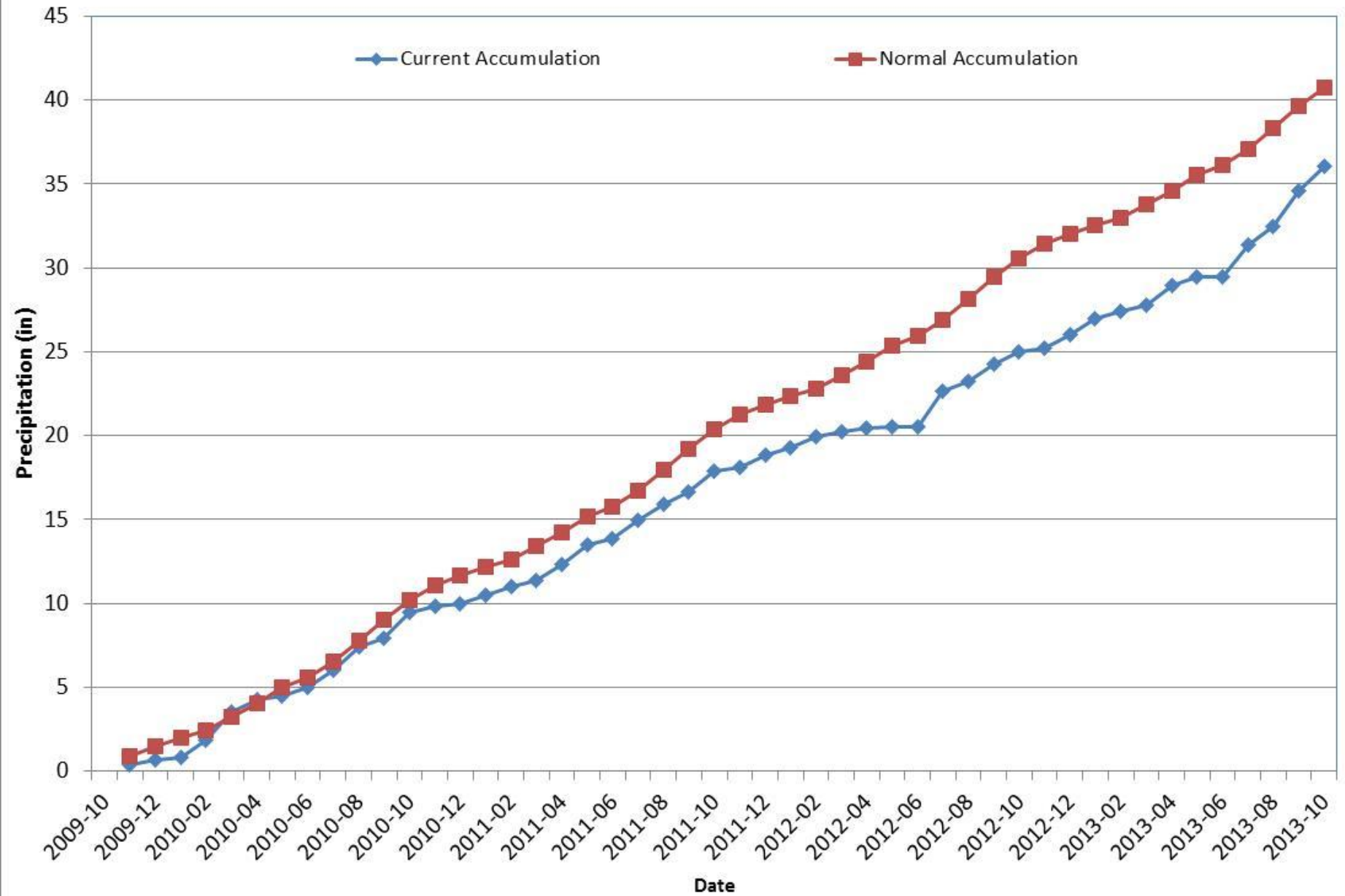


Division 3 – Montrose

Montrose #2 2014 Water Year

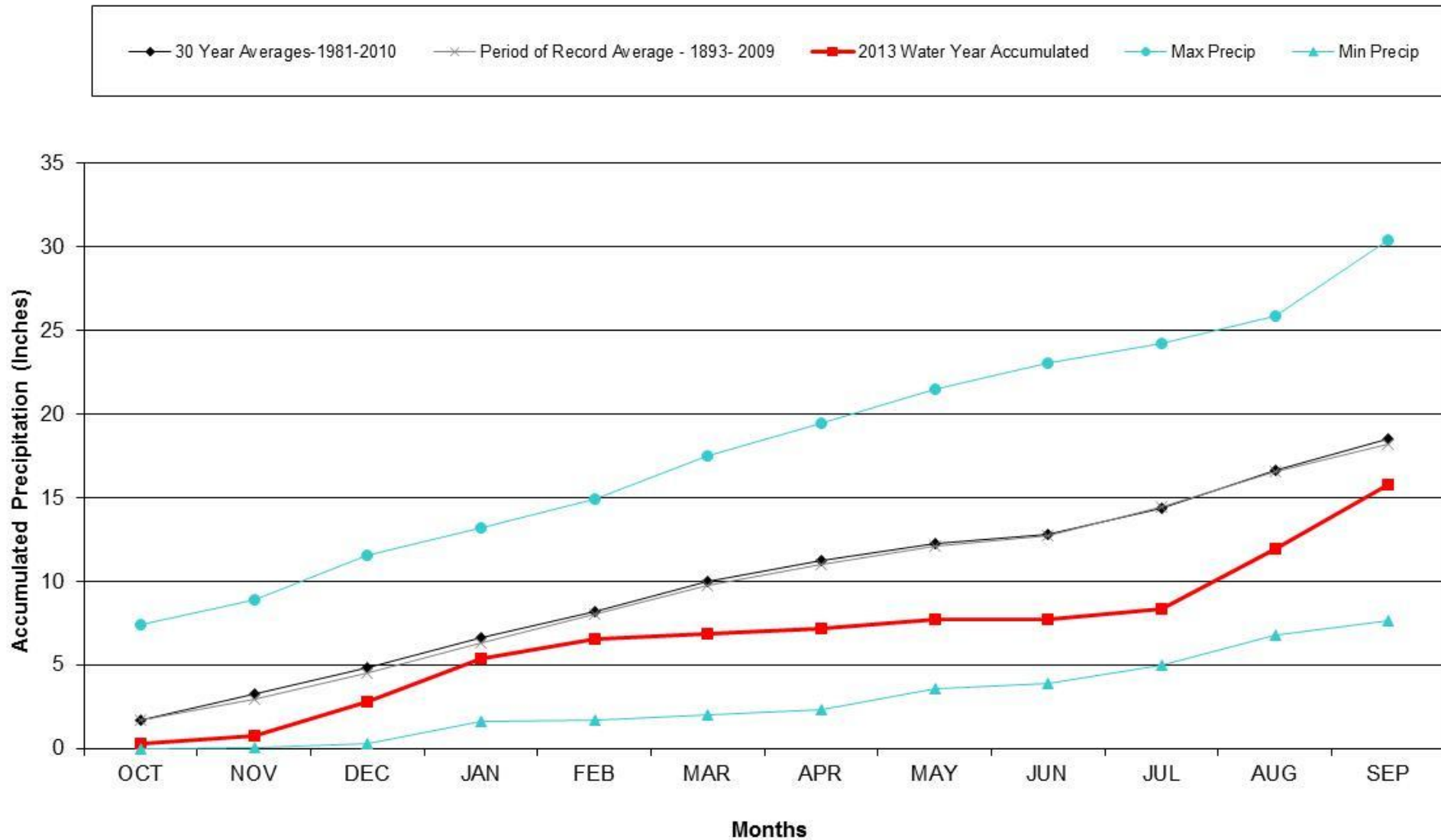


Montrose #2 Precipitation Accumulation



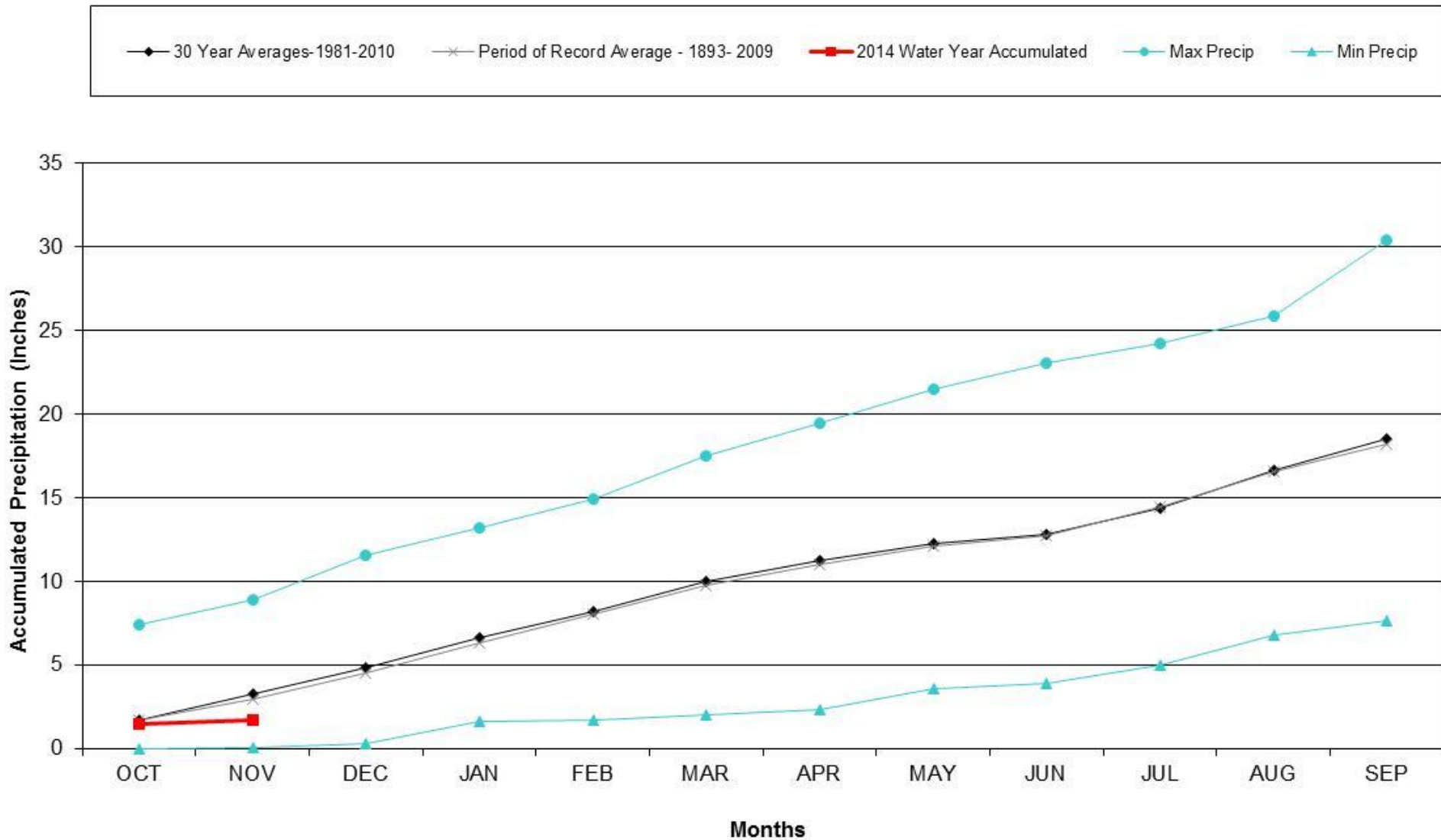
Division 3 – Mesa Verde NP

Mesa Verde NP 2013 Water Year



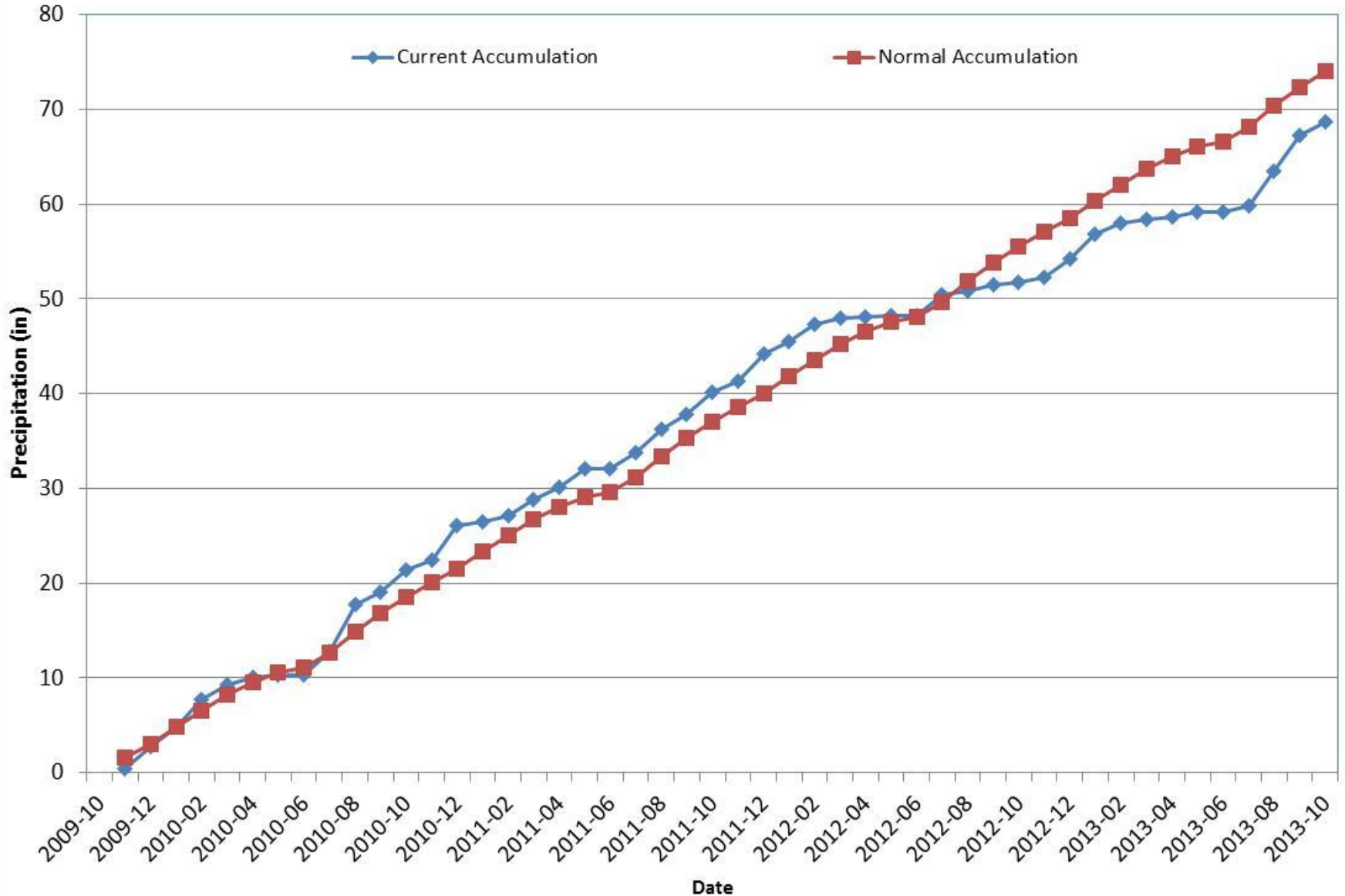
Division 3 – Mesa Verde NP

Mesa Verde NP 2014 Water Year



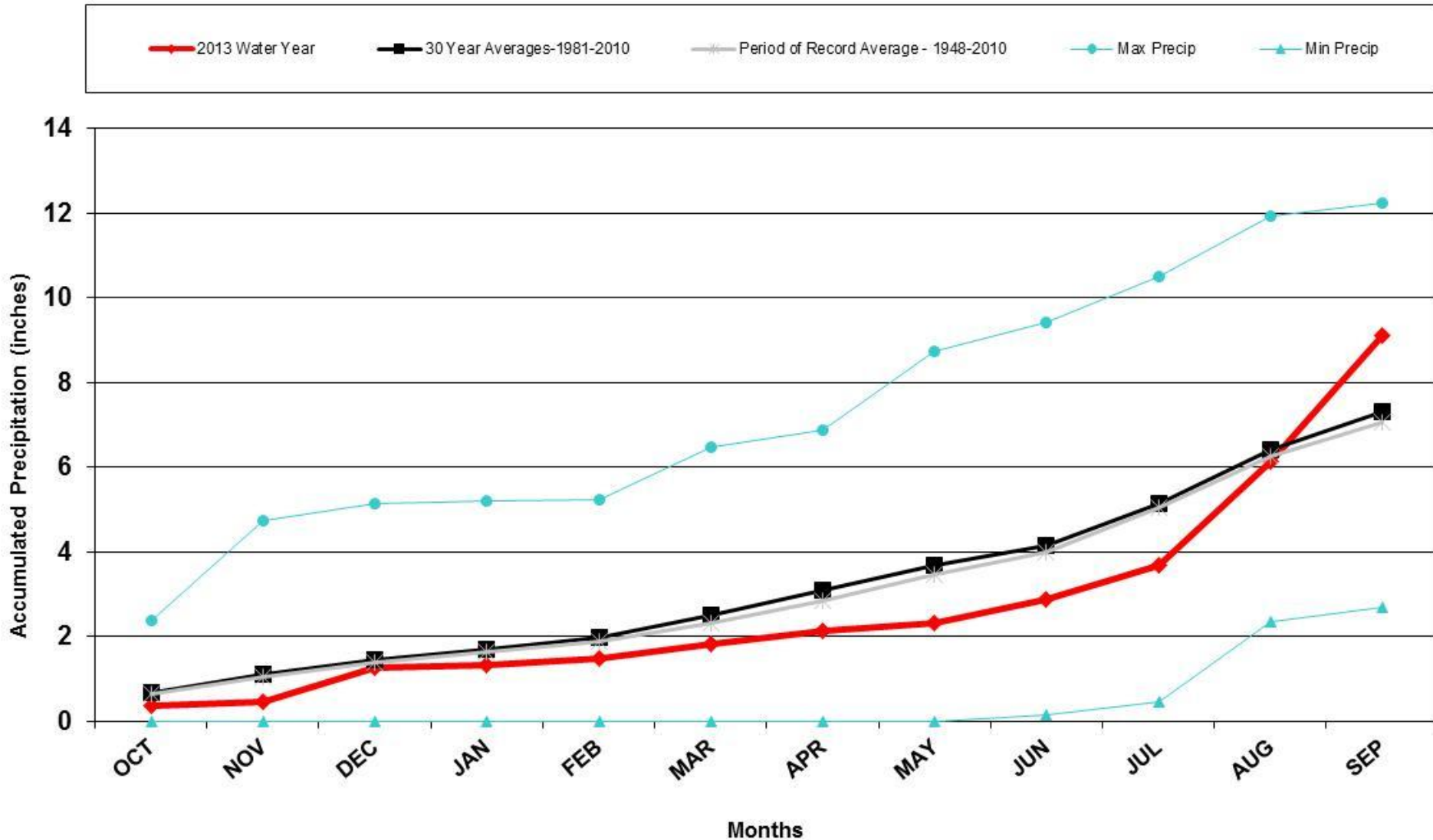
Division 3 – Mesa Verde NP

Mesa Verde NP Precipitation Accumulation



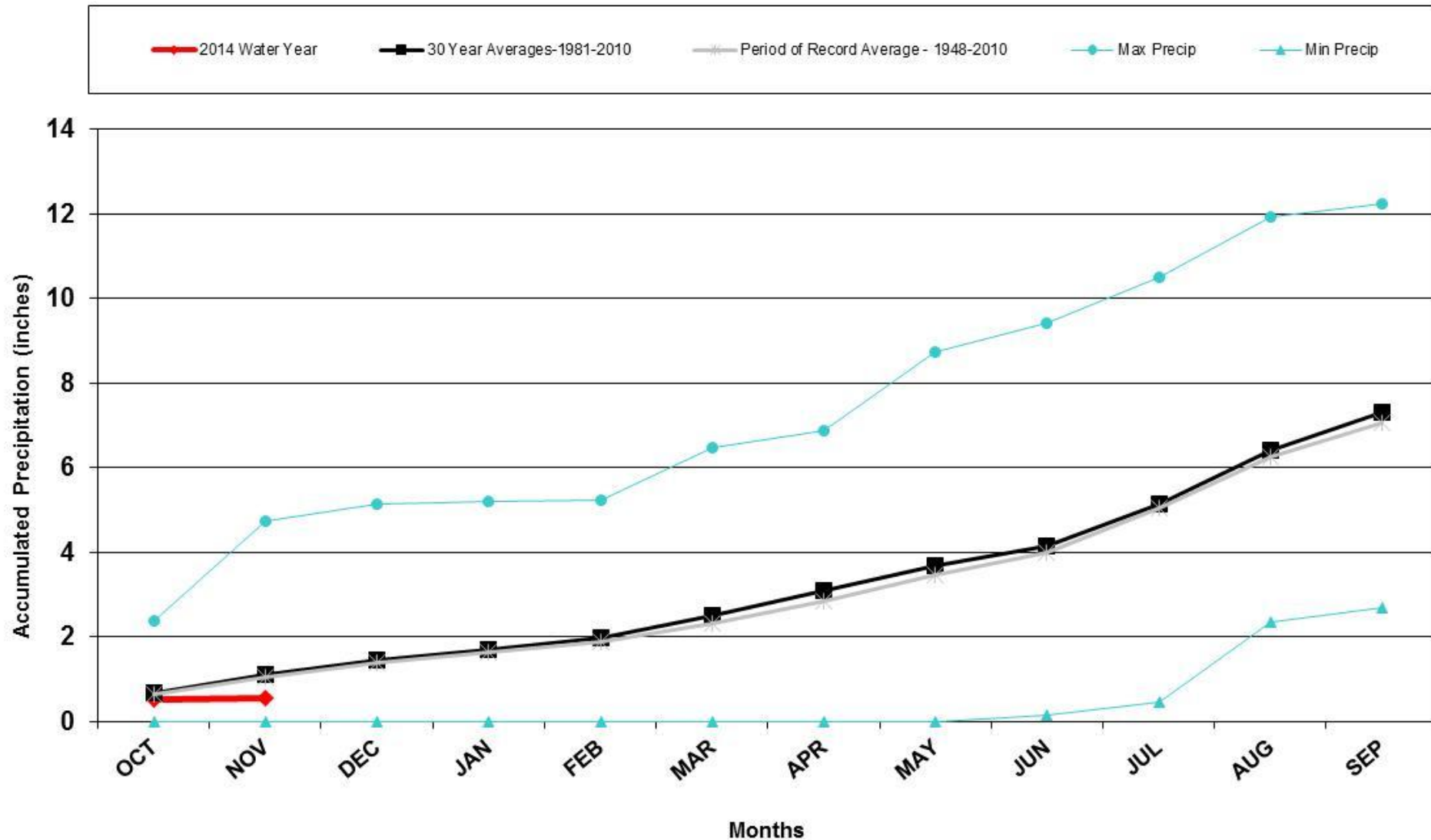
Division 4 – Alamosa

Alamosa WSO 2013 Water Year



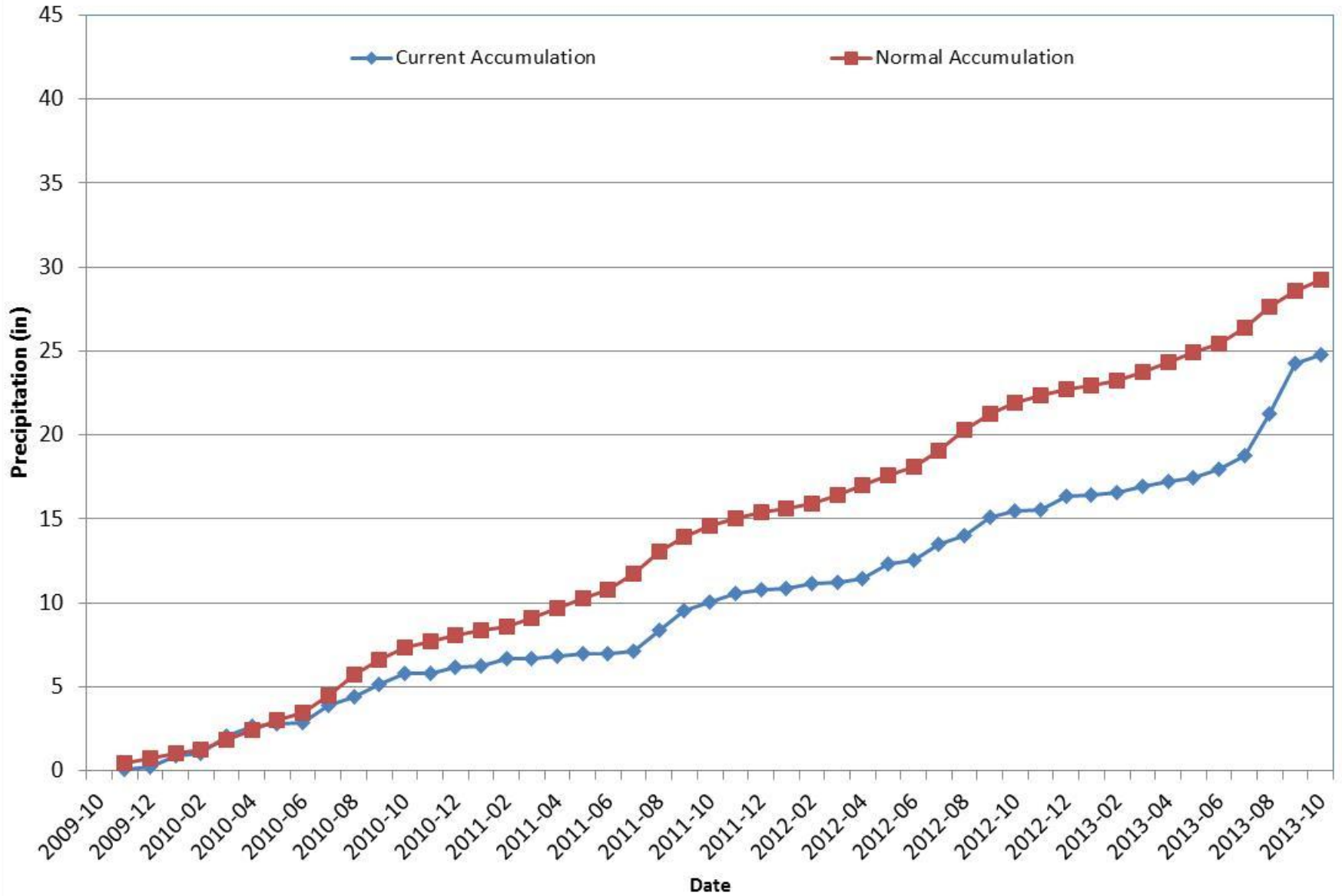
Division 4 – Alamosa

Alamosa WSO 2014 Water Year



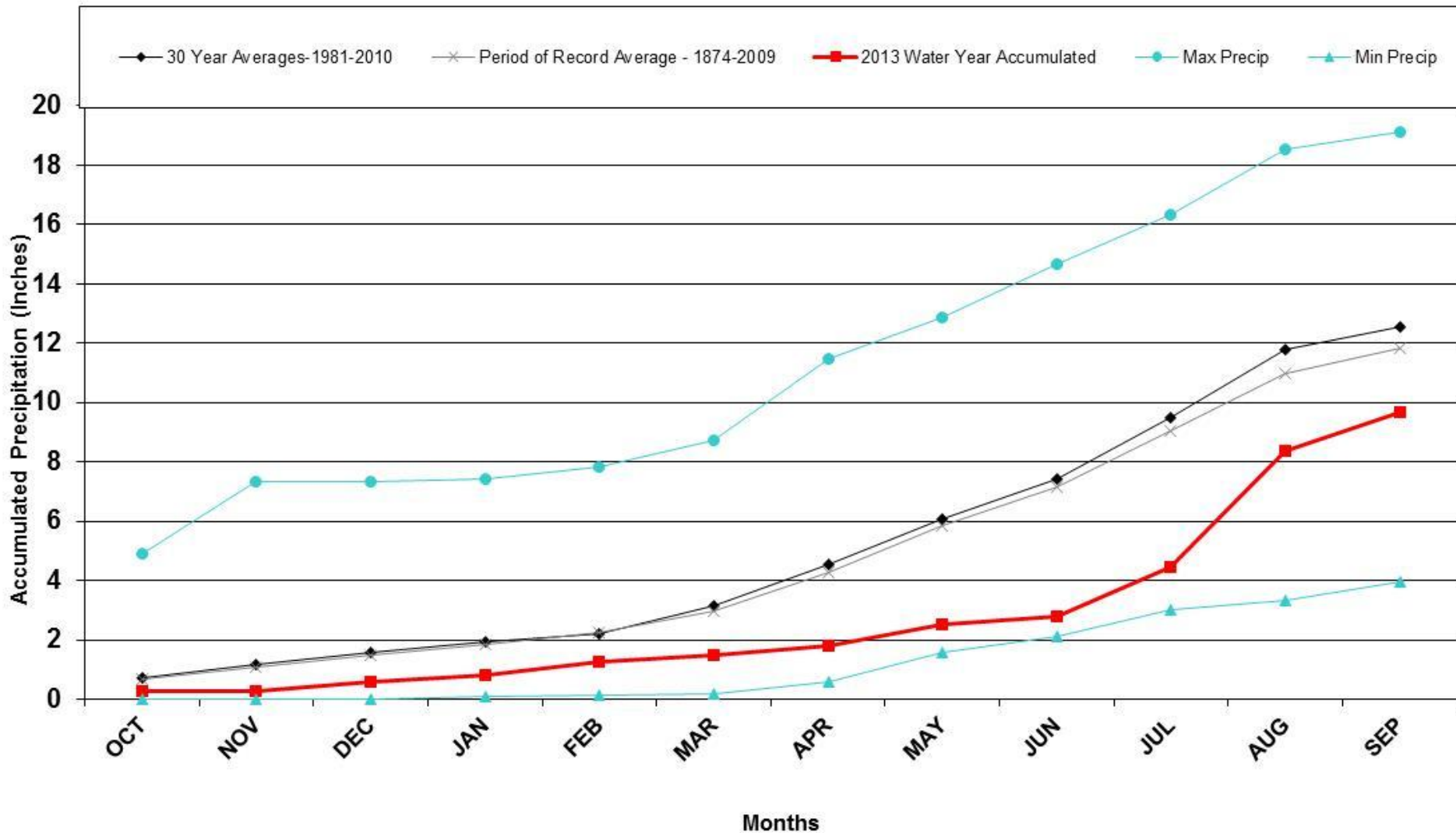
Division 4 – Alamosa

Alamosa WSO Precipitation Accumulation



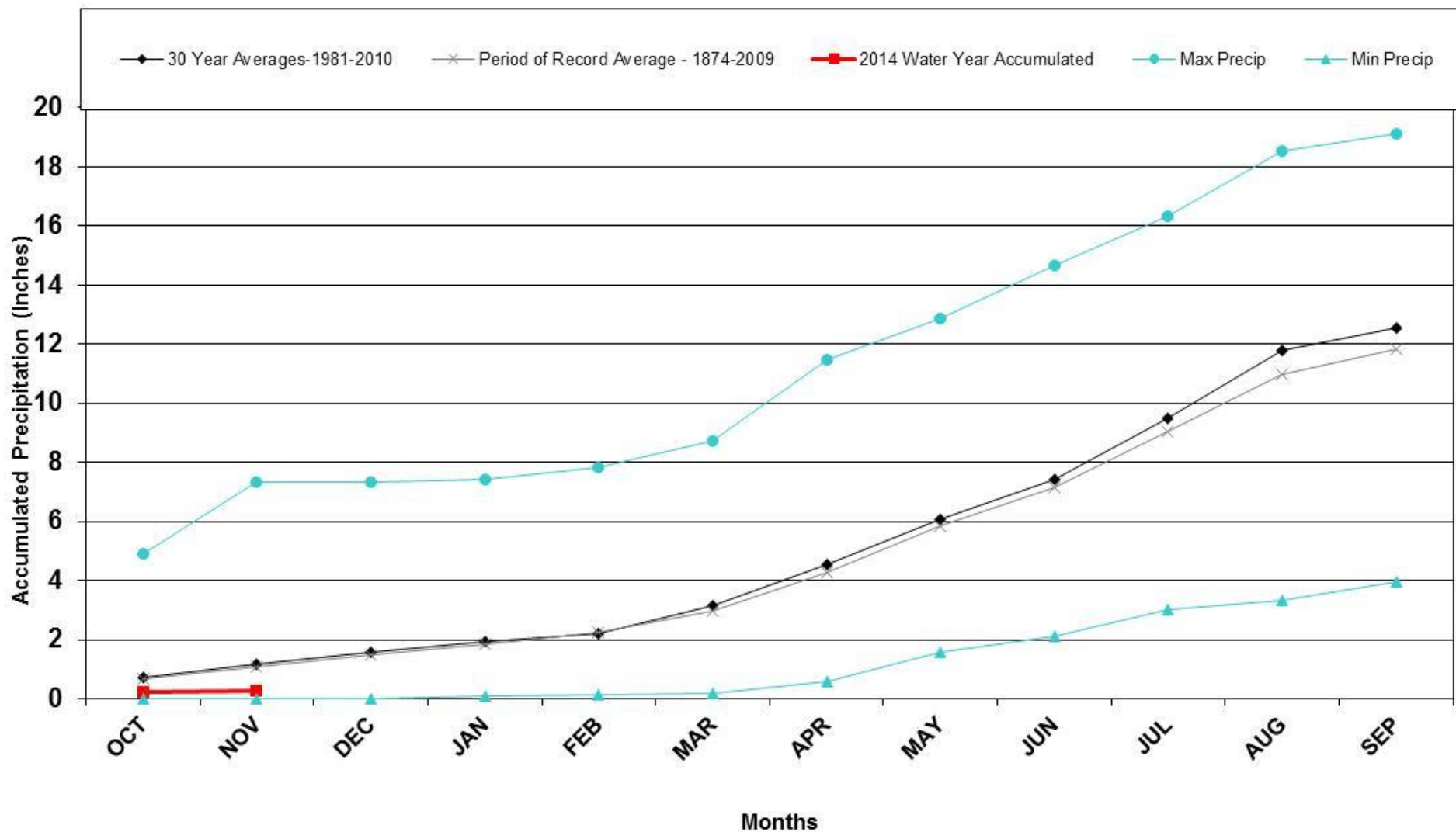
Division 5 – Pueblo

Pueblo WSO 2013 Water Year



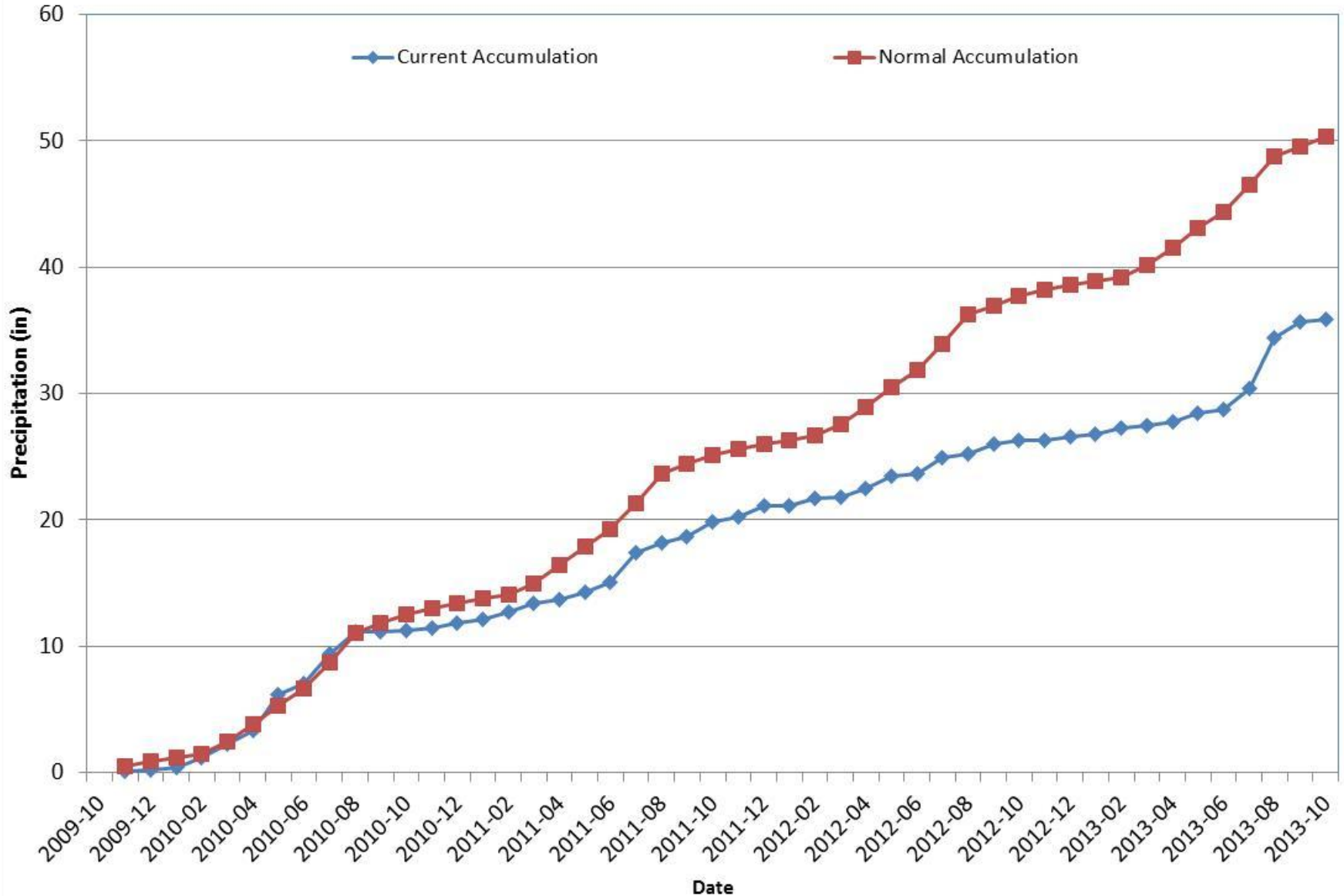
Division 5 – Pueblo

Pueblo WSO 2014 Water Year



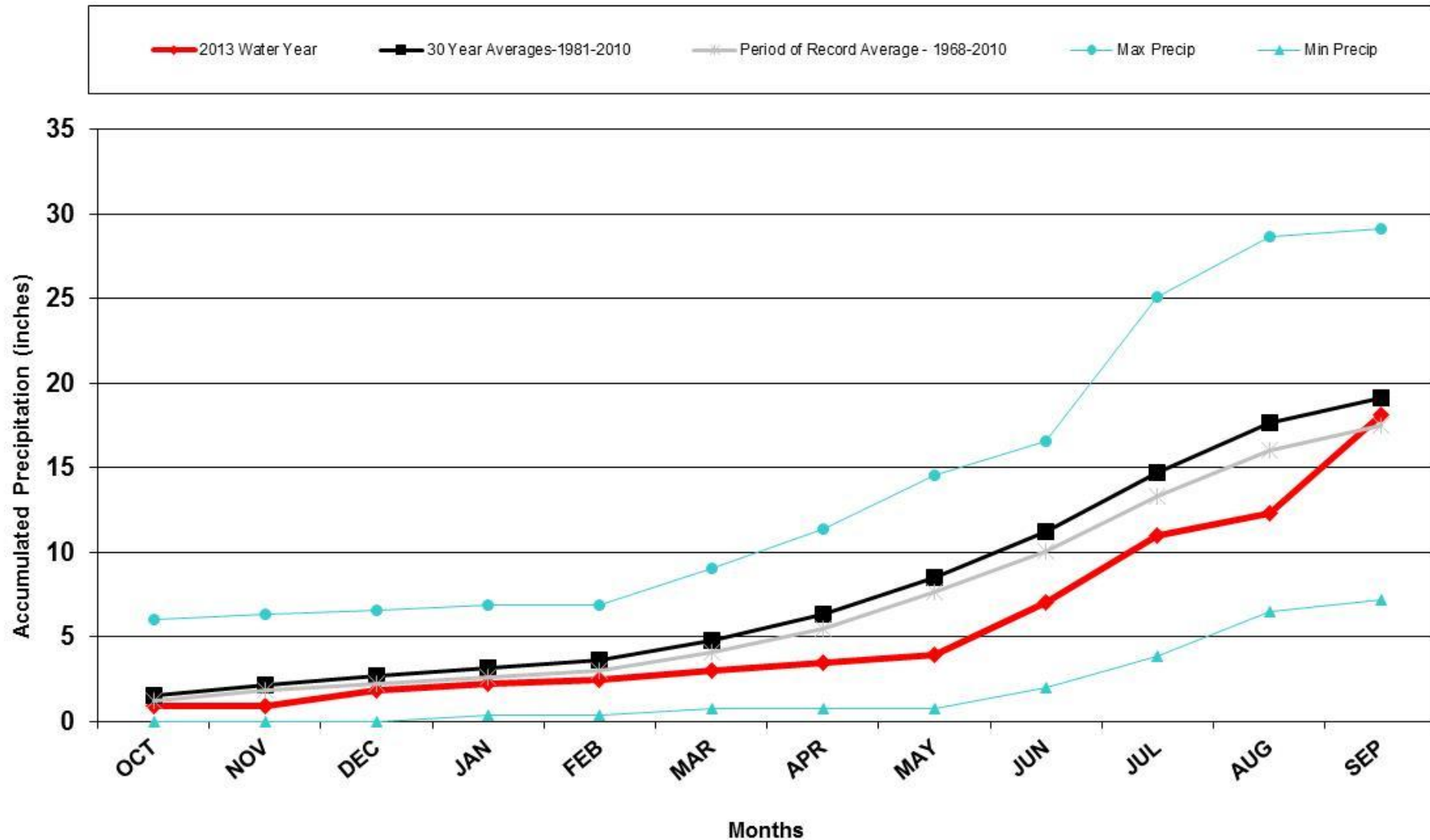
Division 5 – Pueblo

Pueblo Memorial AP Precipitation Accumulation



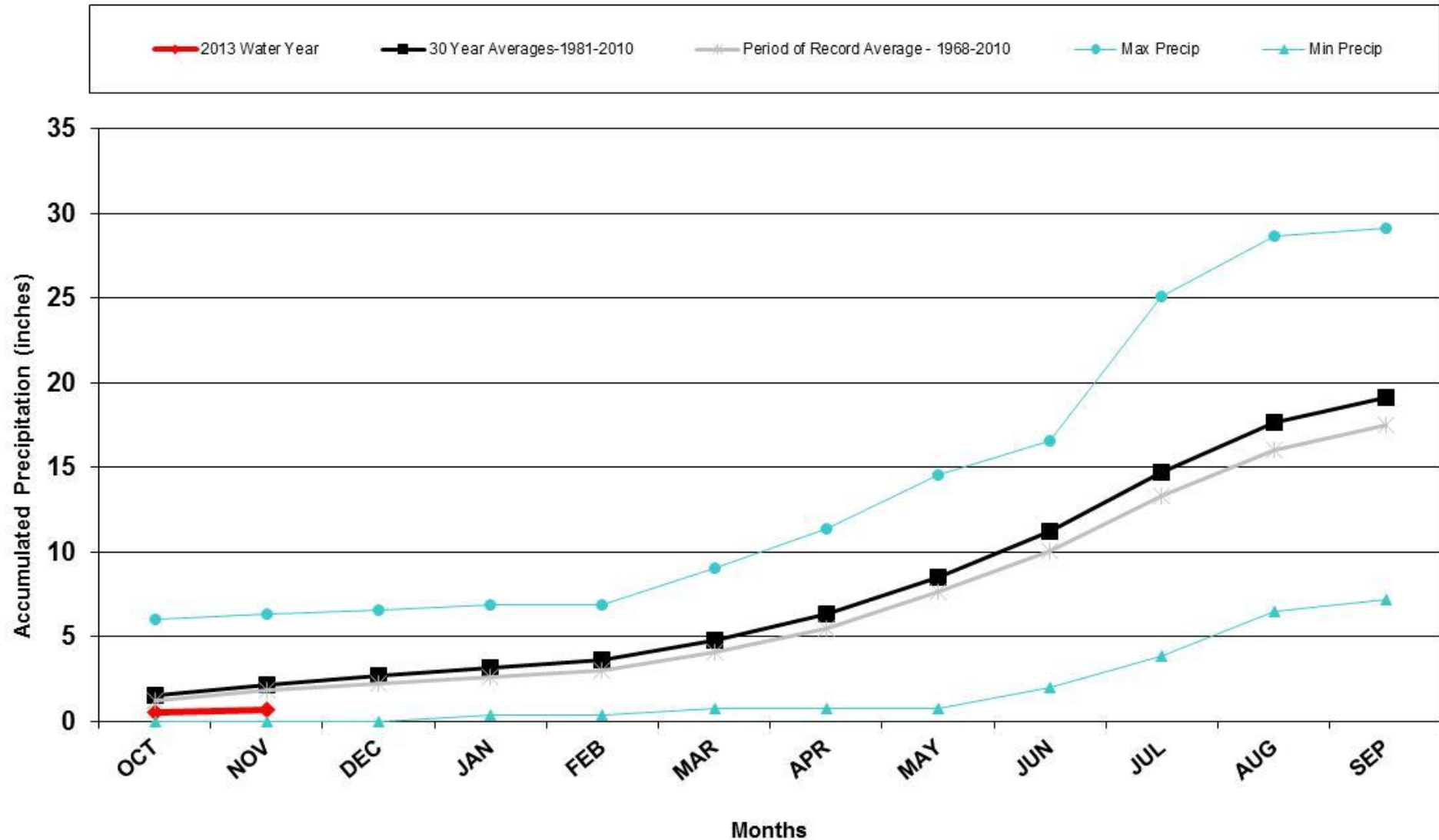
Division 6 - Walsh

Walsh 2013 Water Year



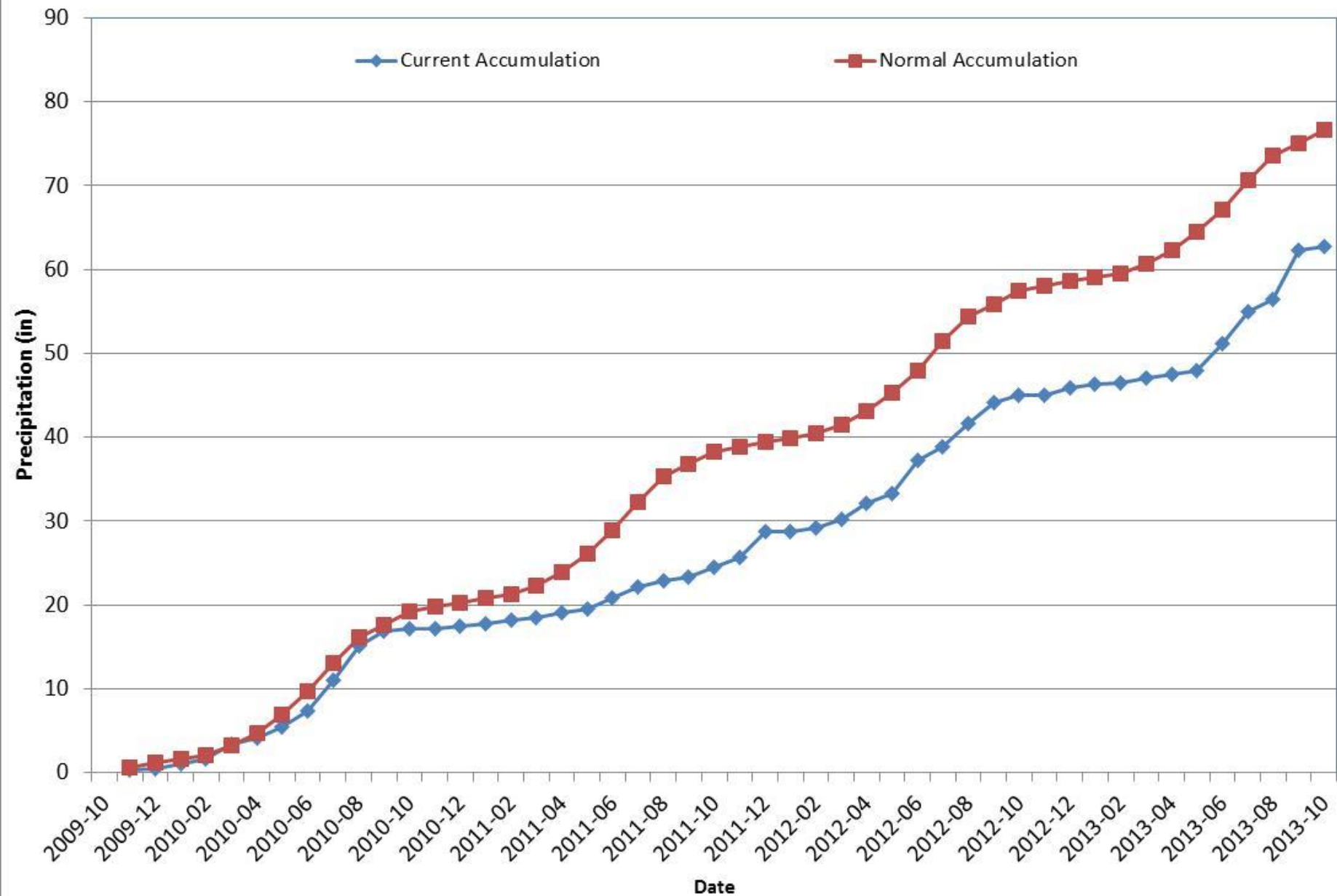
Division 6 - Walsh

Walsh 2014 Water Year



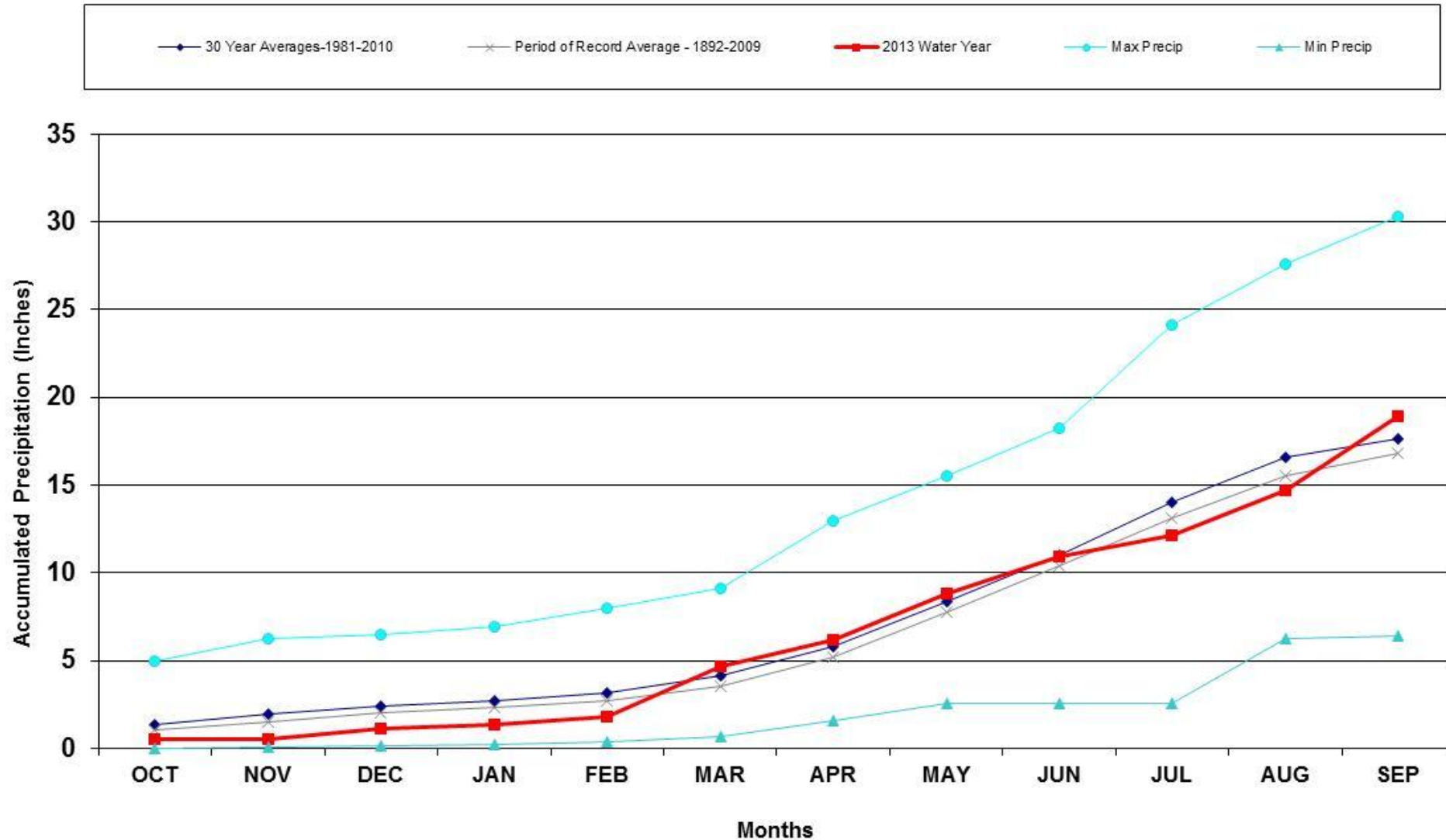
Walsh 1W

Precipitation Accumulation



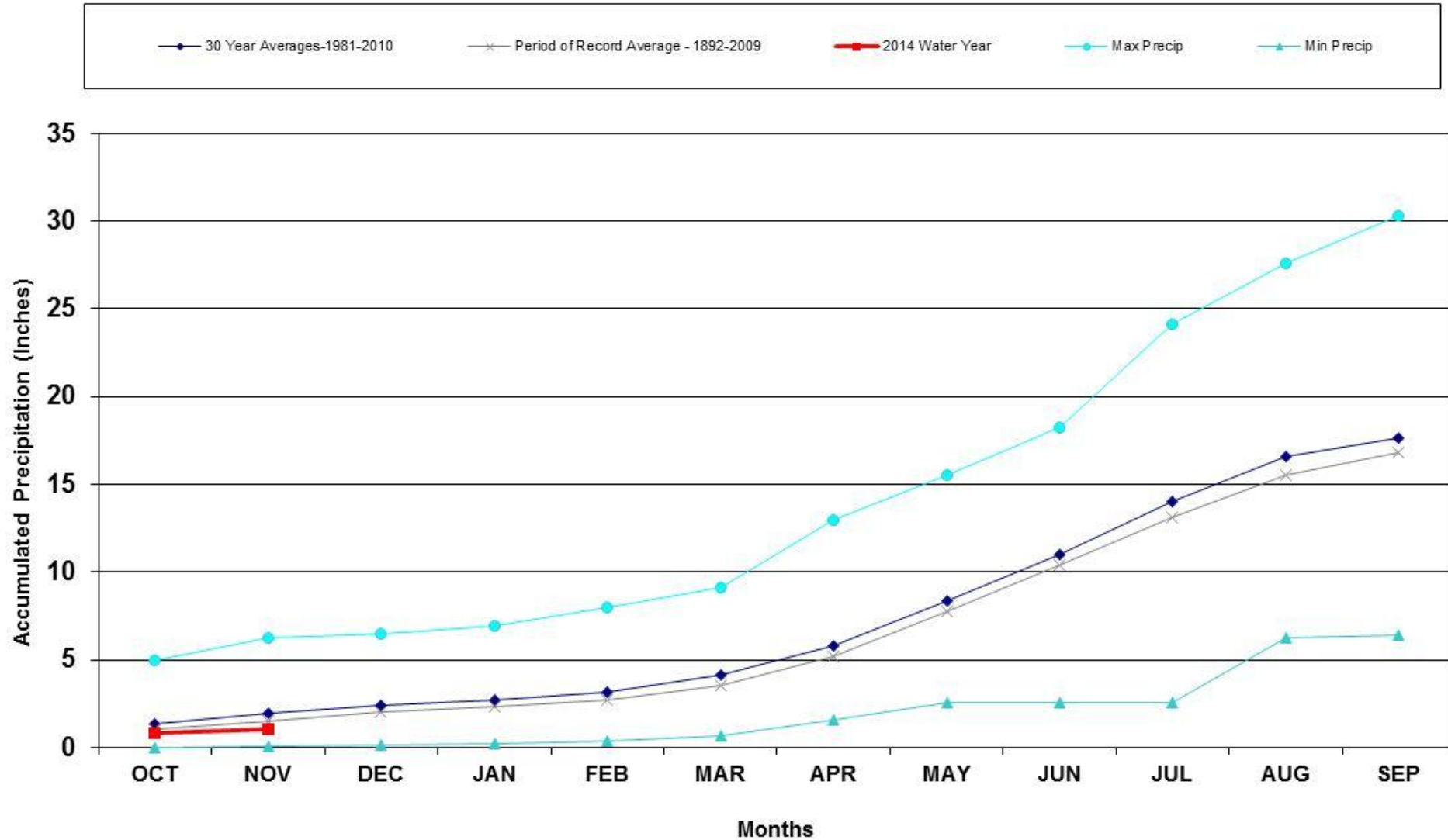
Division 6 - Burlington

Burlington 2013 Water Year



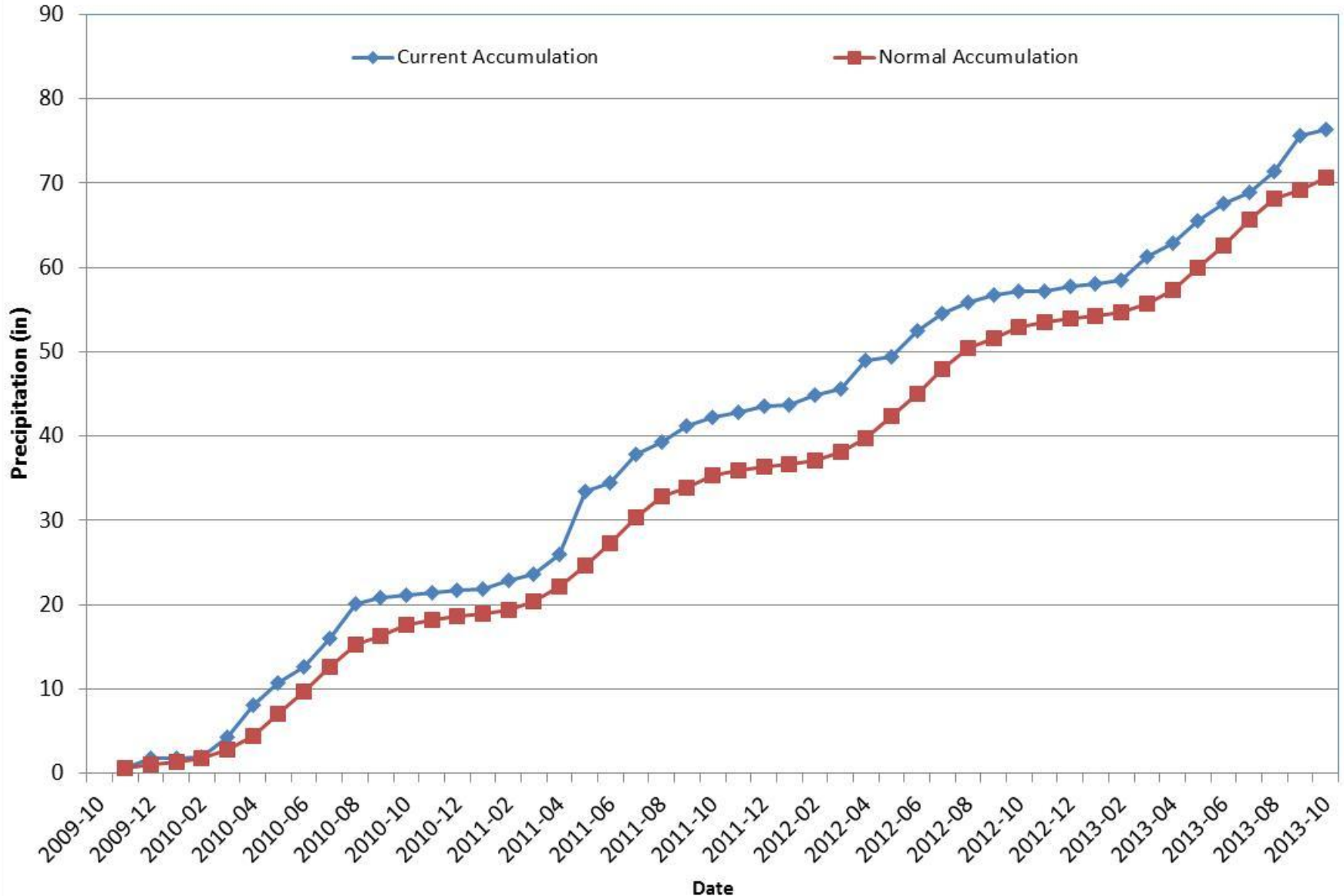
Division 6 - Burlington

Burlington 2014 Water Year



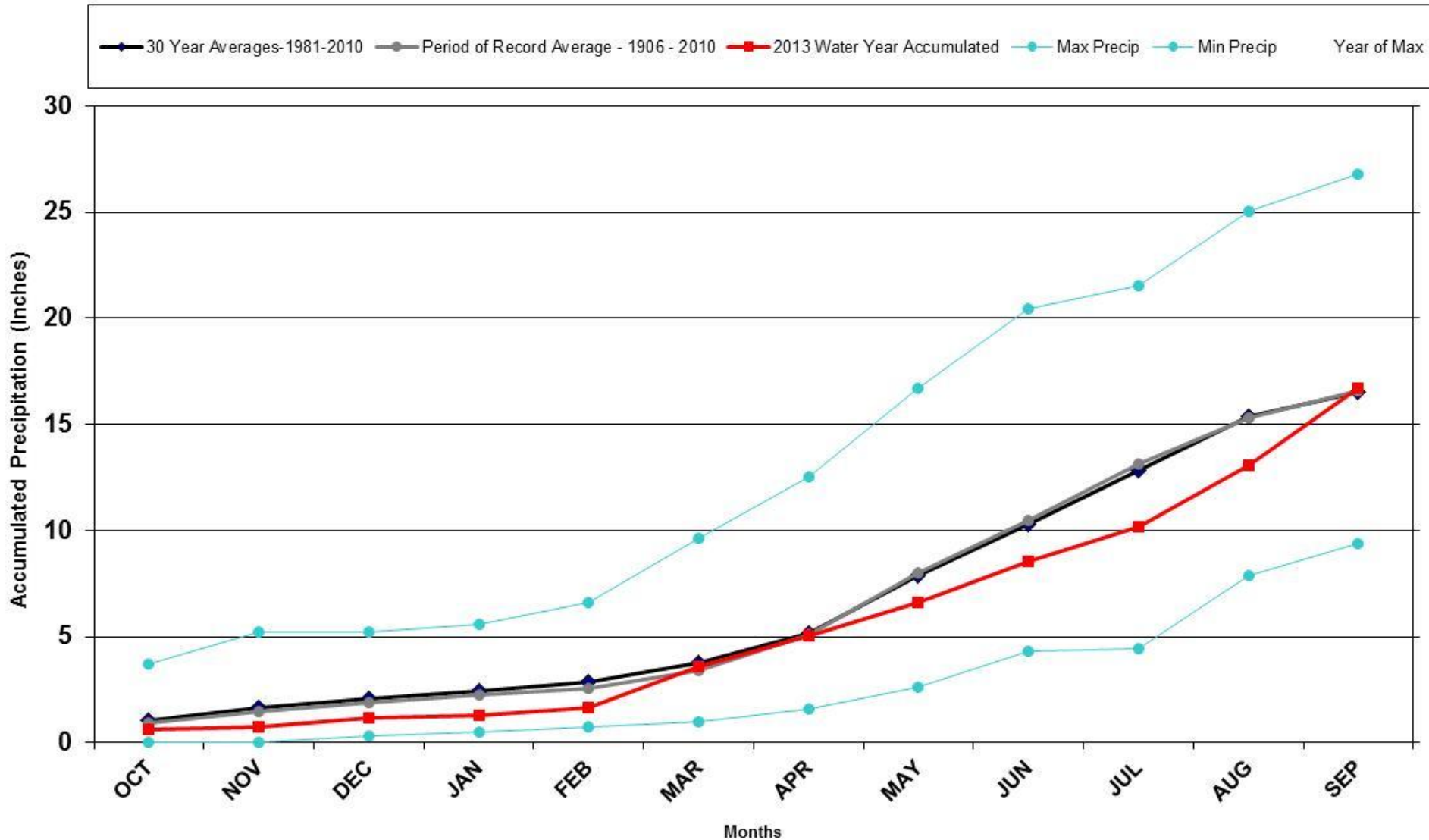
Division 6 - Burlington

Burlington, CO Precipitation Accumulation



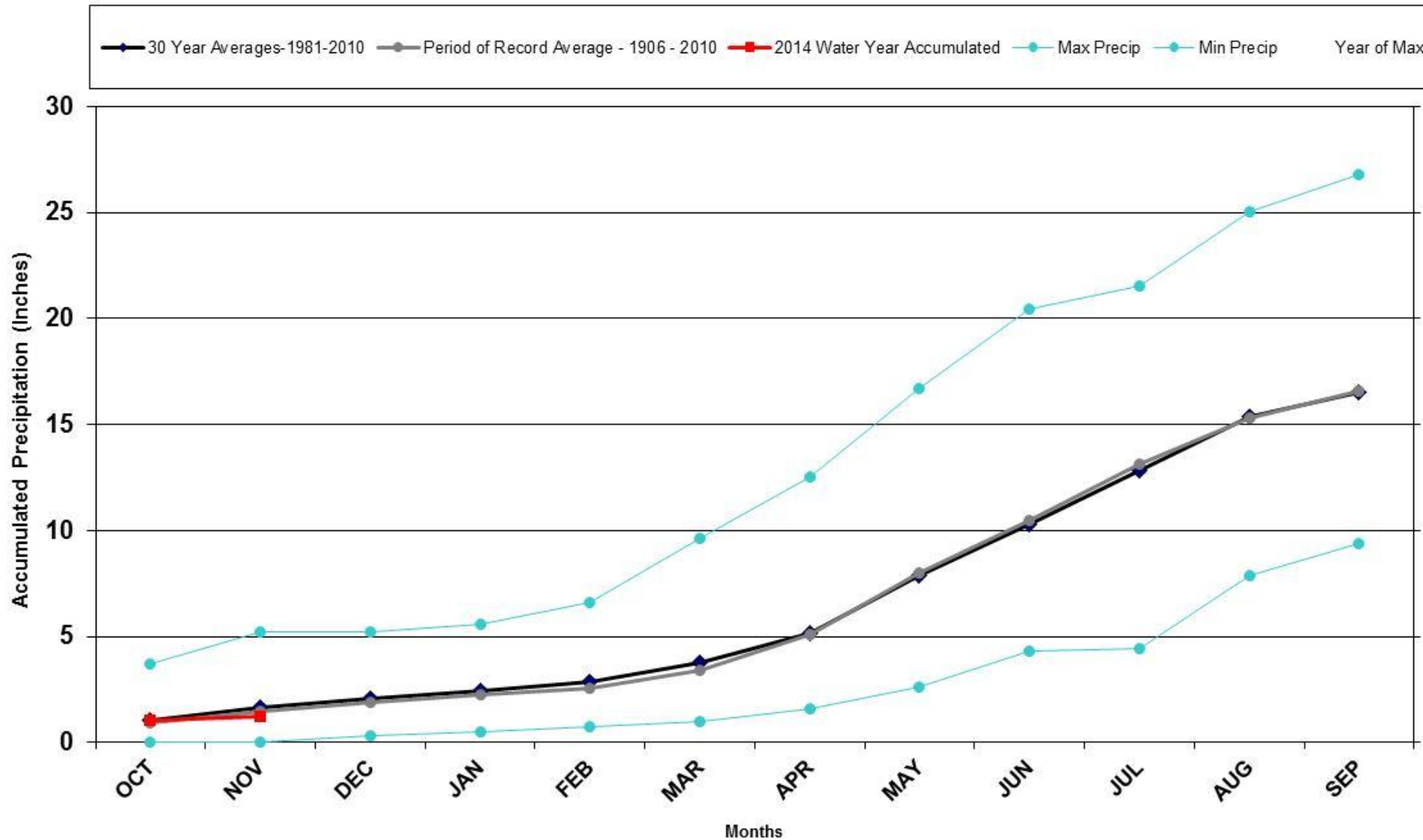
Division 7 – Akron

Akron 4E 2013 Water Year



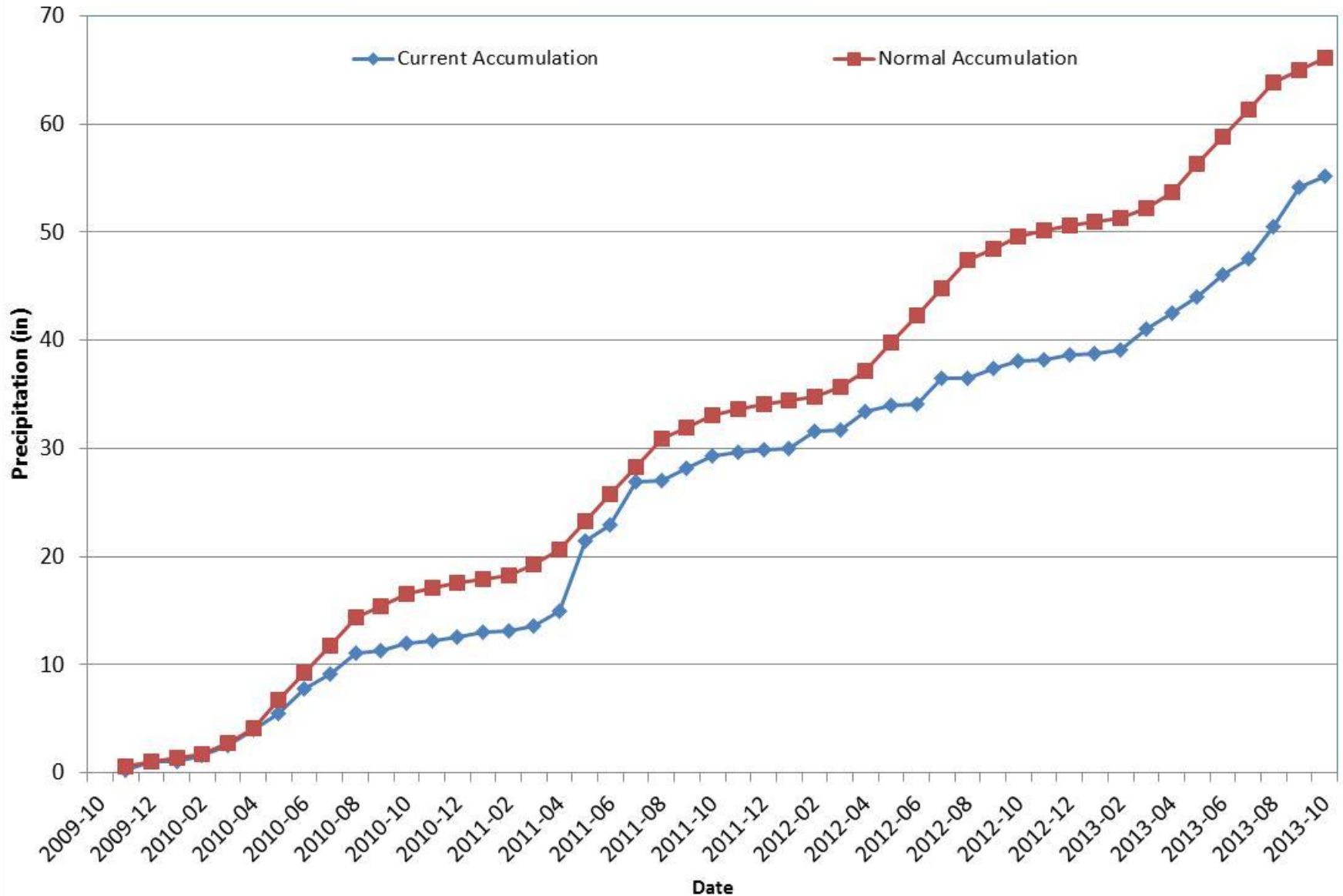
Division 7 – Akron

Akron 4E 2014 Water Year



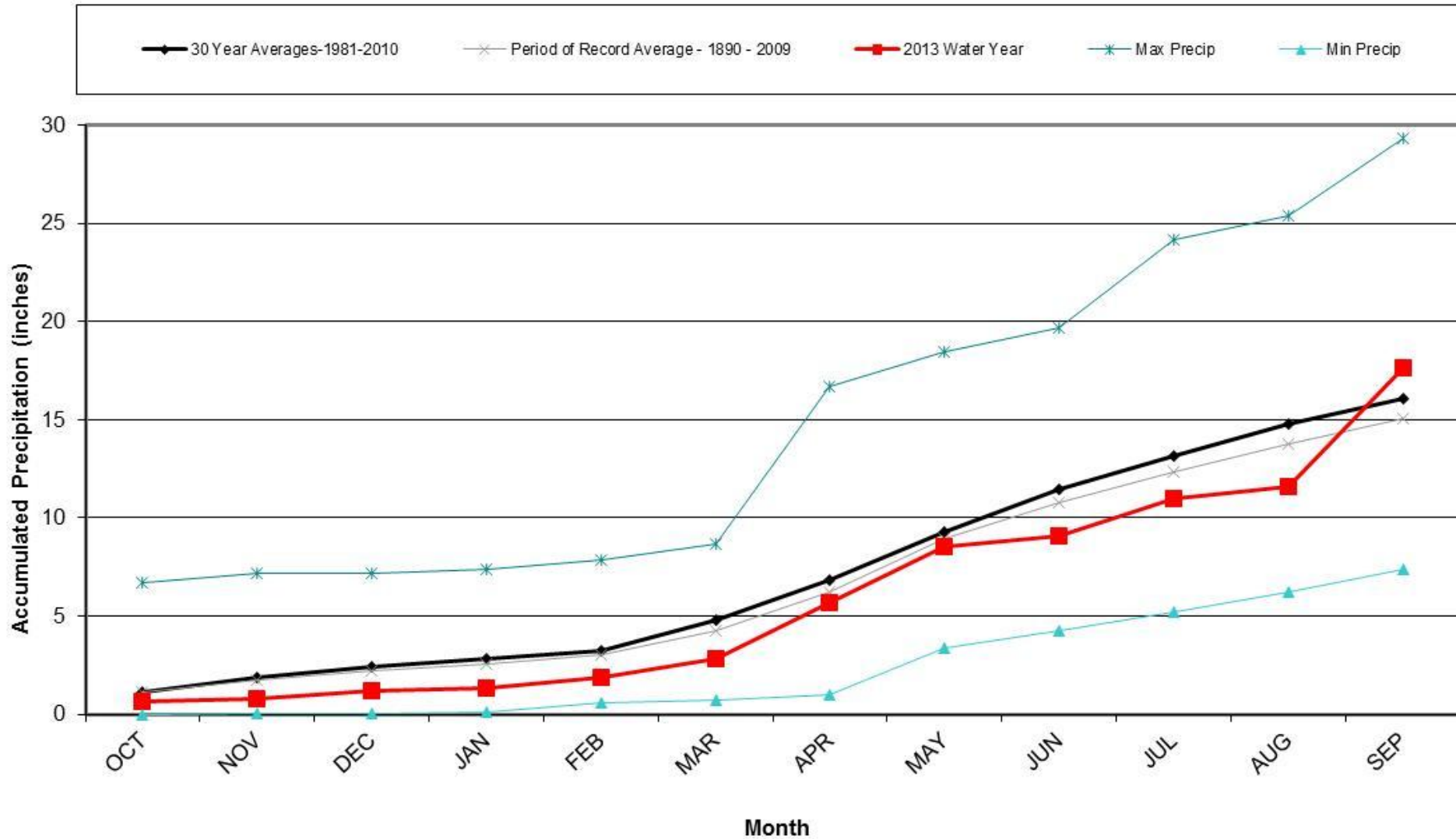
Division 7 – Akron

Akron 4E Precipitation Accumulation



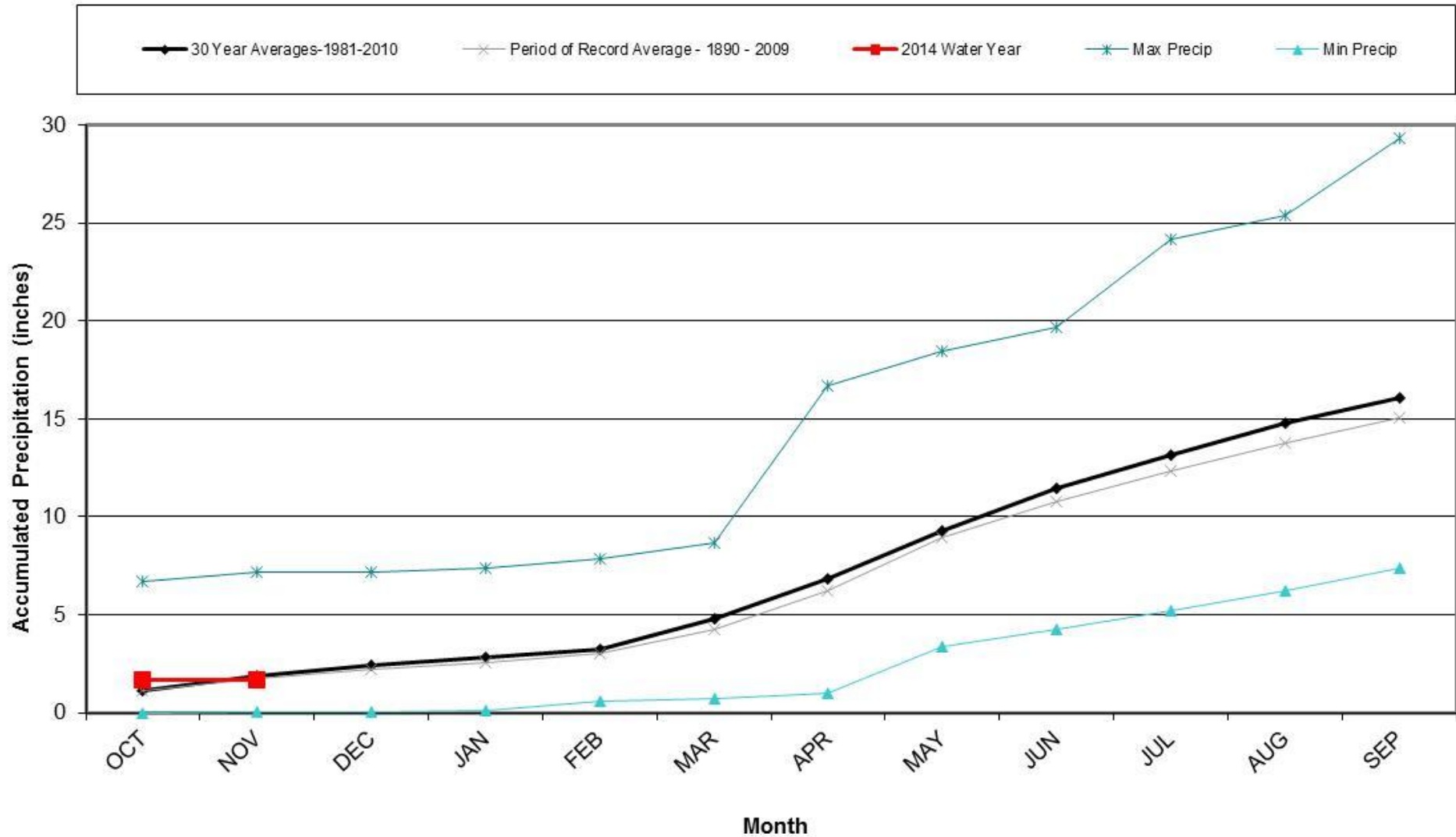
Division 8 – Fort Collins

Fort Collins 2013 Water Year



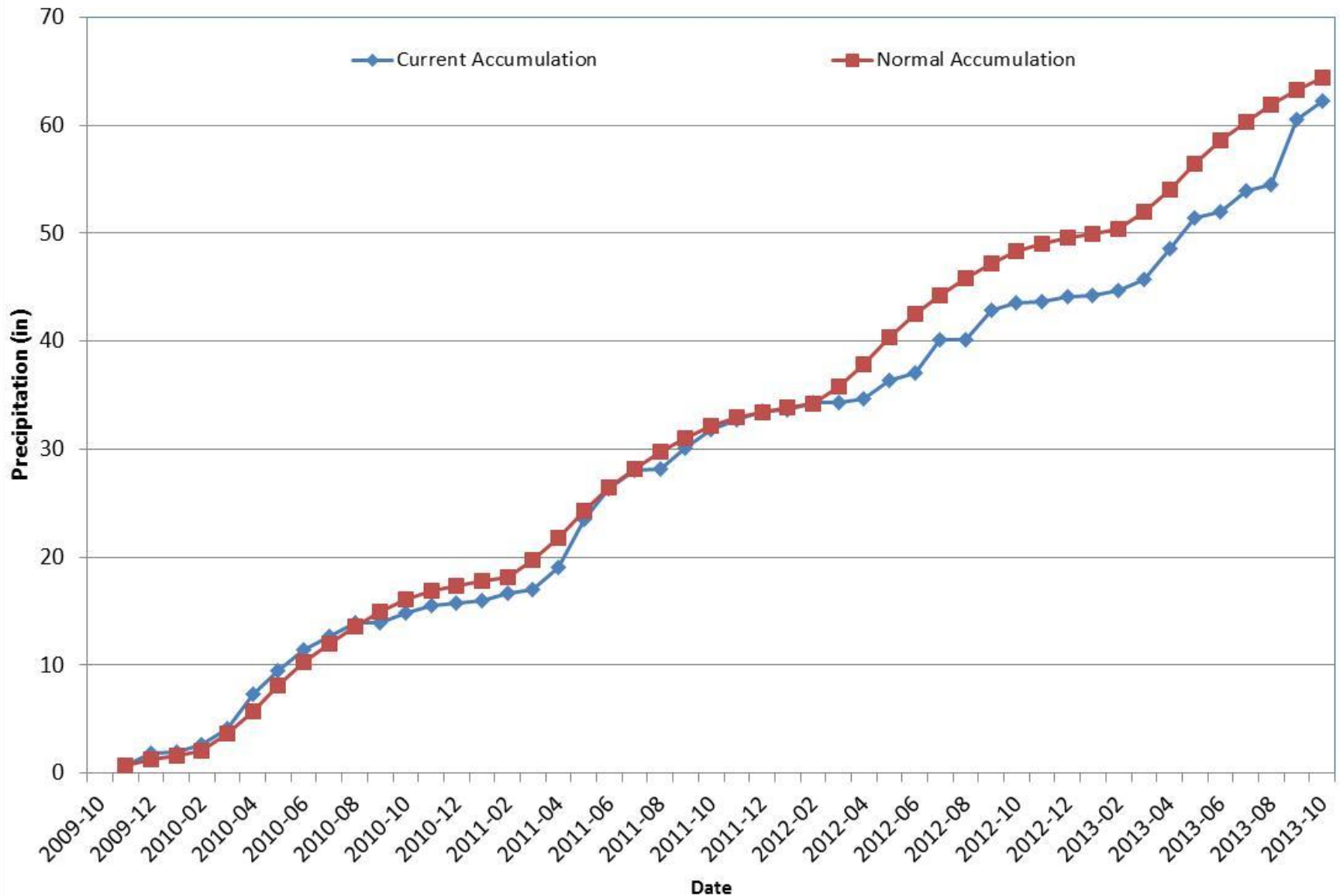
Division 8 – Fort Collins

Fort Collins 2014 Water Year



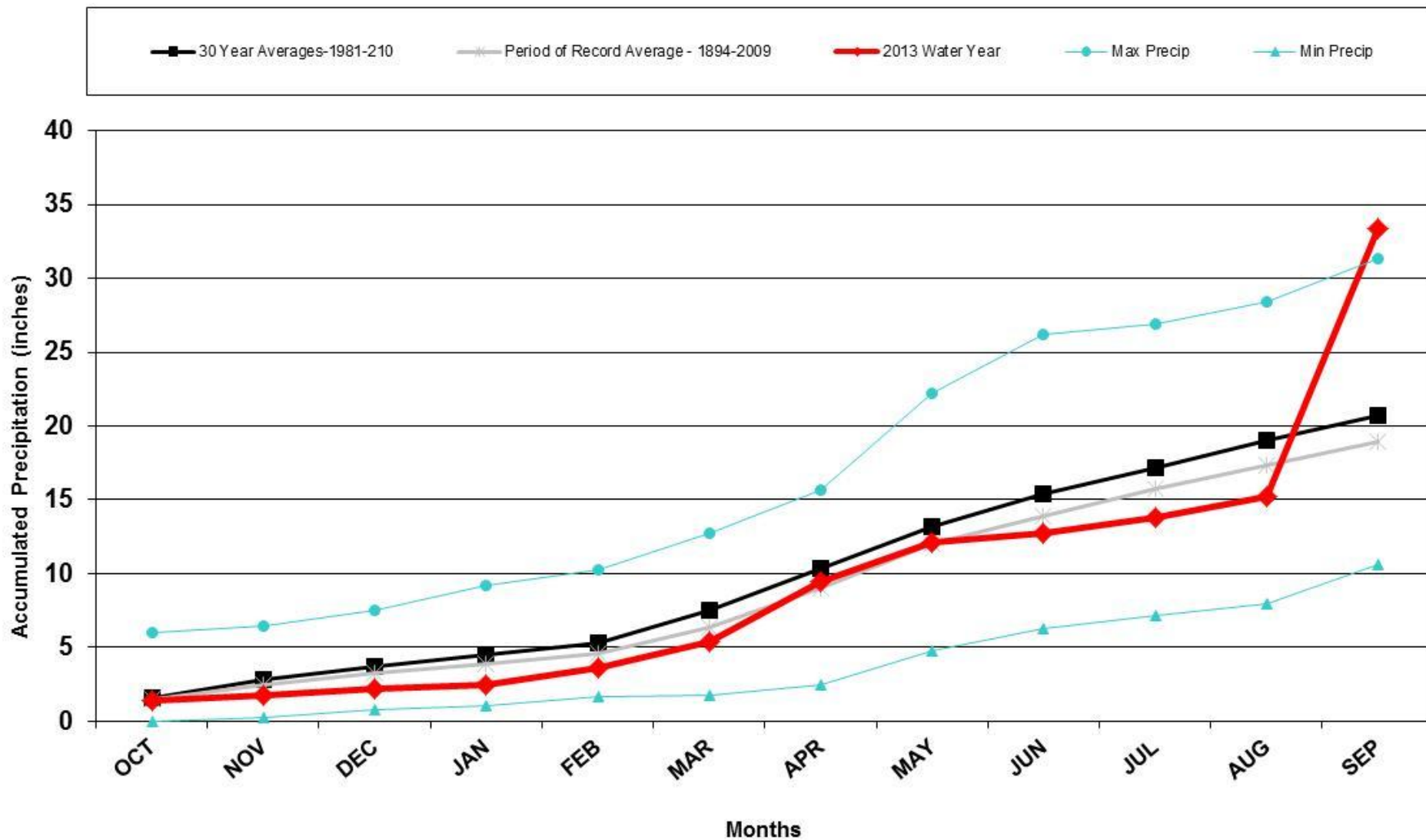
Division 8 – Fort Collins

Fort Collins Precipitation Accumulation



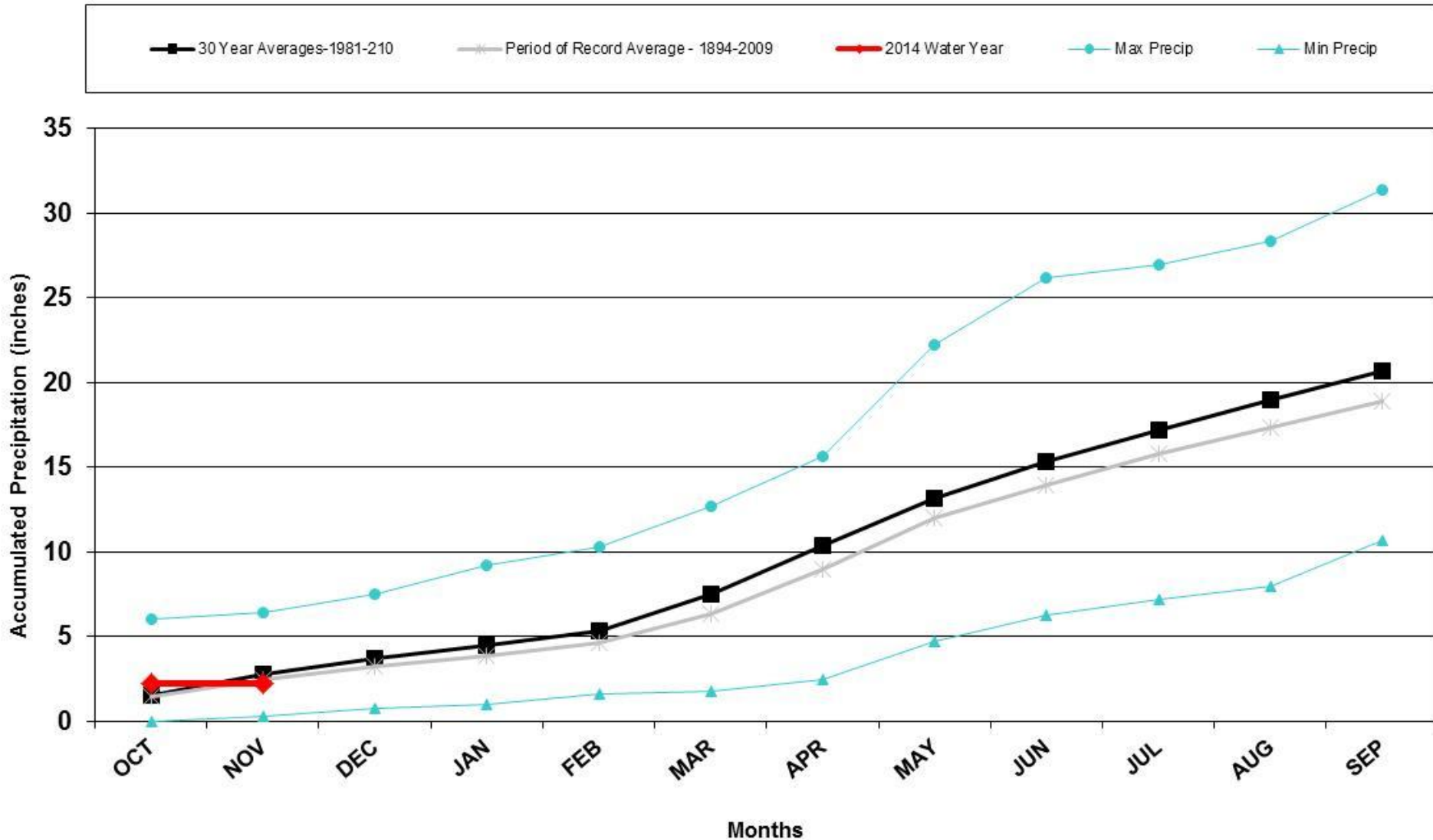
Division 8 - Boulder

Boulder 2013 Water Year



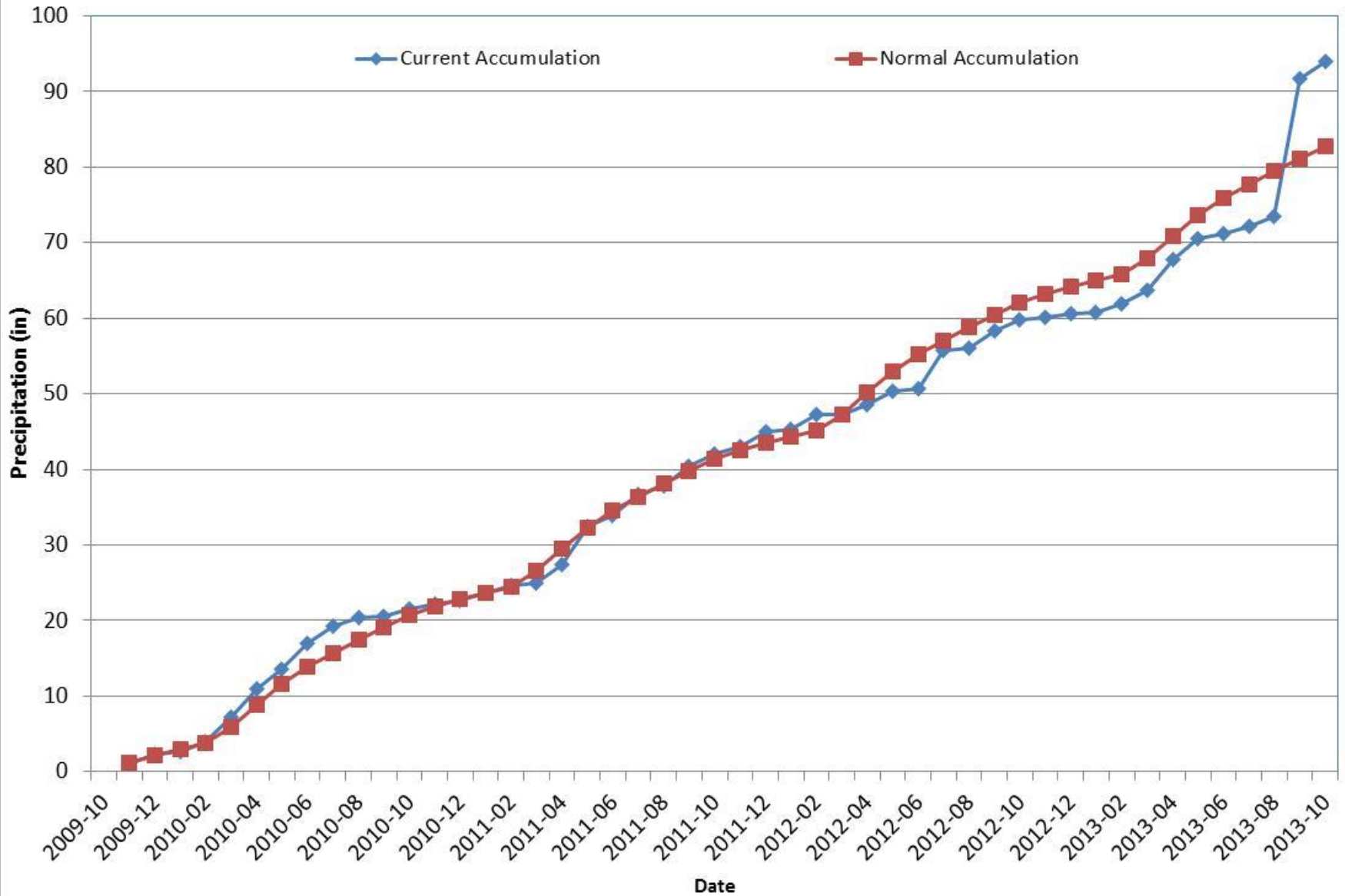
Division 8 - Boulder

Boulder 2014 Water Year



Division 8 - Boulder

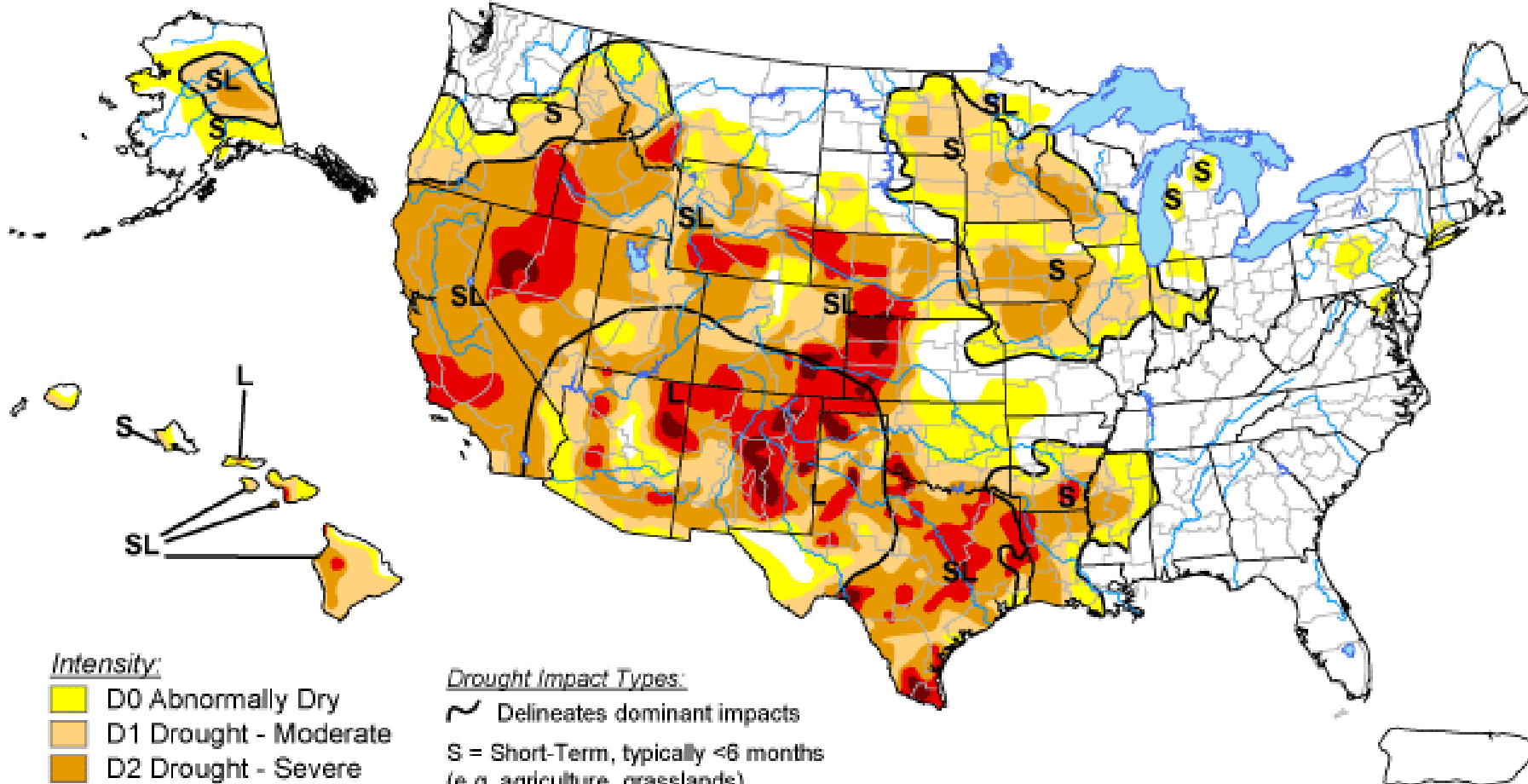
Boulder Precipitation Accumulation







U.S. Drought Monitor

September 10, 2013


Valid 7 a.m. EDT



Intensity:

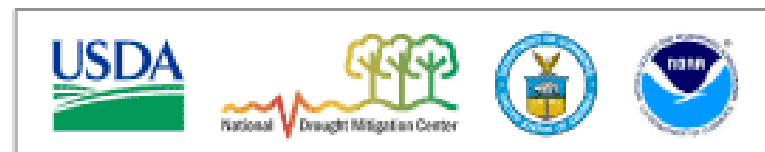
-  D0 Abnormally Dry
-  D1 Drought - Moderate
-  D2 Drought - Severe
-  D3 Drought - Extreme
-  D4 Drought - Exceptional

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.

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

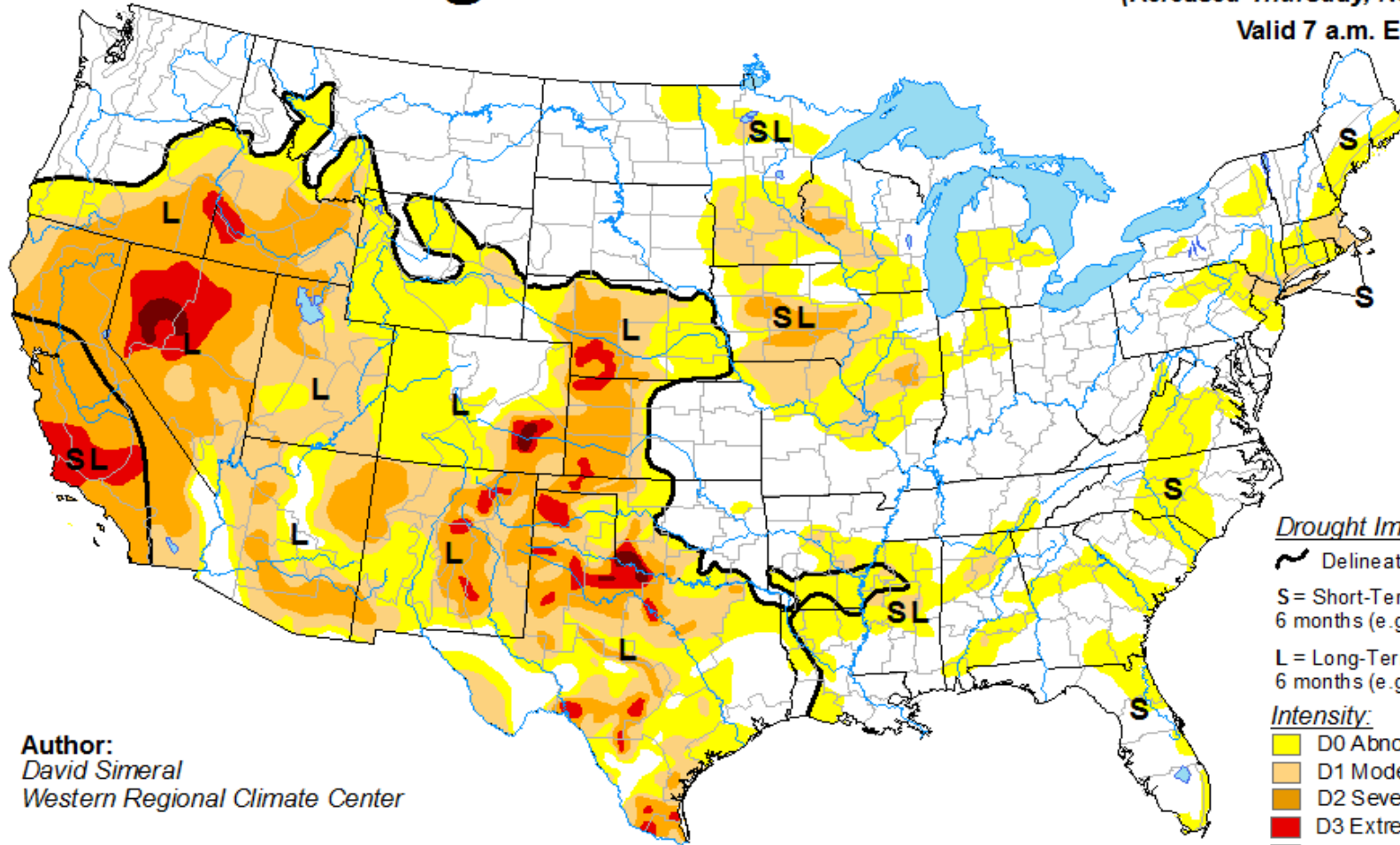


Released Thursday, September 12, 2013

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

U.S. Drought Monitor

November 12, 2013
(Released Thursday, Nov. 14, 2013)
Valid 7 a.m. EST



Author:
David Simeral
Western Regional Climate Center

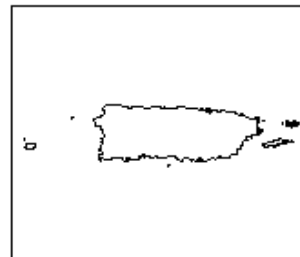
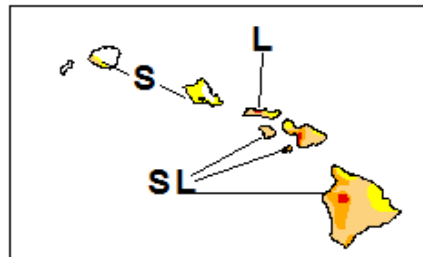
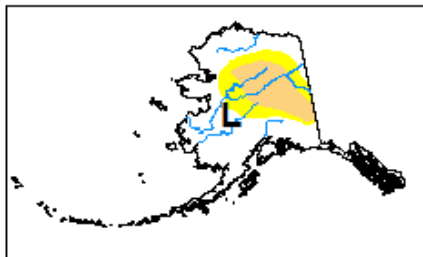
Drought Impact Types:

- ~ 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:

- Yellow: D0 Abnormally Dry
- Light Orange: D1 Moderate Drought
- Orange: D2 Severe Drought
- Red: D3 Extreme Drought
- Dark Red: 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/>

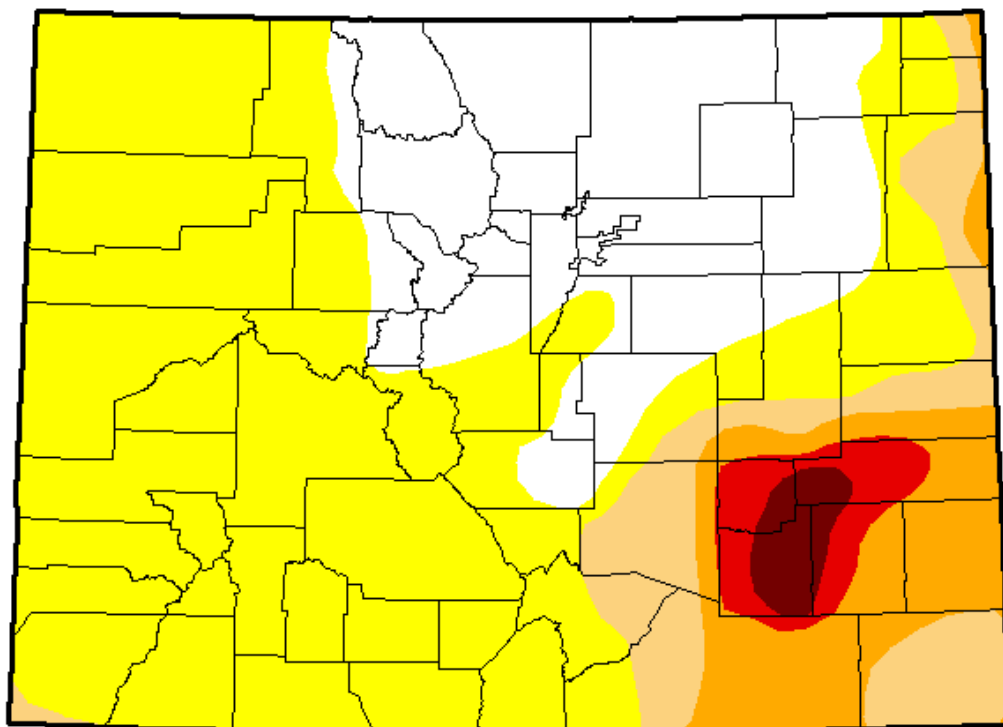
U.S. Drought Monitor

Colorado

November 12, 2013
 (Released Thursday, Nov. 14, 2013)
 Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	26.04	73.96	21.01	12.01	4.01	1.47
Last Week <i>11/5/2013</i>	26.04	73.96	21.04	12.01	4.01	1.47
3 Months Ago <i>8/13/2013</i>	1.53	98.47	93.82	68.72	26.33	3.04
Start of Calendar Year <i>1/1/2013</i>	0.00	100.00	100.00	95.06	53.47	13.48
Start of Water Year <i>10/1/2013</i>	24.91	75.09	37.88	12.01	4.01	1.47
One Year Ago <i>11/13/2012</i>	0.00	100.00	100.00	91.52	48.56	12.50



Intensity:



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

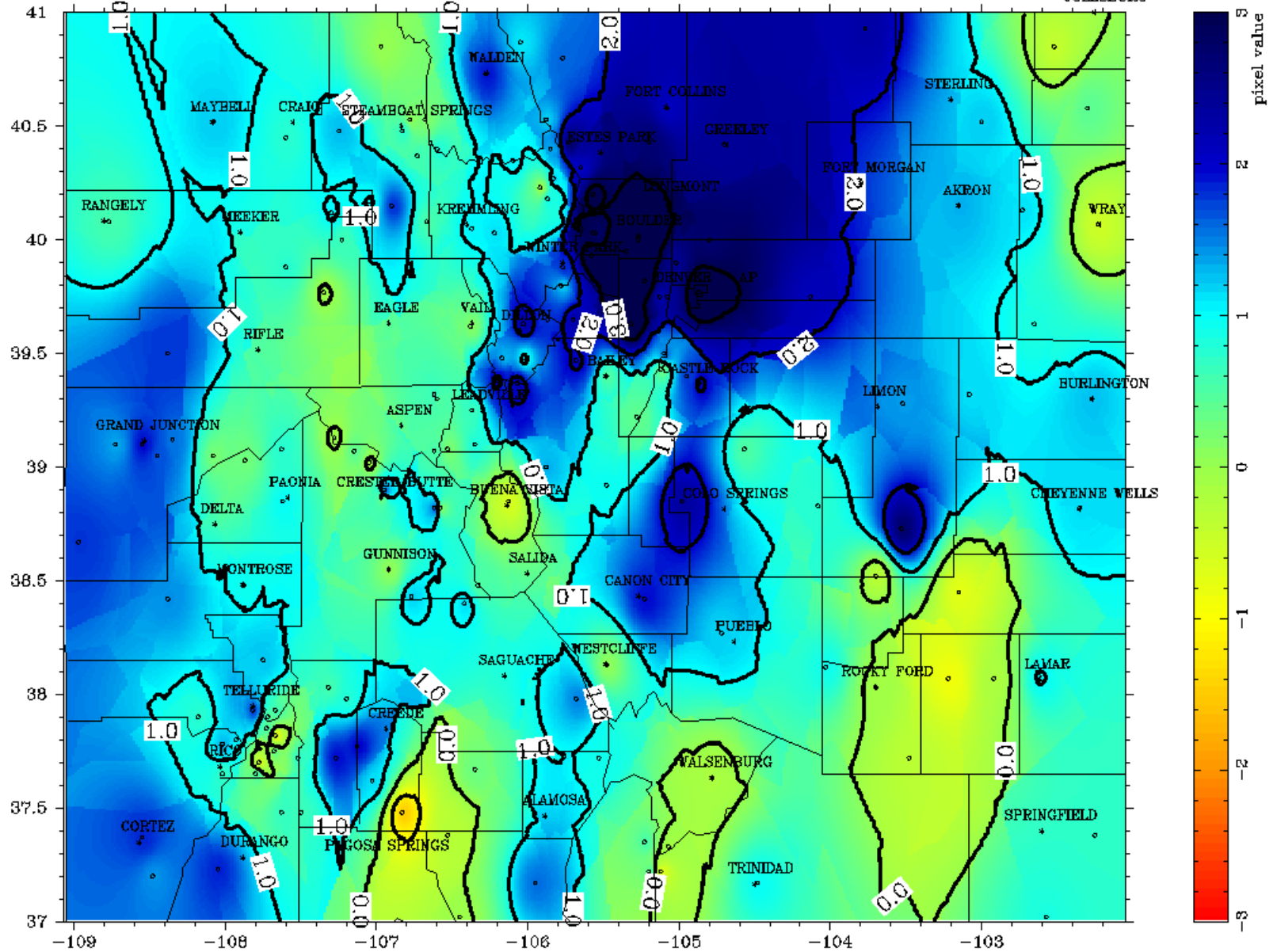
Author:
 David Simeral
 Western Regional Climate Center



Colorado

10/2013 3 mon. SPI

JULESBURG



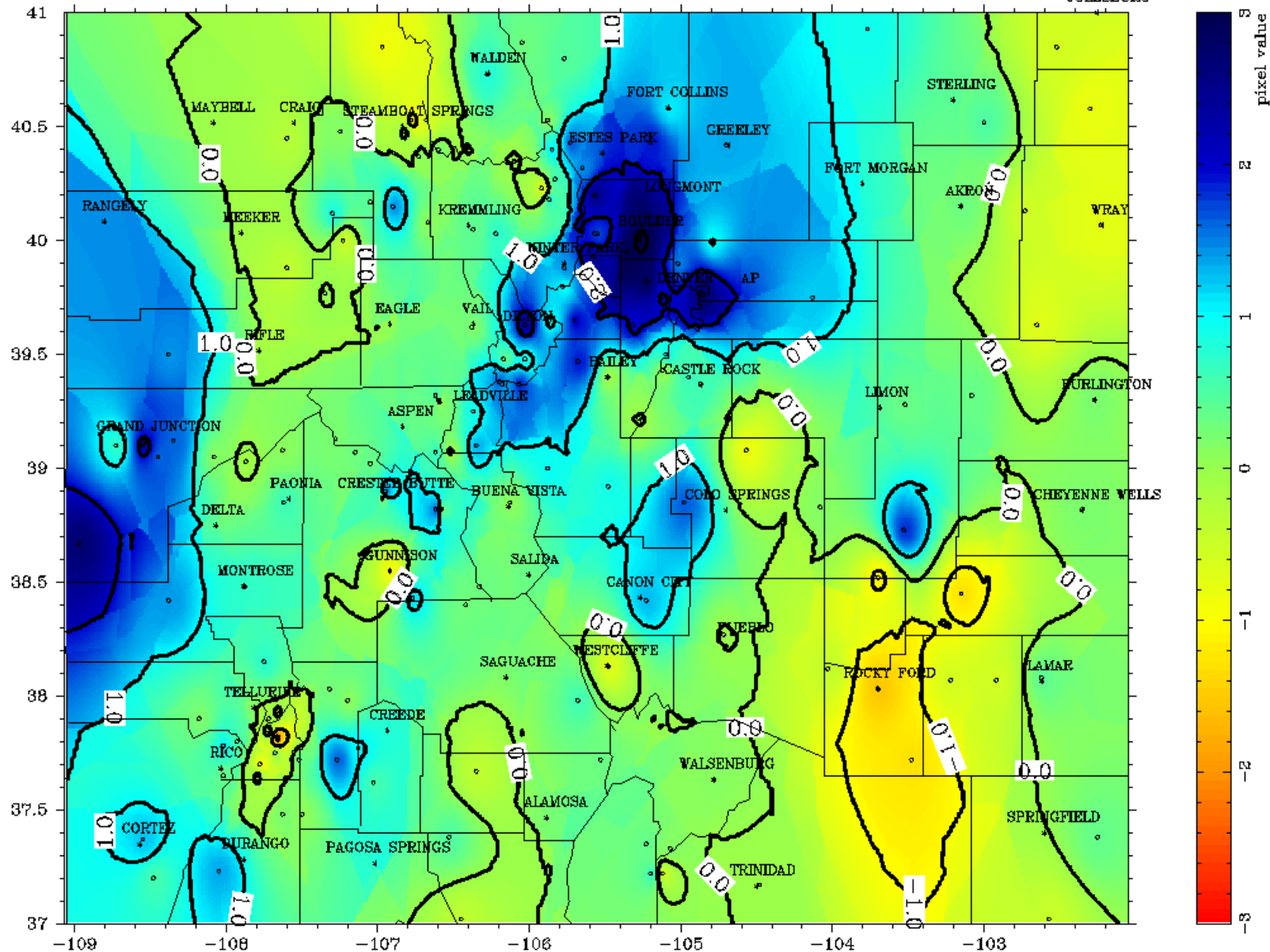
90 % < 2.0	0 % < -1.0
54 % < 1.0	0 % < -2.0
8 % < 0.0	0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

Colorado

10/2013 6 mon. SPI

JULESBURG



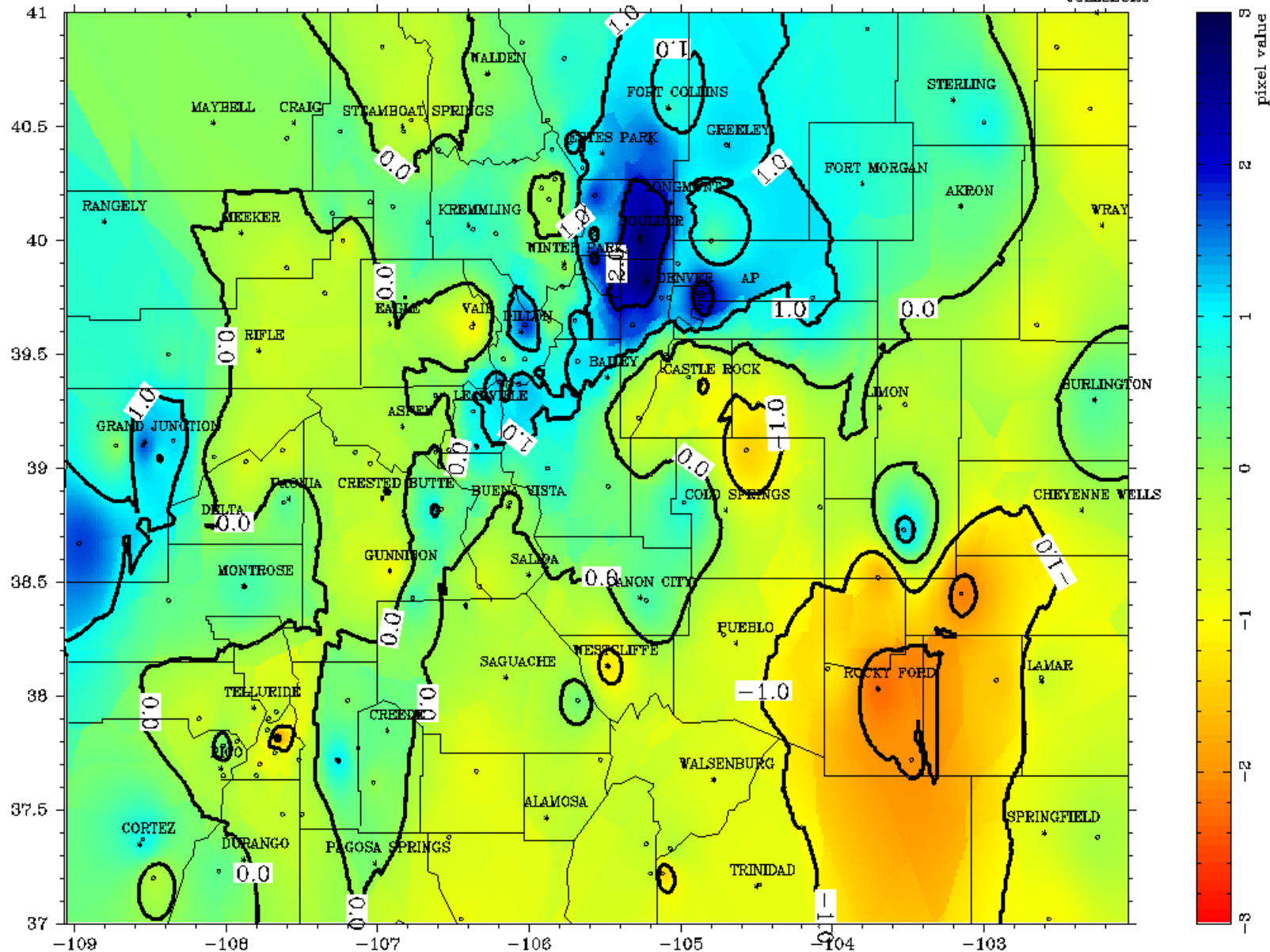
98 % < 2.0	2 % < -1.0
80 % < 1.0	0 % < -2.0
27 % < 0.0	0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

Colorado

10/2013 12 mon. SPI

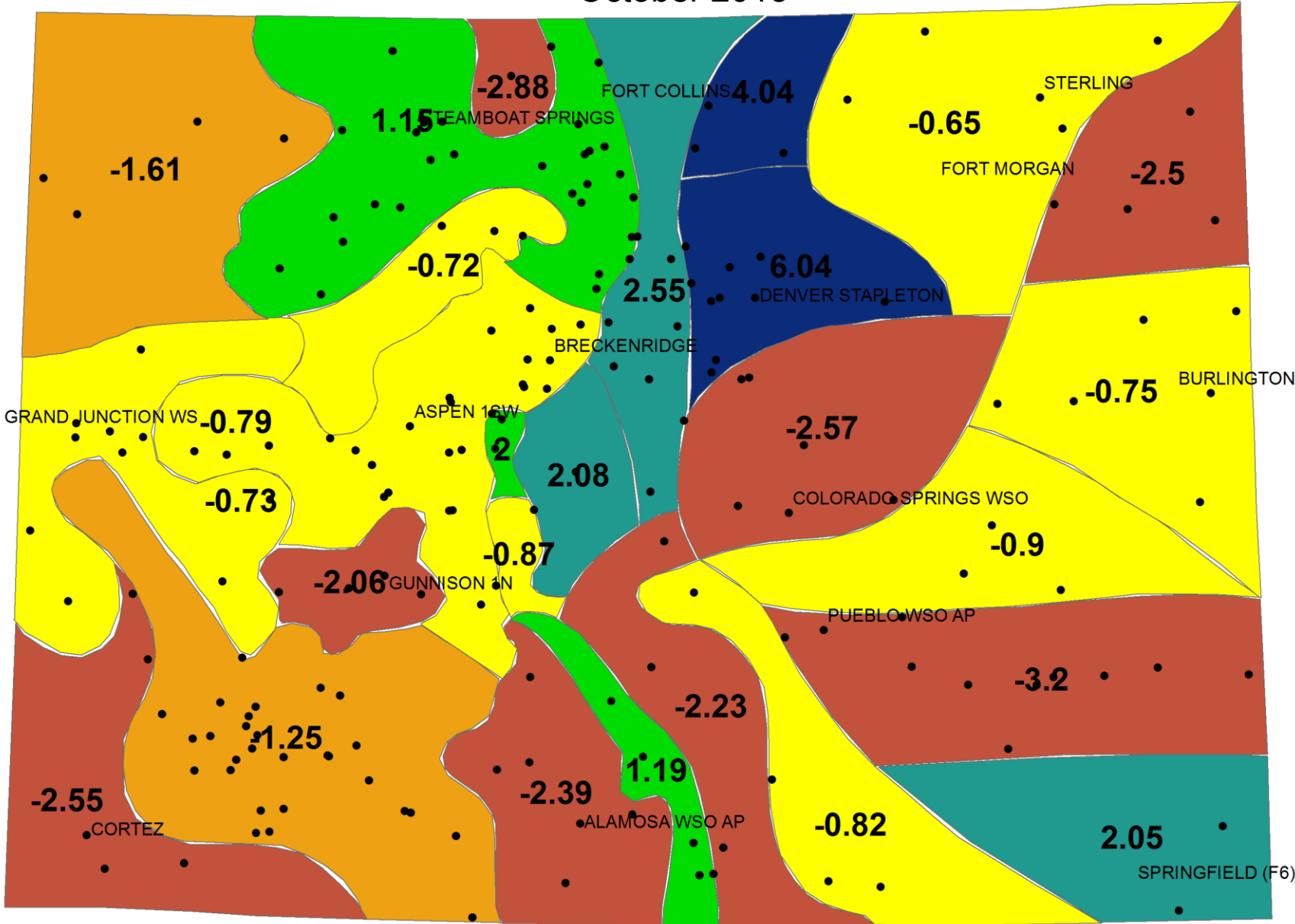
JULESBURG



99 % < 2.0 9 % < -1.0
 92 % < 1.0 1 % < -2.0
 63 % < 0.0 0 % < -3.0

Produced by:
 Colorado Climate Center
 Fort Collins, CO

Modified Palmer Drought Severity Index for Colorado October 2013



Colorado Climate Center

Data and Power Point Presentations available for downloading

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



COLORADO
CLIMATE
CENTER

**Colorado
State
University**
Knowledge to Go Places