



# *Climate Update*

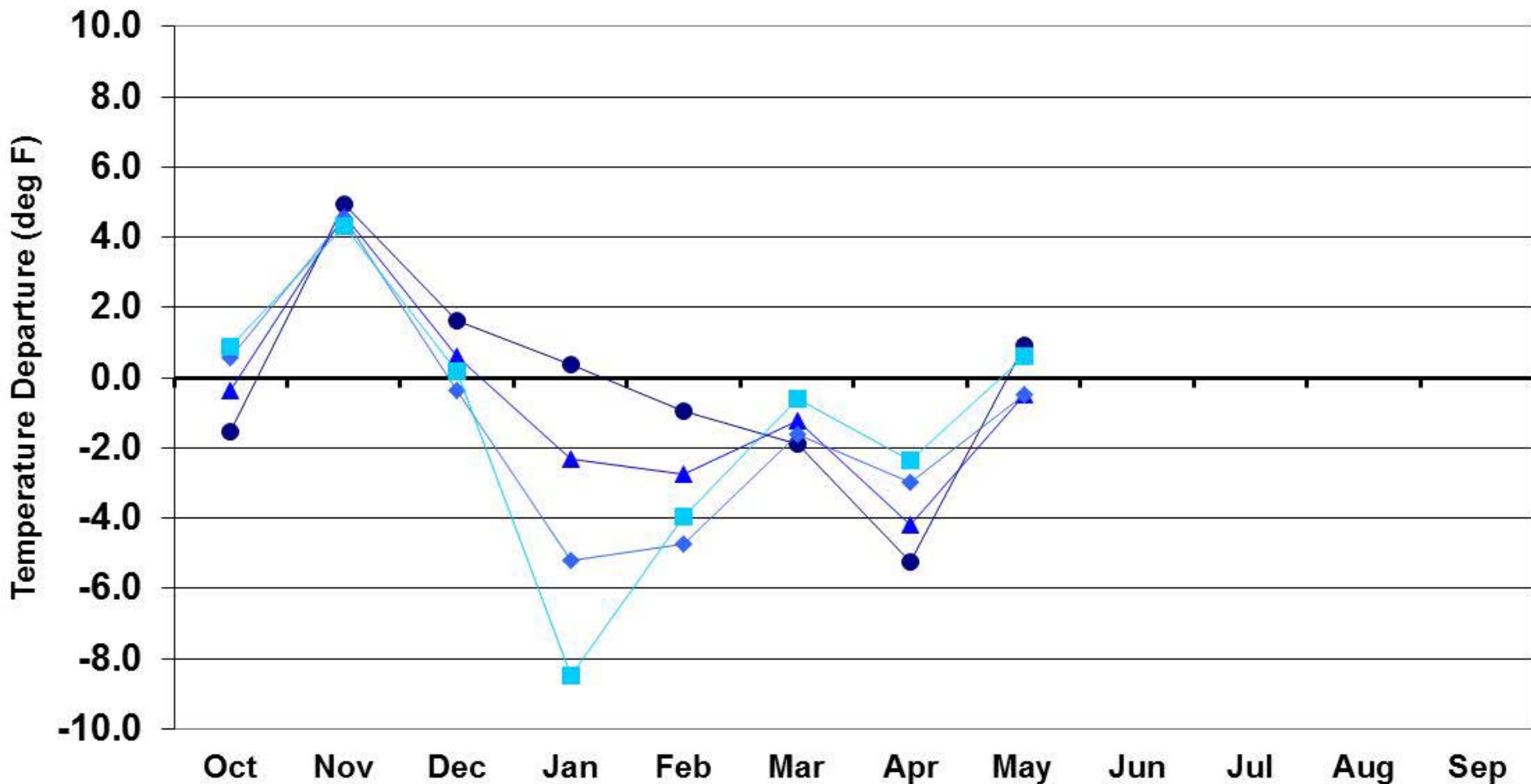
**Wendy Ryan**  
**Colorado Climate Center**

**Assistant State Climatologist**  
**Colorado State University**

Presented to  
Water Availability Task Force  
20 June 2013  
Denver, CO

# Water Year 2013 Temperature Departures

Water Year 2013



● Eastern Plains

▲ Foothills

◆ Mountains

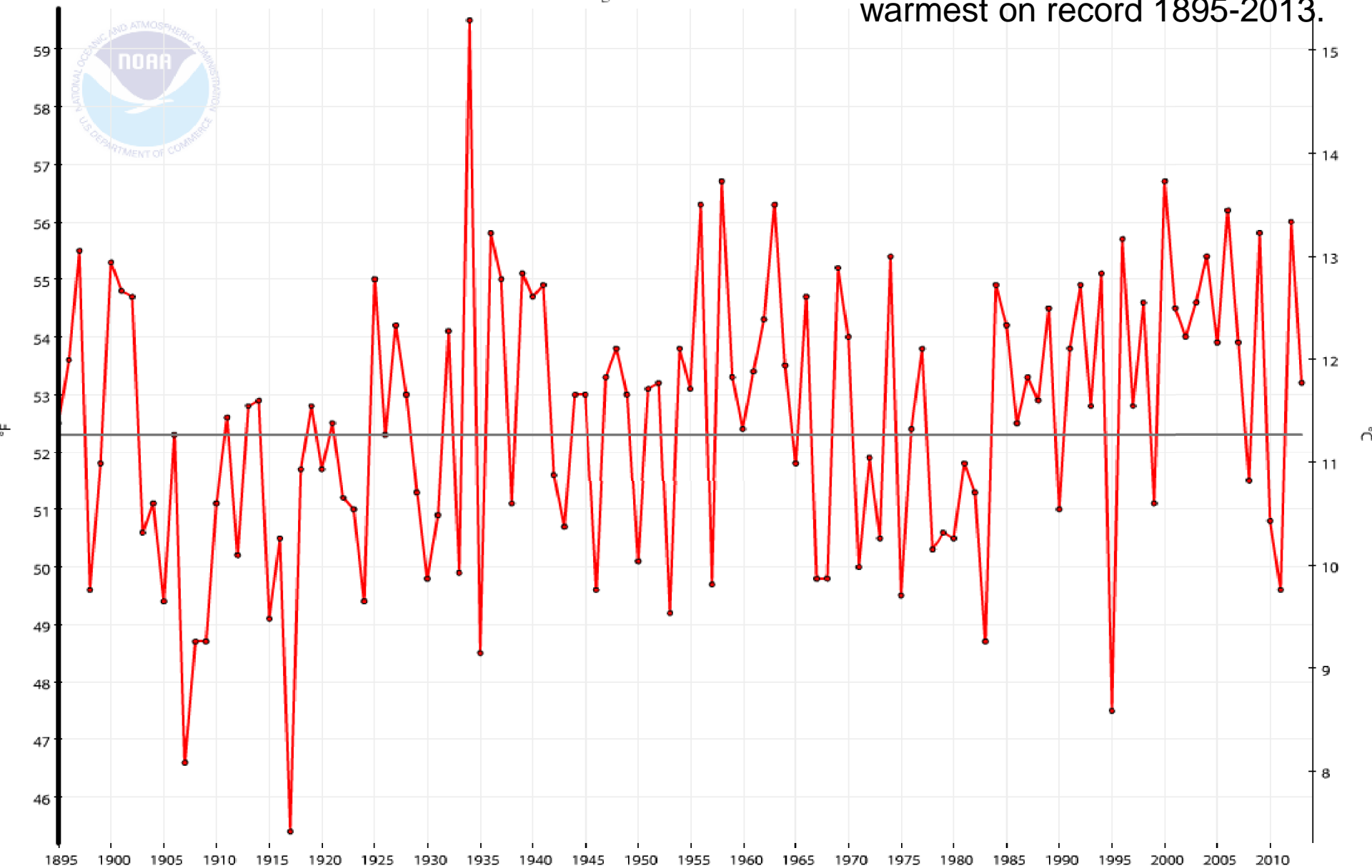
■ Western Valleys

# May Average Temperature History for Colorado (NCDC)

Colorado, Temperature, May

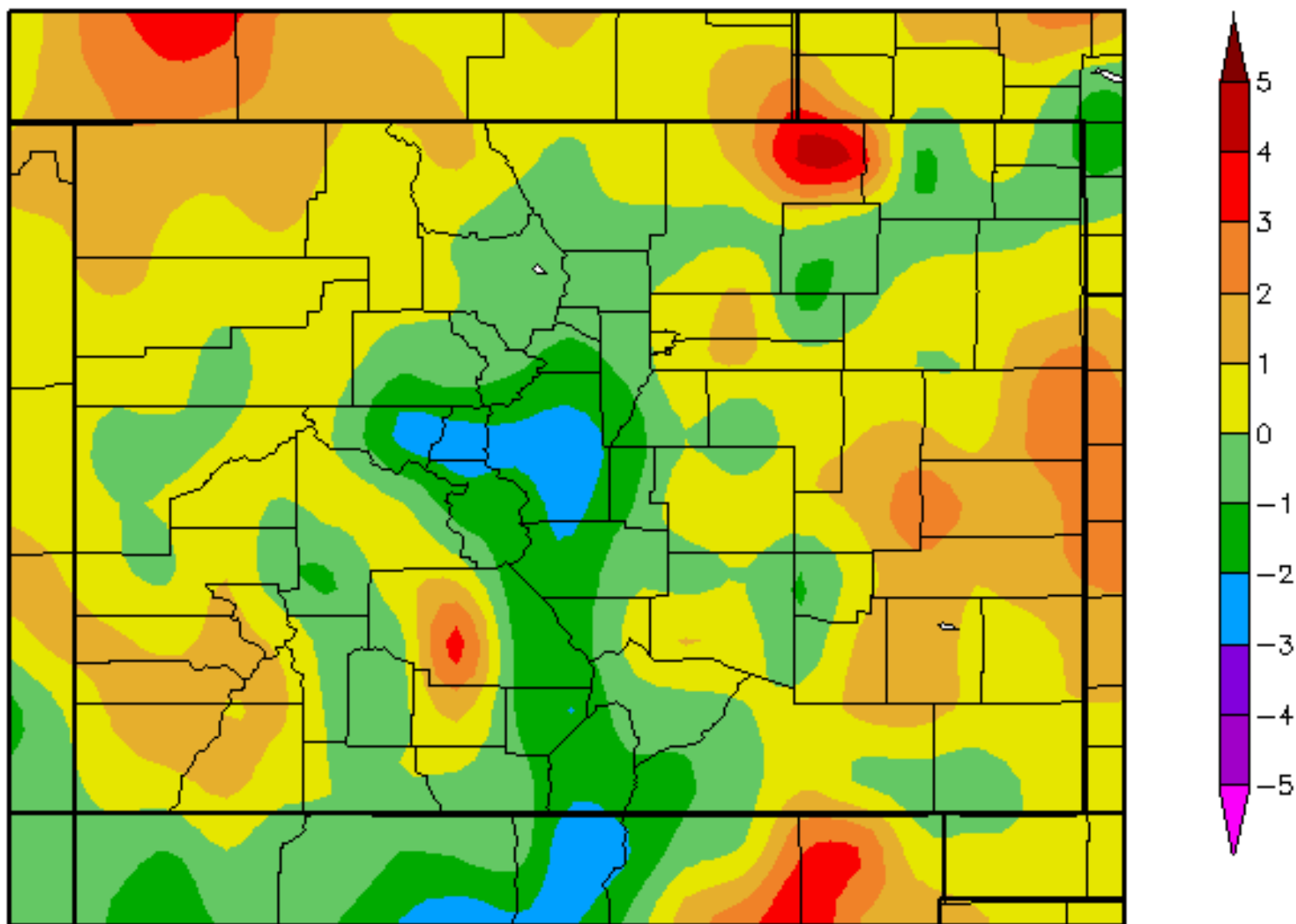
— 1901-2000 Avg: 52.3°F      ●— Temperature

53.2 Ranks as the 49<sup>th</sup> warmest on record 1895-2013.



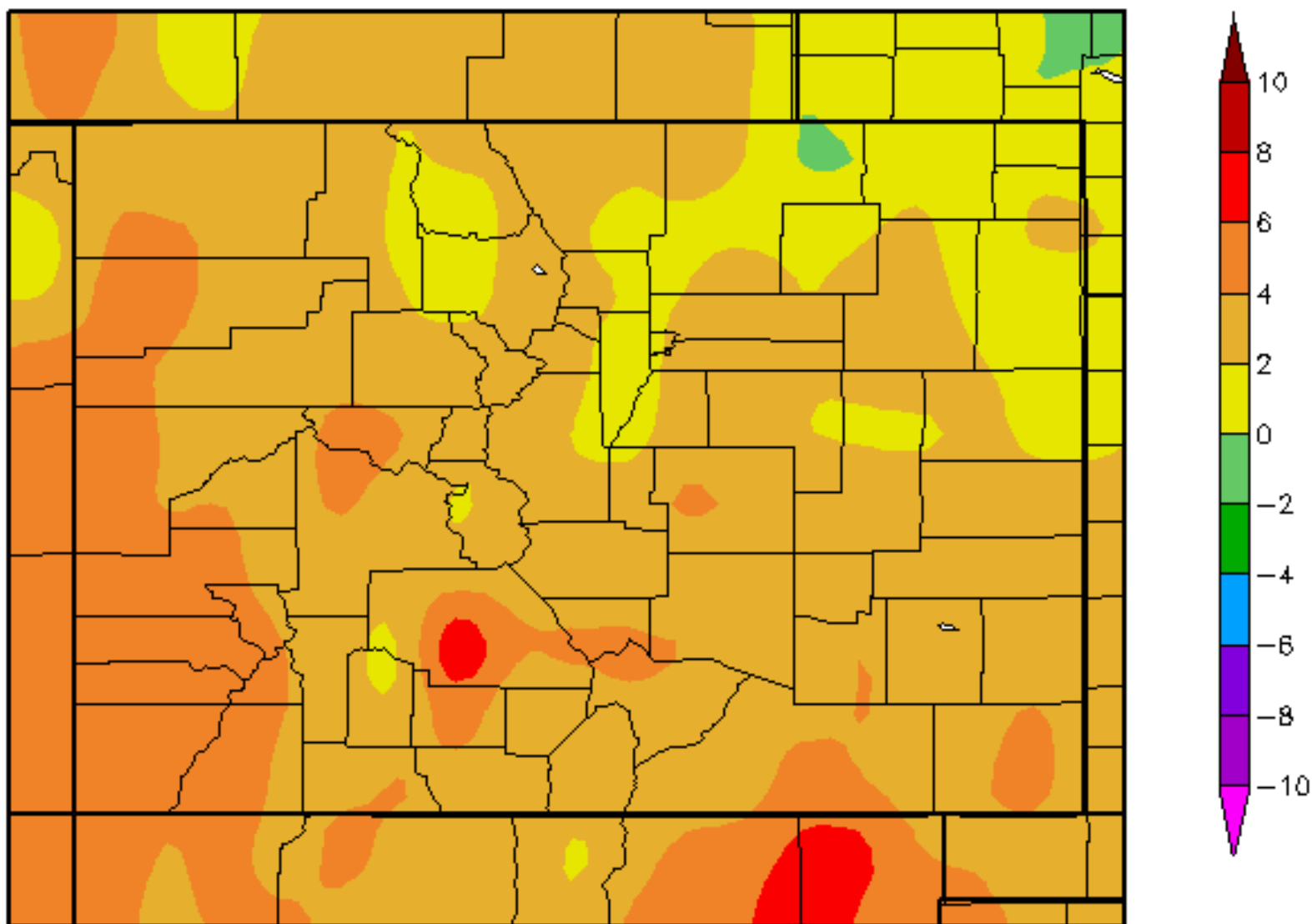
# Departure from Normal Temperature (F)

## 5/1/2013 – 5/31/2013

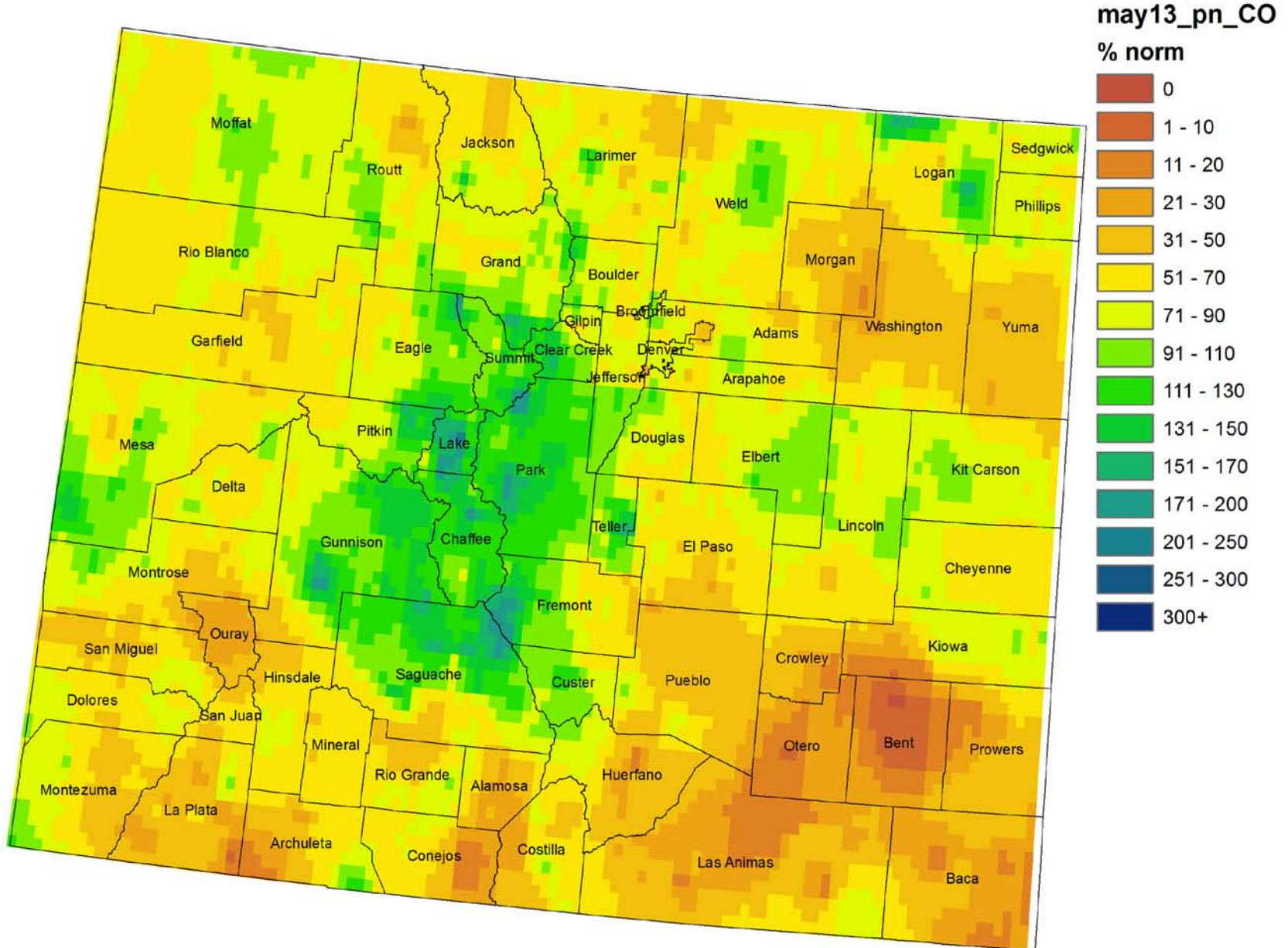


# Departure from Normal Temperature (F)

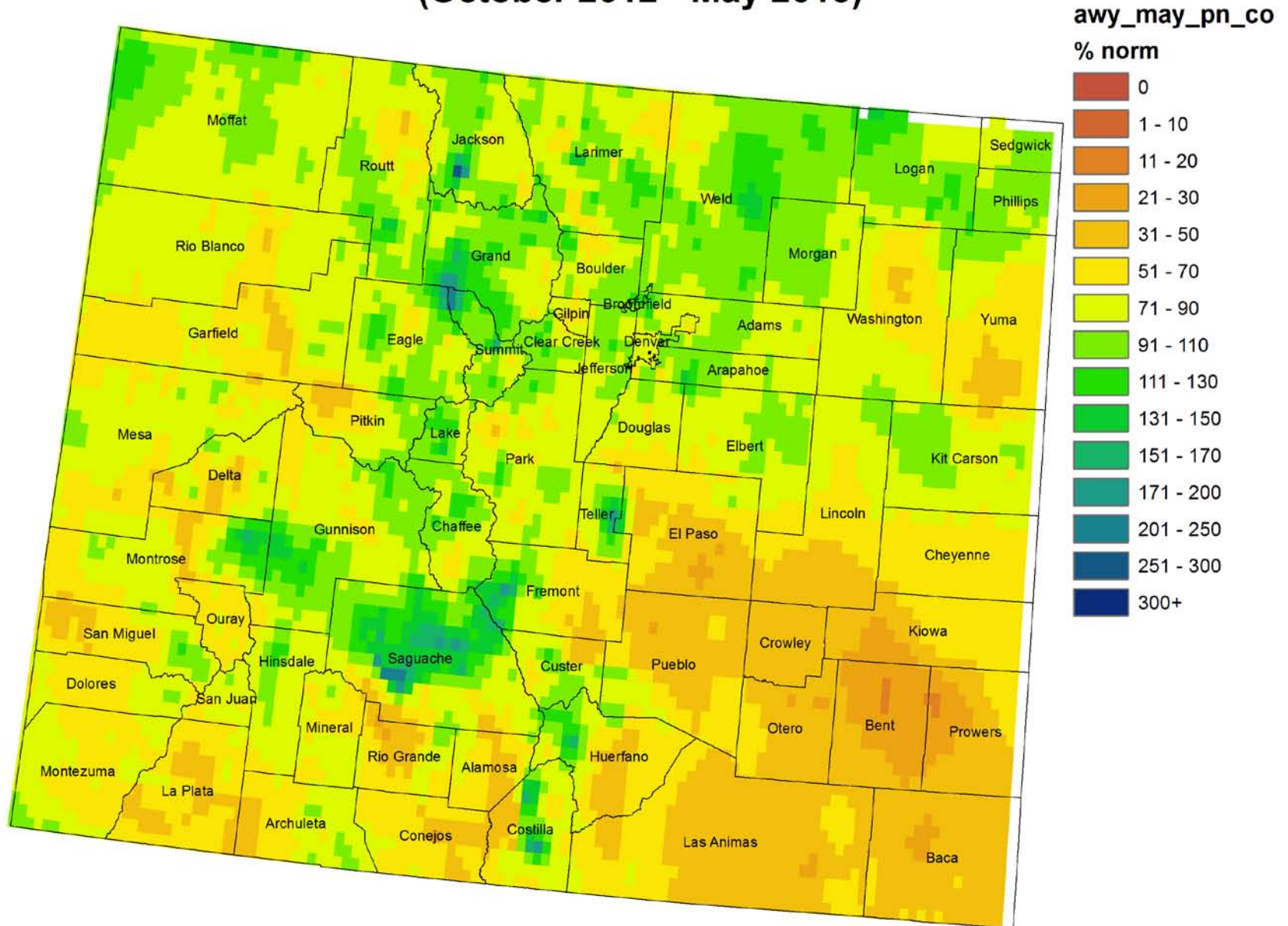
## 6/1/2013 – 6/18/2013



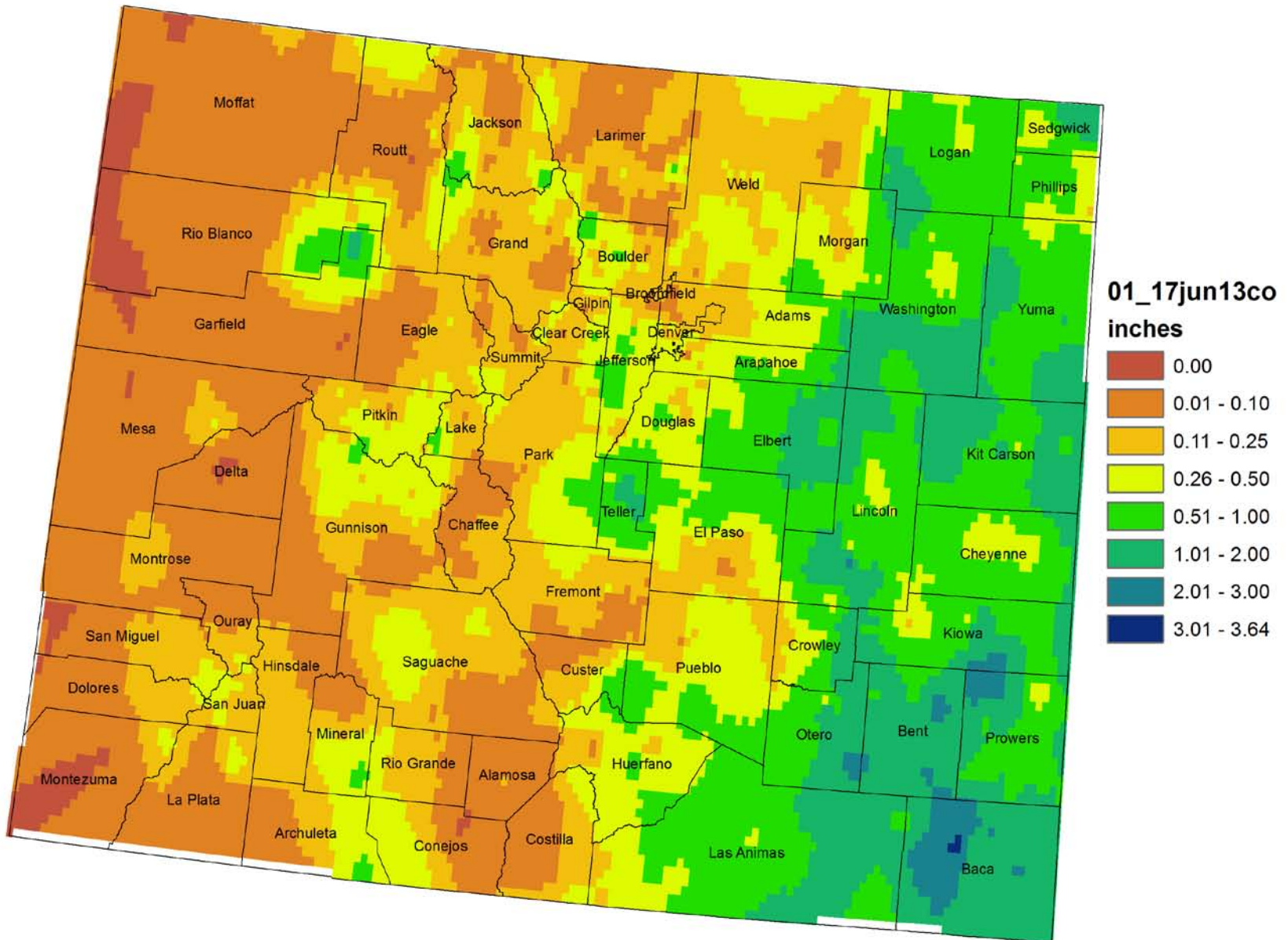
# Colorado May 2013 Precipitation as Percentage of Normal



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

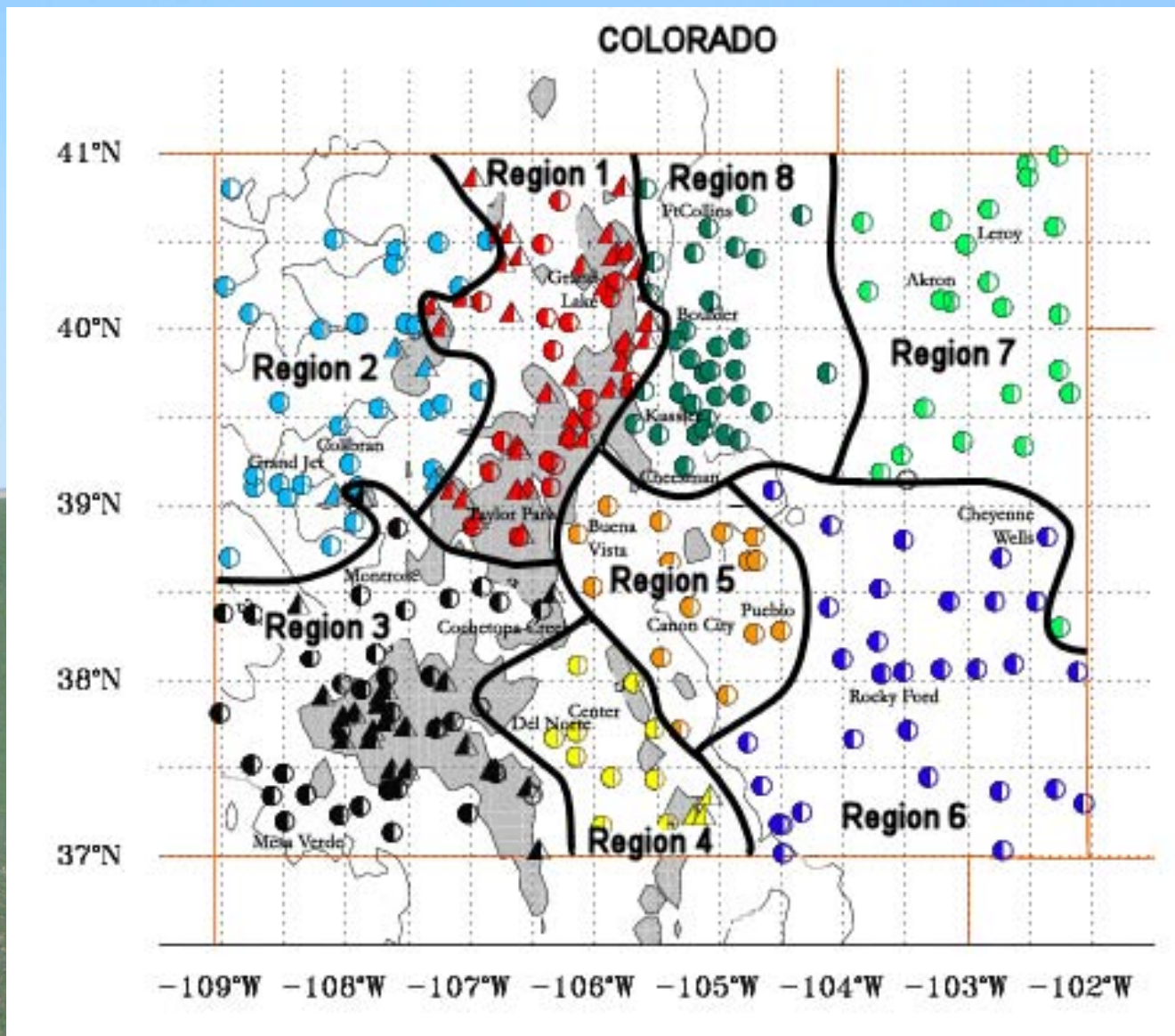


# Colorado Month to Date Precipitation (in) 1 - 17 June 2013



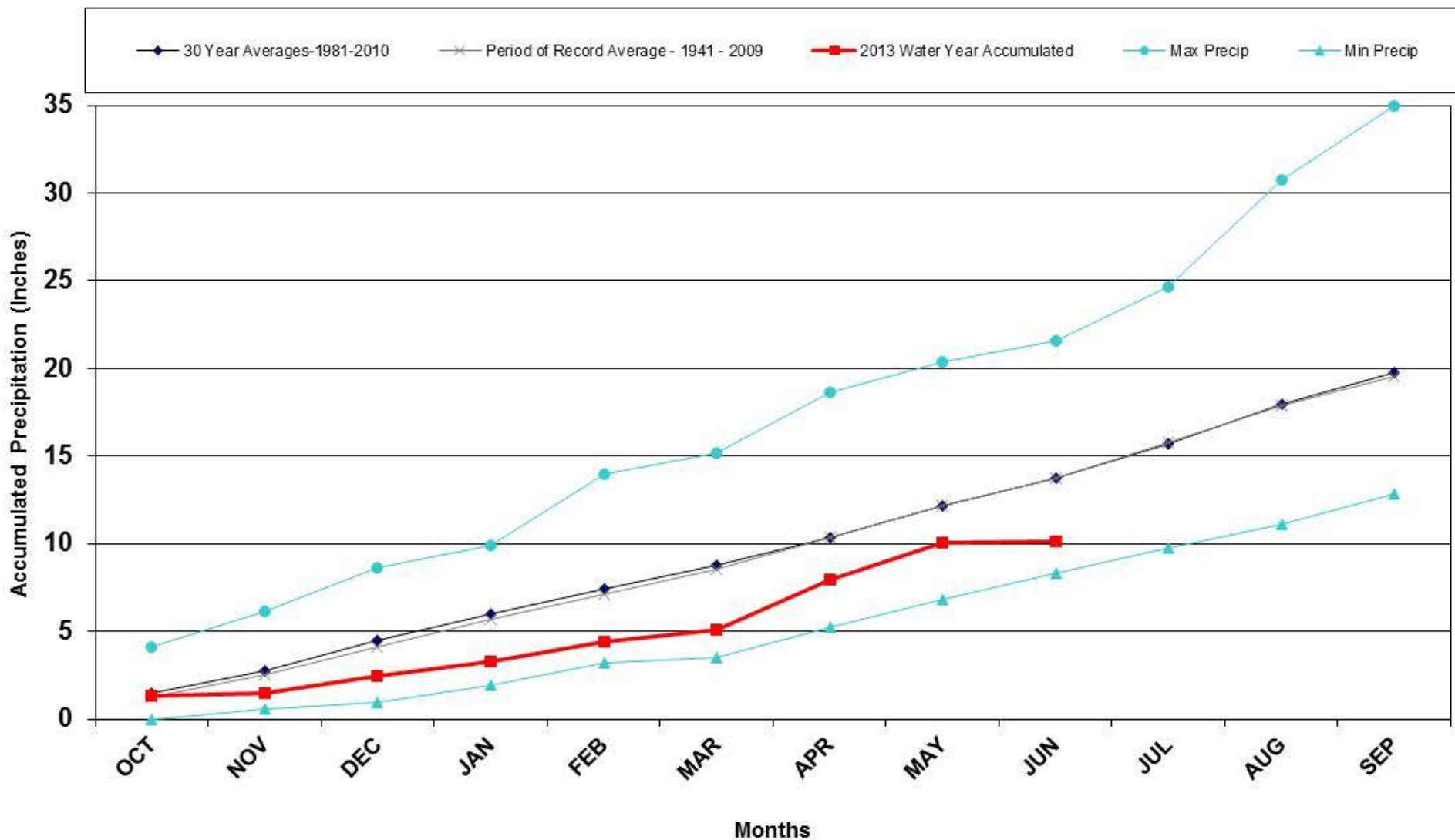


# Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO



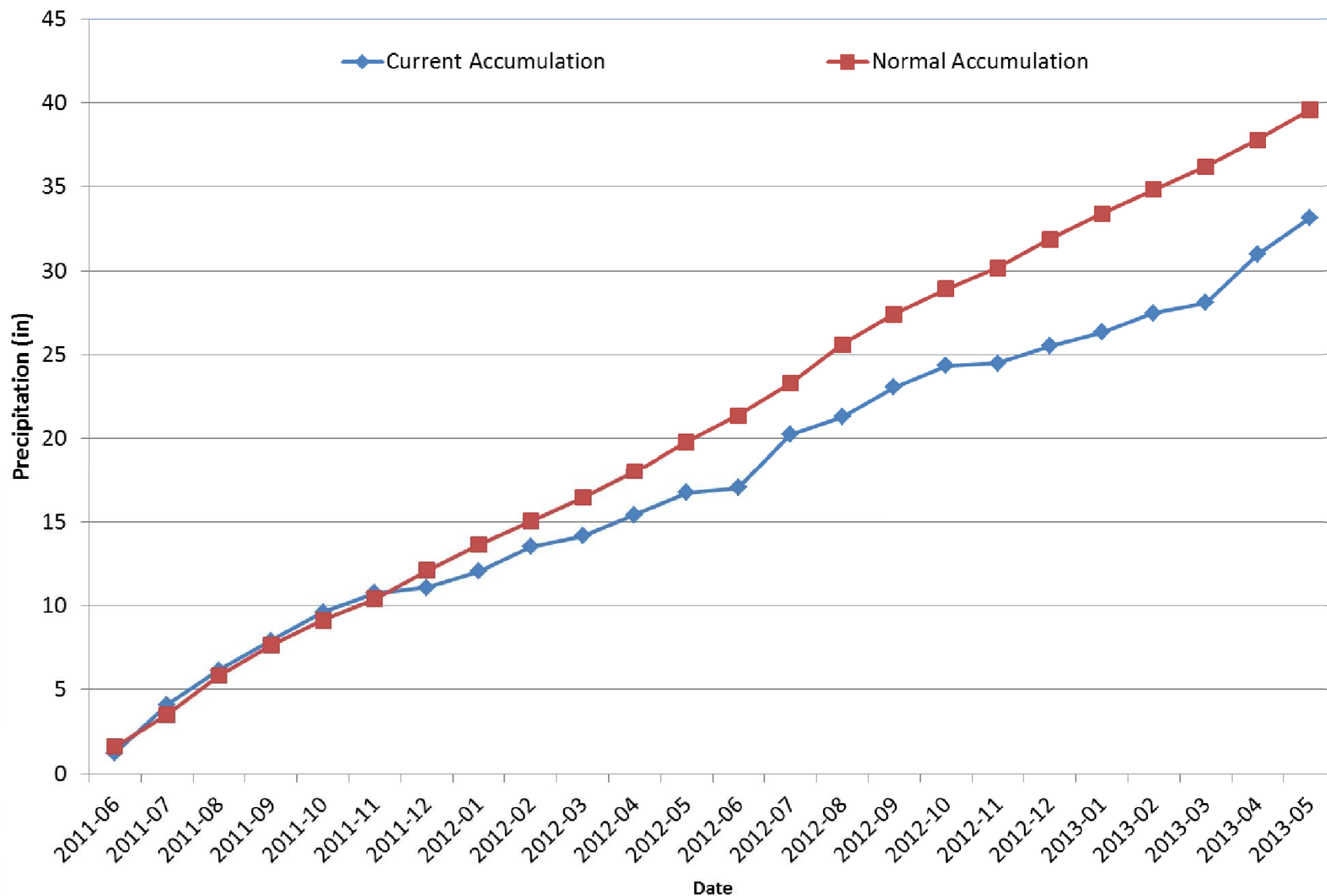
# Division 1 – Grand Lake 1NW

## Grand Lake 1 NW 2013 Water Year



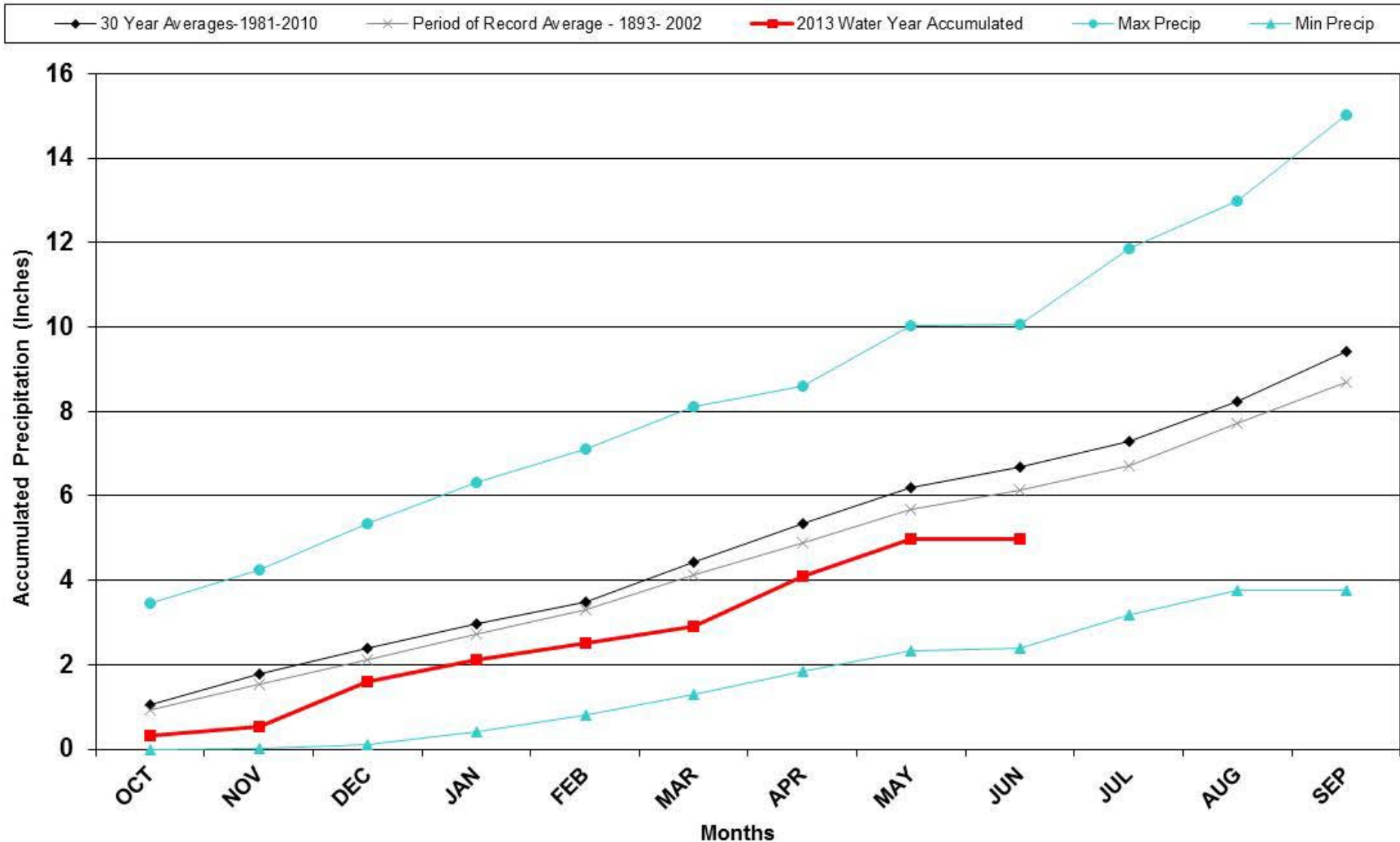
# Division 1 – Grand Lake 1NW

## Grand Lake 1NW 24 Month Precipitation Accumulation



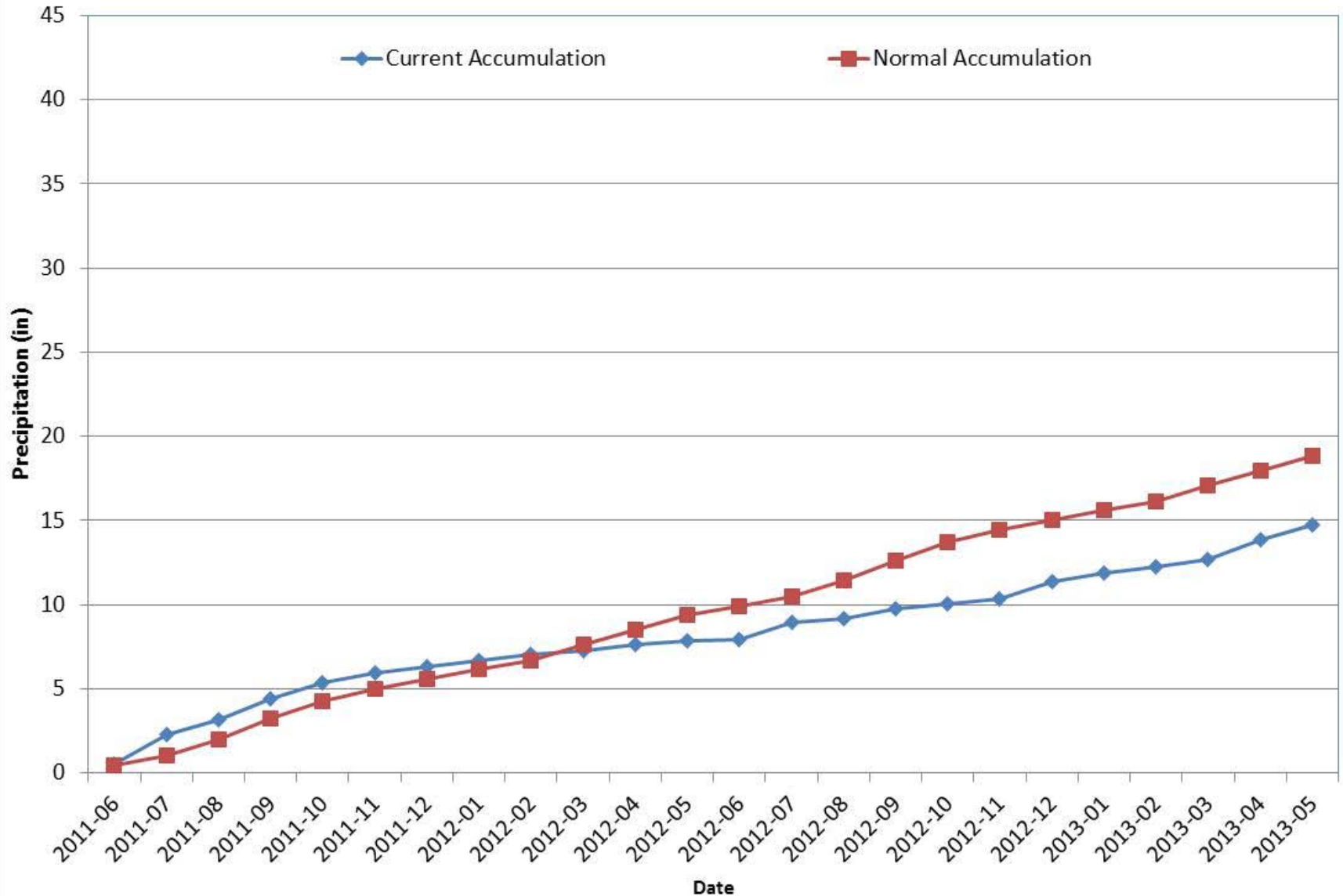
# Division 2 – Grand Junction

## Grand Junction WSFO 2013 Water Year



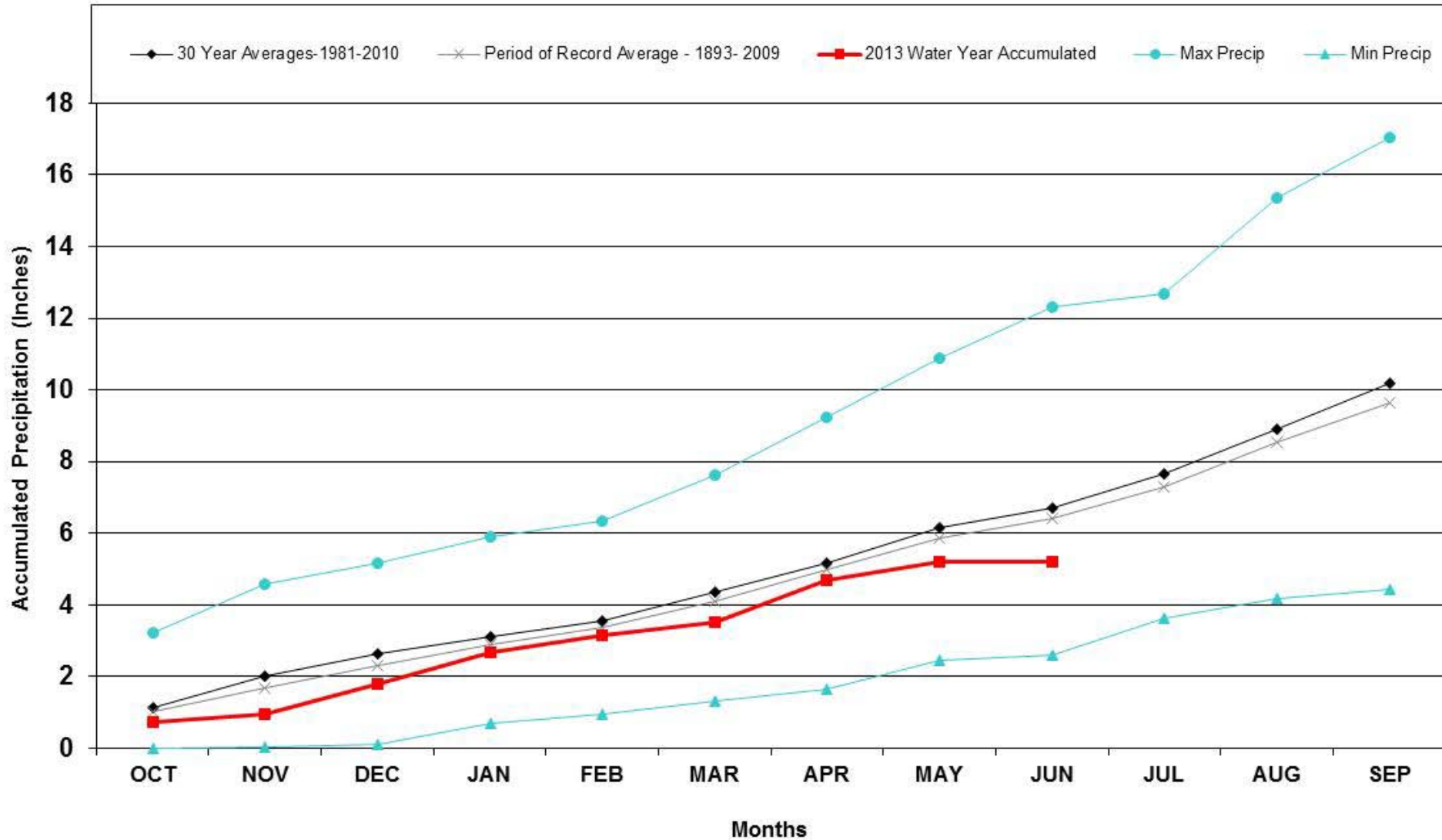
# Division 2 – Grand Junction

## Grand Junction 24 Month Precipitation Accumulation



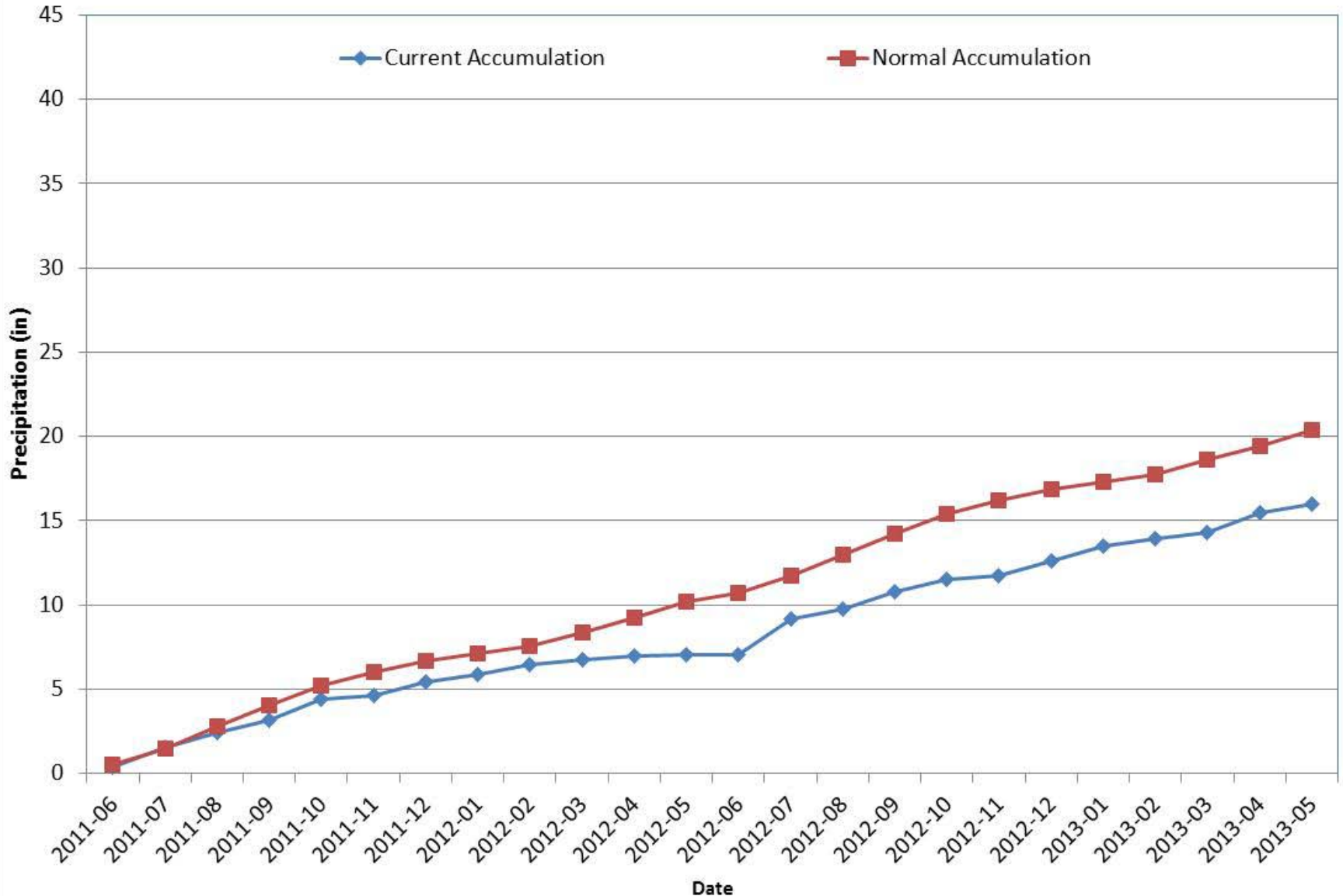
# Division 3 – Montrose

## Montrose #2 2013 Water Year



# Division 3 – Montrose

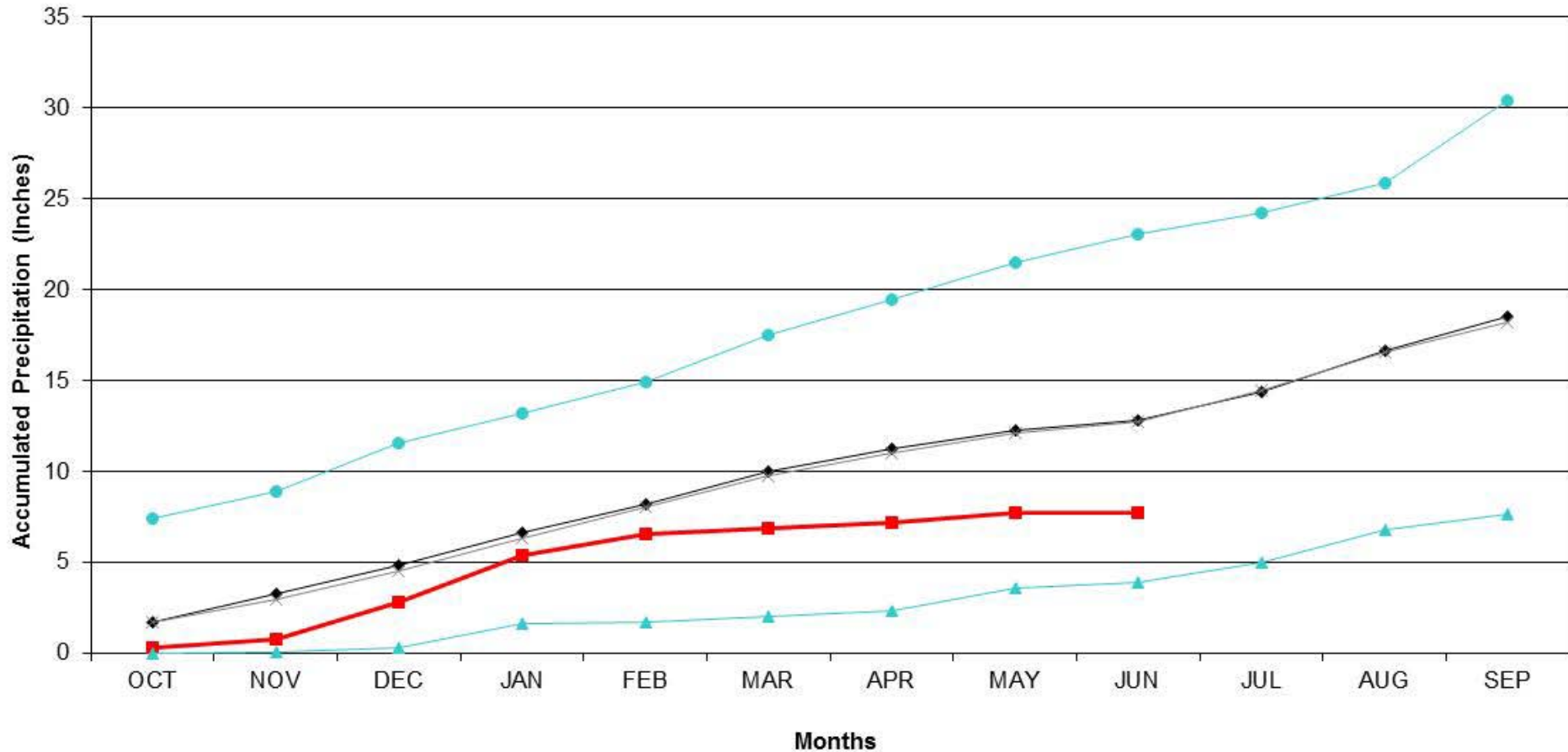
## Montrose #2 24 Month Precipitation Accumulation



# Division 3 – Mesa Verde NP

## Mesa Verde NP 2013 Water Year

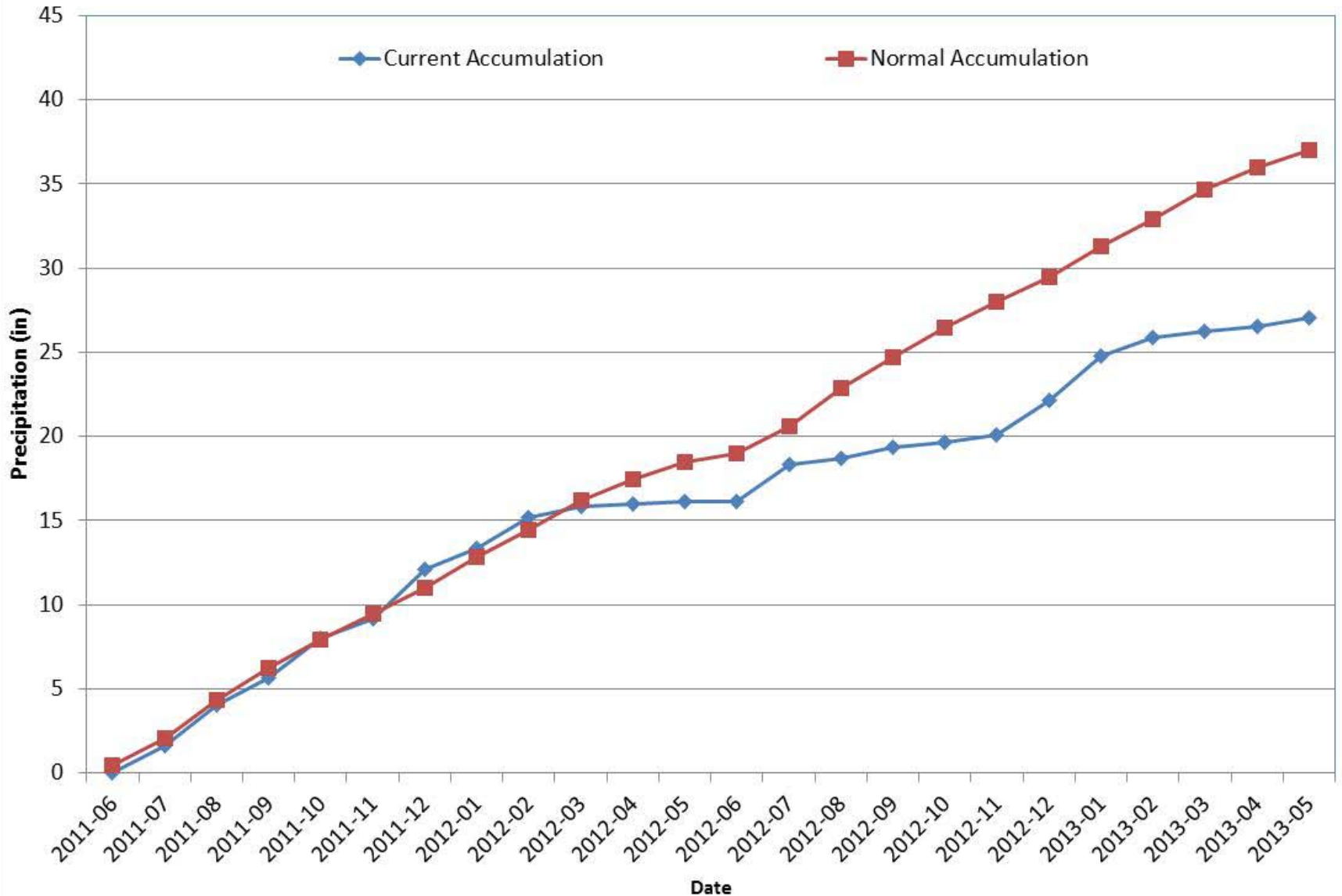
◆ 30 Year Averages-1981-2010    ✕ Period of Record Average - 1893- 2009    ■ 2013 Water Year Accumulated    ● Max Precip    ▲ Min Precip





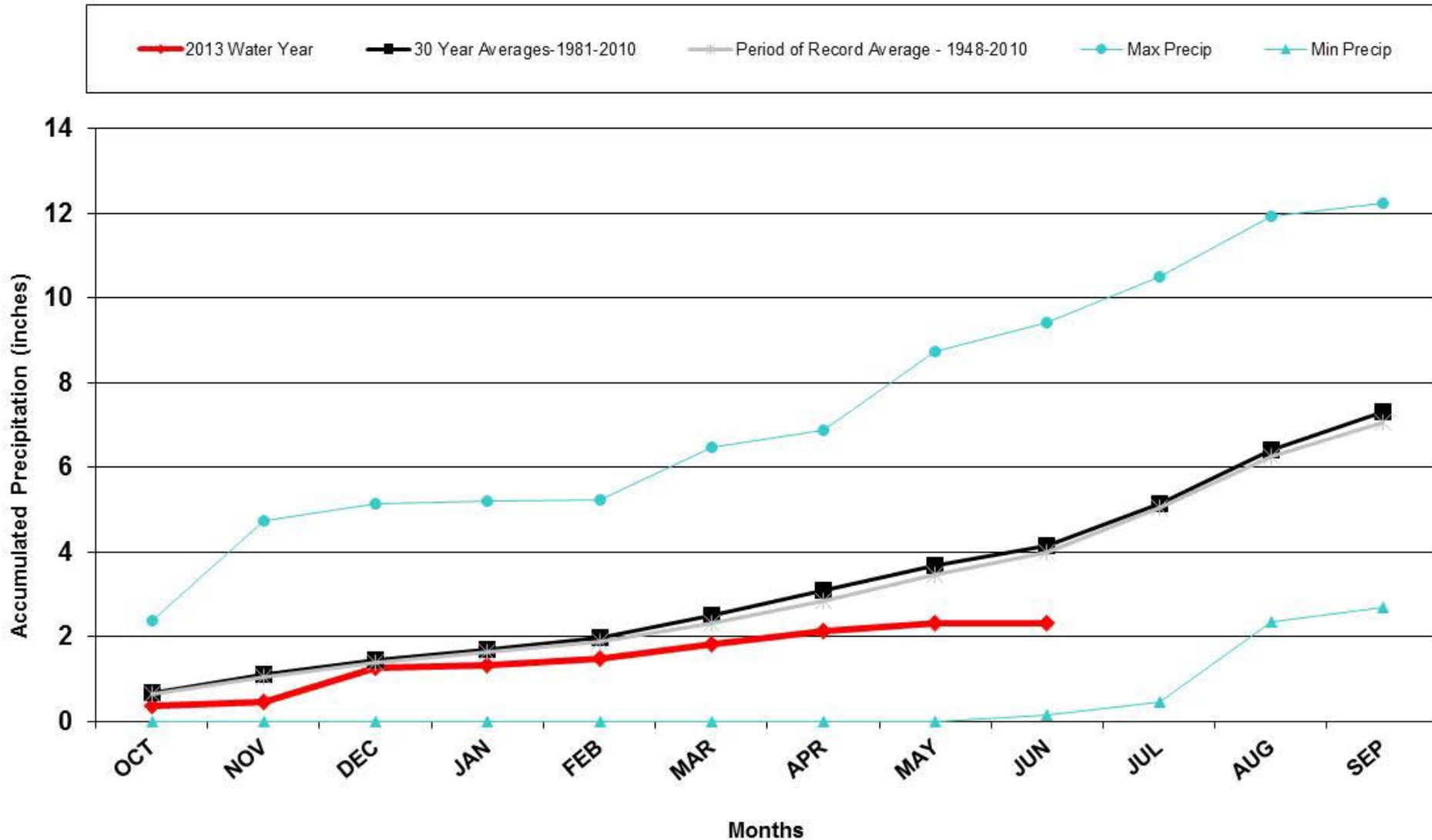
# Division 3 – Mesa Verde NP

## Mesa Verde NP 24 Month Precipitation Accumulation



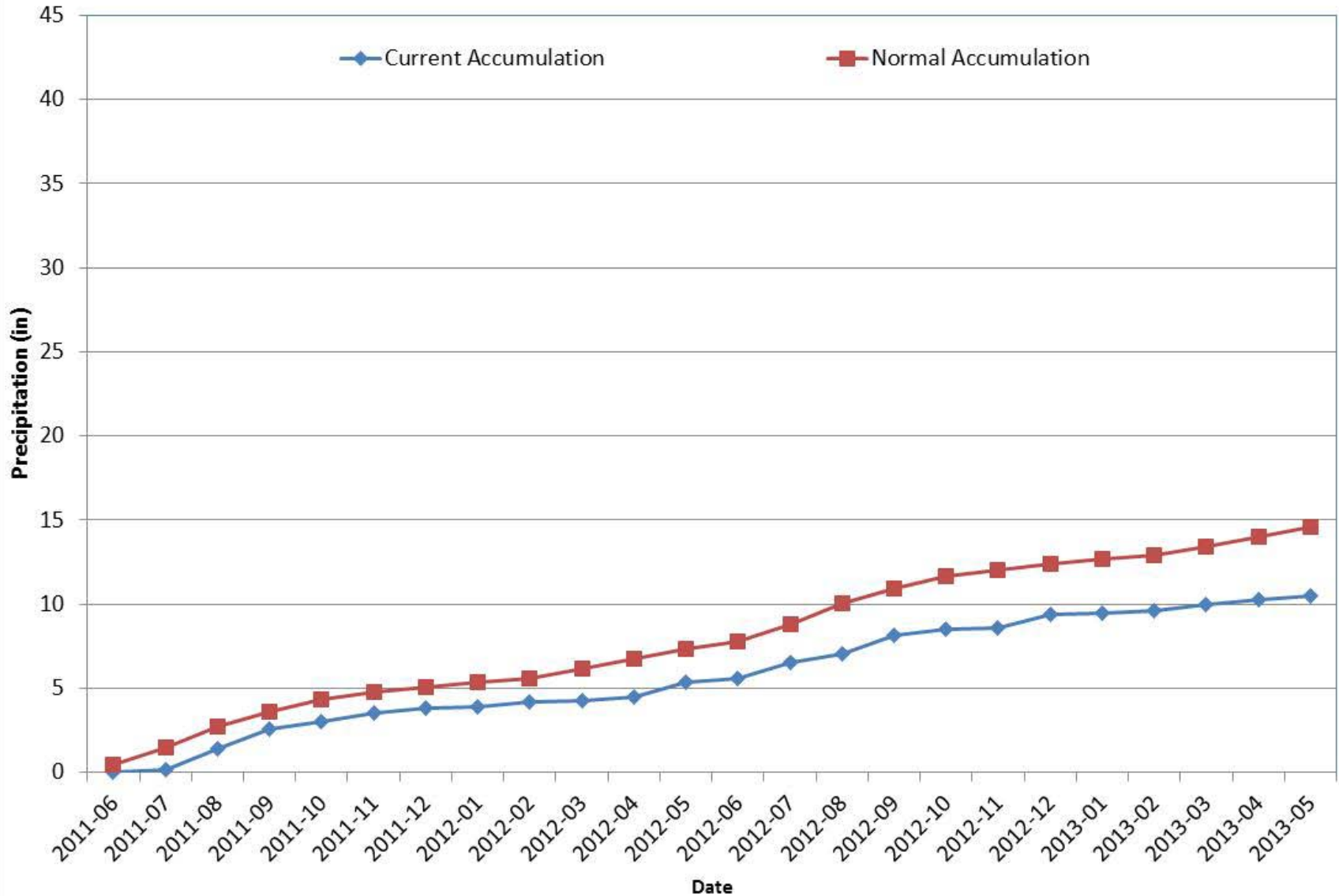
# Division 4 – Alamosa

## Alamosa WSO 2013 Water Year



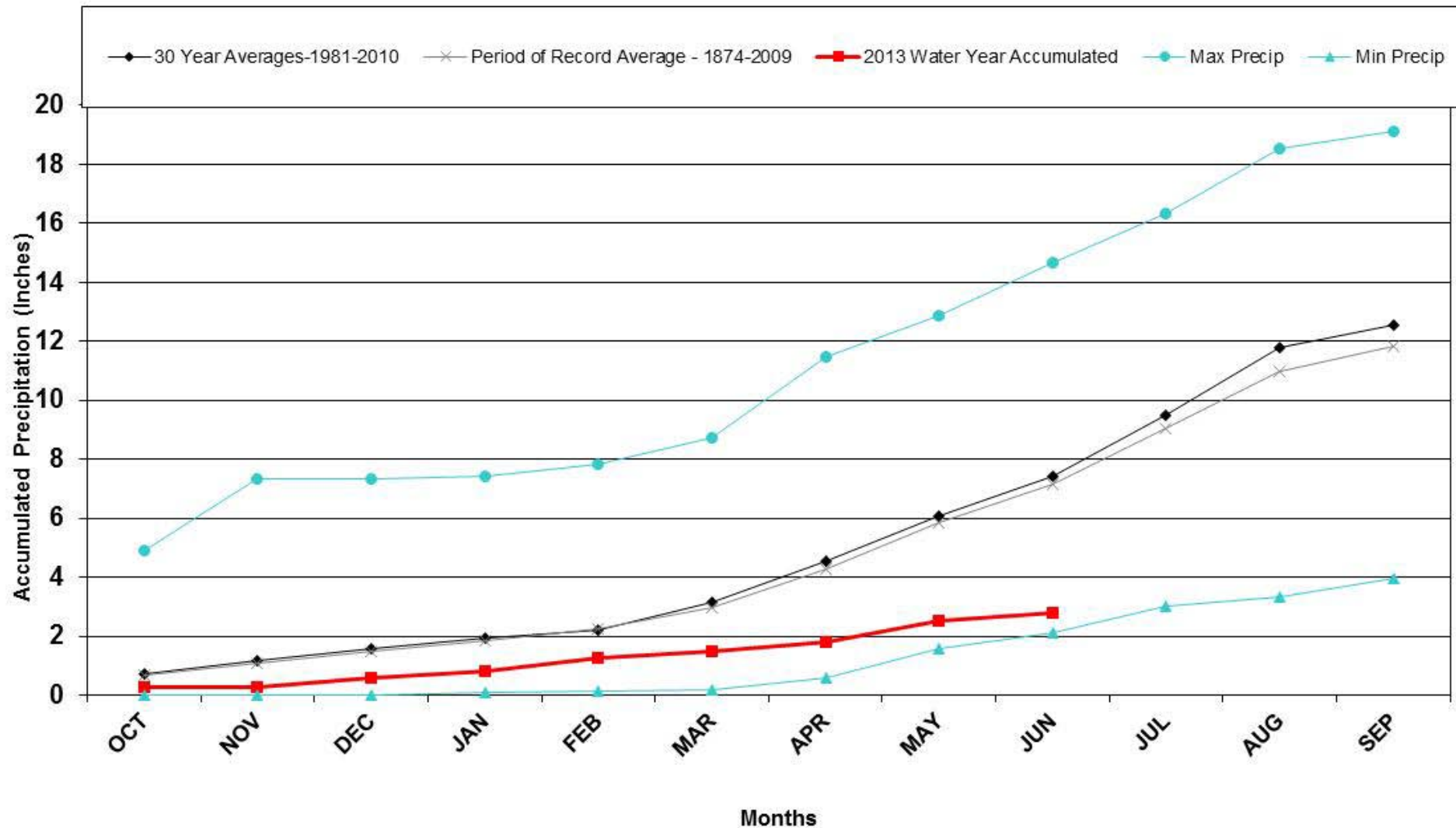
# Division 4 – Alamosa

## Alamosa WSO 24 Month Precipitation Accumulation



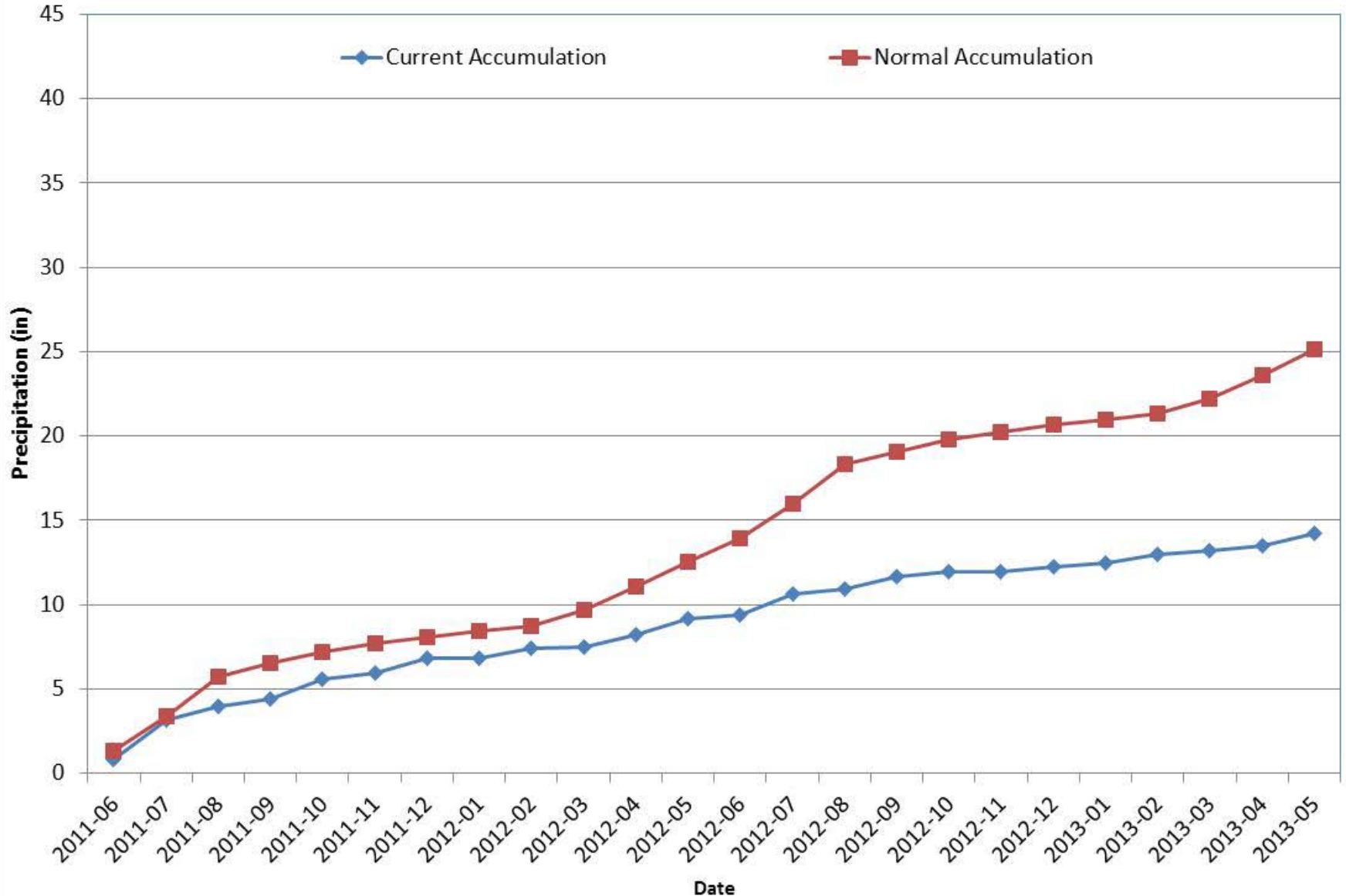
# Division 5 – Pueblo

## Pueblo WSO 2013 Water Year



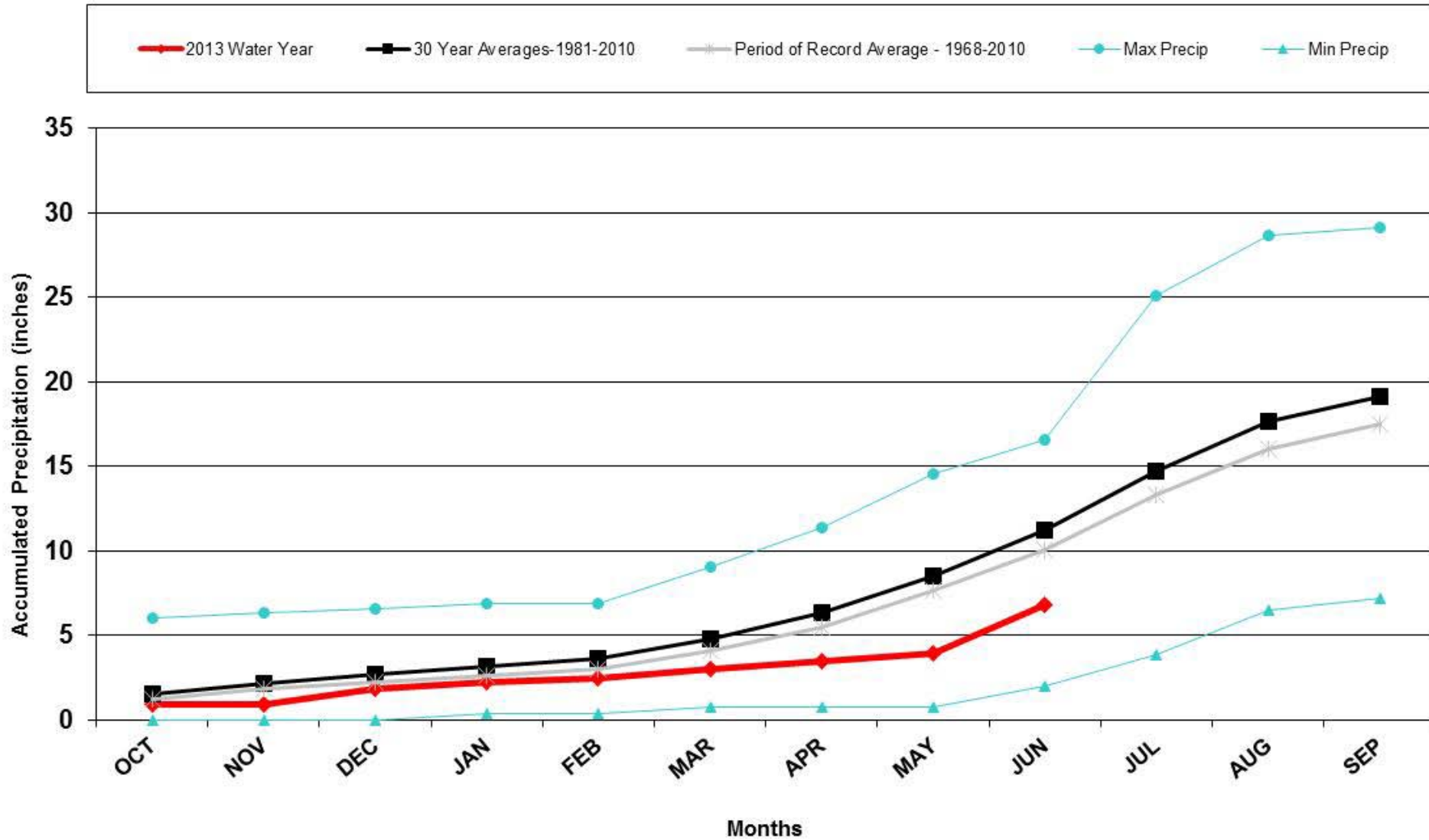
# Division 5 – Pueblo

## Pueblo Memorial AP 24 Month Precipitation Accumulation



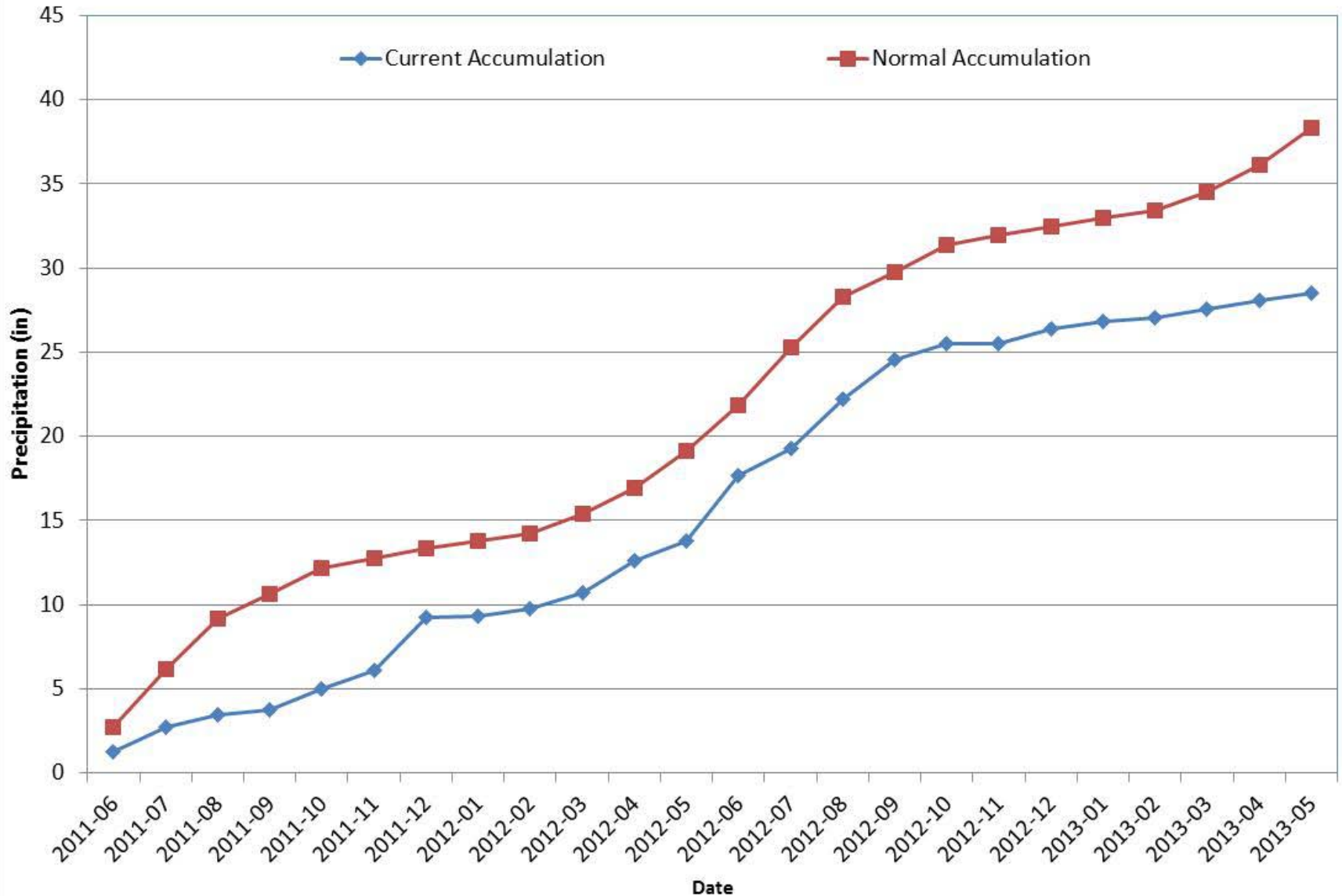
# Division 6 - Walsh

## Walsh 2013 Water Year



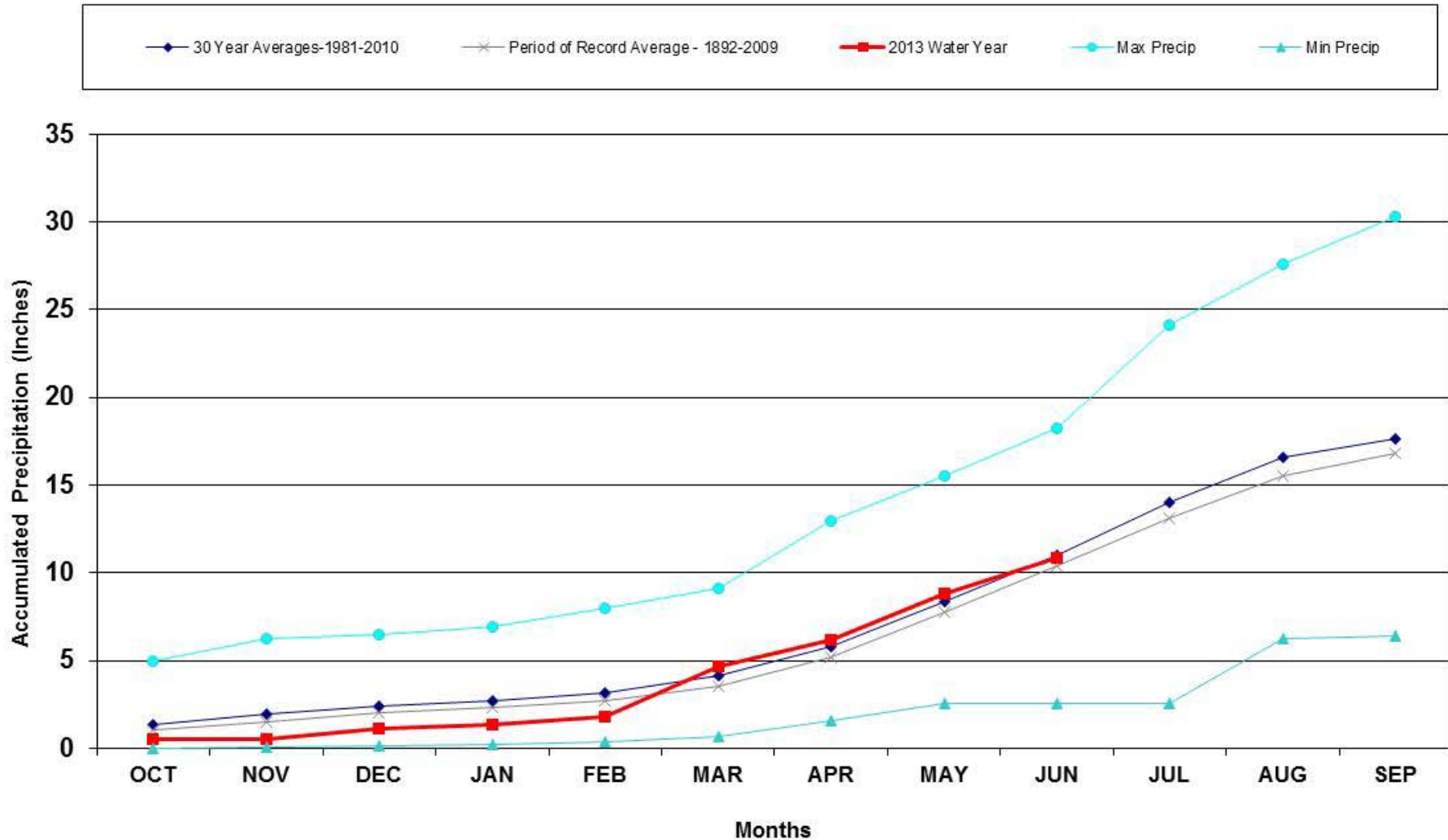
# Division 6 - Walsh

## Walsh 1W 24 Month Precipitation Accumulation



# Division 6 - Burlington

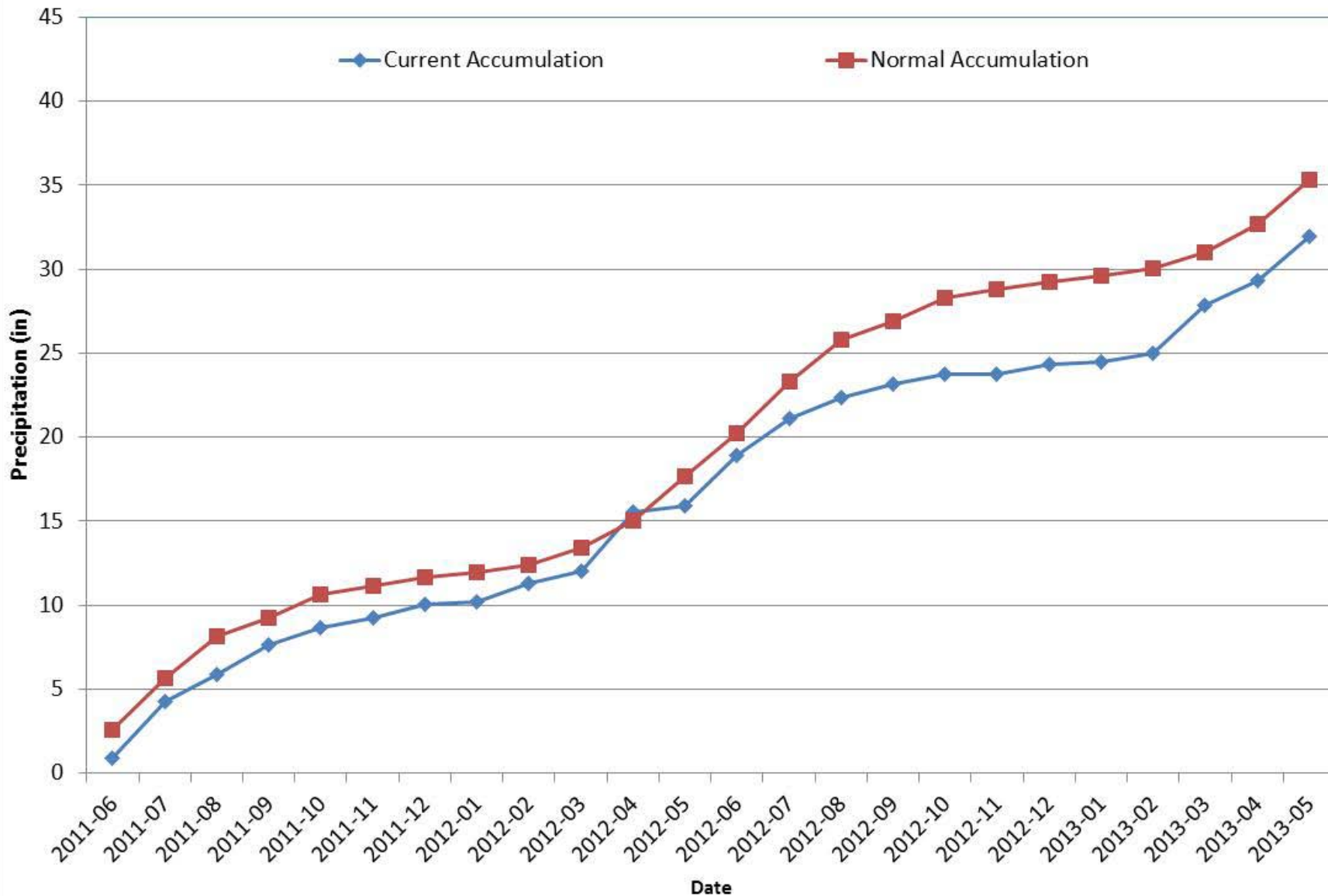
## Burlington 2013 Water Year





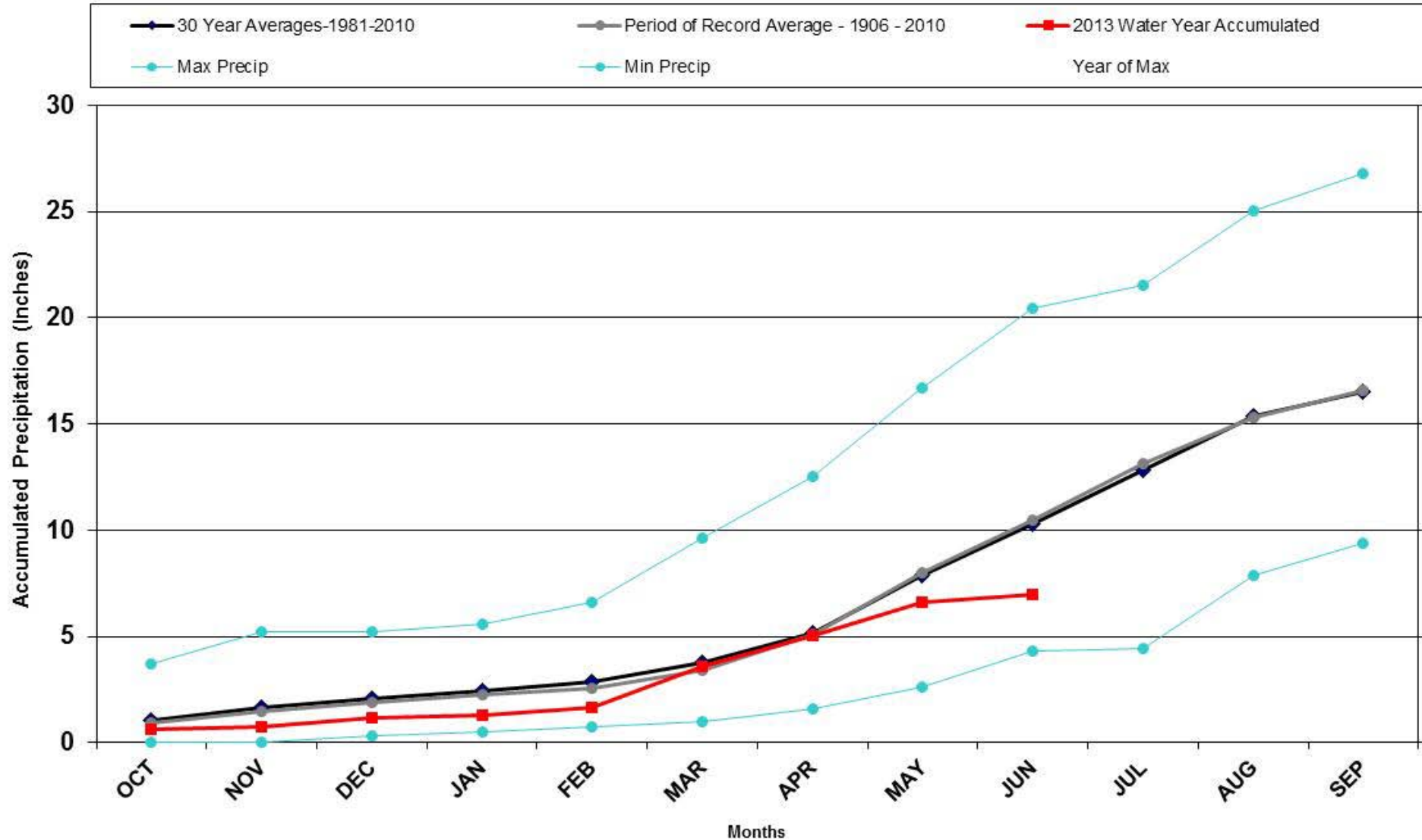
# Division 6 - Burlington

**Burlington, CO**  
**24 Month Precipitation Accumulation**



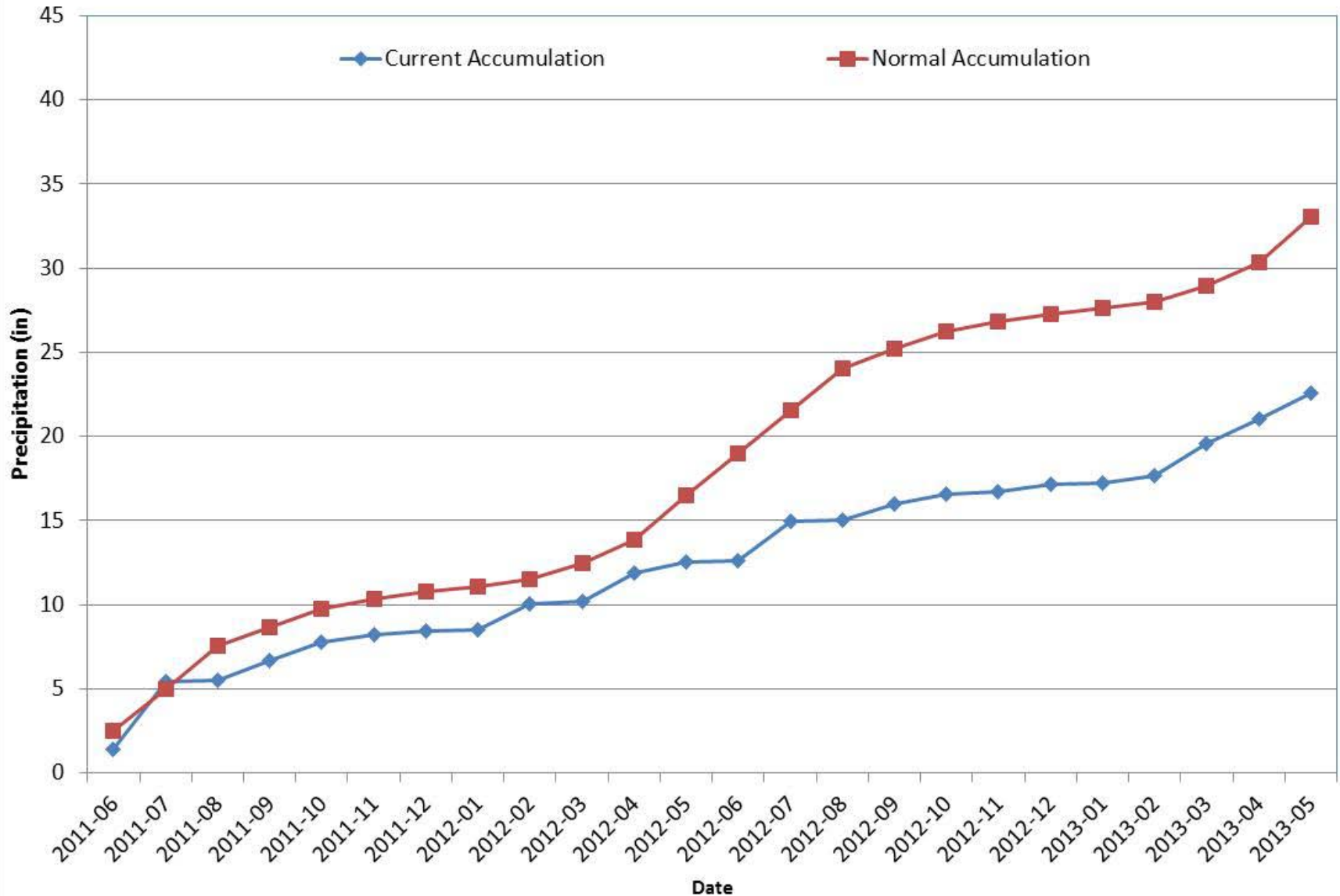
# Division 7 – Akron

## Akron 4E 2013 Water Year



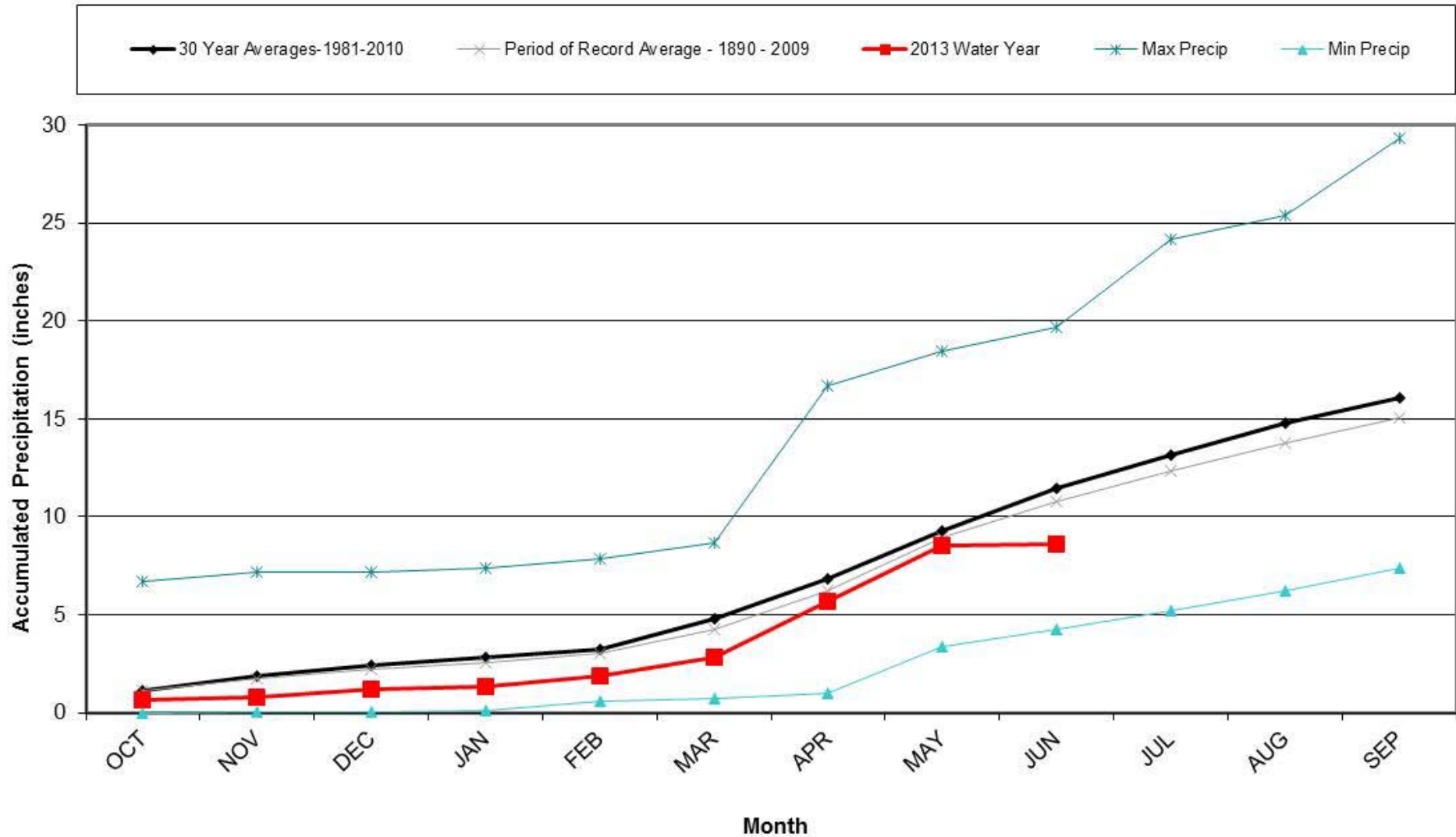
# Division 7 – Akron

## Akron 4E 24 Month Precipitation Accumulation



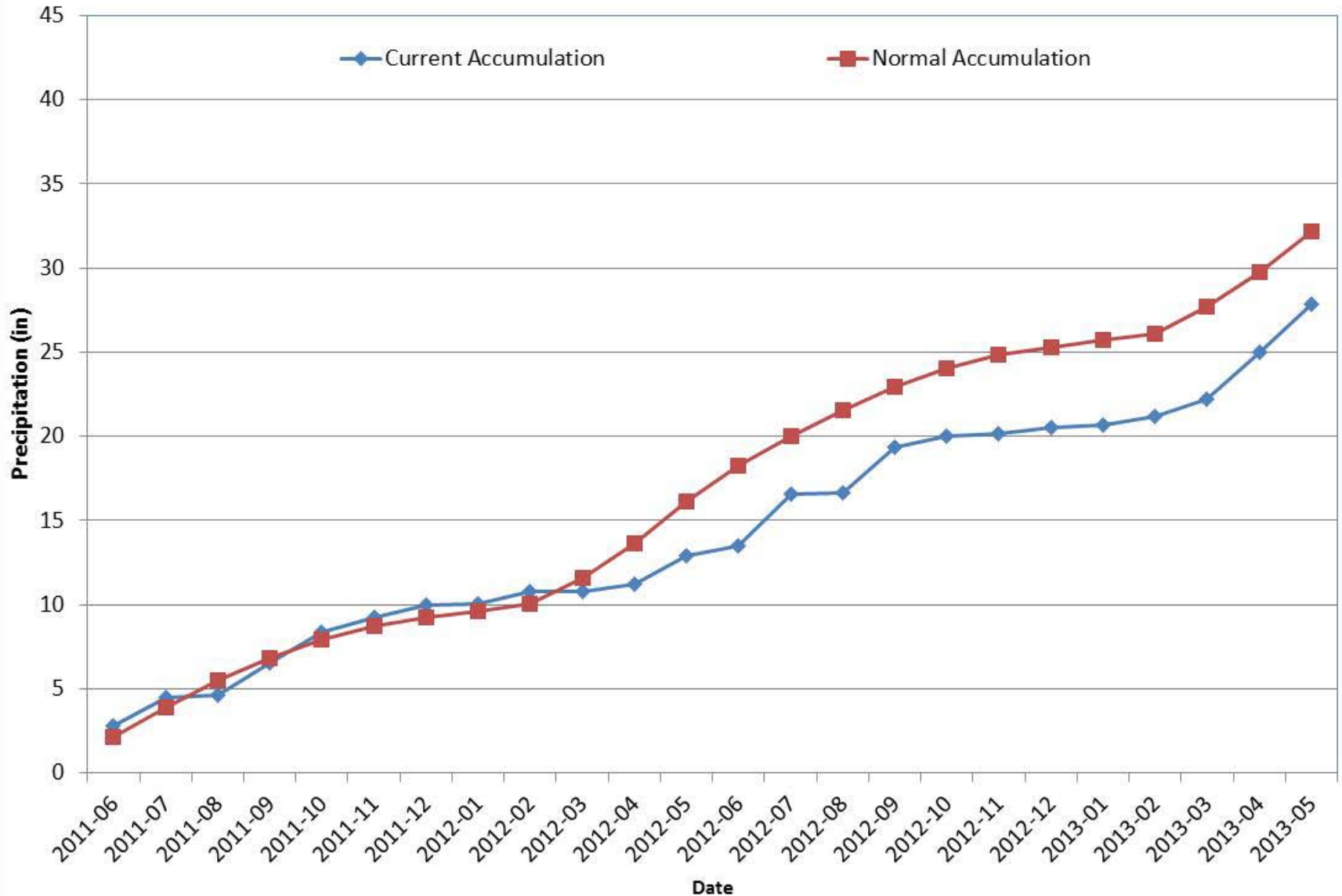
# Division 8 – Fort Collins

## Fort Collins 2013 Water Year



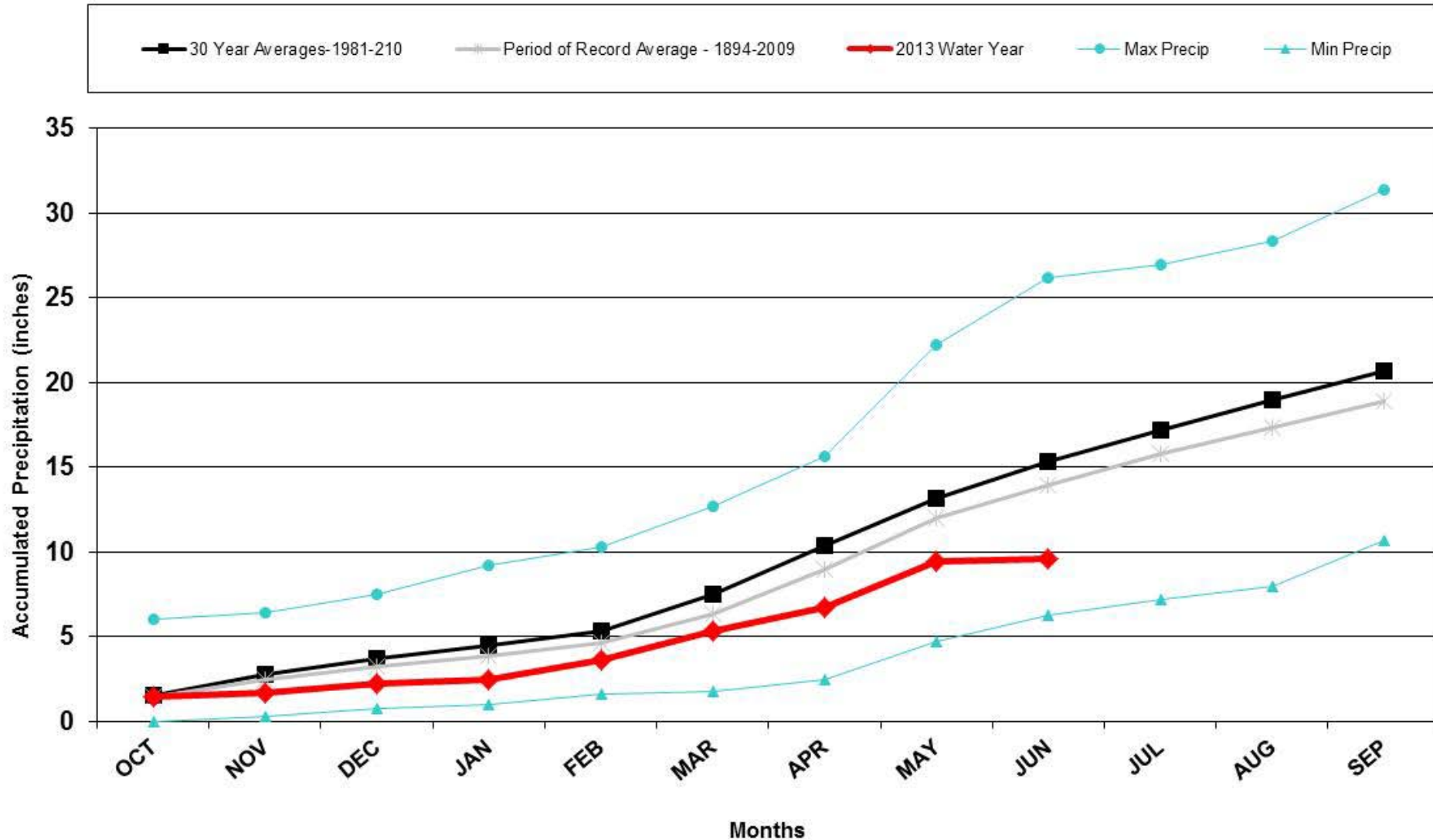
# Division 8 – Fort Collins

## Fort Collins 24 Month Precipitation Accumulation



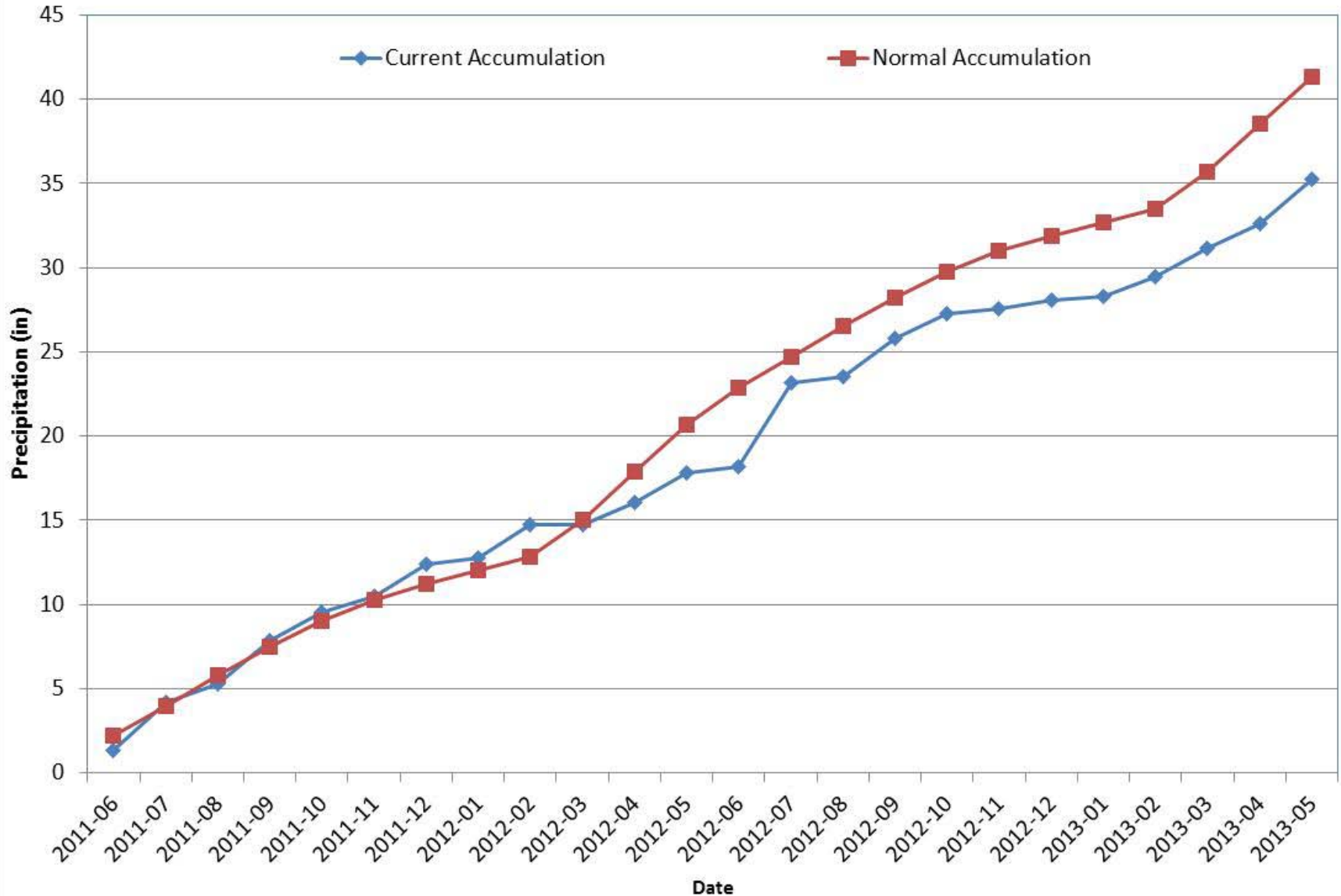
# Division 8 - Boulder

## Boulder 2013 Water Year



# Division 8 - Boulder

## Boulder 24 Month Precipitation Accumulation

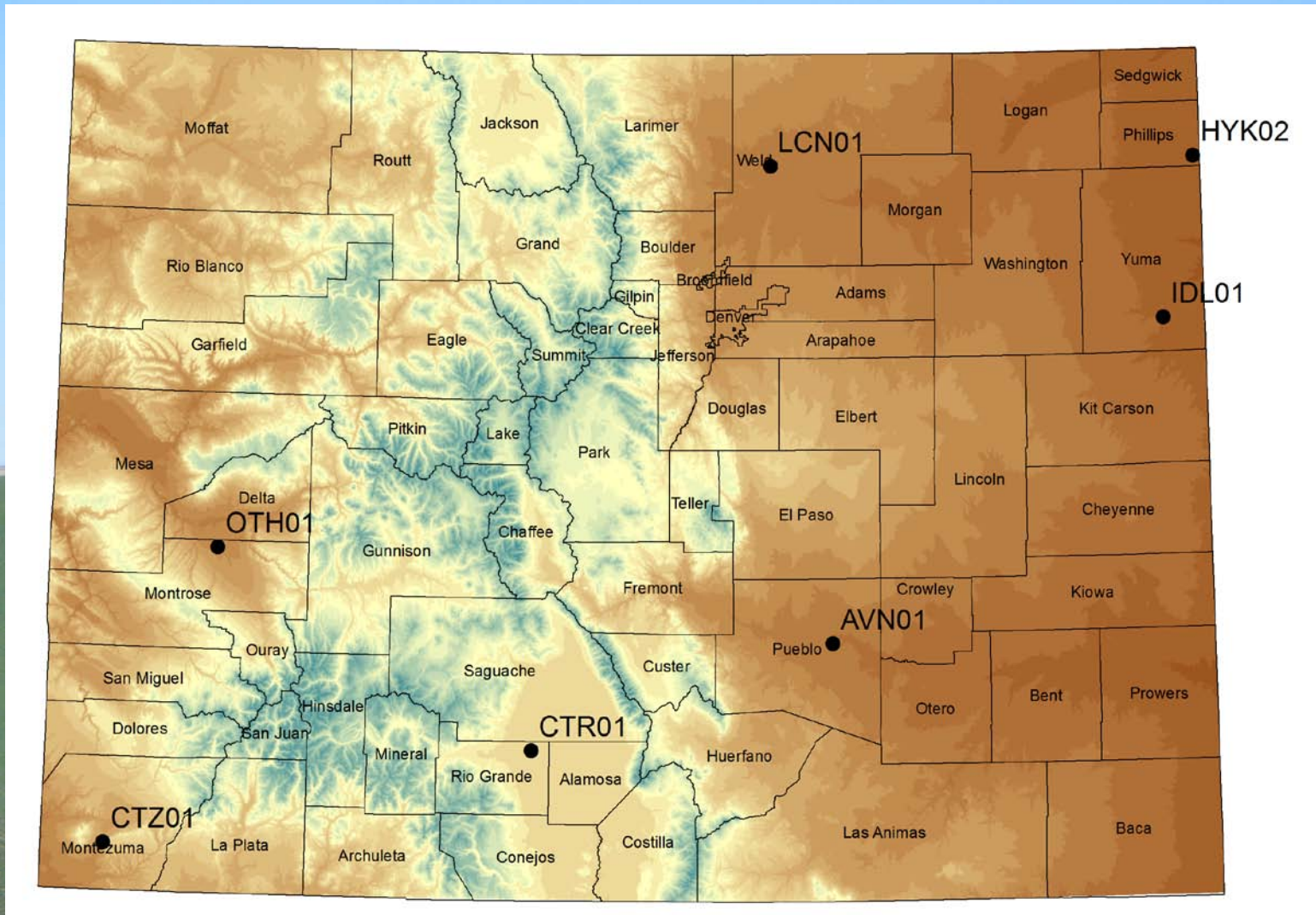


# Evapotranspiration



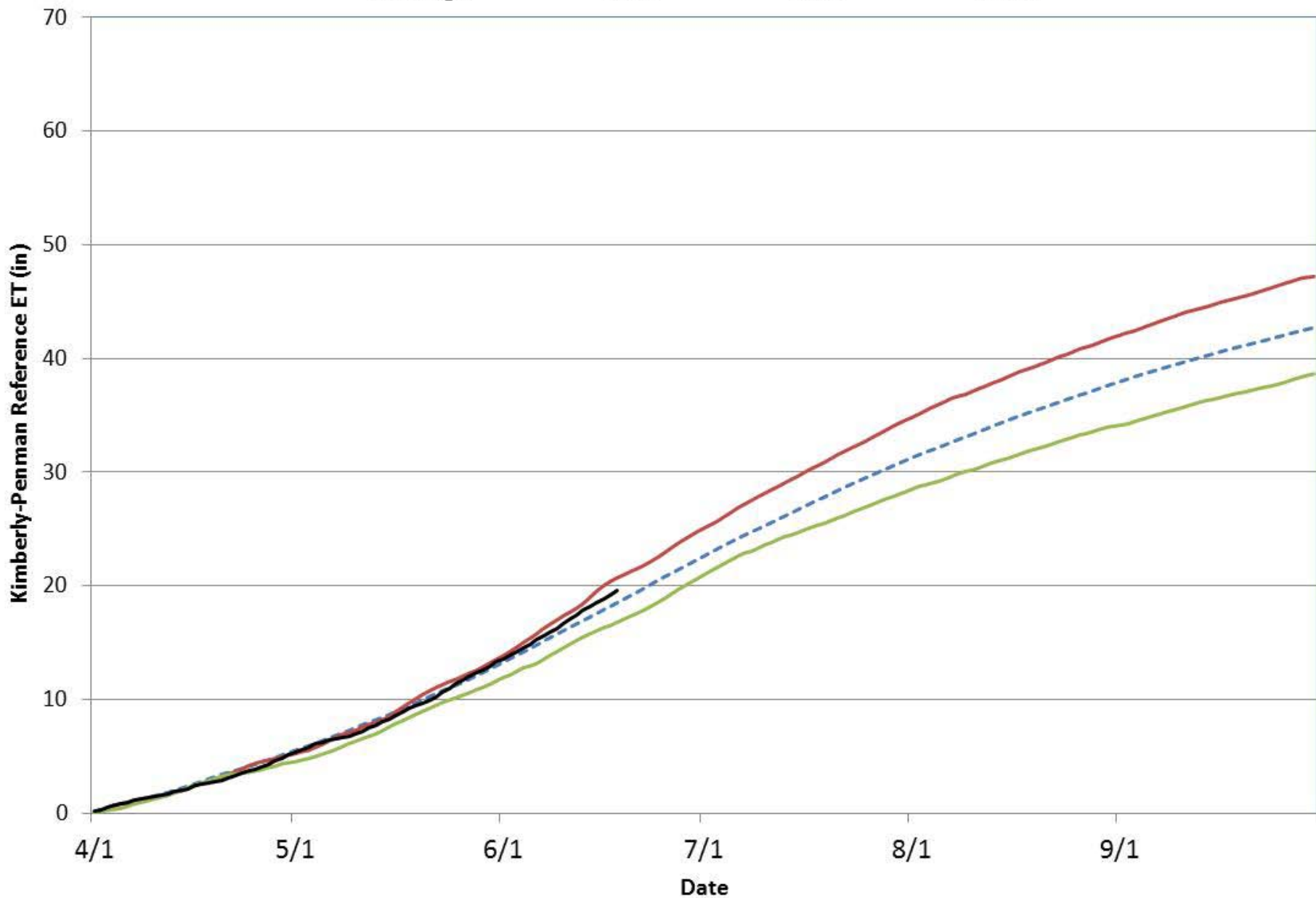


# CoAgMet Reference Evapotranspiration Stations



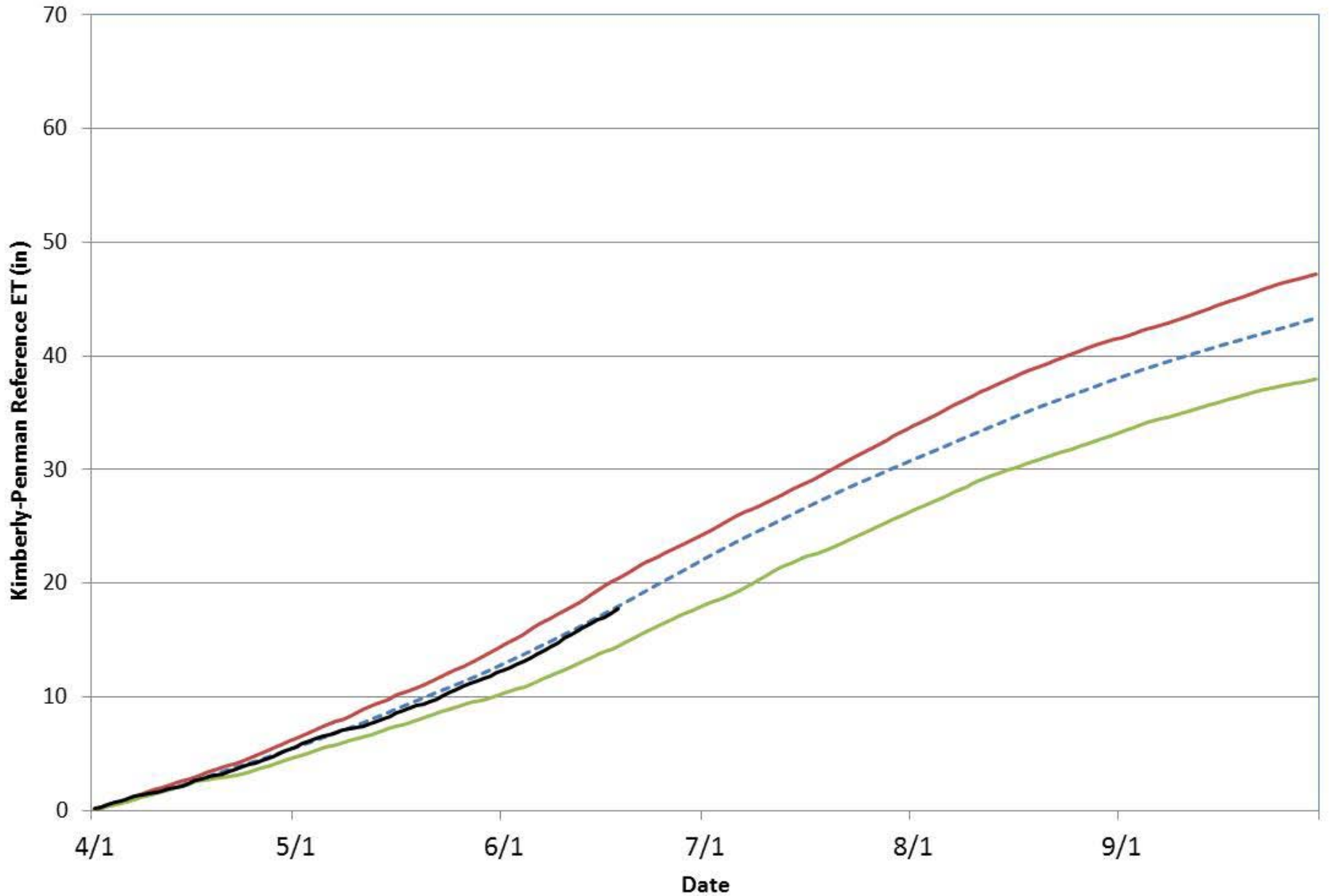
# Olathe Kimberly-Penman Reference ET (1993 - 2013)

--- Average    — 1994    — 1999    — 2013



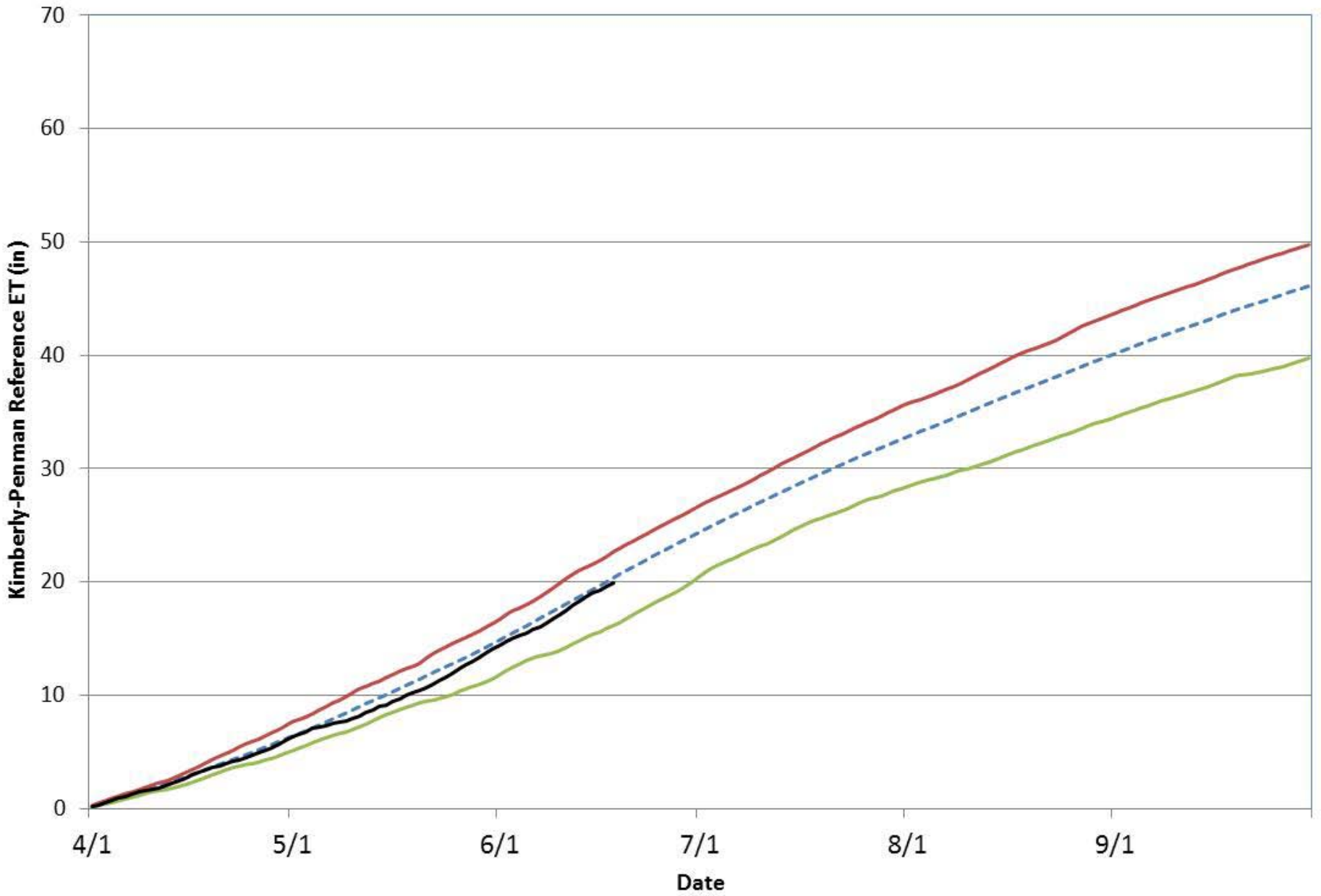
# Cortez Kimberly-Penman Reference ET (1992 - 2013)

--- Average    — 2000    — 1995    — 2013



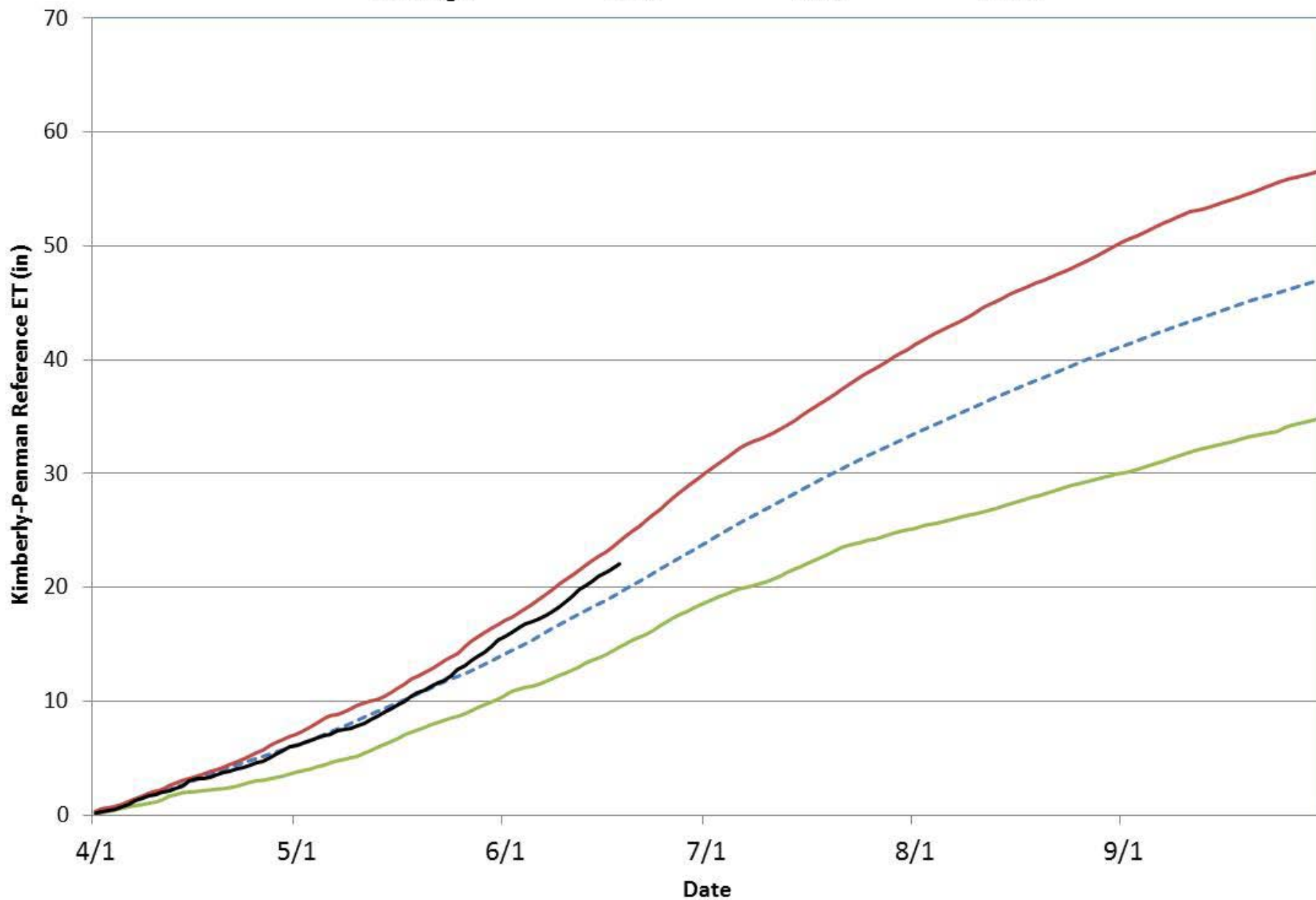
# Center Kimberly-Penman Reference ET (1994 - 2013)

--- Average    — 2002    — 1997    — 2013



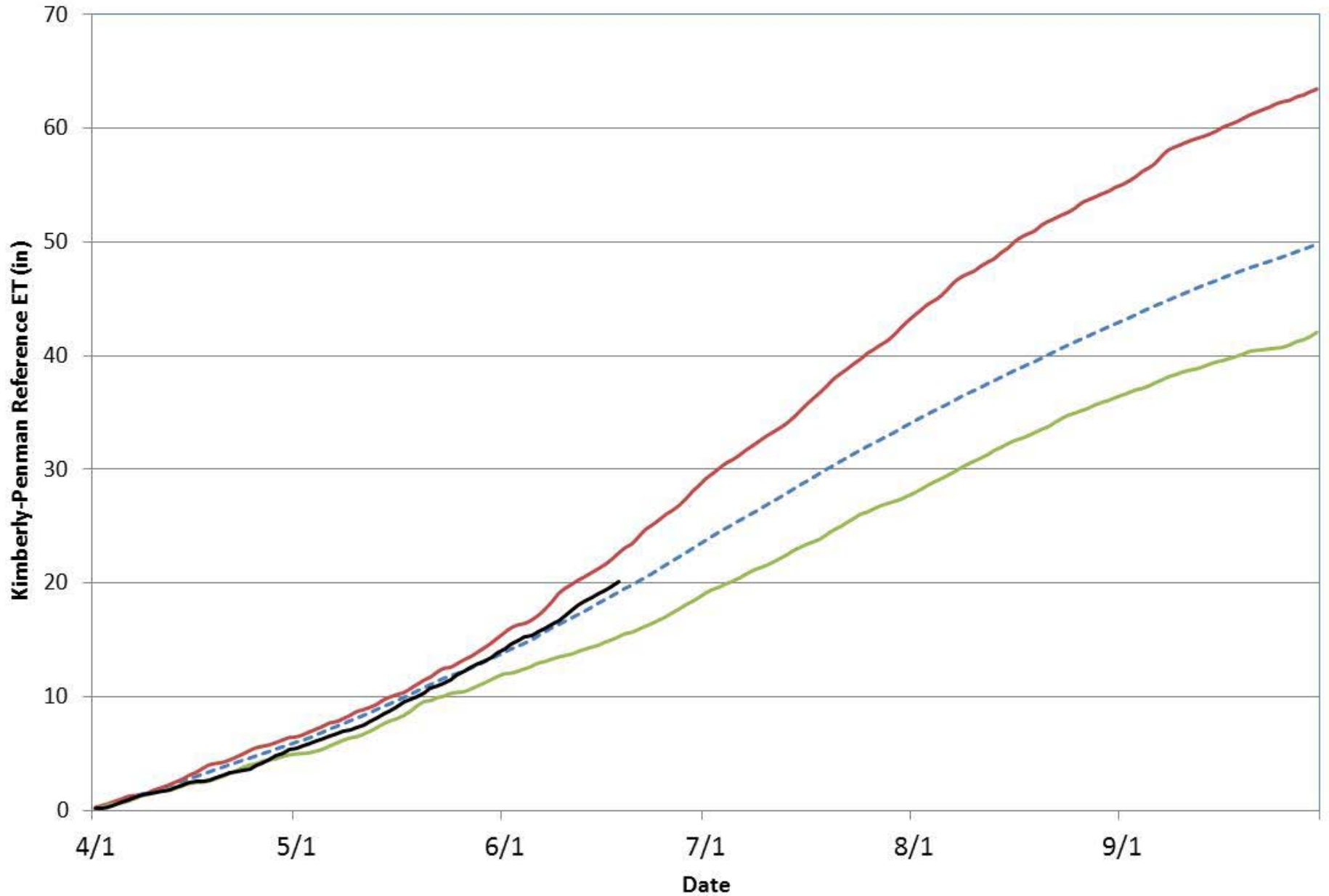
# Avondale Kimberly-Penman Reference ET (1993 - 2013)

--- Average    — 2012    — 1998    — 2013



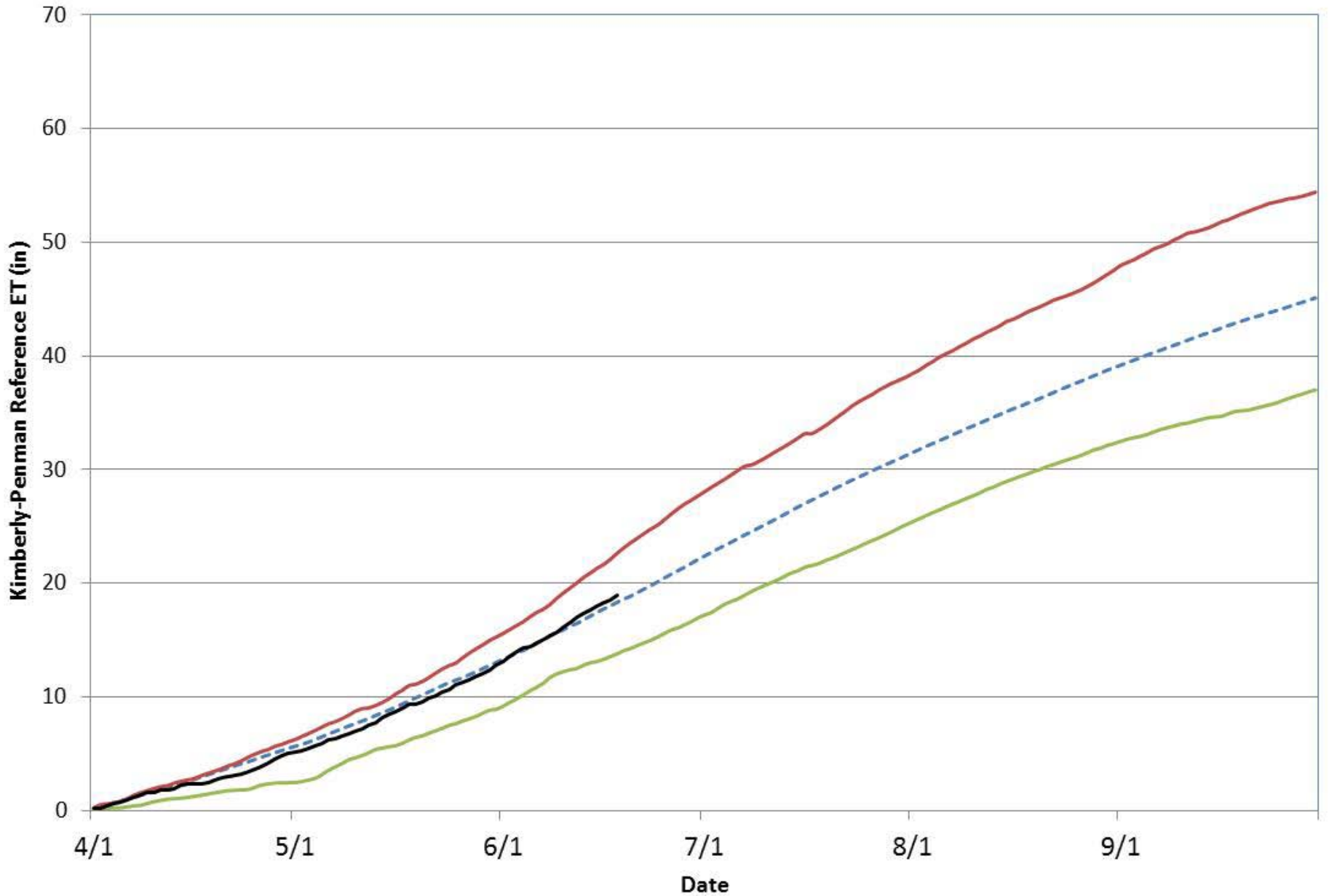
# Idalia Kimberly-Penman Reference ET (1992 - 2013)

--- Average    — 2002    — 2009    — 2013

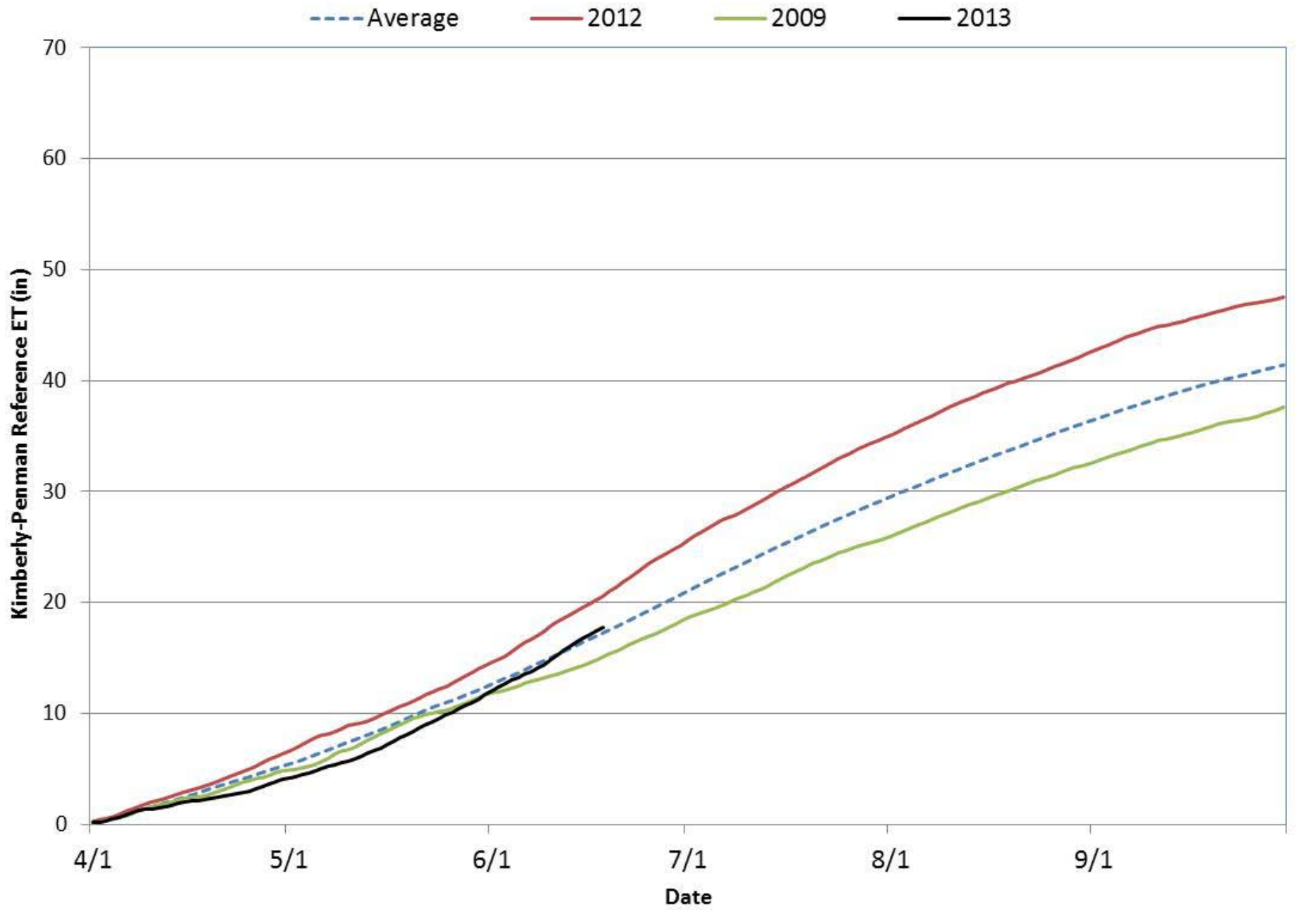


# Holyoke Kimberly-Penman Reference ET (1992 - 2013)

--- Average    — 2012    — 1999    — 2013



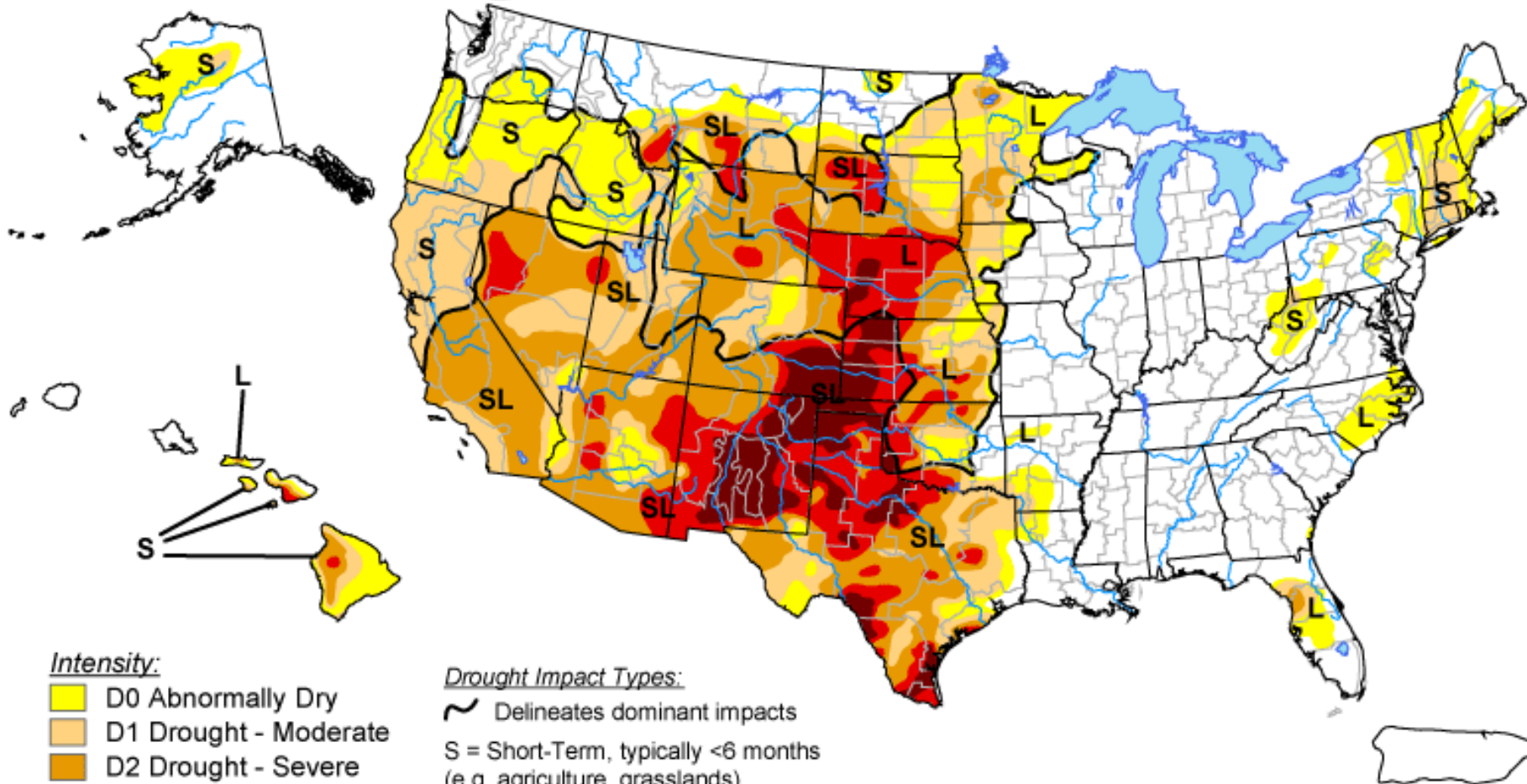
# Lucerne Kimberly-Penman Reference ET (1992 - 2013)





# U.S. Drought Monitor

May 14, 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, May 16, 2013  
Author: Rich Tinker, NOAA/NWS/NCEP/CPC

# U.S. Drought Monitor

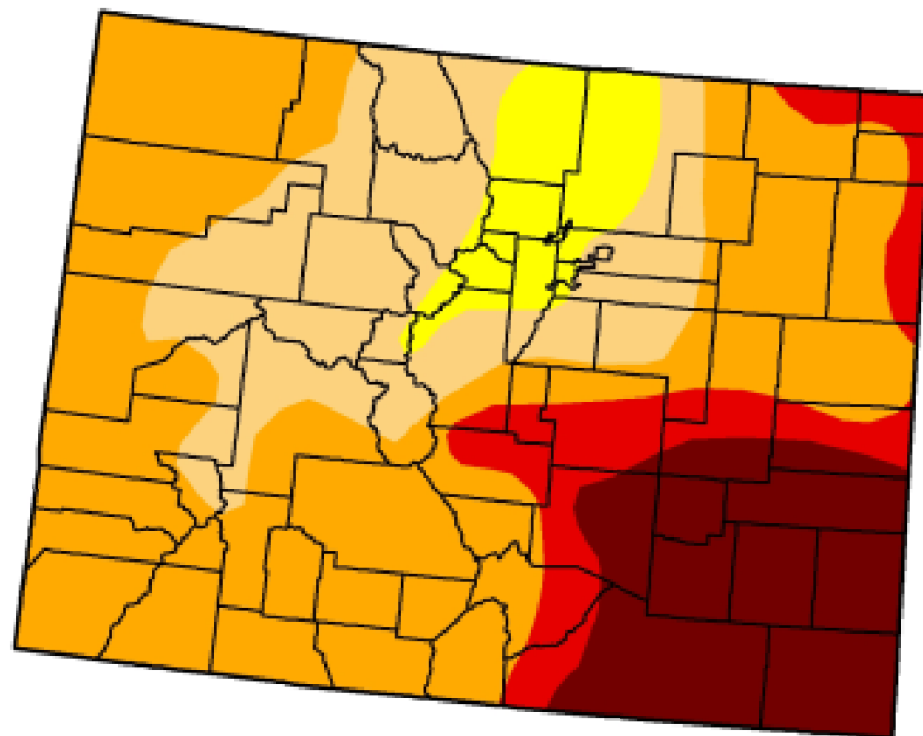
## Colorado

May 14, 2013

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	93.18	71.71	24.53	15.84
Last Week (05/07/2013 map)	0.00	100.00	95.49	75.99	26.97	17.93
3 Months Ago (02/12/2013 map)	0.00	100.00	100.00	91.30	50.99	24.92
Start of Calendar Year (01/01/2013 map)	0.00	100.00	100.00	95.06	53.47	13.48
Start of Water Year (09/25/2012 map)	0.00	100.00	100.00	100.00	61.75	16.89
One Year Ago (05/08/2012 map)	5.13	94.87	61.81	29.40	0.00	0.00



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.*

<http://droughtmonitor.unl.edu>



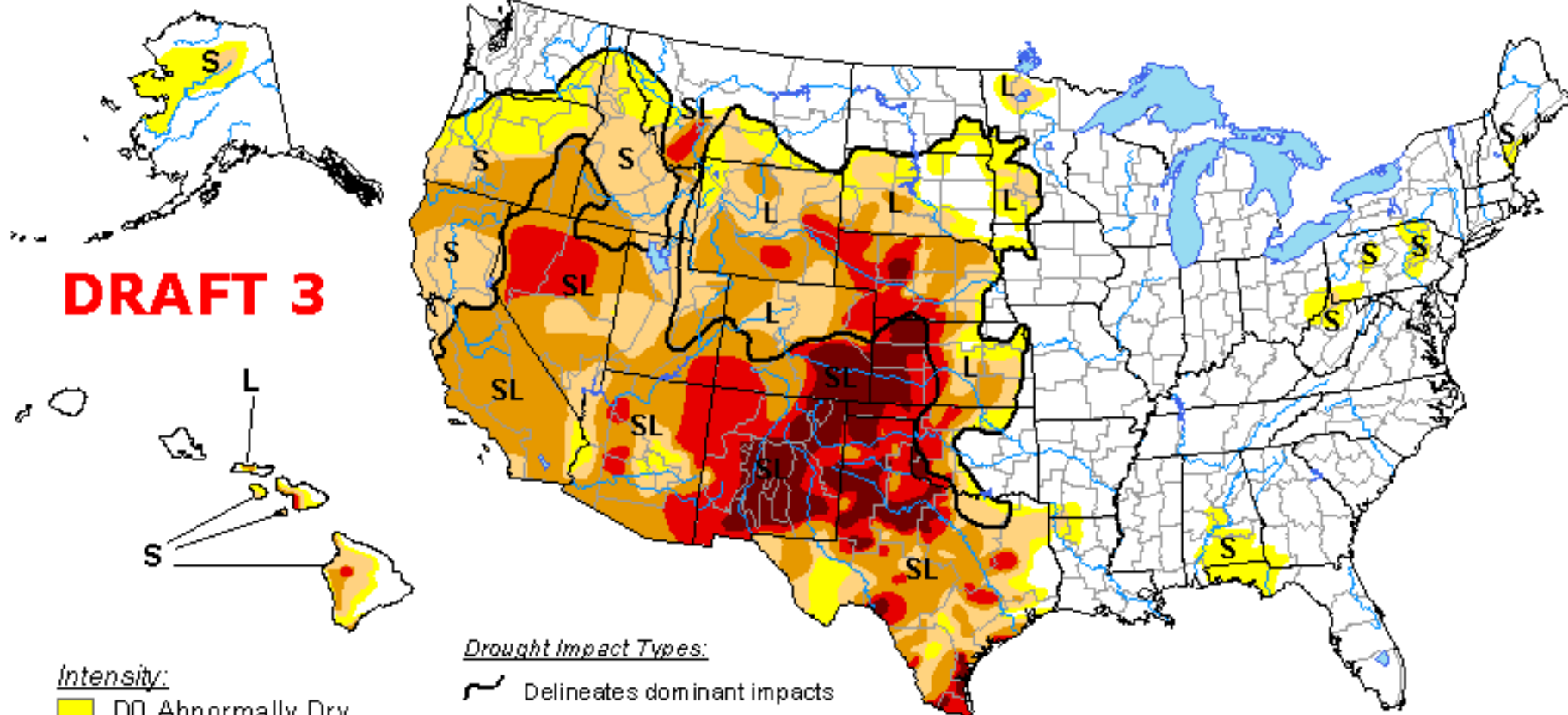
Released Thursday, May 16, 2013

Rich Tinker, Climate Prediction Center/NCEP/NWS/NOAA

# U.S. Drought Monitor

June 18, 2013






Valid 7 a.m. EST




**DRAFT 3**

**DRAFT 3**

### 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, June 20, 2013**

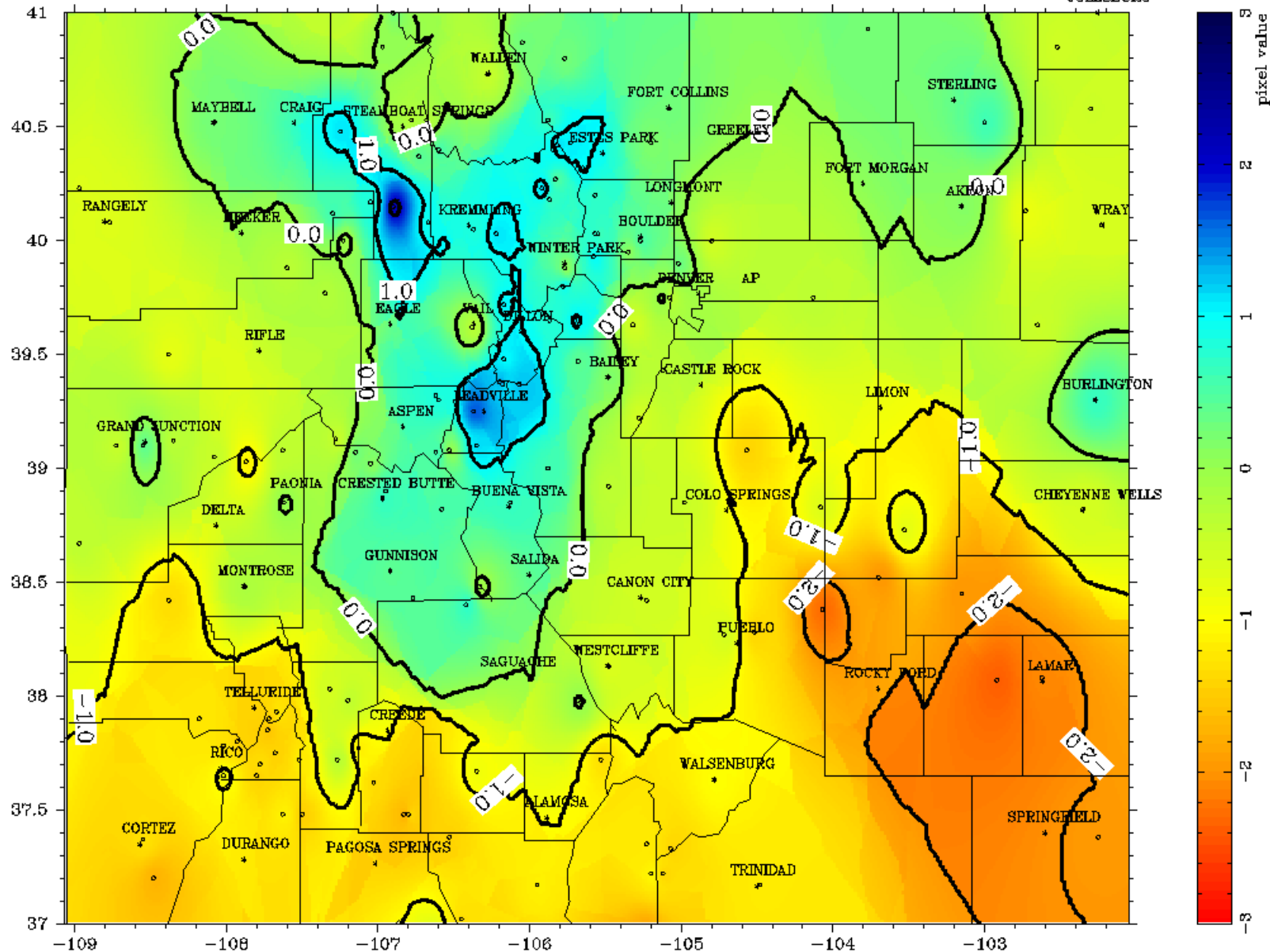
<http://droughtmonitor.unl.edu/>

*Author: Mark Svoboda, National Drought Mitigation Center*

# Colorado

5/2013 3 mon. SPI

JULESBURG



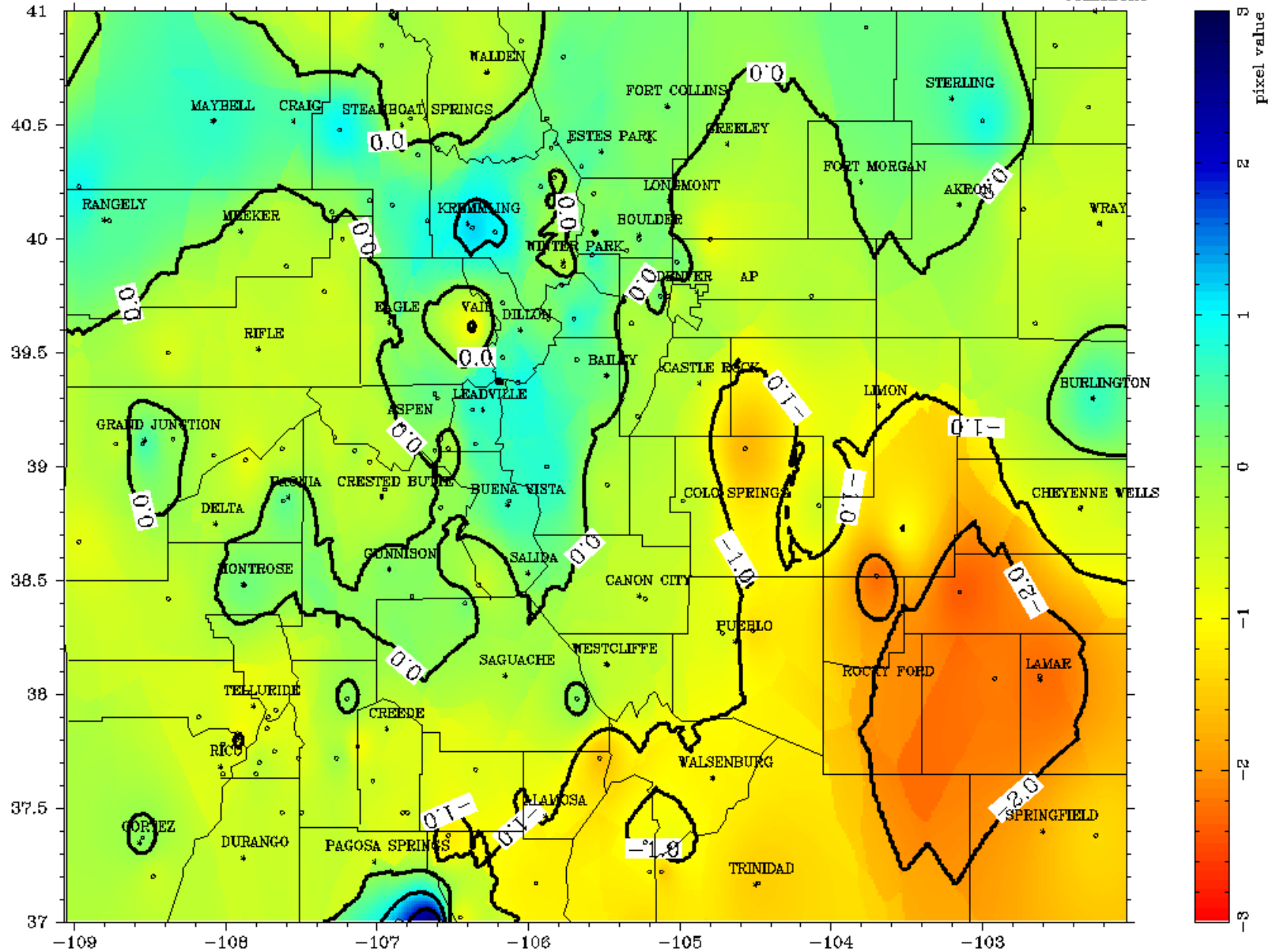
100 % < 2.0	33 % < -1.0
98 % < 1.0	5 % < -2.0
73 % < 0.0	0 % < -3.0

Produced by:  
Colorado Climate Center  
Fort Collins, CO

# Colorado

5/2013 6 mon. SPI

JULESBURG



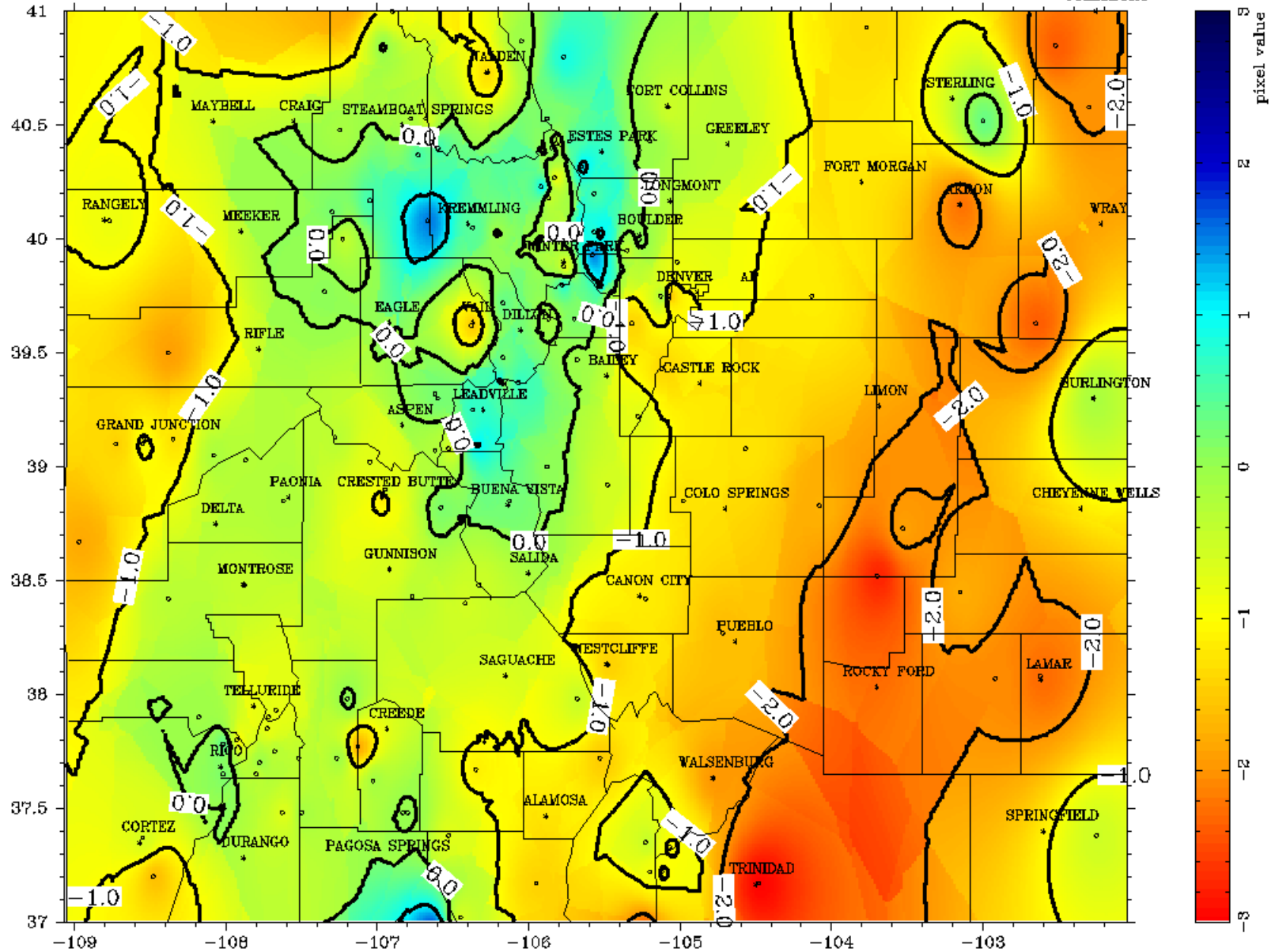
100 % < 2.0	22 % < -1.0
100 % < 1.0	5 % < -2.0
71 % < 0.0	0 % < -3.0

Produced by:  
Colorado Climate Center  
Fort Collins, CO

# Colorado

5/2013 12 mon. SPI

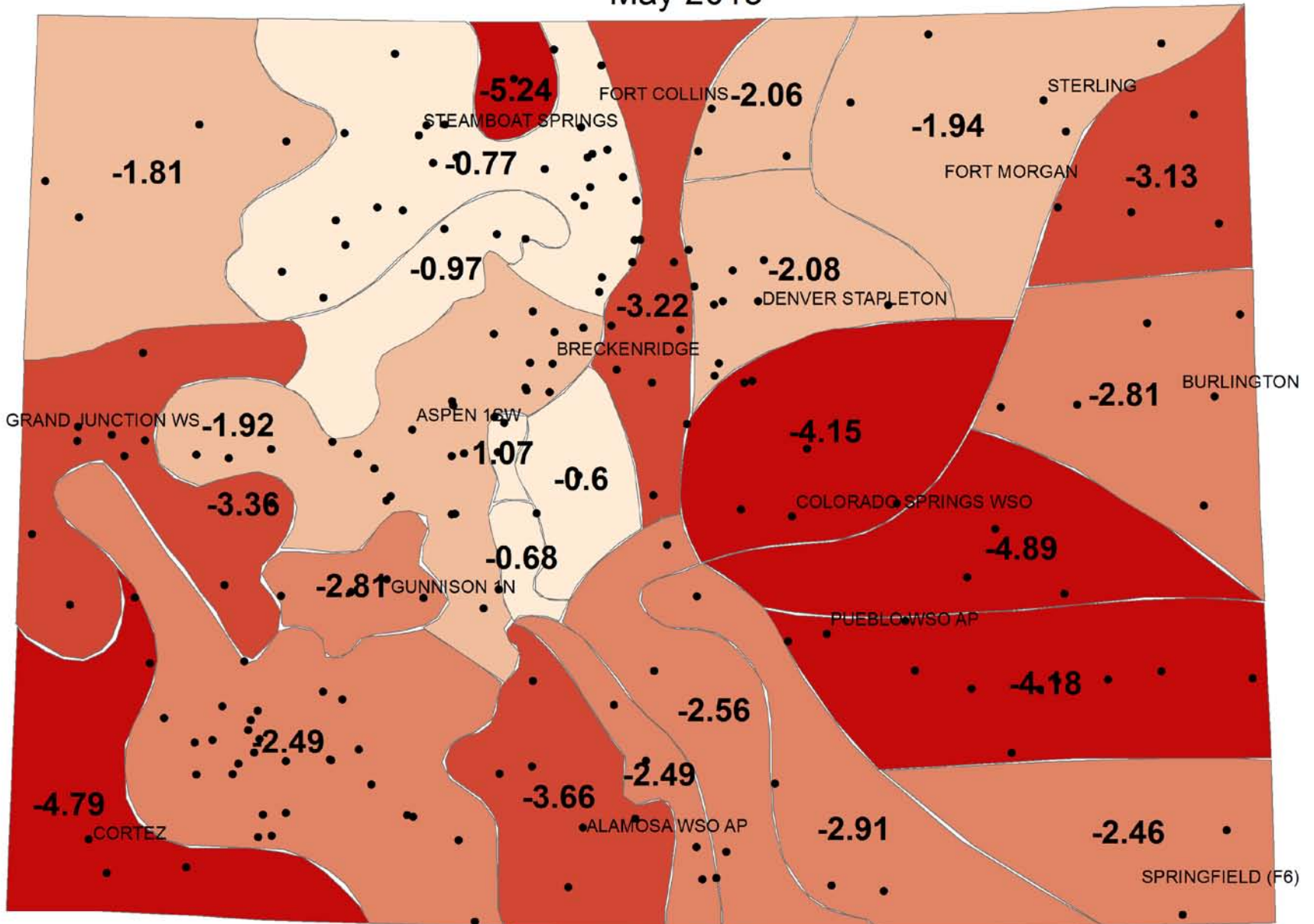
JULESBURG



100 % < 2.0	50 % < -1.0
100 % < 1.0	11 % < -2.0
89 % < 0.0	0 % < -3.0

Produced by:  
Colorado Climate Center  
Fort Collins, CO

# Modified Palmer Drought Severity Index for Colorado May 2013



# Colorado Climate Center

Data and Power Point Presentations available for downloading

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

