



Climate Update

Nolan Doesken
Colorado Climate Center

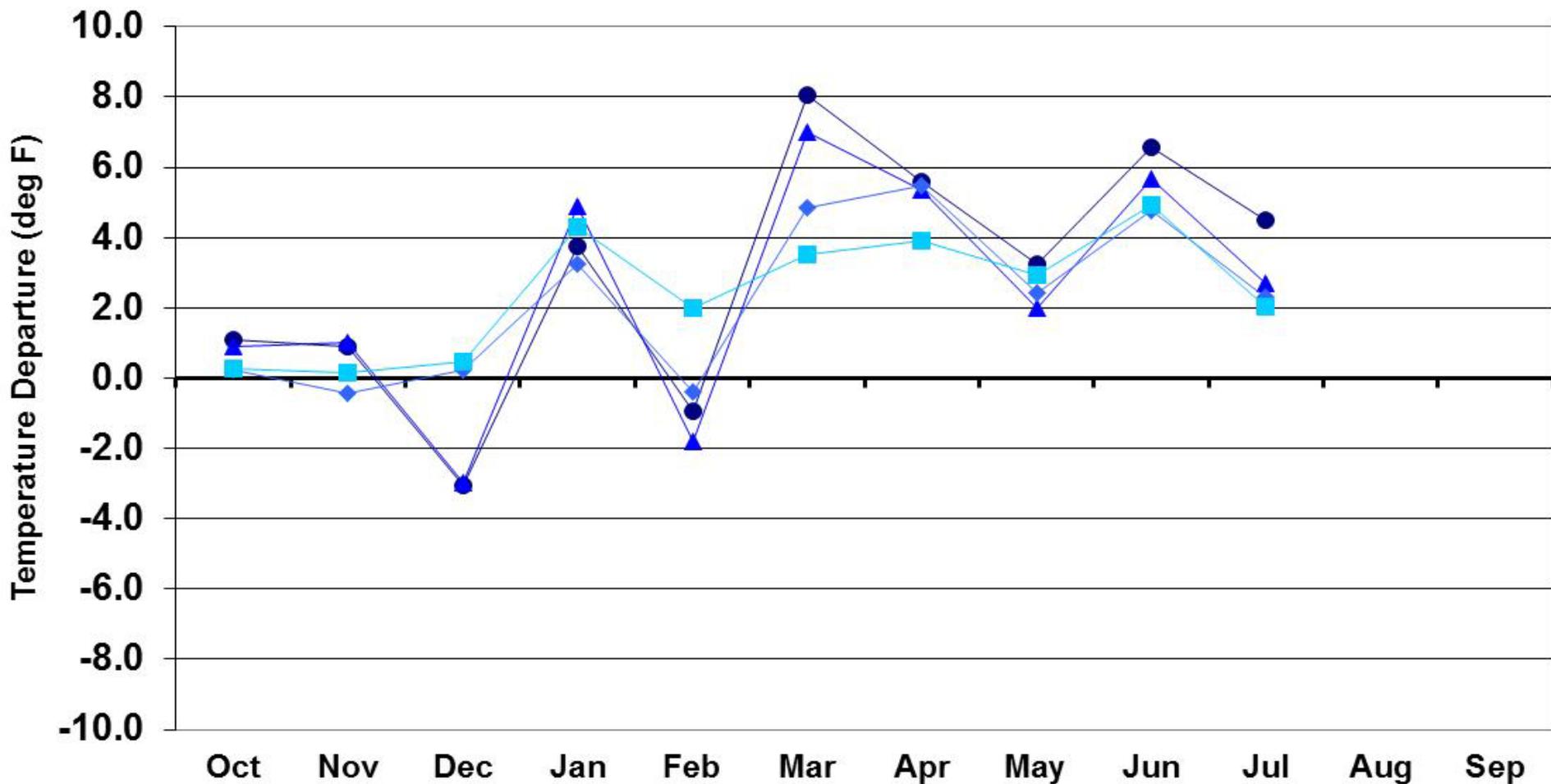
Atmospheric Science Department
Colorado State University

Presented to
Water Availability Task Force
August 15, 2012
Denver, CO

Prepared by Wendy Ryan

Water Year 2012 Temperature Departures

Water Year 2012



● Eastern Plains

▲ Foothills

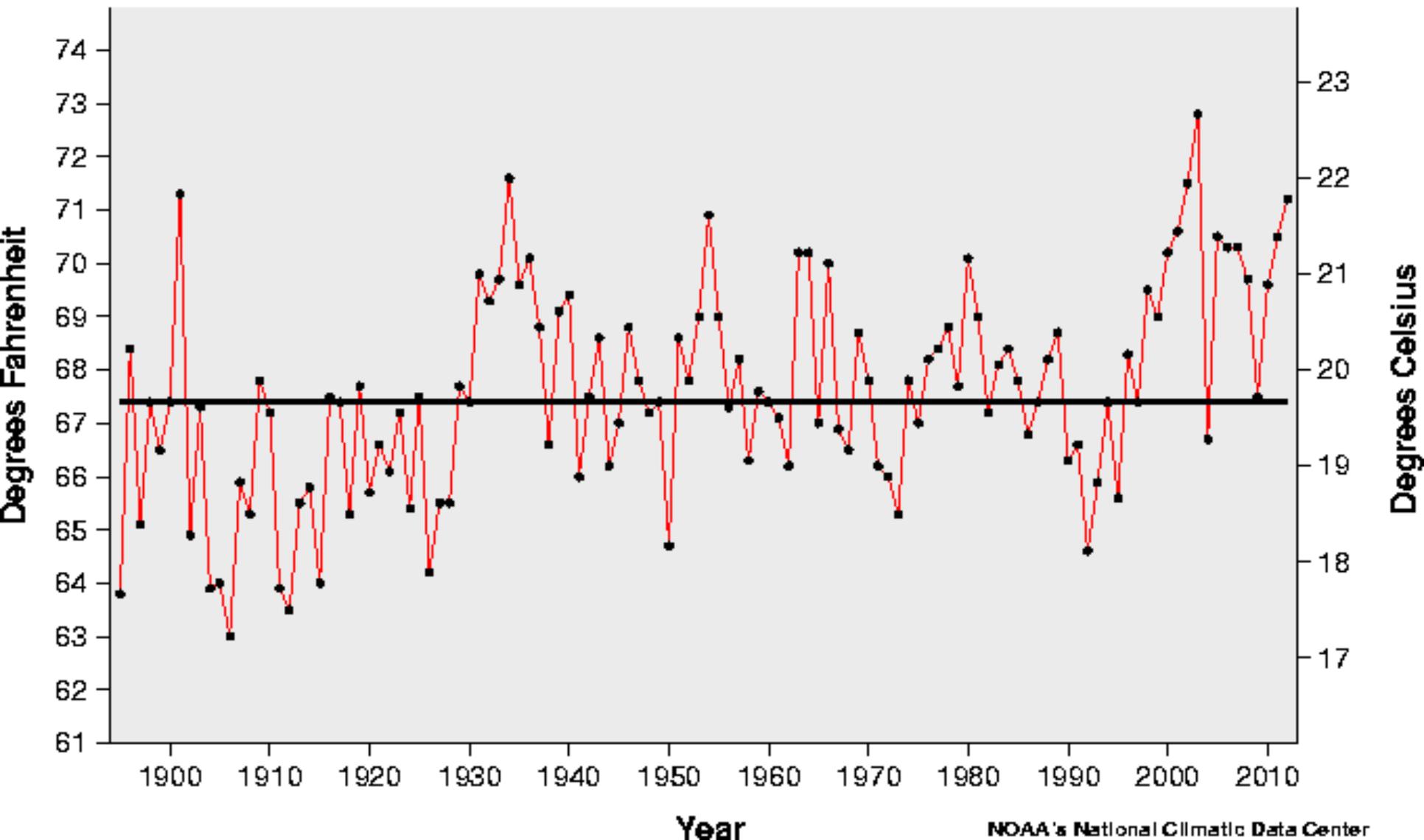
◆ Mountains

■ Western Valleys

July Average Temperature History for Colorado (NCDC)

— Actual Temperature
— Average Temperature

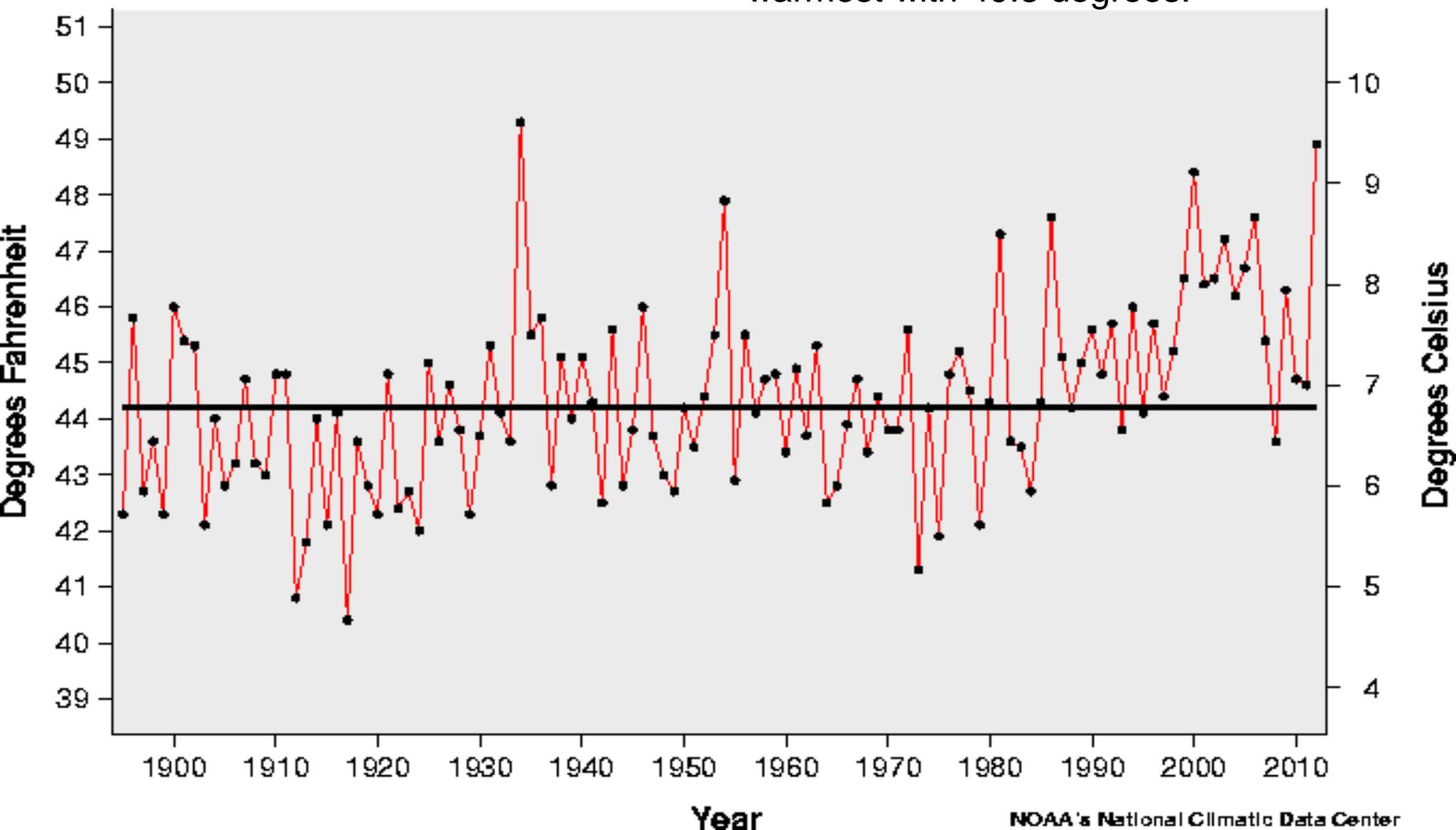
71.2 Ranks as the 5th warmest on record
1895-2012.



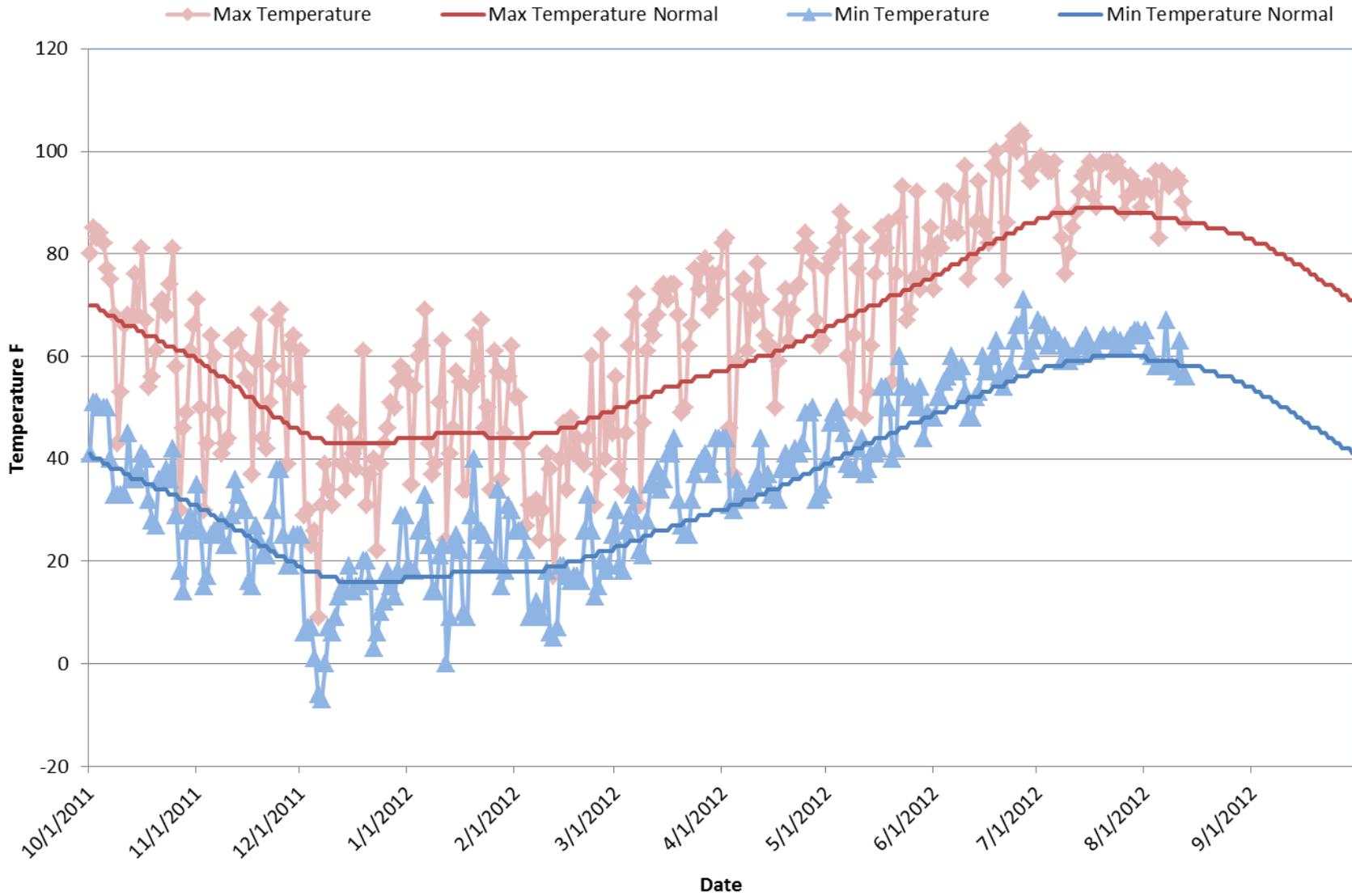
Calendar Year Average Temperature History for Colorado (NCDC)

— Actual Temperature
— Average Temperature

48.9 Ranks as the 2nd warmest on record 1895-2012. 1934 Calendar year was warmest with 49.3 degrees.

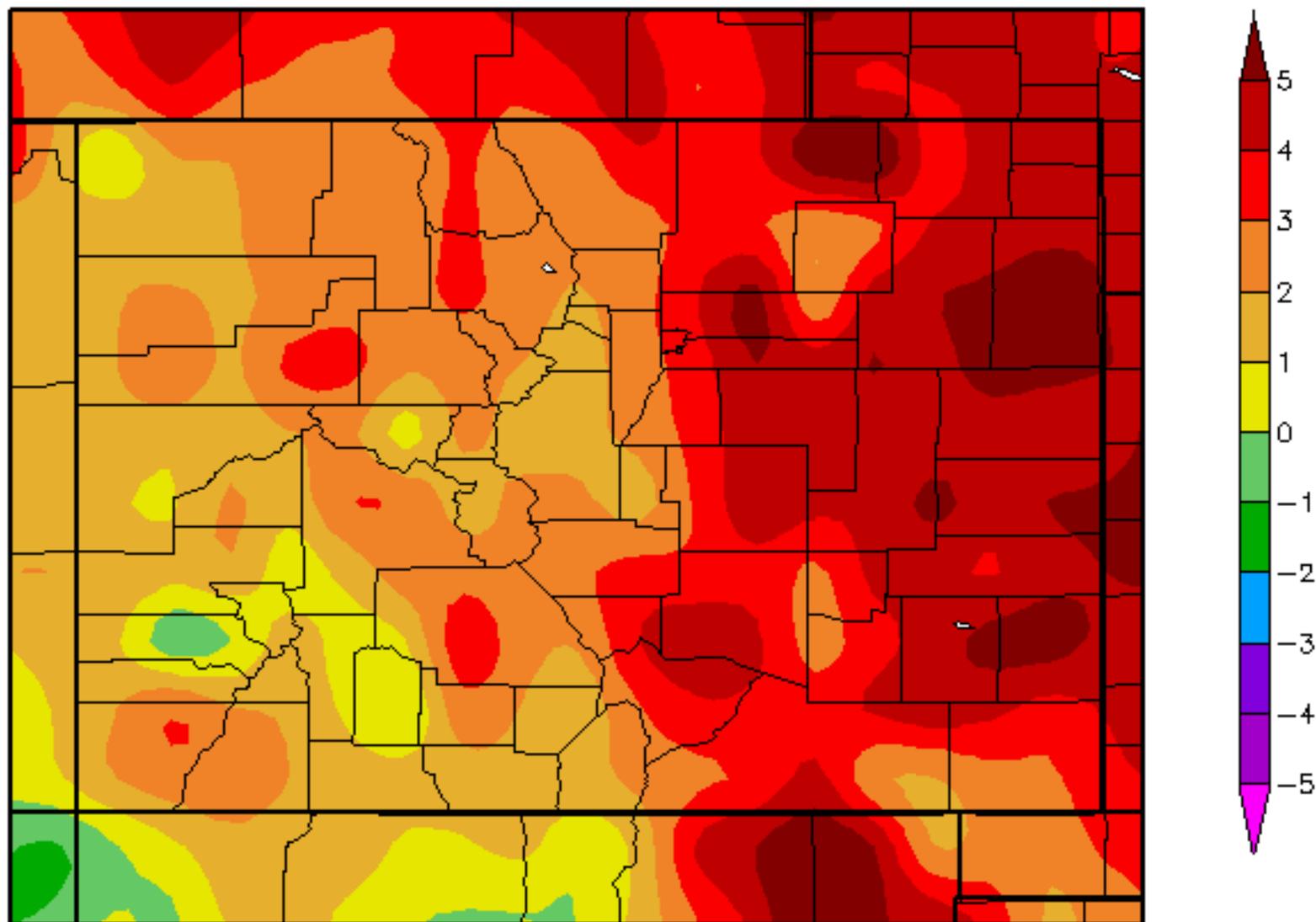


Denver Stapleton Daily Max/Min Temperatures and Normals



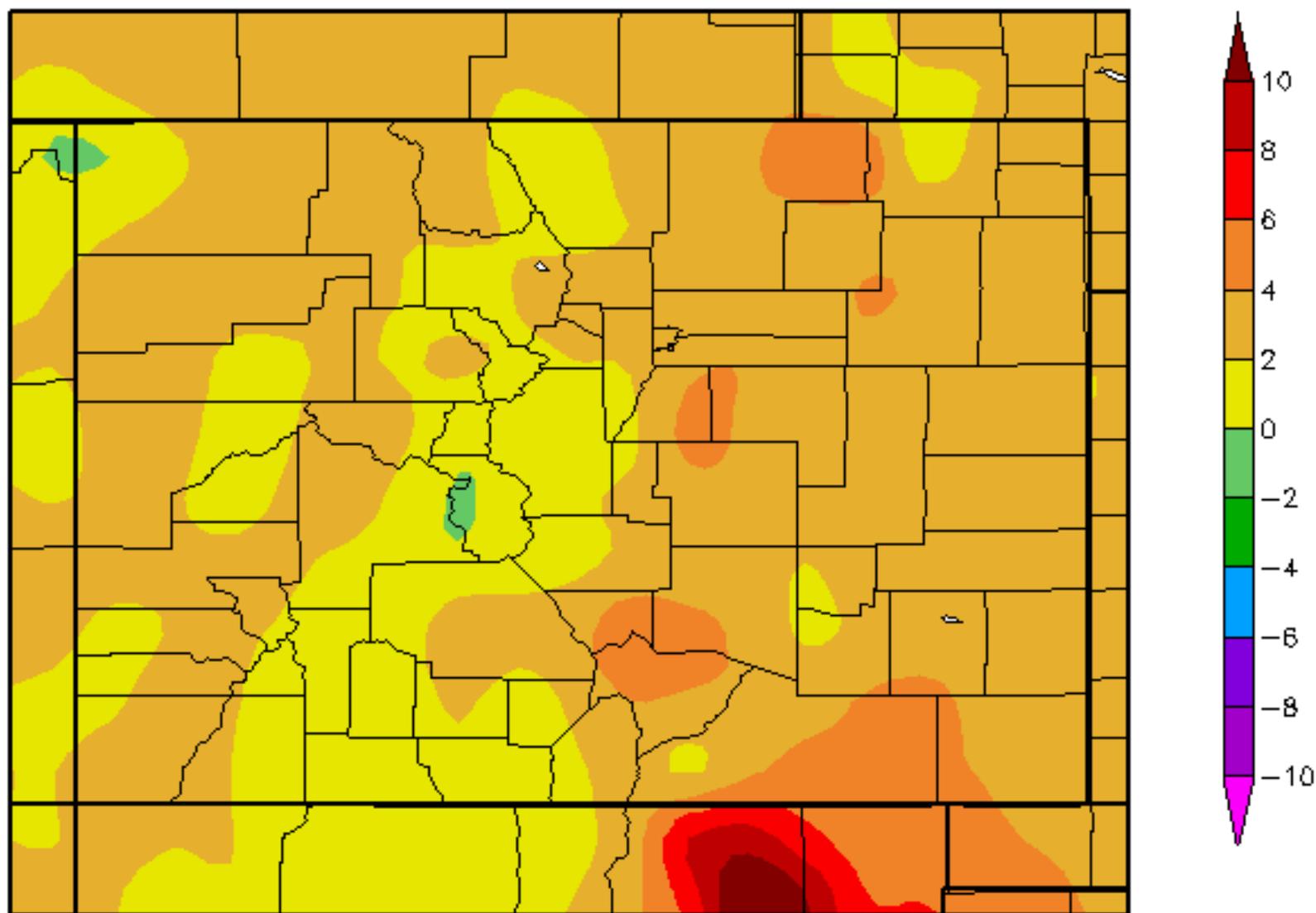
Departure from Normal Temperature (F)

7/1/2012 - 7/31/2012

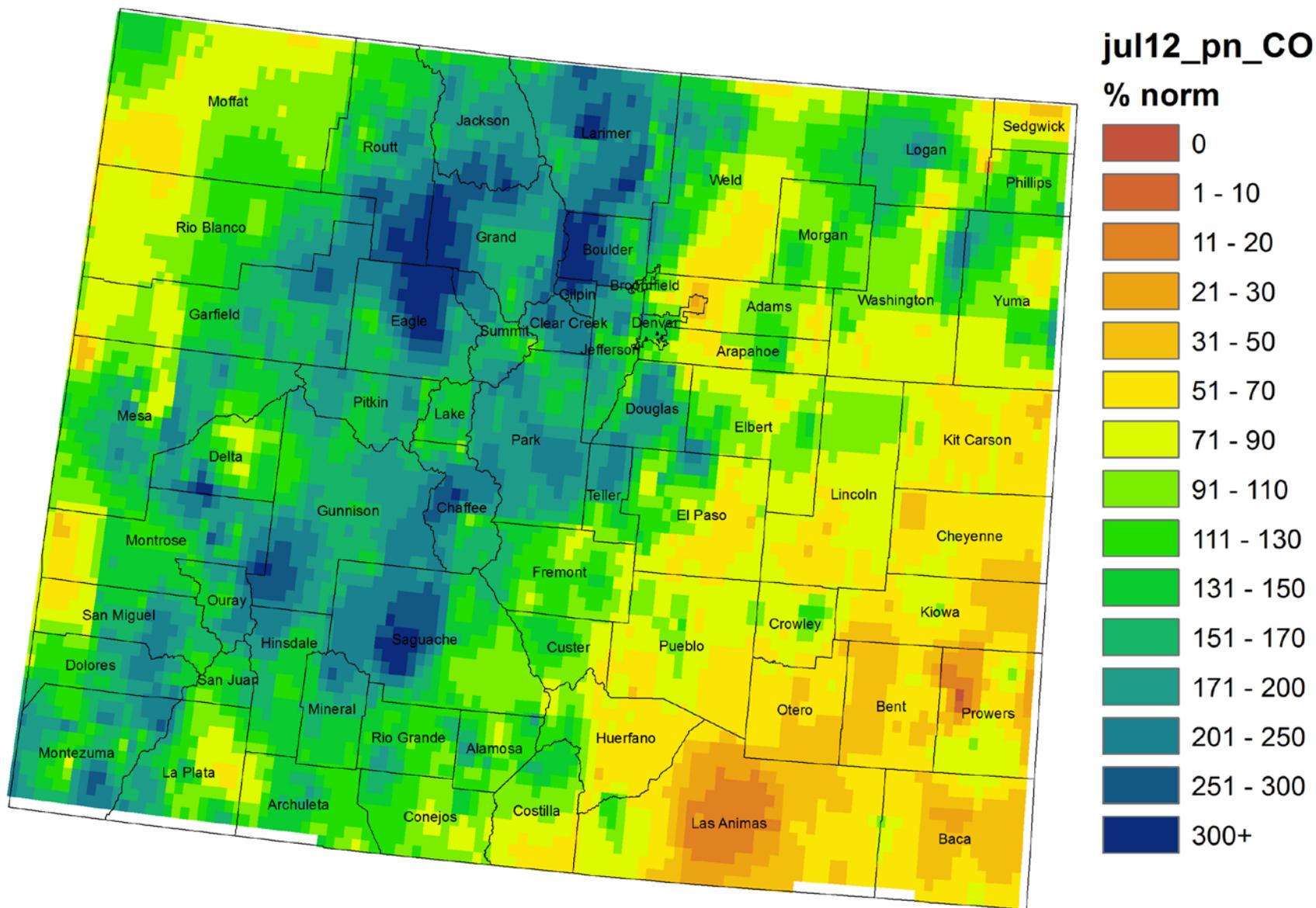


Departure from Normal Temperature (F)

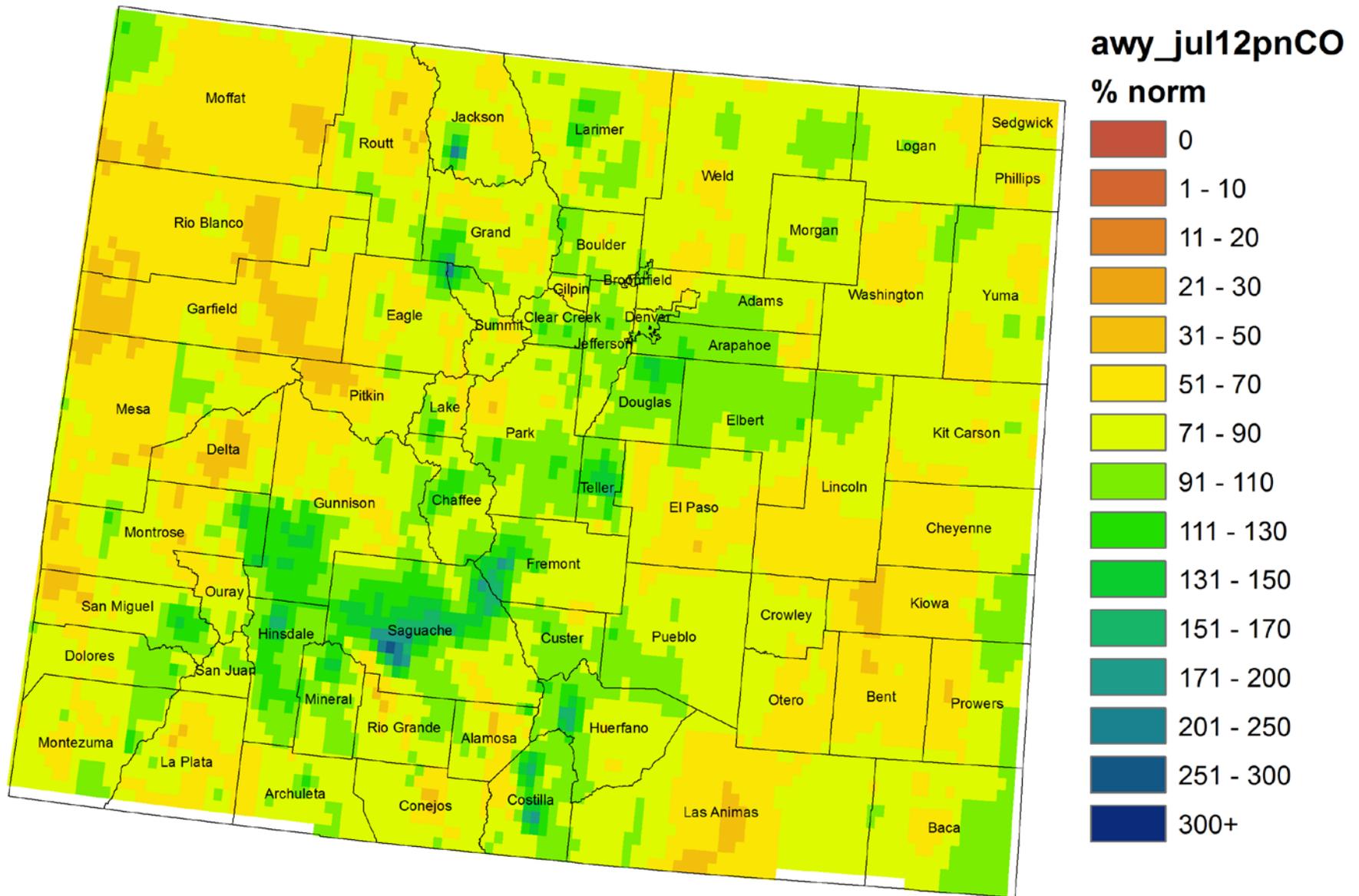
8/1/2012 - 8/12/2012



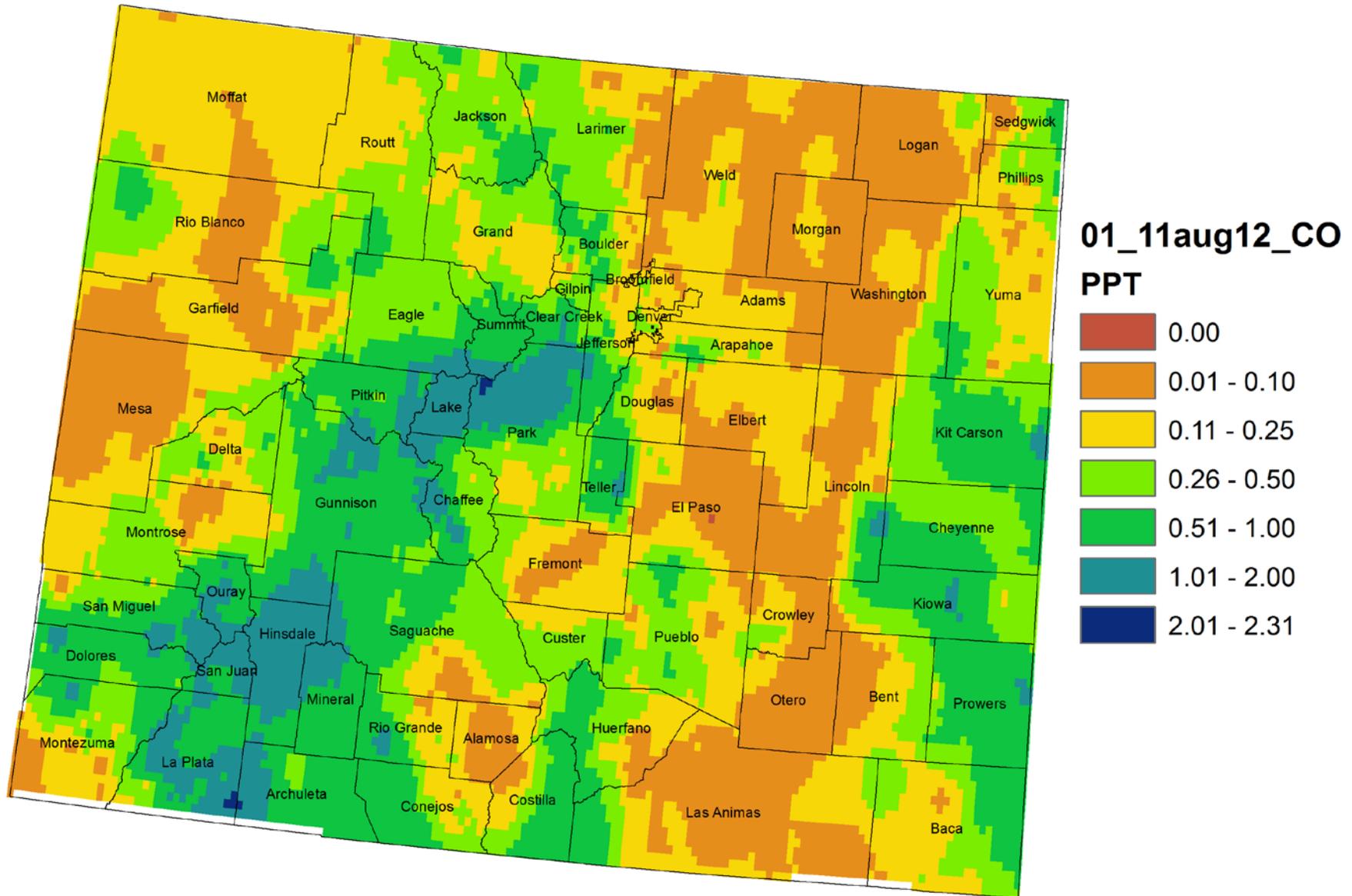
Colorado July 2012 Precipitation as Percentage of Normal



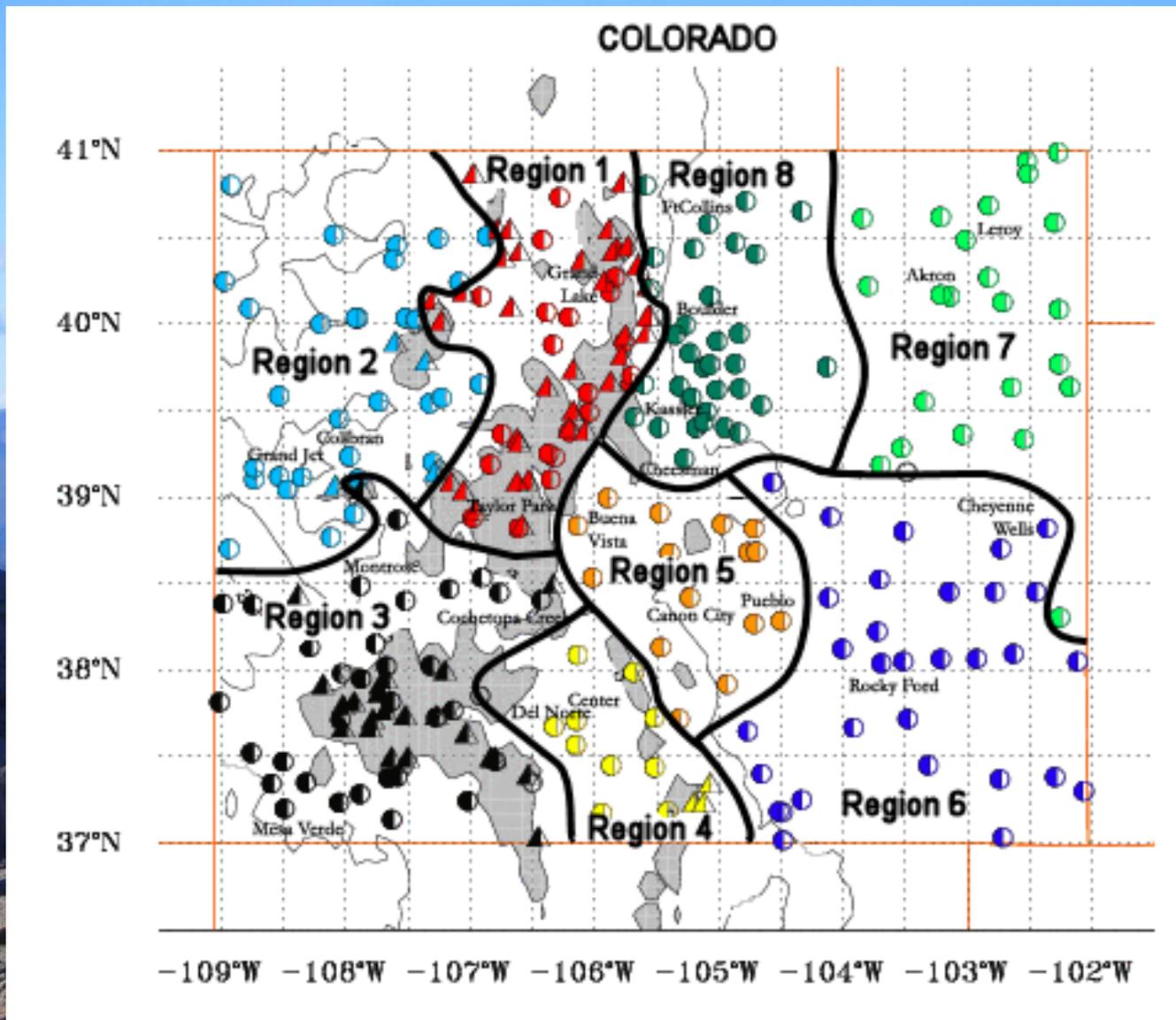
Colorado Water Year Precipitation as Percentage of Normal (October 2012 - July 2012)



Colorado Month to Date Precipitation (in) 1 - 11 August 2012

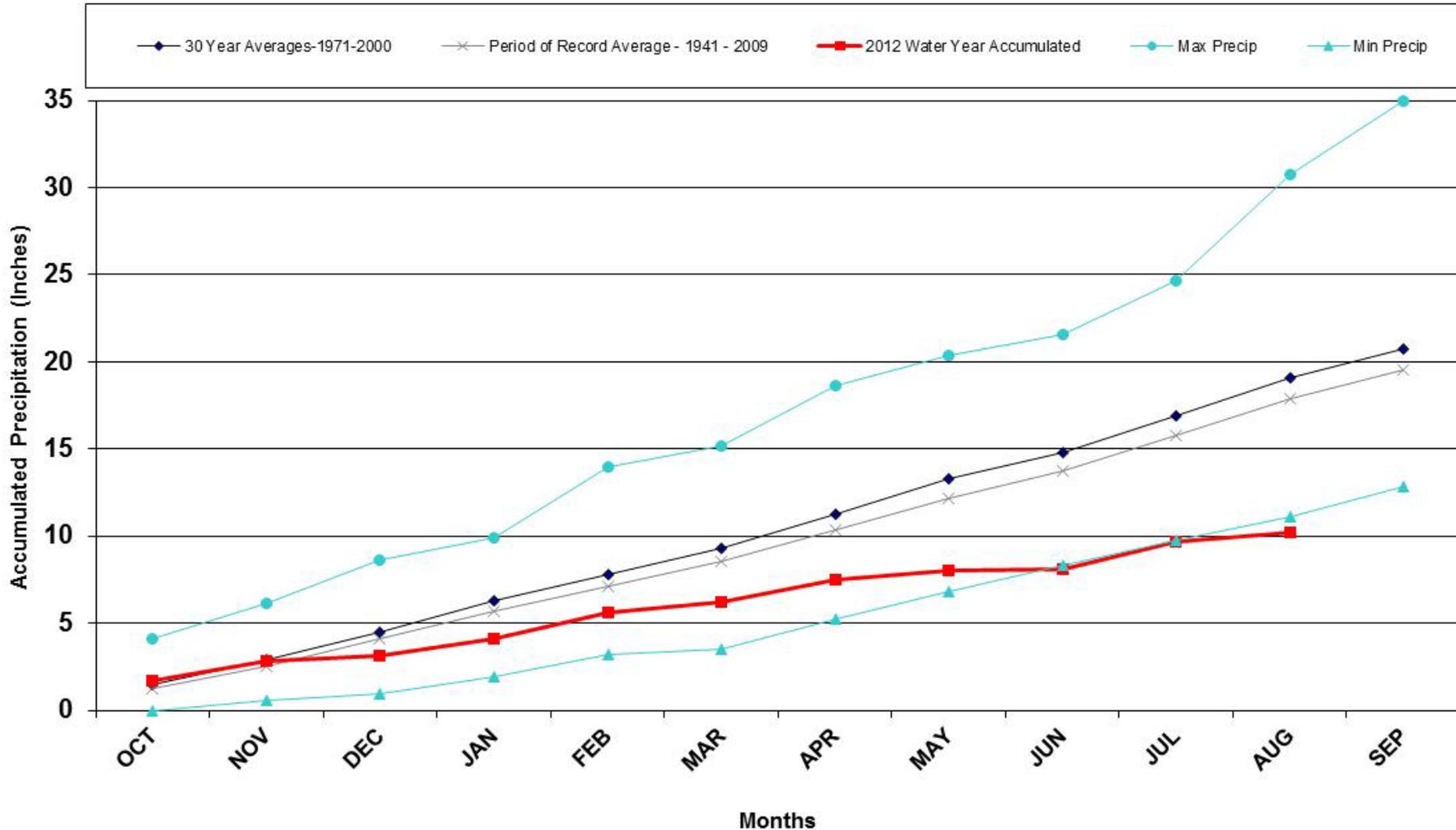


Climate divisions defined by Dr. Klaus Wolter of NOAA's Climate Diagnostic Center in Boulder, CO



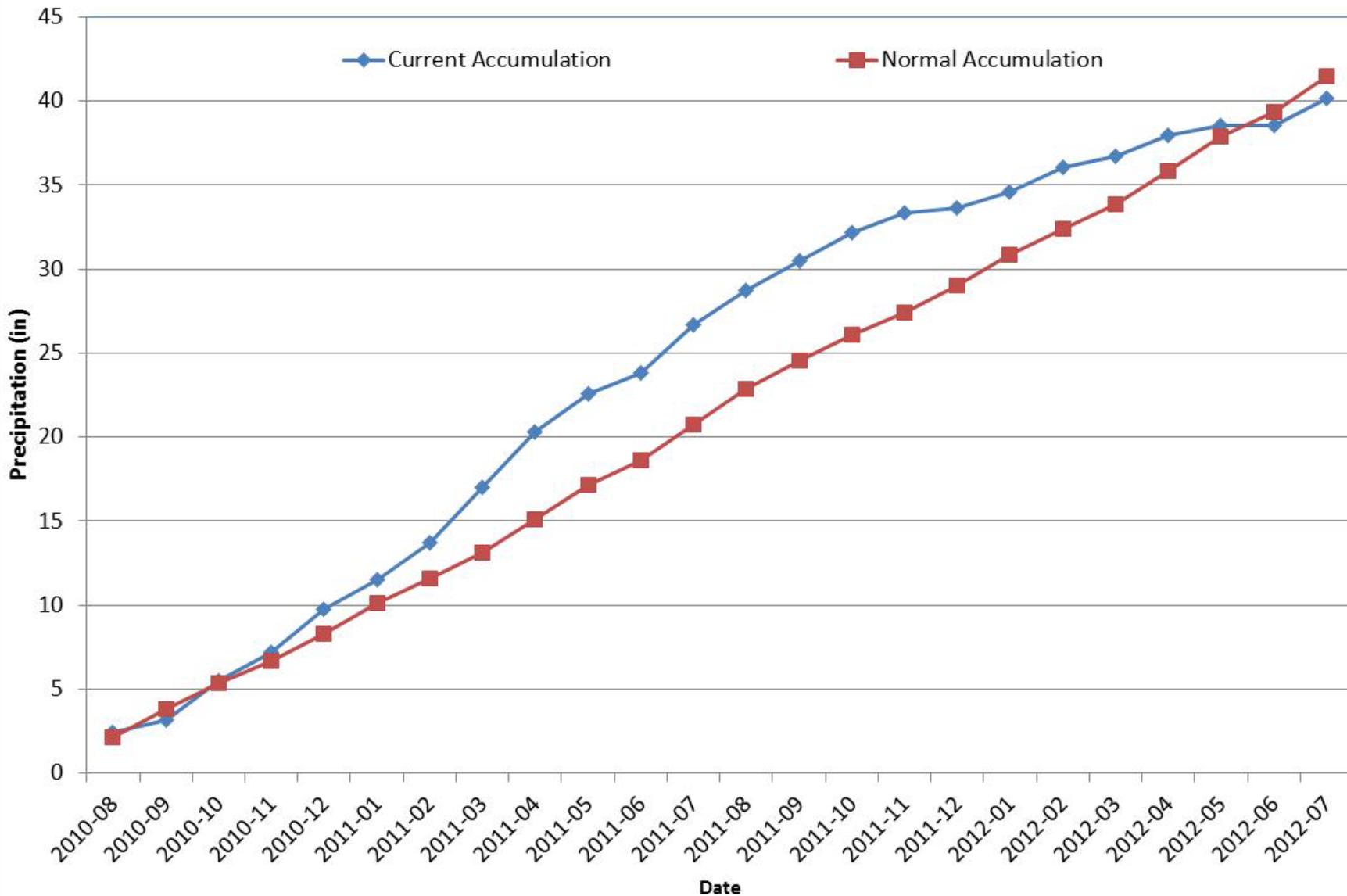
Division 1 – Grand Lake 1NW

Grand Lake 1 NW 2012 Water Year



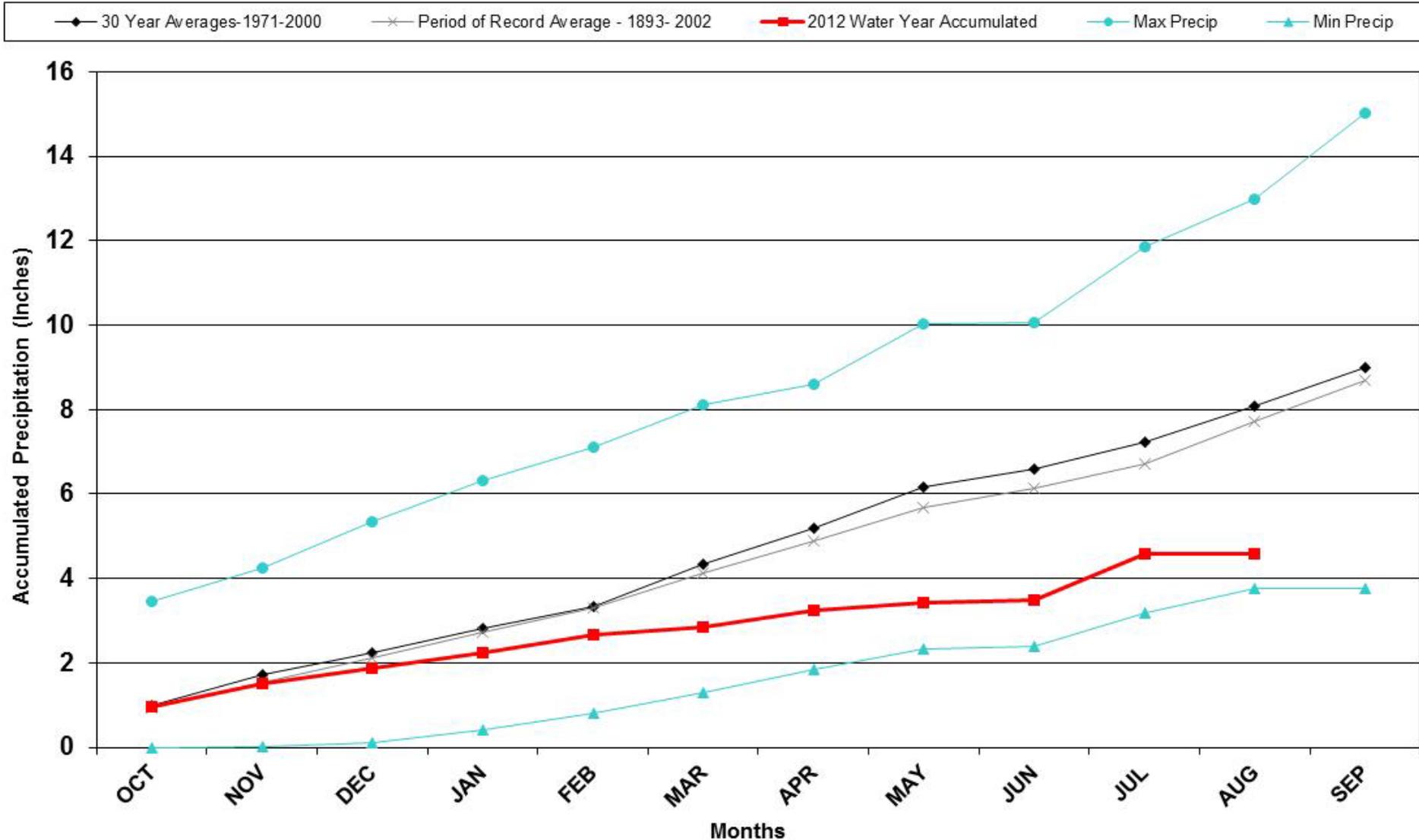
Division 1 – Grand Lake 1NW

Grand Lake 1NW 24 Month Precipitation Accumulation



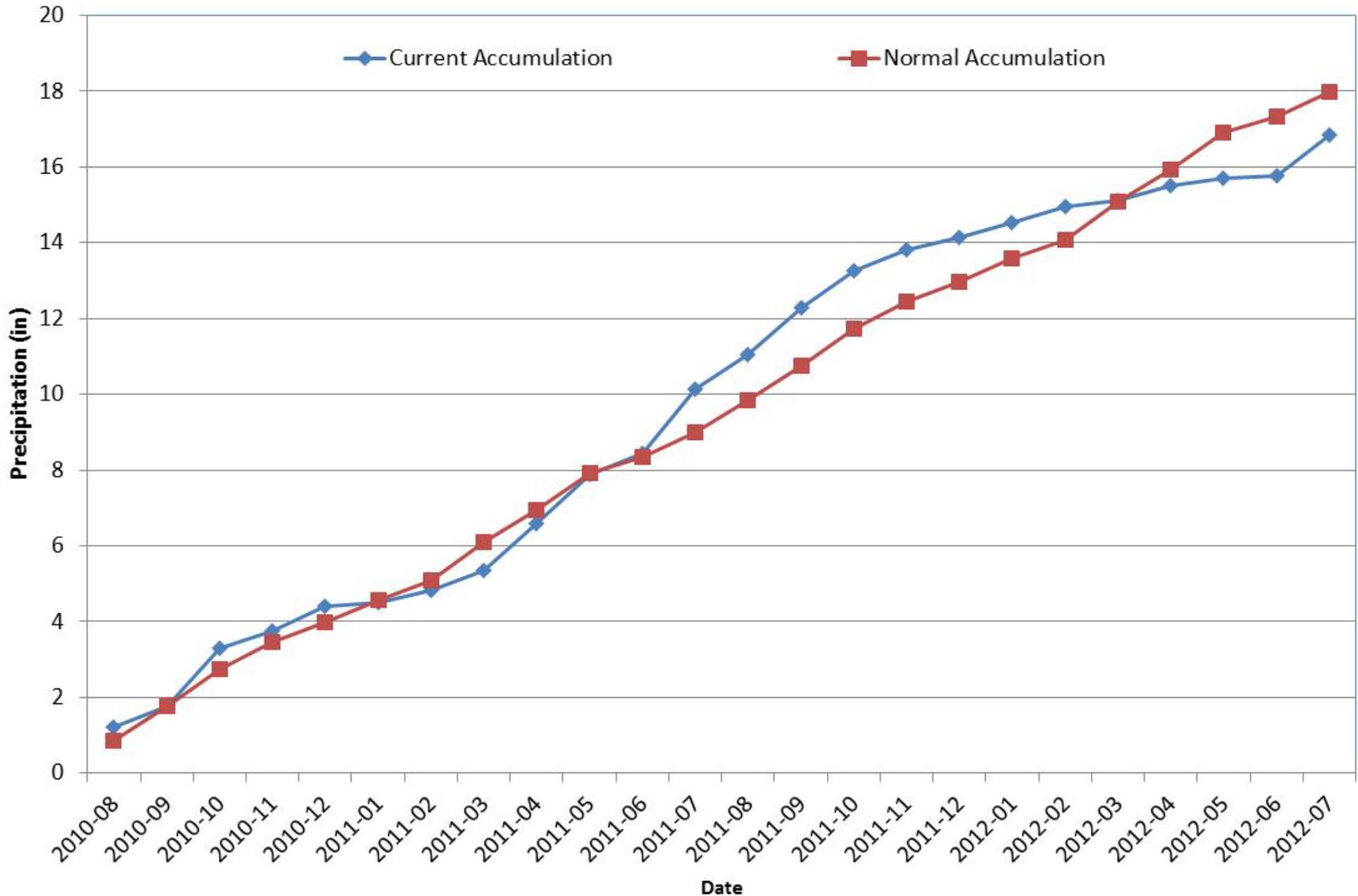
Division 2 – Grand Junction

Grand Junction WSFO 2012 Water Year



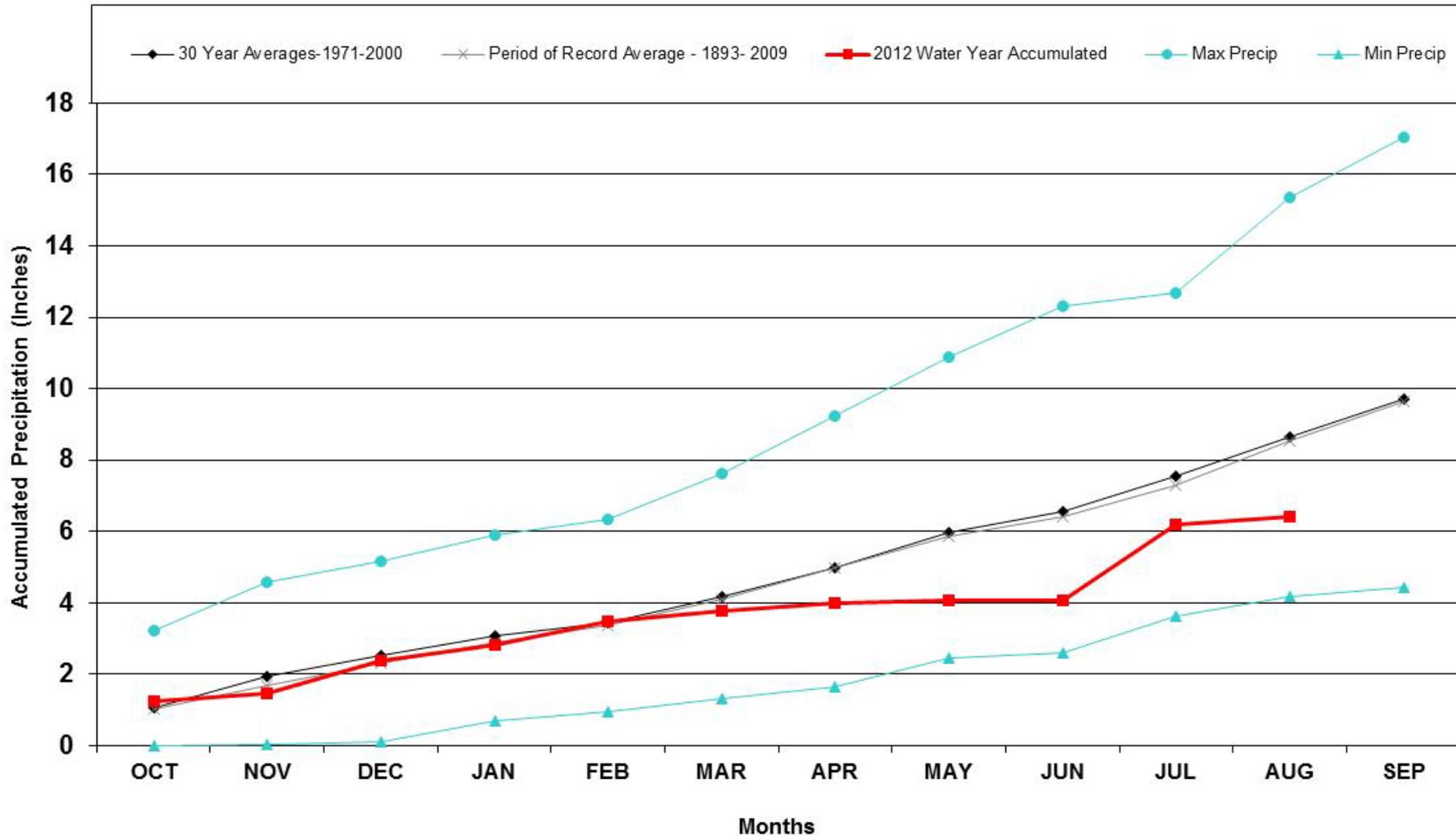
Division 2 – Grand Junction

Grand Junction 24 Month Precipitation Accumulation



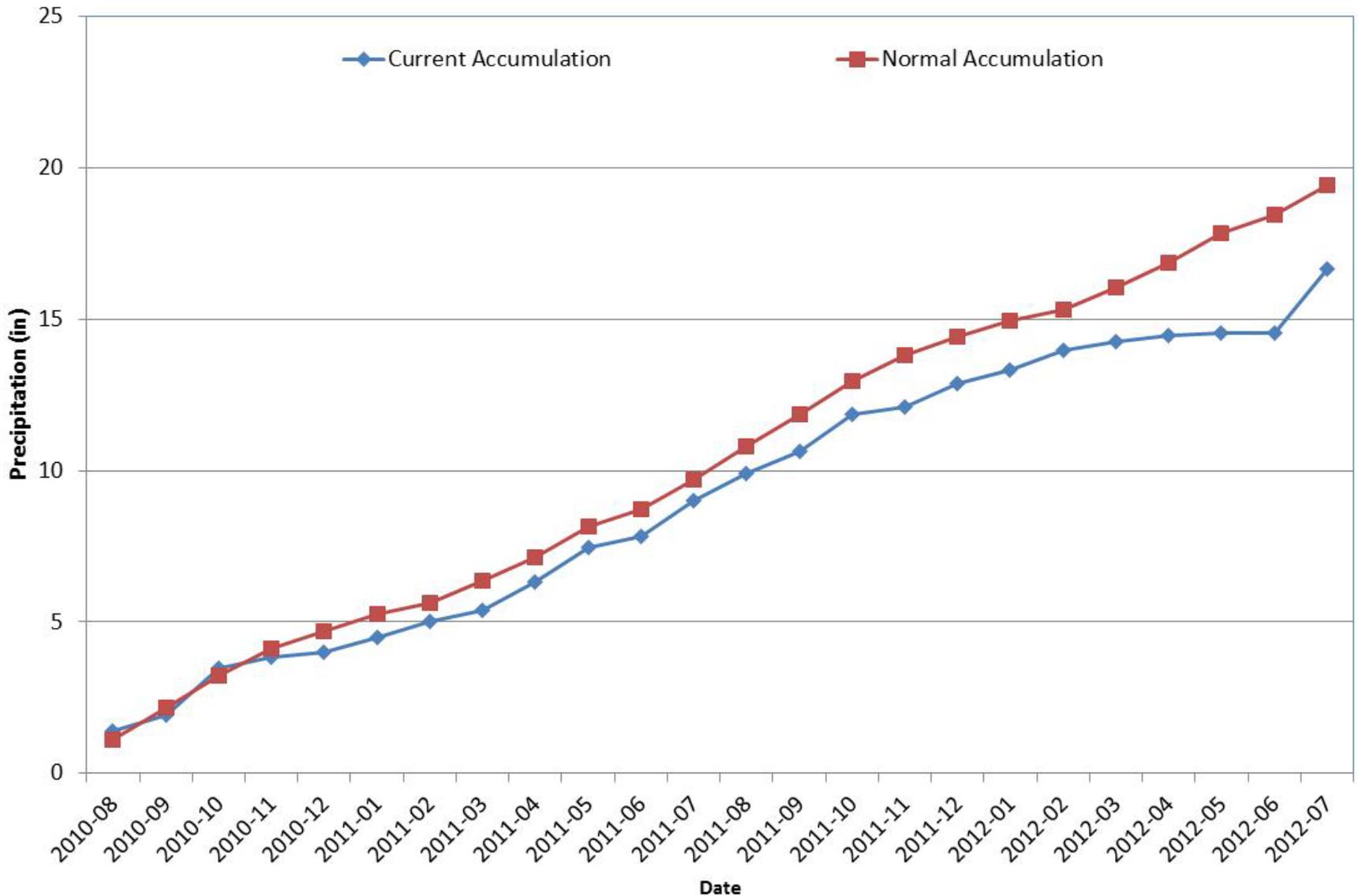
Division 3 – Montrose

Montrose #2 2012 Water Year



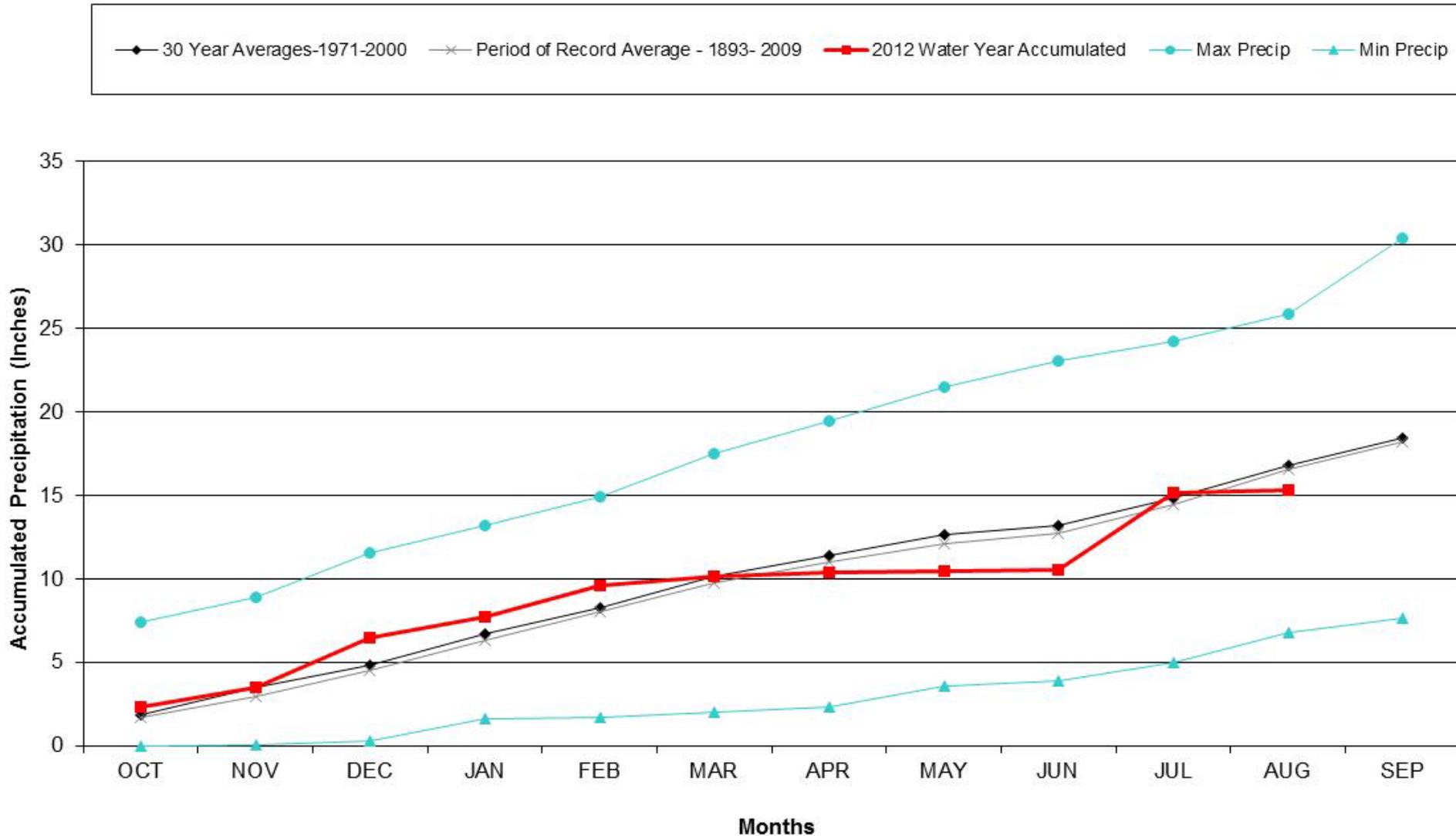
Division 3 – Montrose

Montrose #2
24 Month Precipitation Accumulation



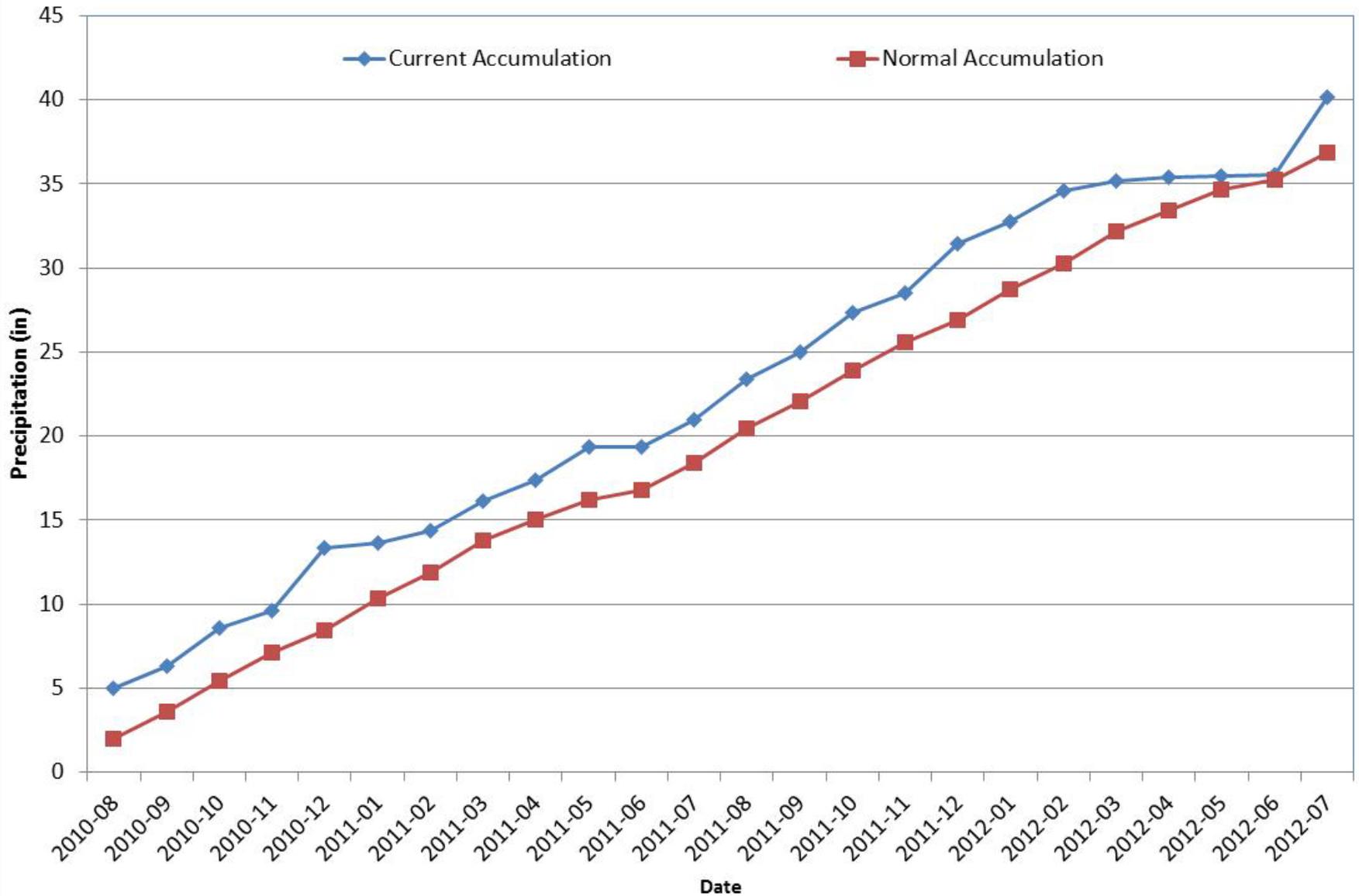
Division 3 – Mesa Verde NP

Mesa Verde NP 2012 Water Year



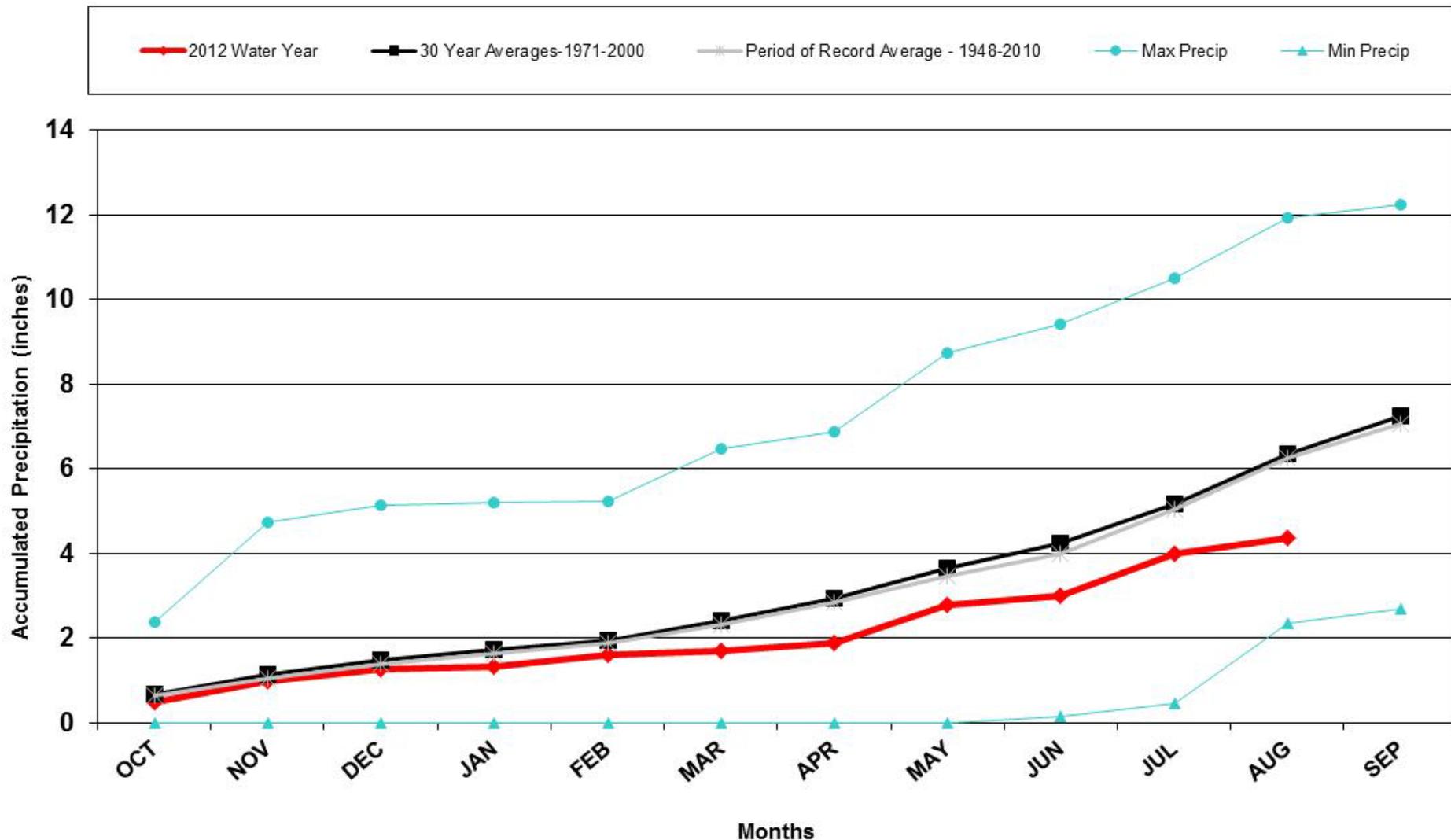
Division 3 – Mesa Verde NP

Mesa Verde NP 24 Month Precipitation Accumulation



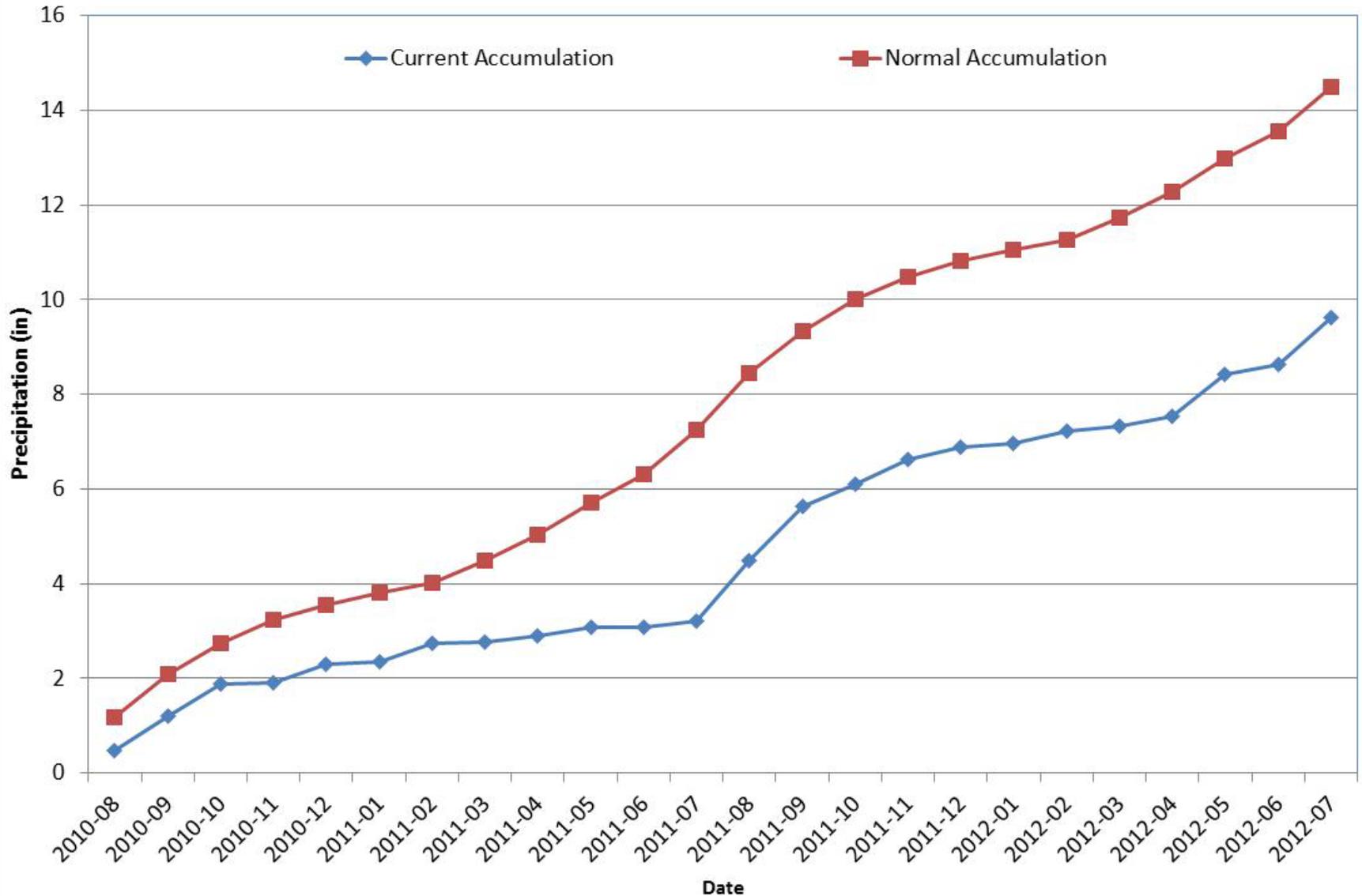
Division 4 – Alamosa

Alamosa WSO 2012 Water Year



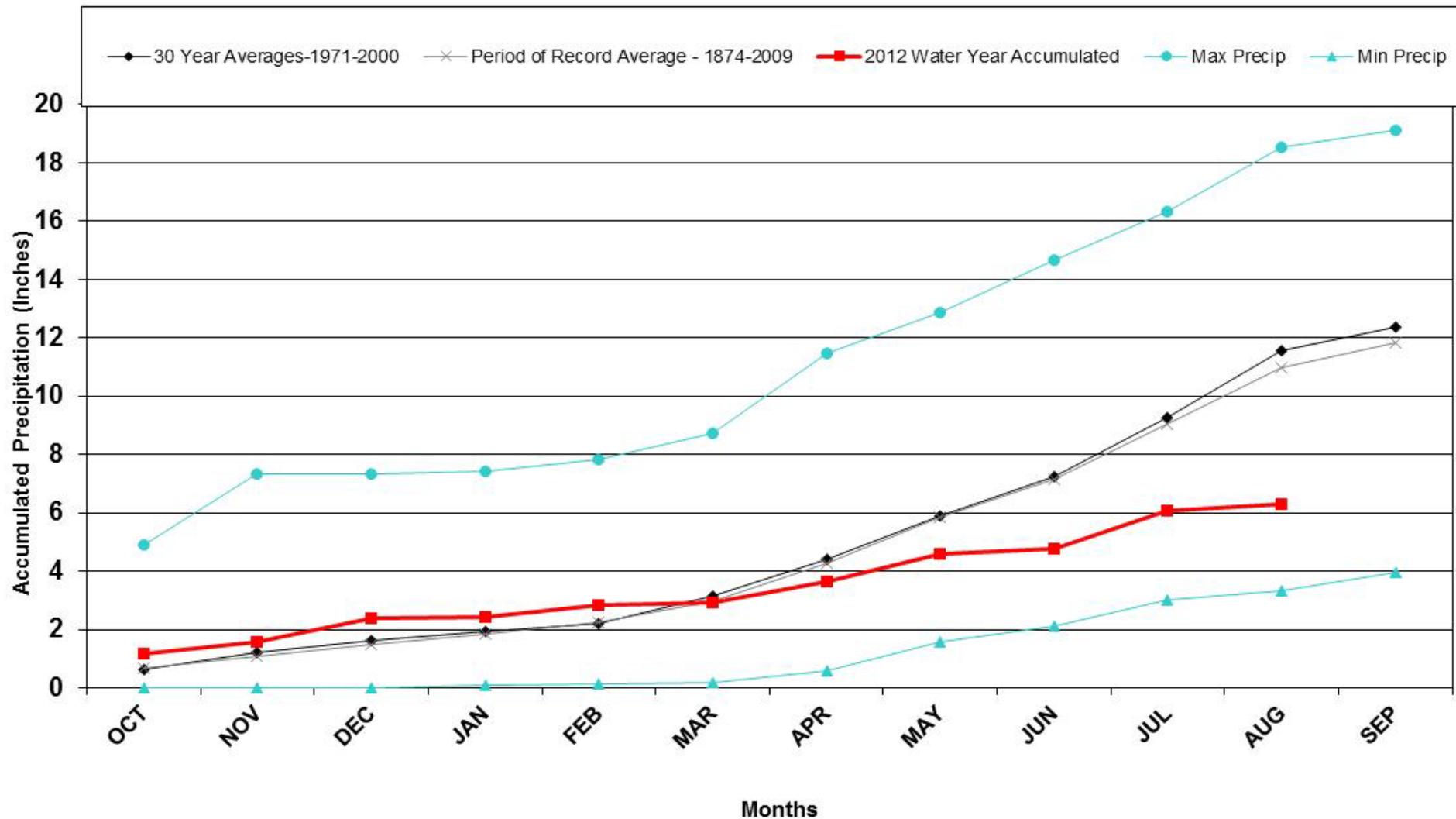
Division 4 – Alamosa

Alamosa WSO 24 Month Precipitation Accumulation



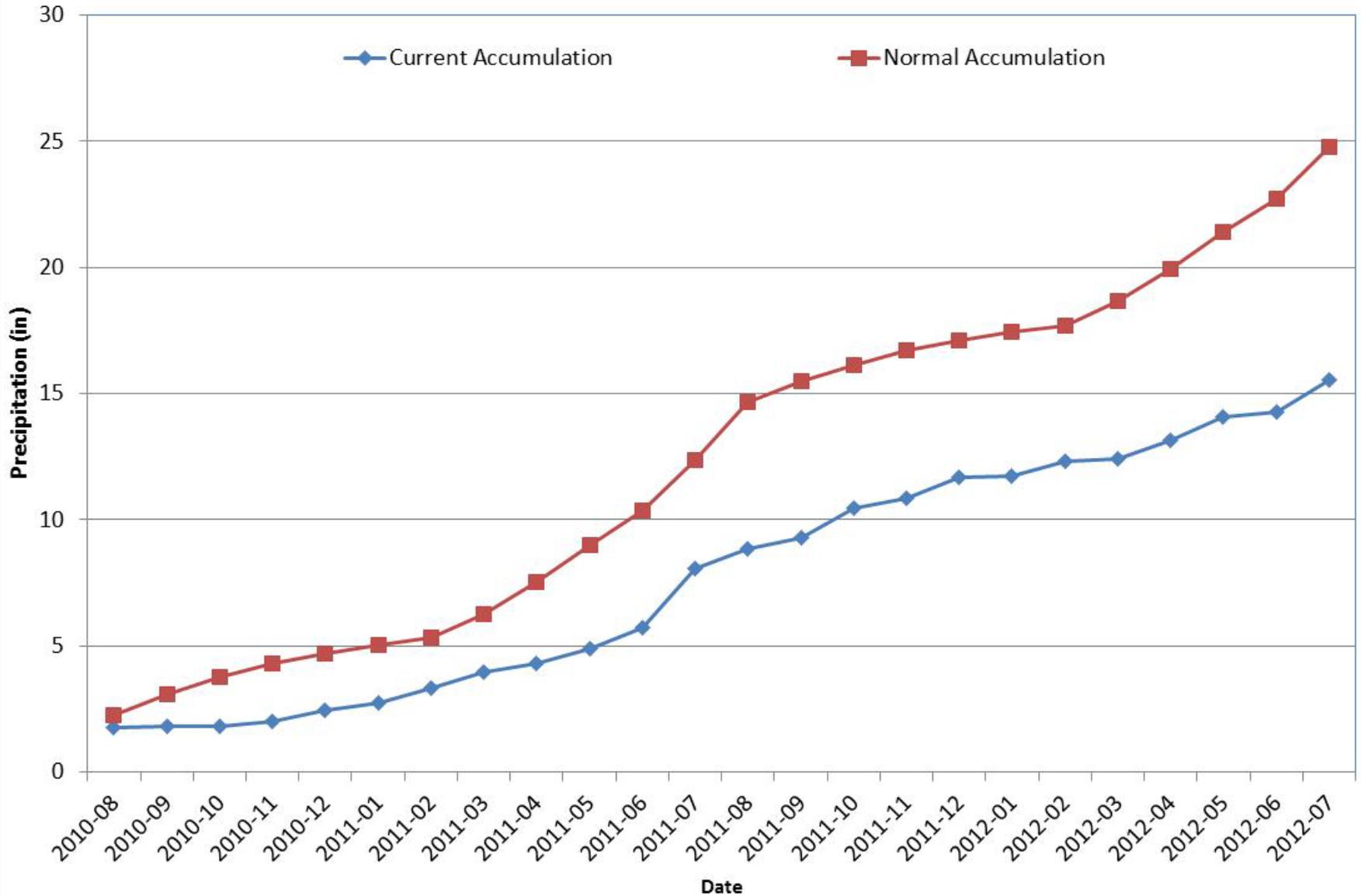
Division 5 – Pueblo

Pueblo WSO 2012 Water Year



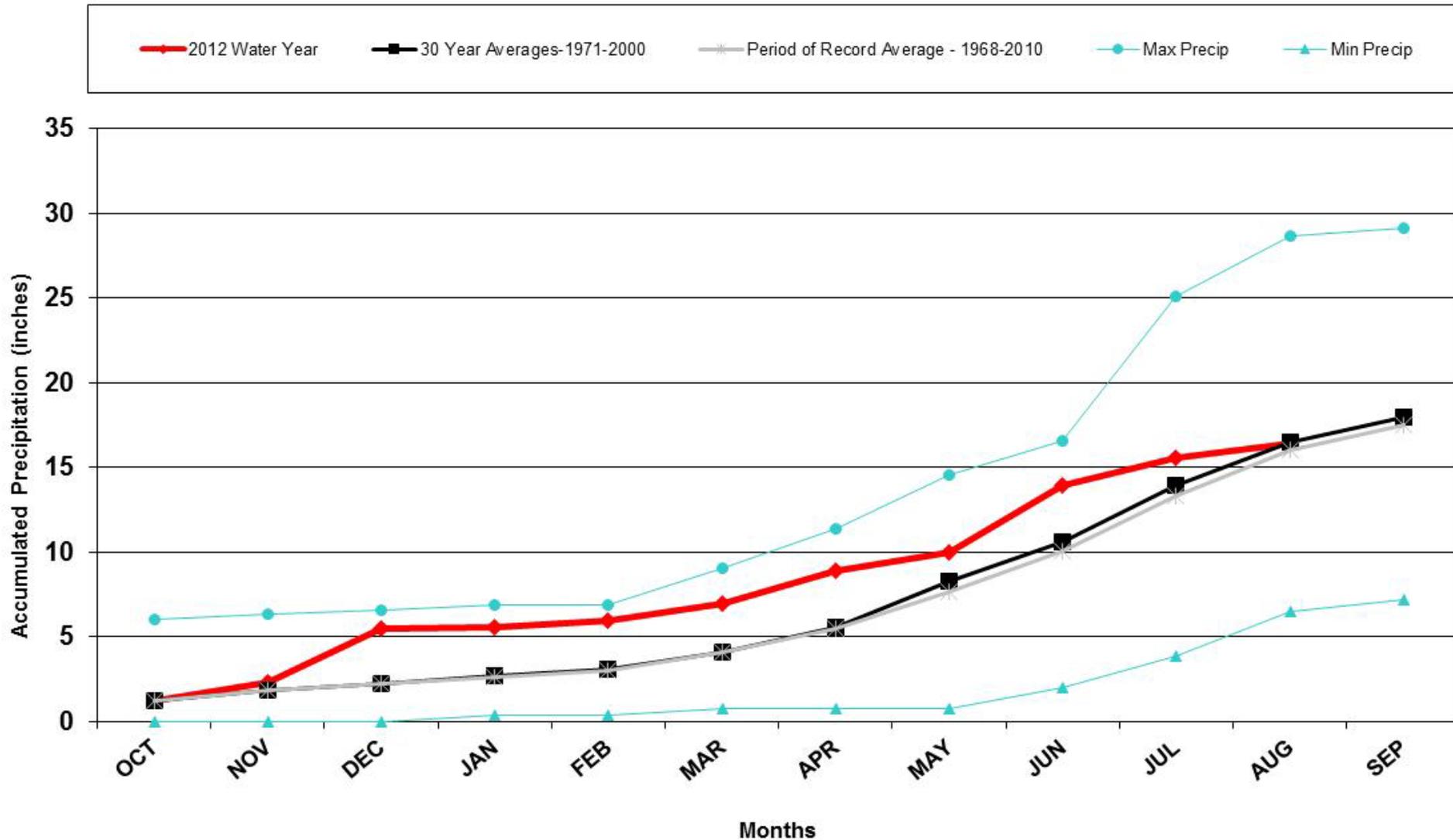
Division 5 – Pueblo

Pueblo Memorial AP 24 Month Precipitation Accumulation



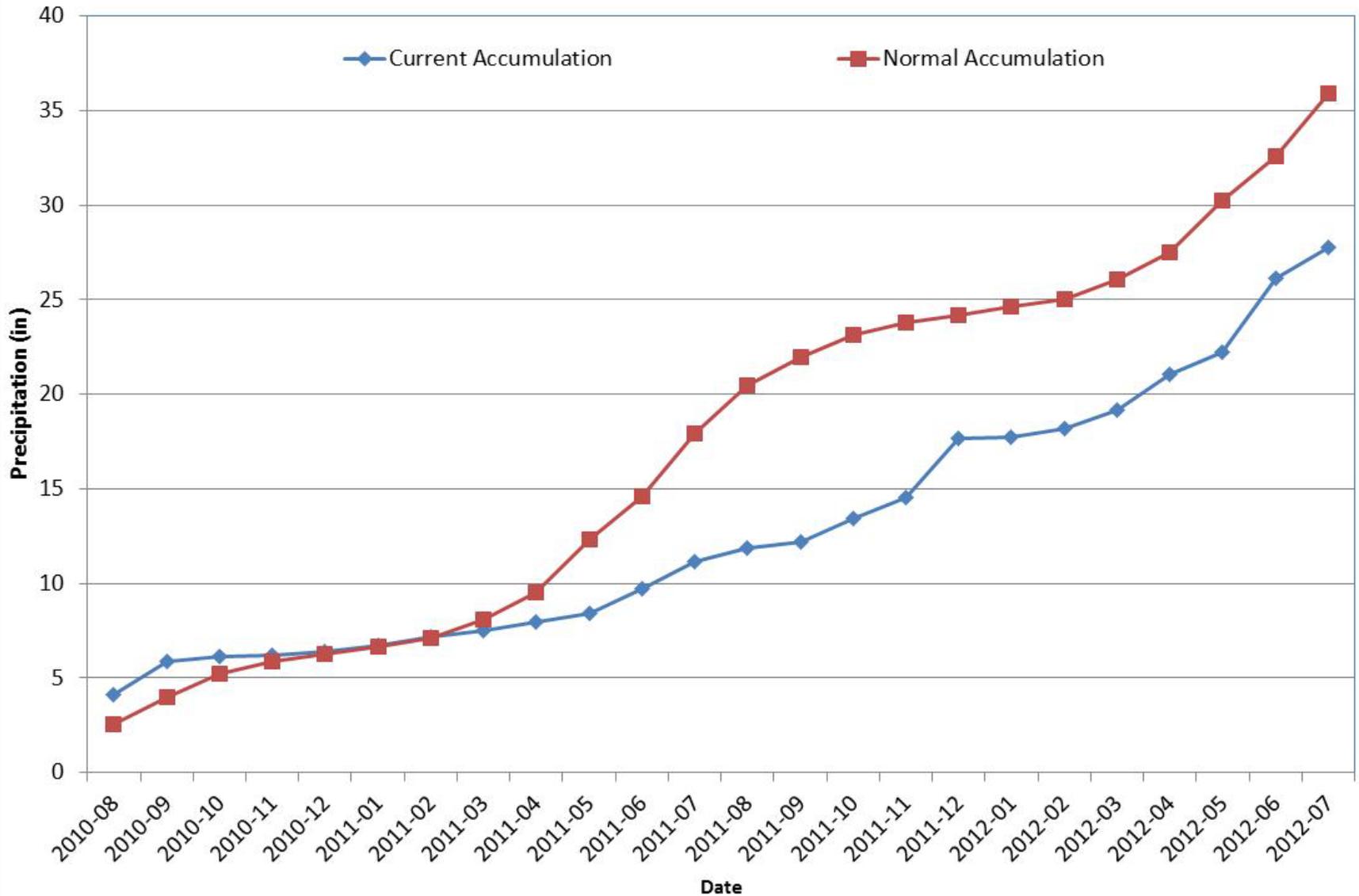
Division 6 - Walsh

Walsh 2012 Water Year



Division 6 - Walsh

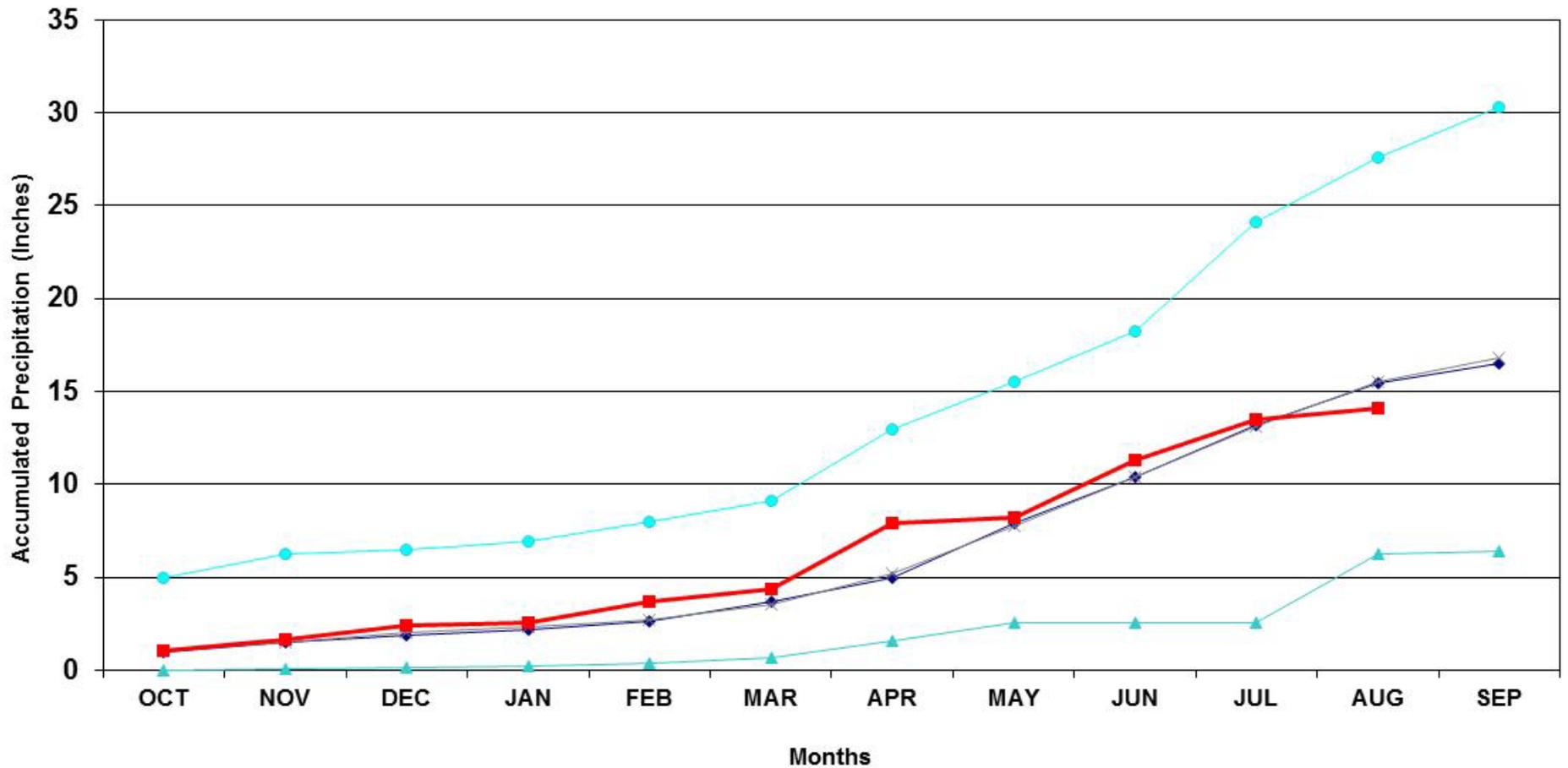
Walsh 1W 24 Month Precipitation Accumulation



Division 6 - Burlington

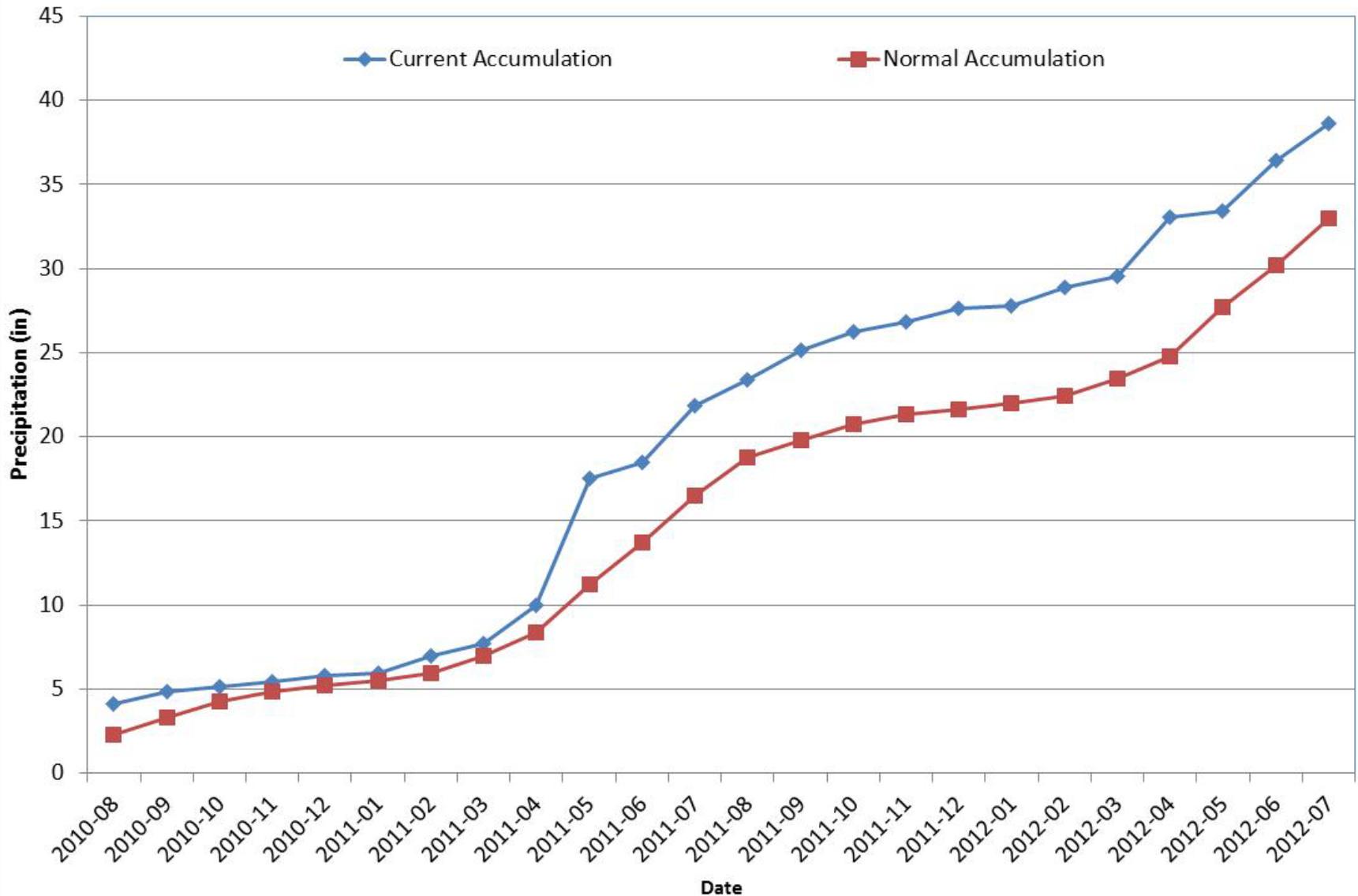
Burlington 2012 Water Year

◆ 30 Year Averages-1971-2000 ✕ Period of Record Average - 1892-2009 ■ 2012 Water Year ● Max Precip ▲ Min Precip



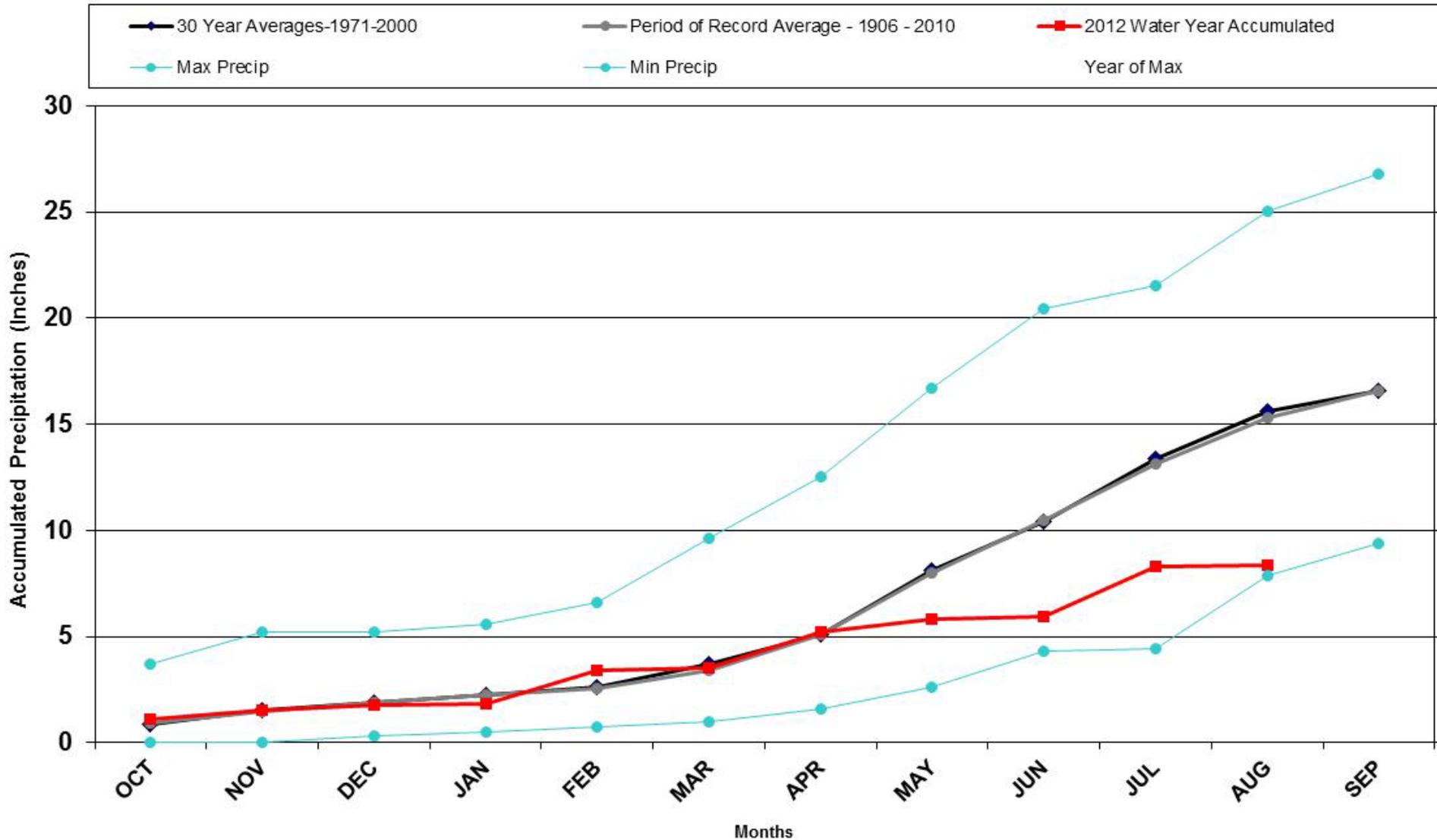
Division 6 - Burlington

Burlington, CO 24 Month Precipitation Accumulation



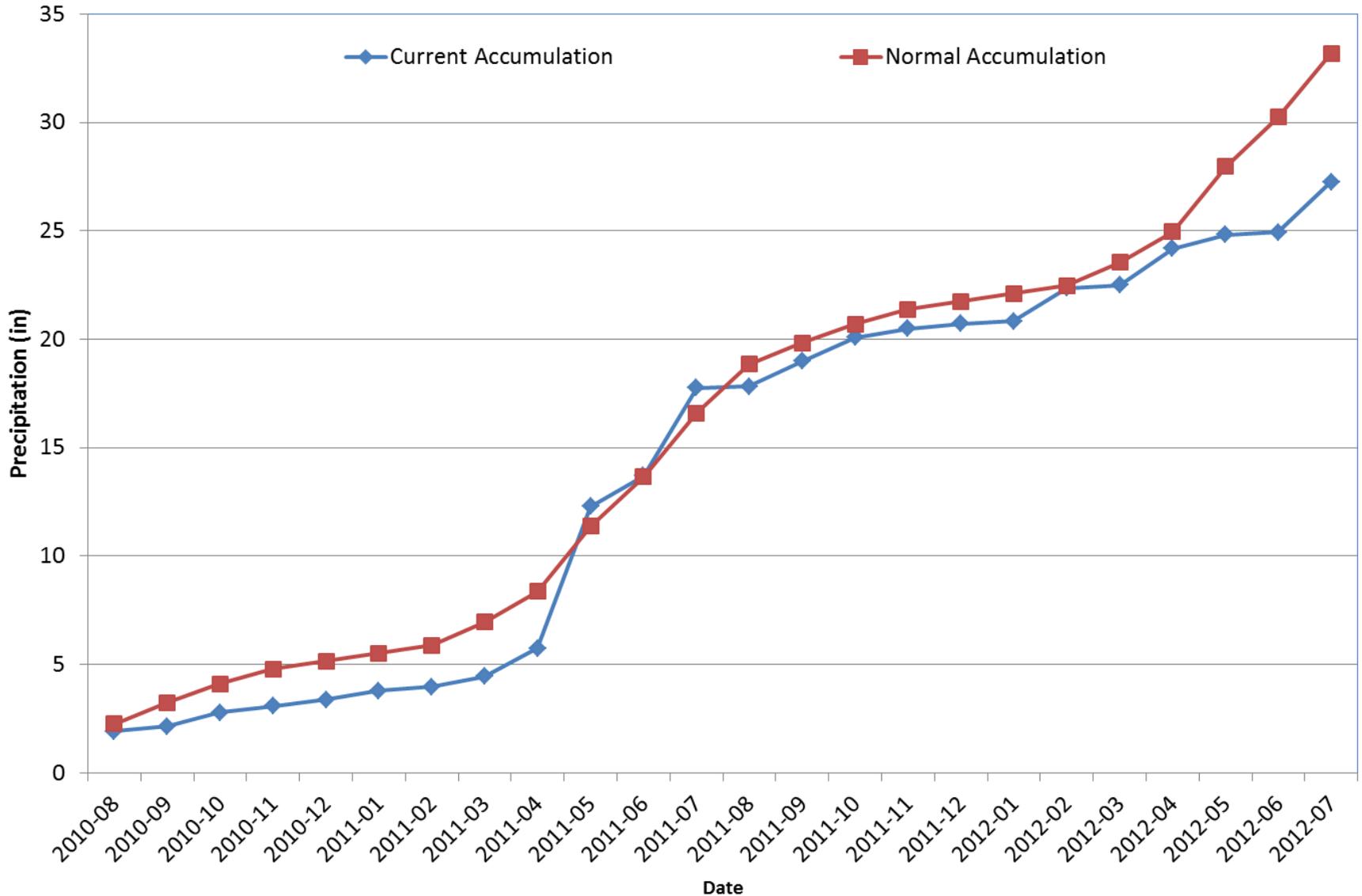
Division 7 – Akron

Akron 4E 2012 Water Year



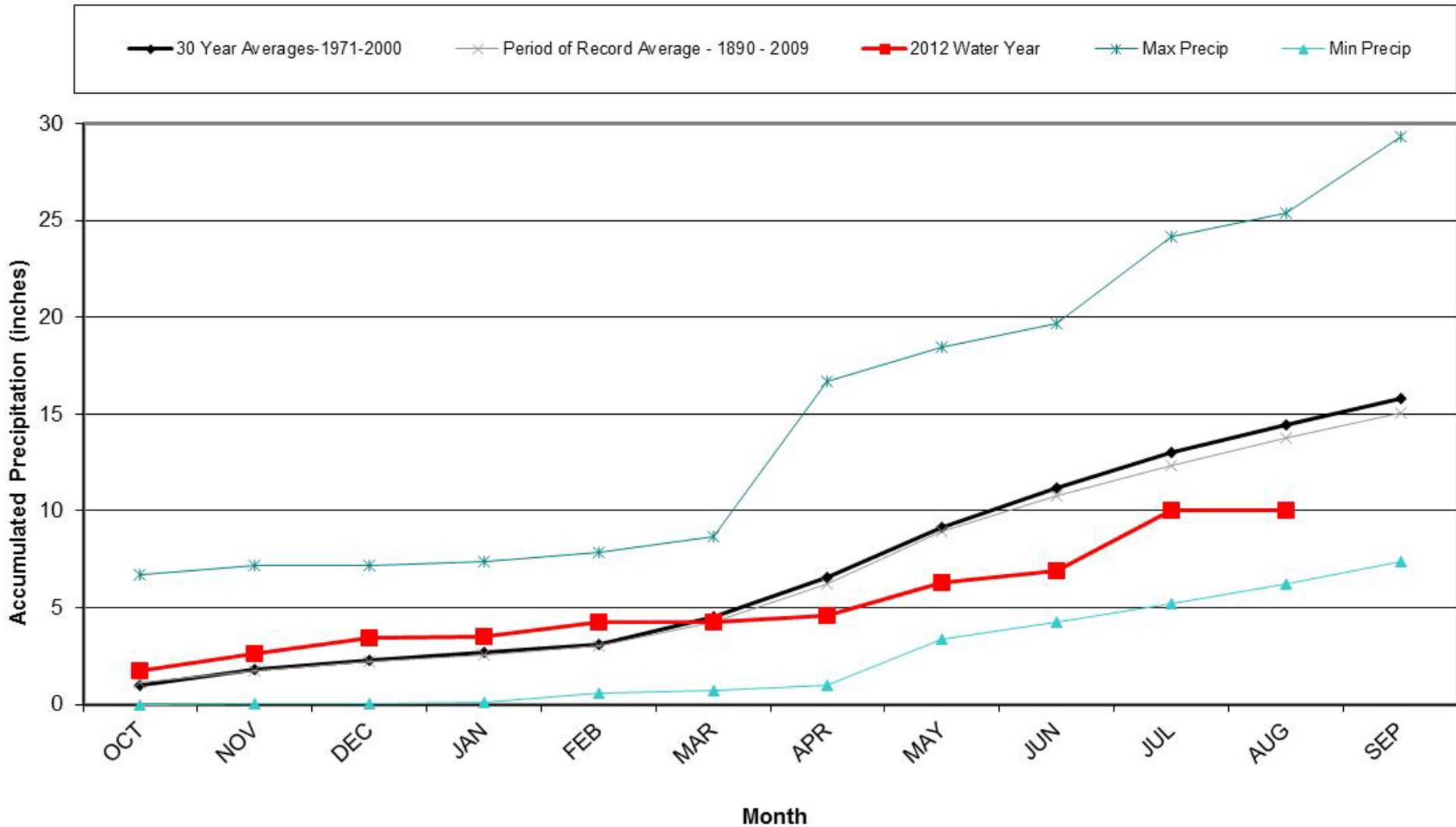
Division 7 – Akron

Akron 4E 24 Month Precipitation Accumulation



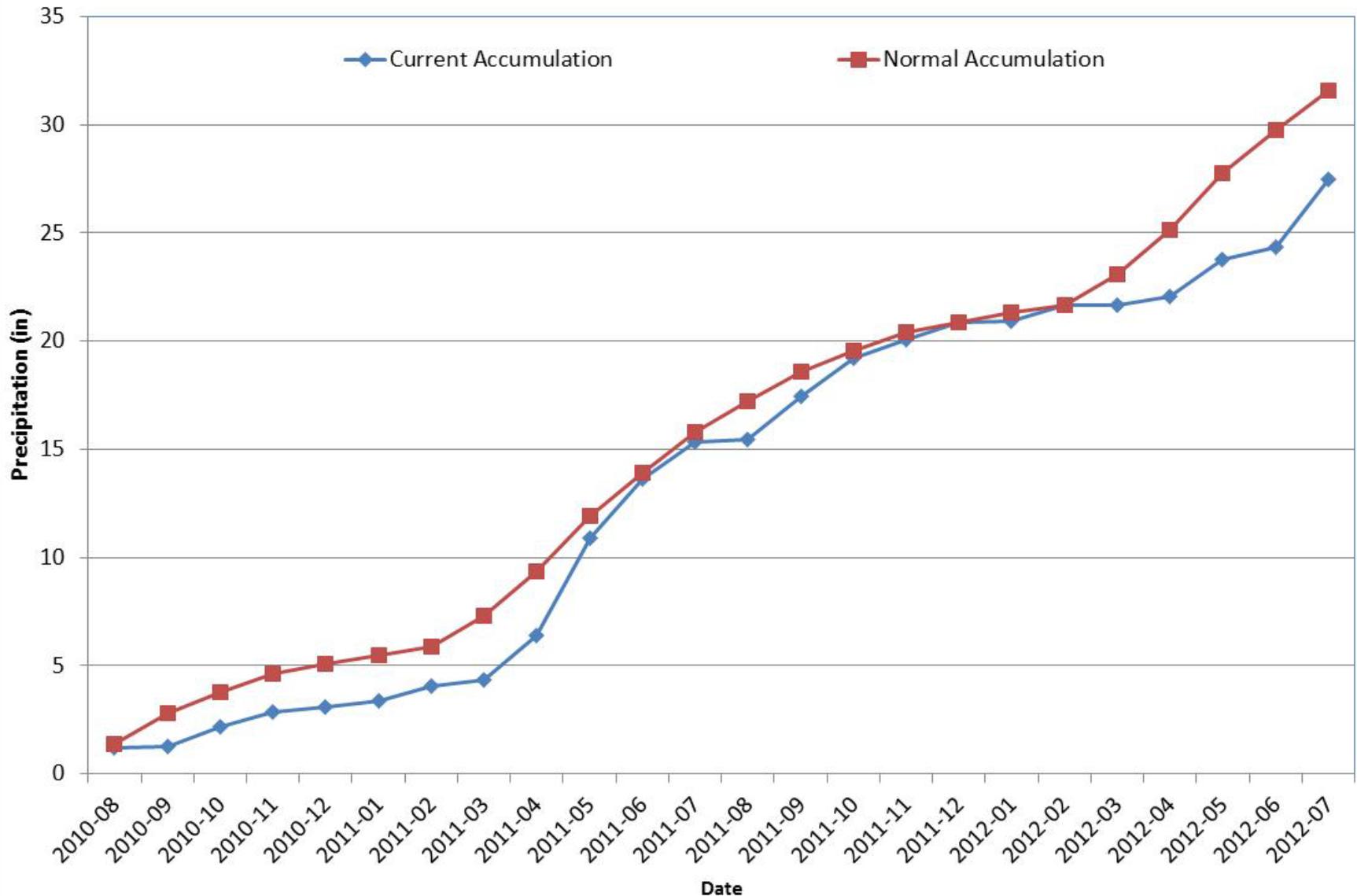
Division 8 – Fort Collins

Fort Collins 2012 Water Year



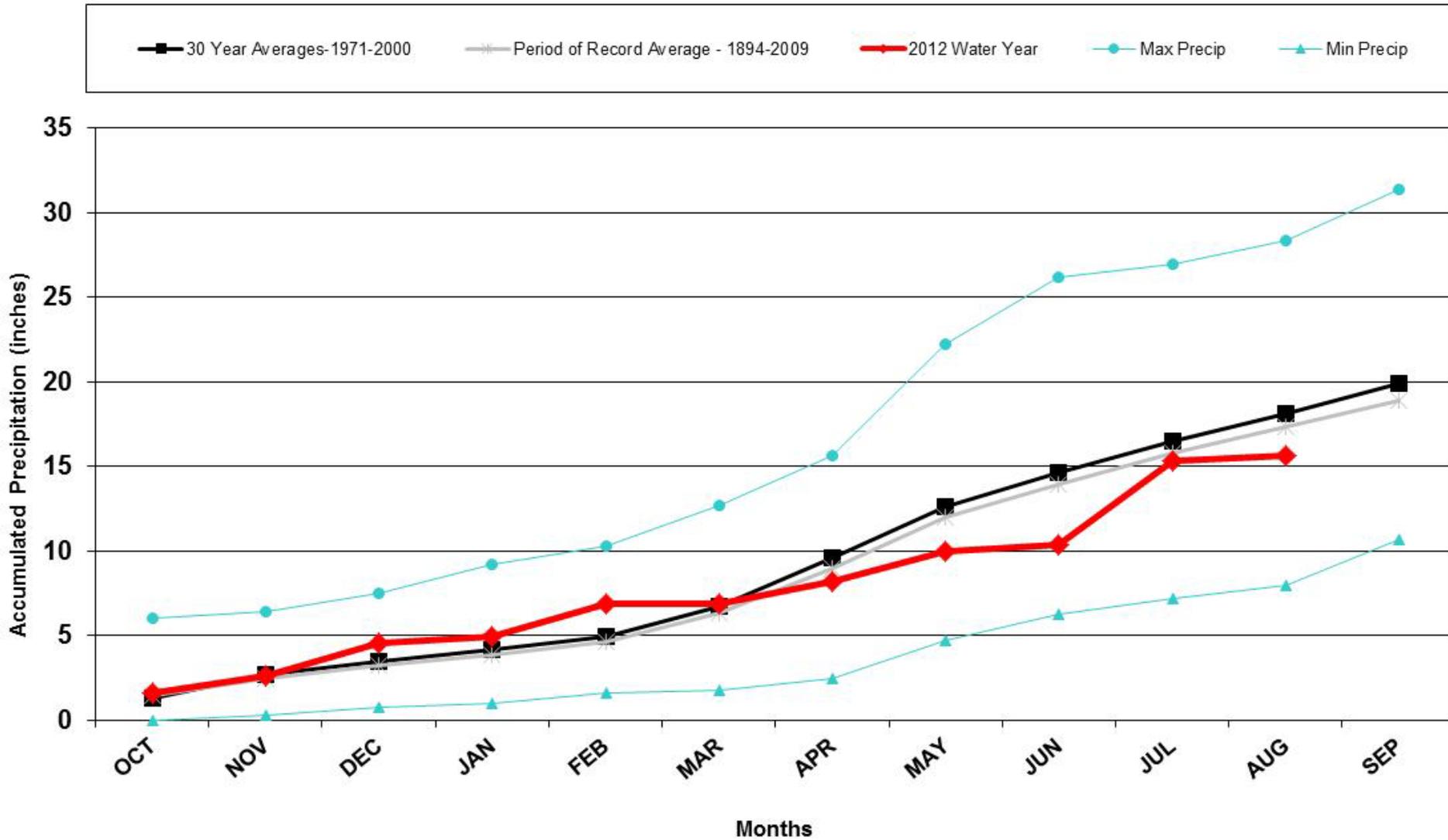
Division 8 – Fort Collins

Fort Collins 24 Month Precipitation Accumulation



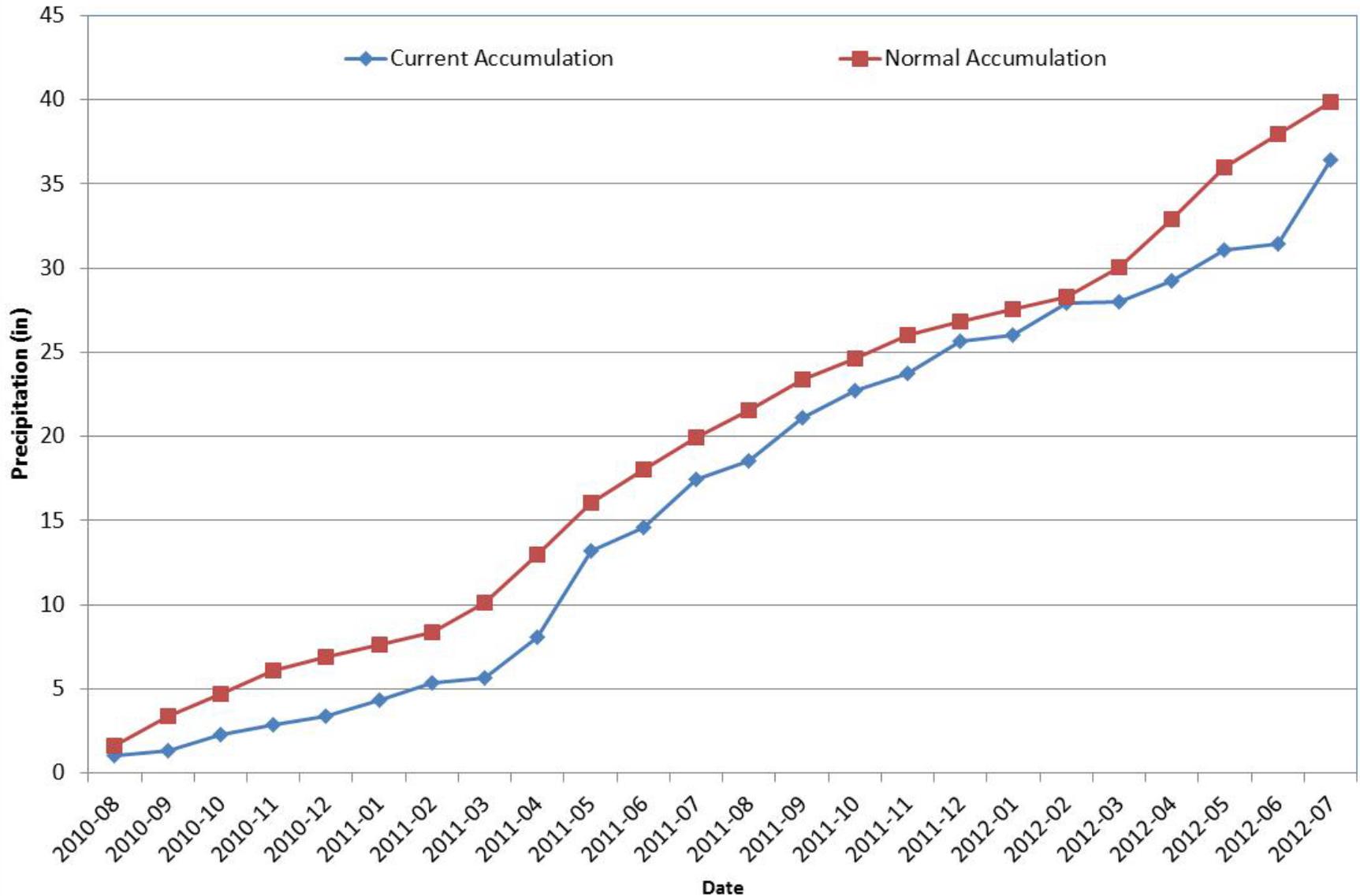
Division 8 - Boulder

Boulder 2012 Water Year



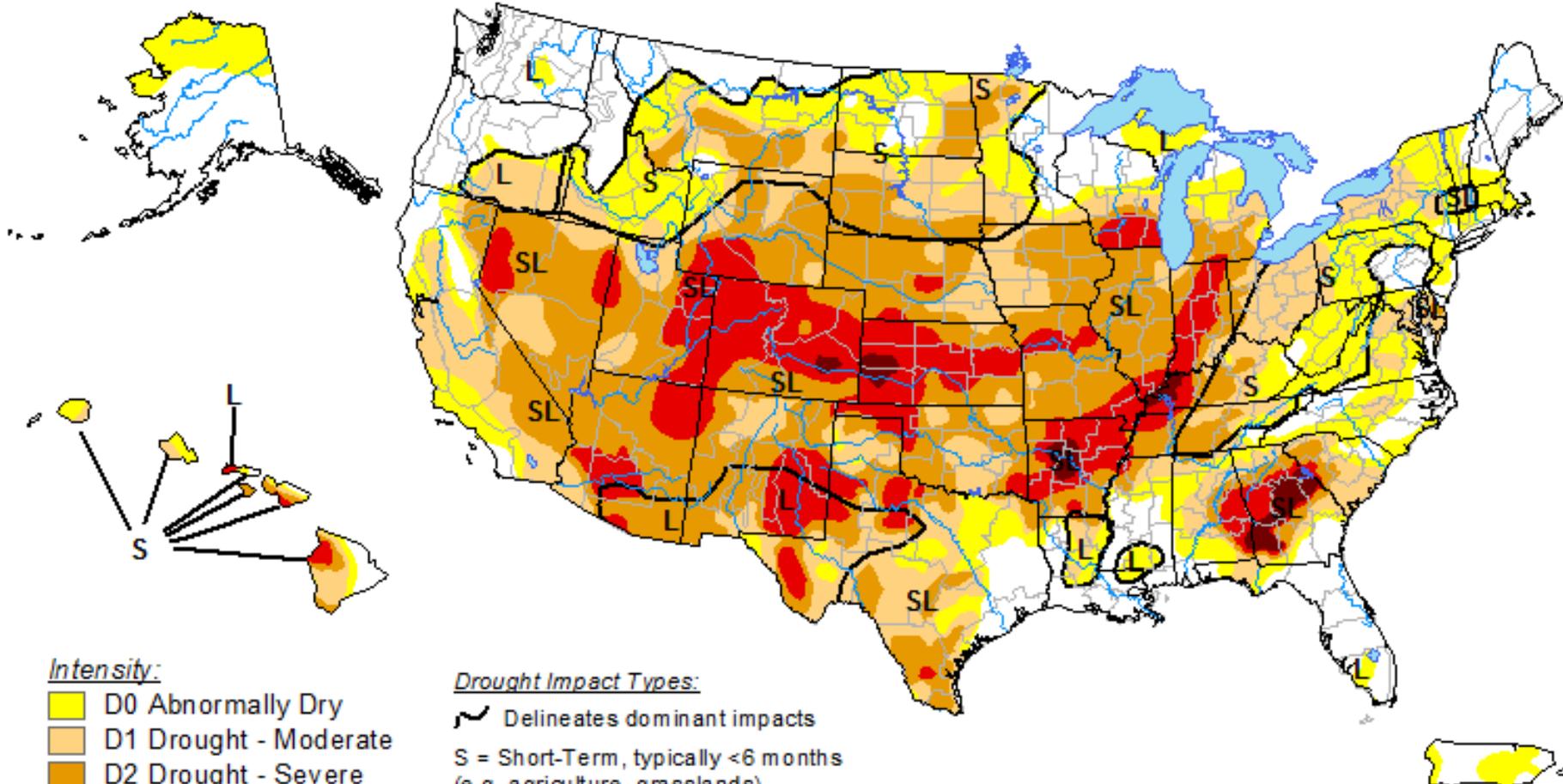
Division 8 - Boulder

Boulder 24 Month Precipitation Accumulation



U.S. Drought Monitor

July 17, 2012
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, July 19, 2012

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

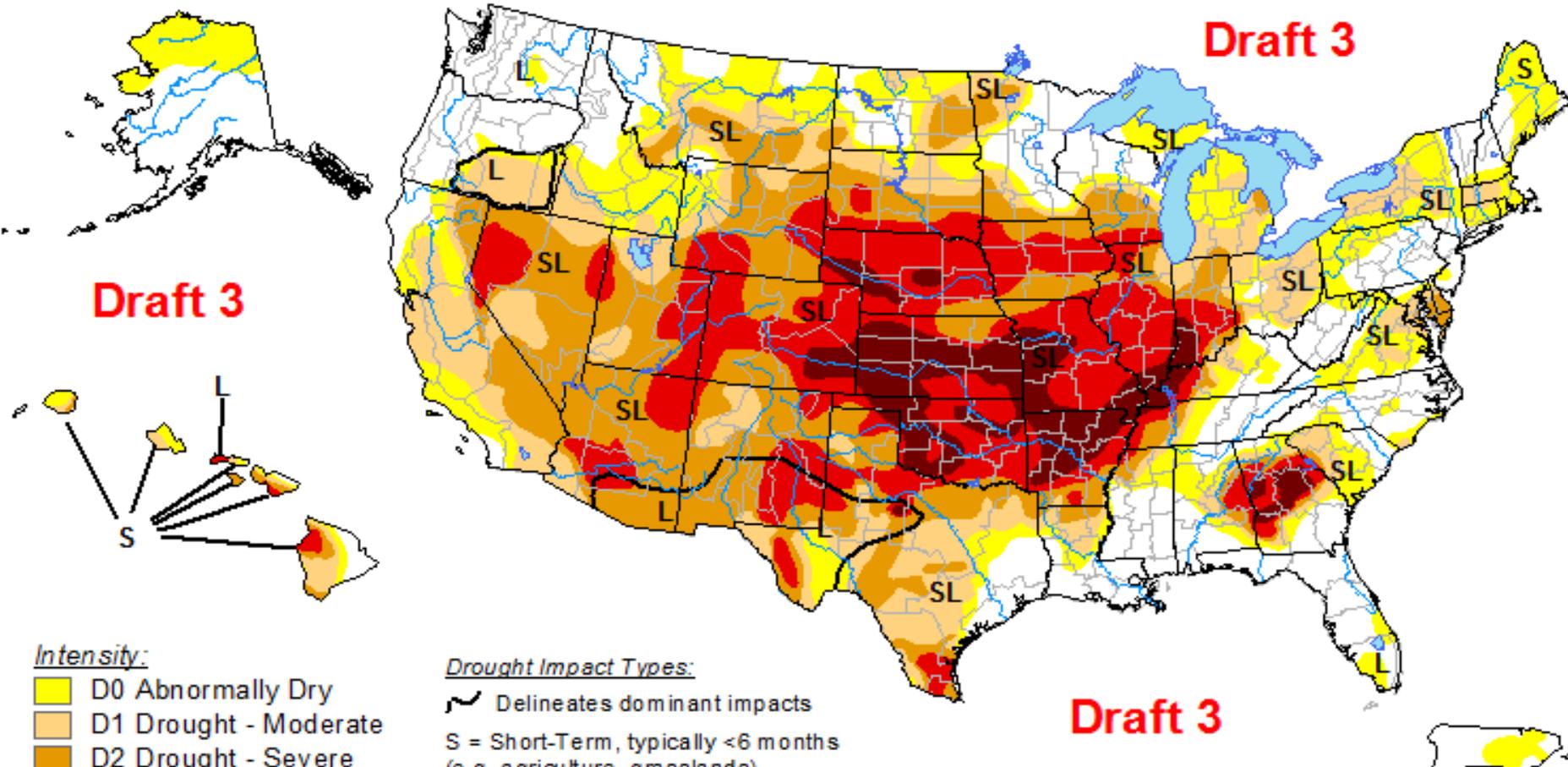
Author: Richard Heim/Liz Love-Brotak NOAA/NESDIS/NCDC

U.S. Drought Monitor

August 14, 2012

Valid 7 a.m. EDT

Draft 3



Draft 3

Draft 3

Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
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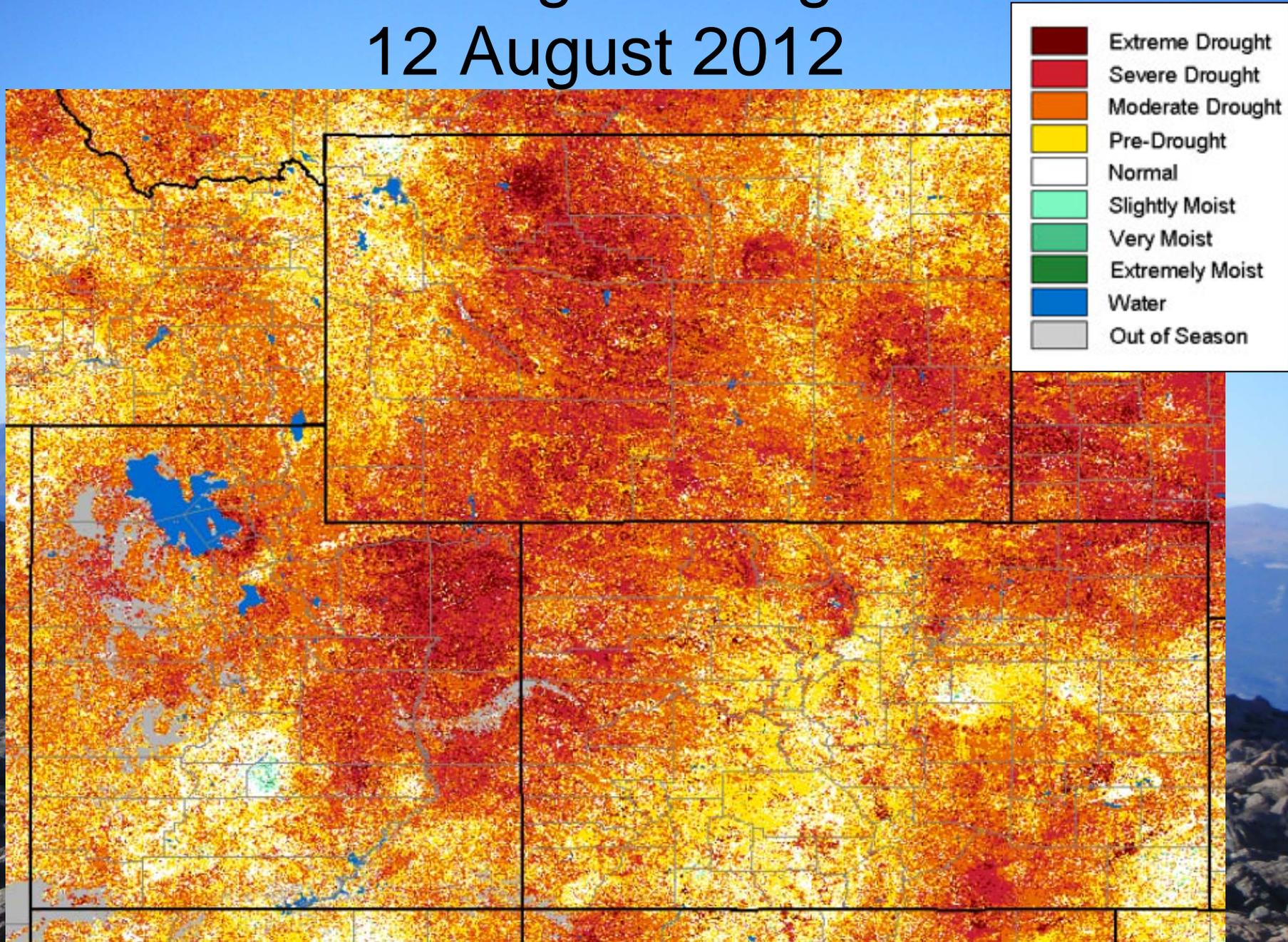
Released Thursday, August 16, 2012

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

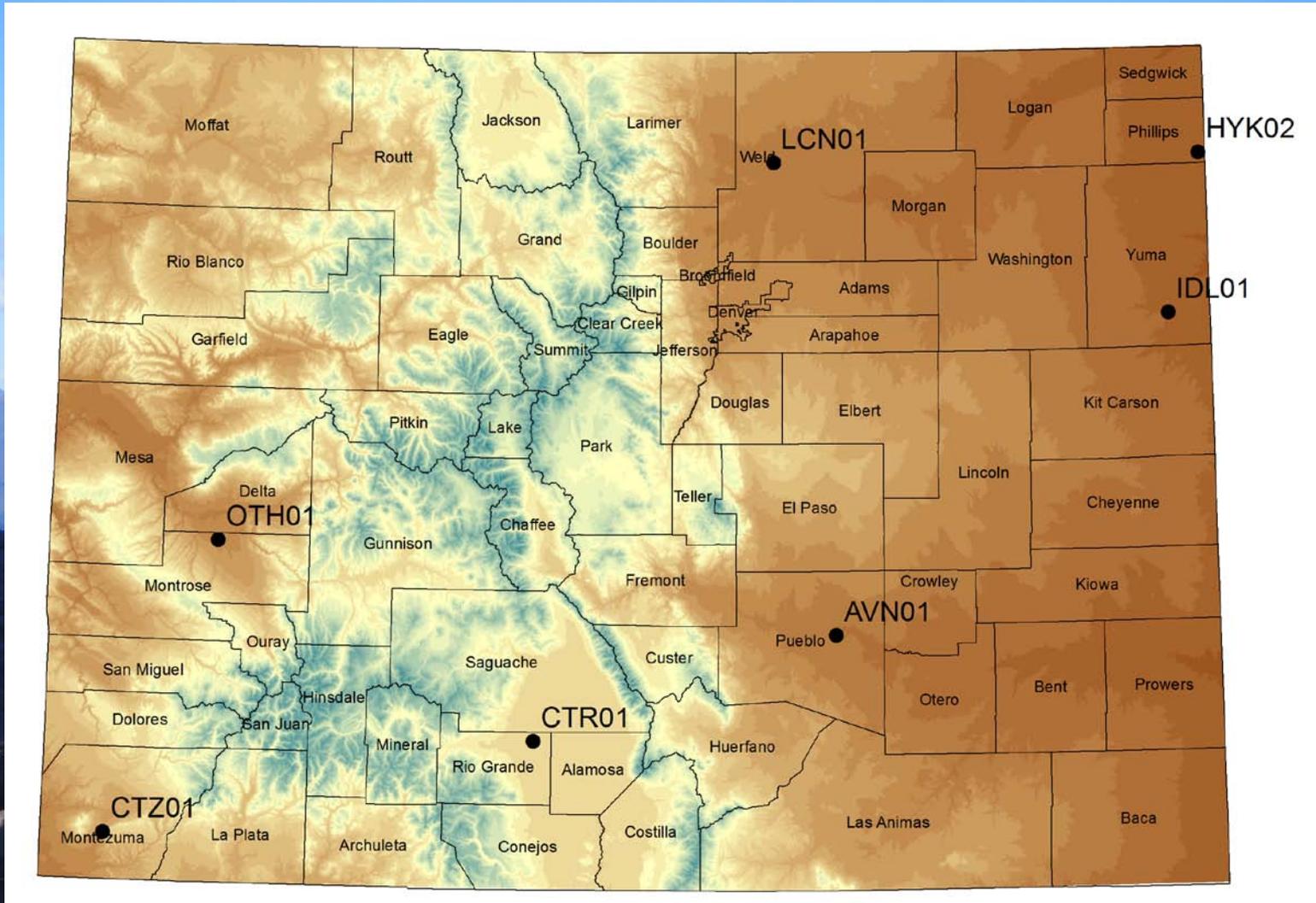
Author: Michael Brewer/Liz Love-Brotak NOAA/NESDIS/NCDC

eMODIS VegDRI Vegetation

12 August 2012

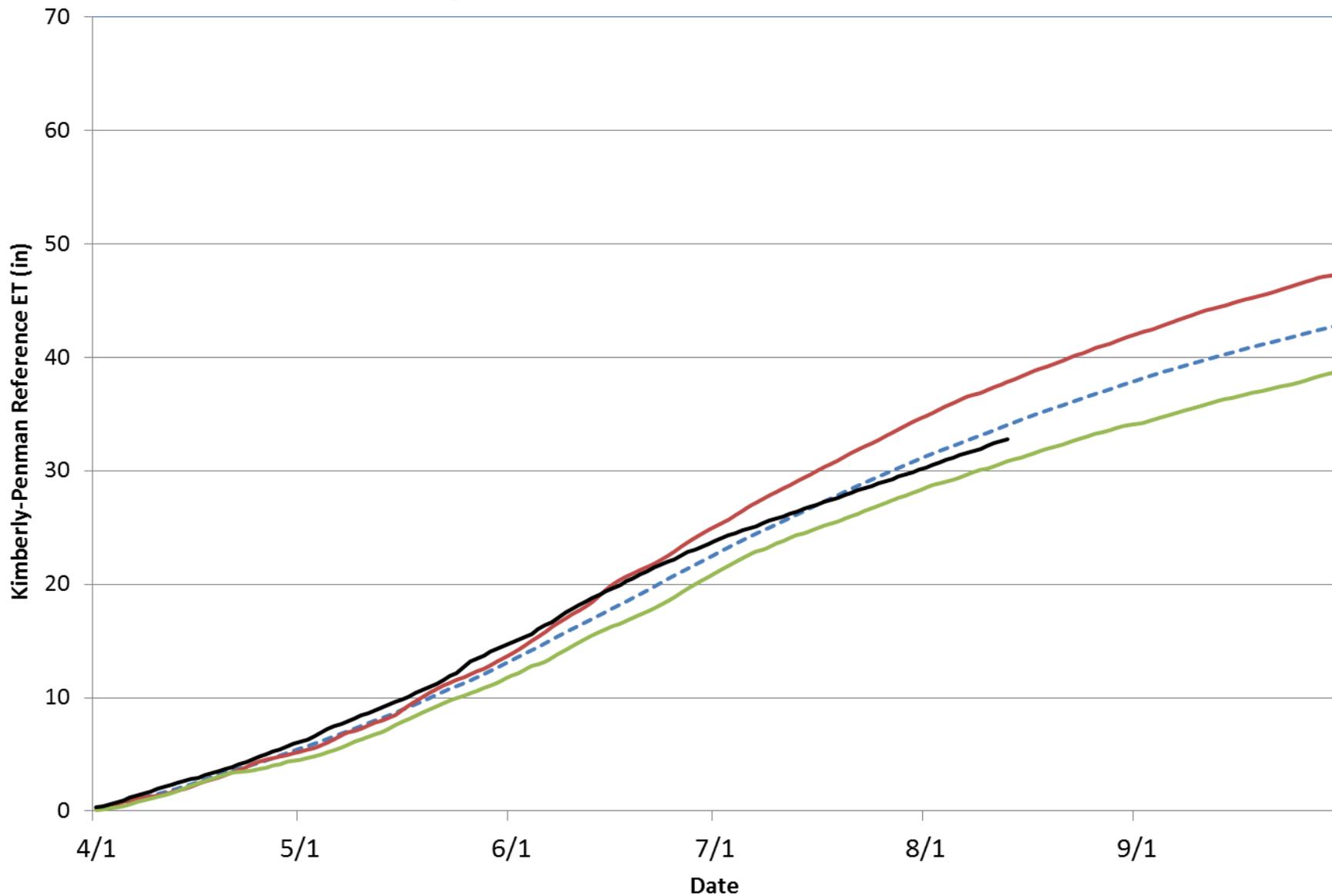


CoAgMet Reference Evapotranspiration Stations



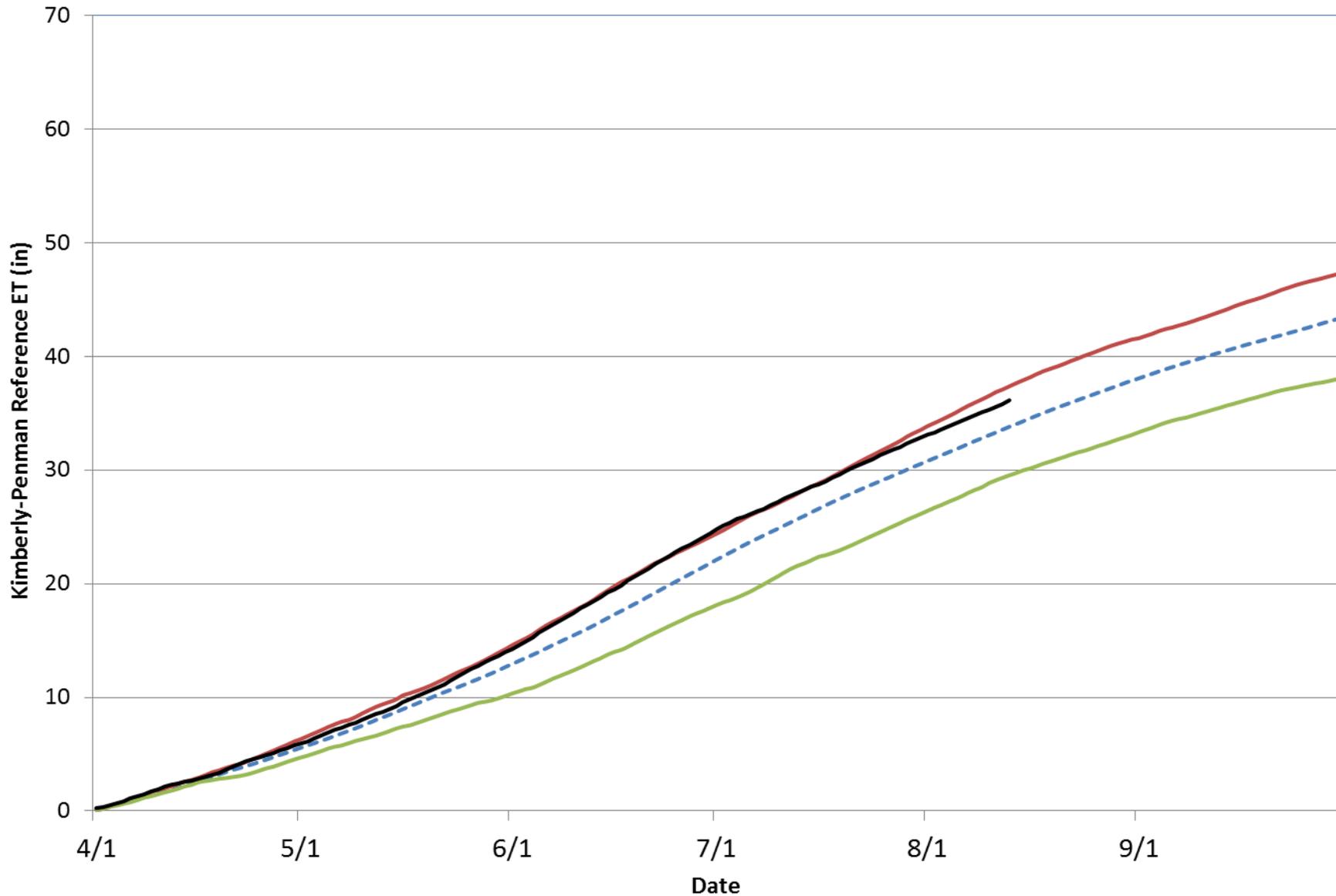
Olathe Kimberly-Penman Reference ET (1993 - 2012)

--- Average — 1994 — 1999 — 2012



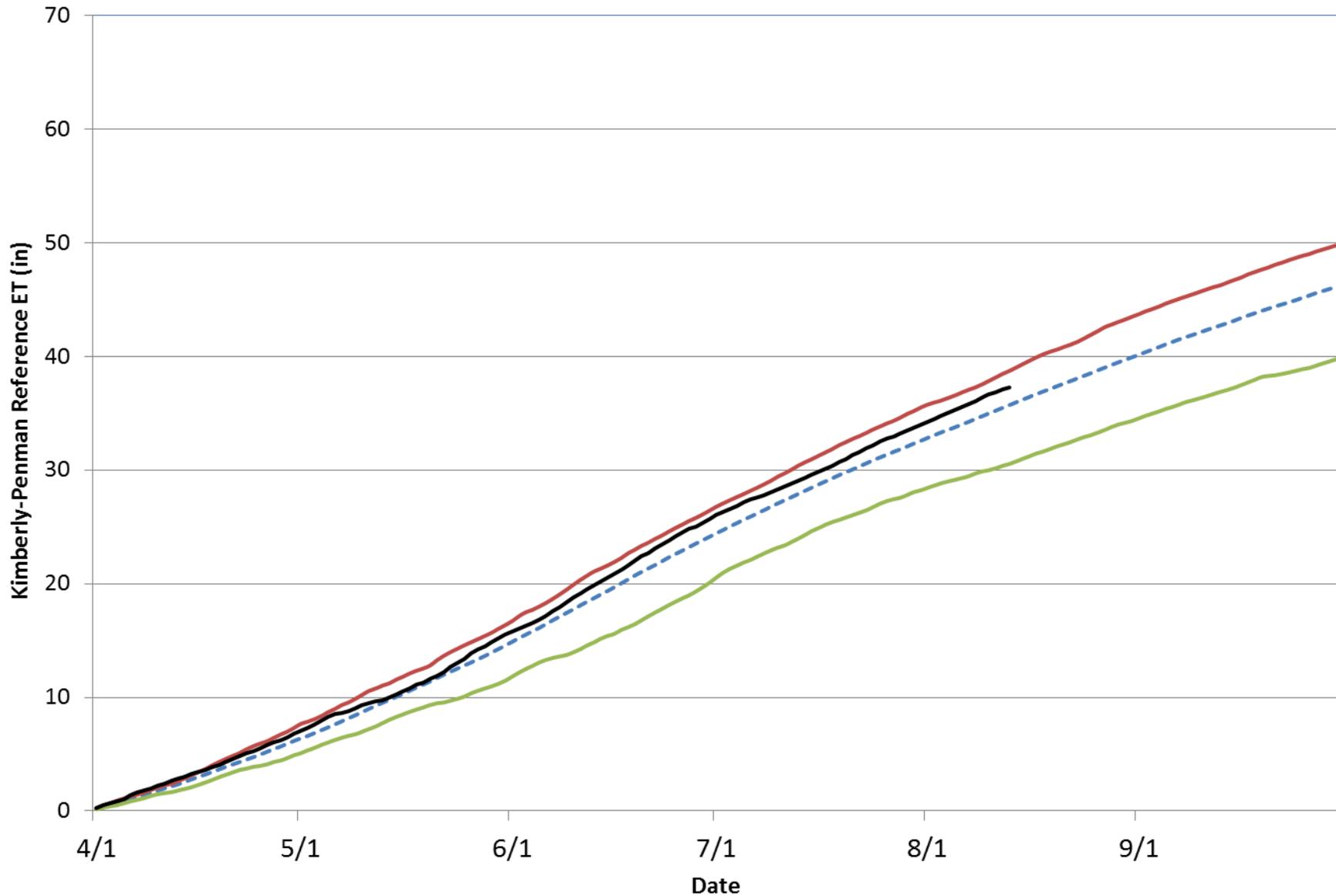
Cortez Kimberly-Penman Reference ET (1992 - 2012)

--- Average — 2000 — 1995 — 2012



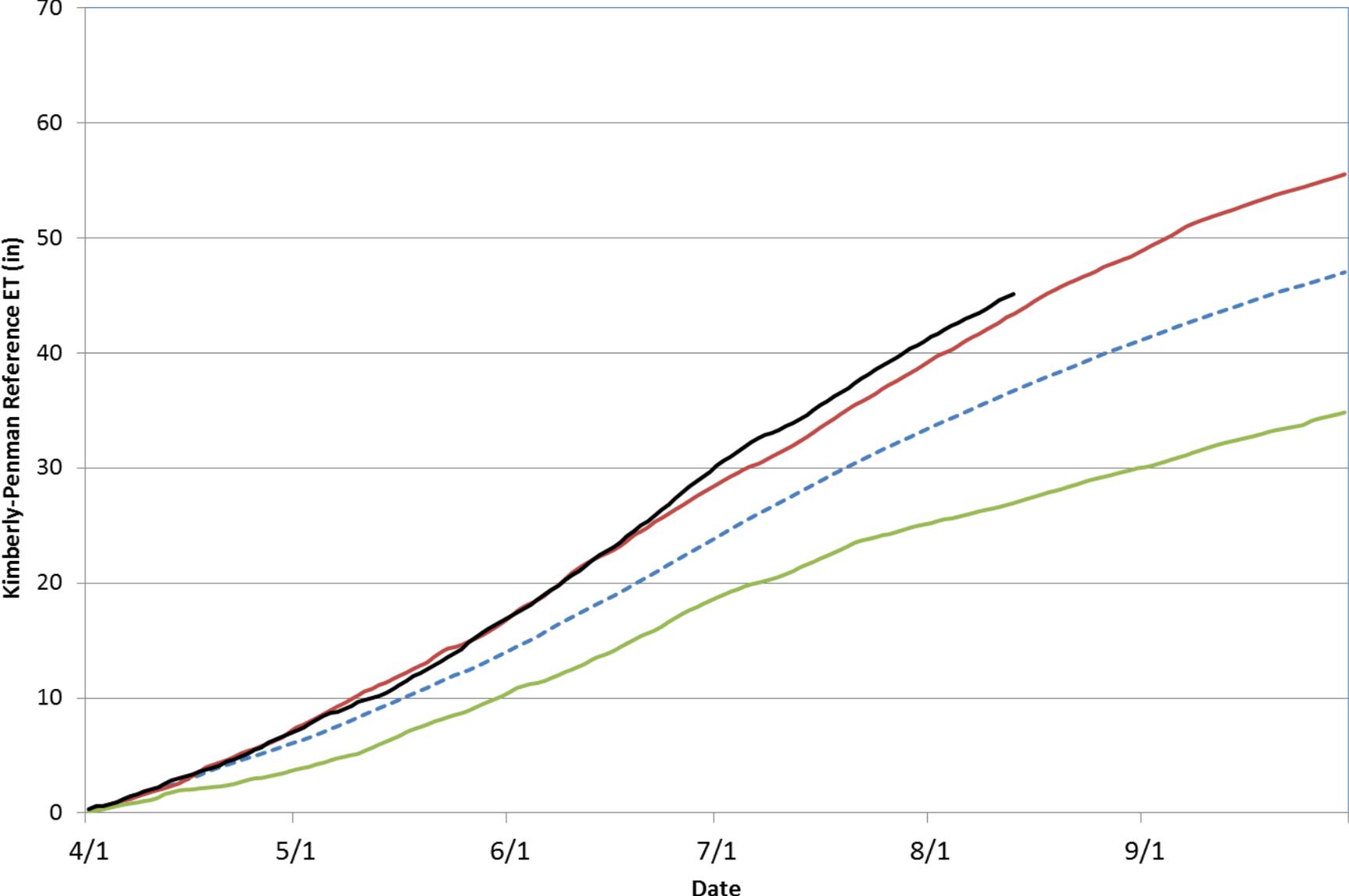
Center Kimberly-Penman Reference ET (1994 - 2012)

--- Average — 2002 — 1997 — 2012



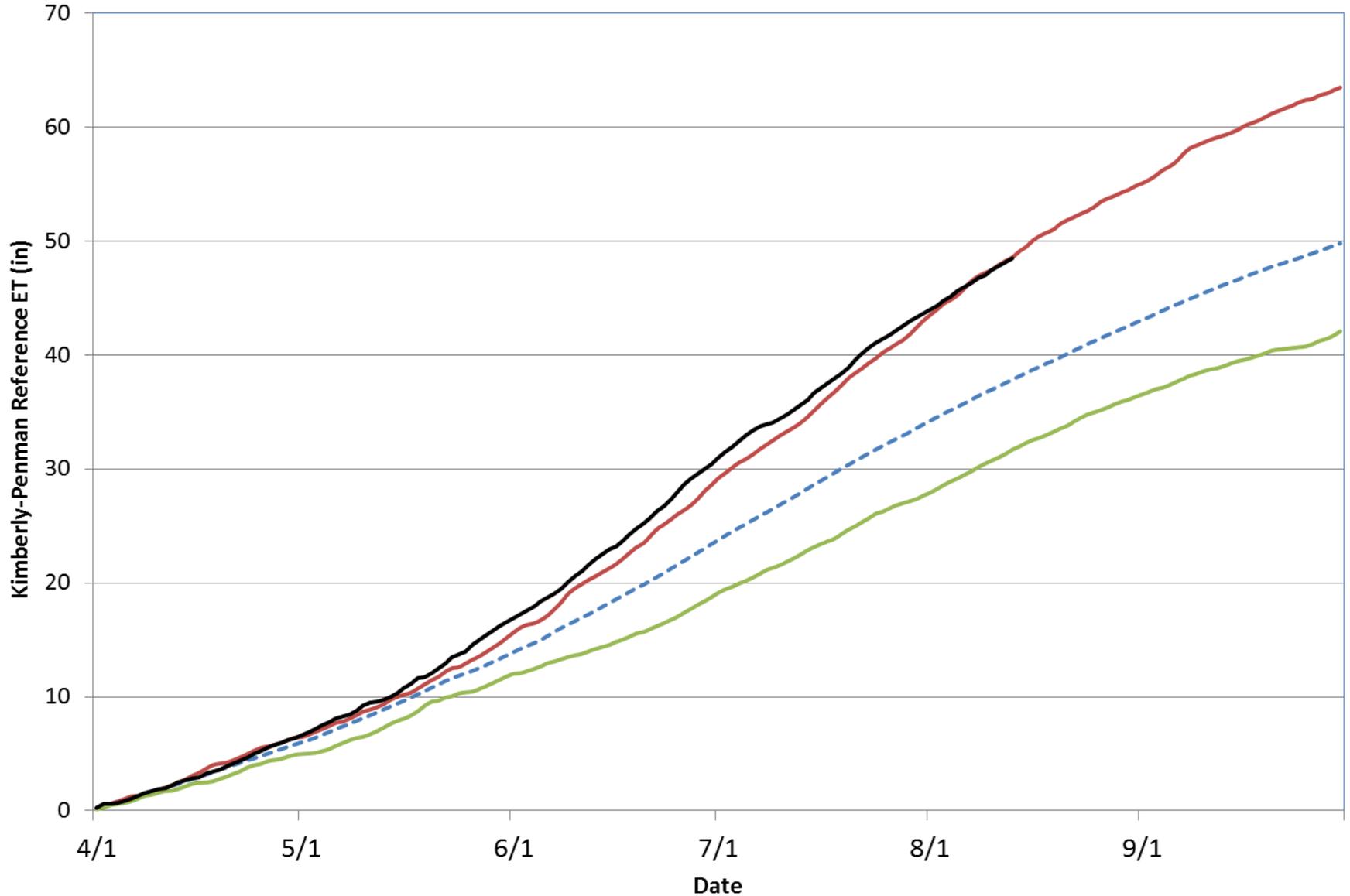
Avondale Kimberly-Penman Reference ET (1993 - 2012)

--- Average — 2002 — 1998 — 2012



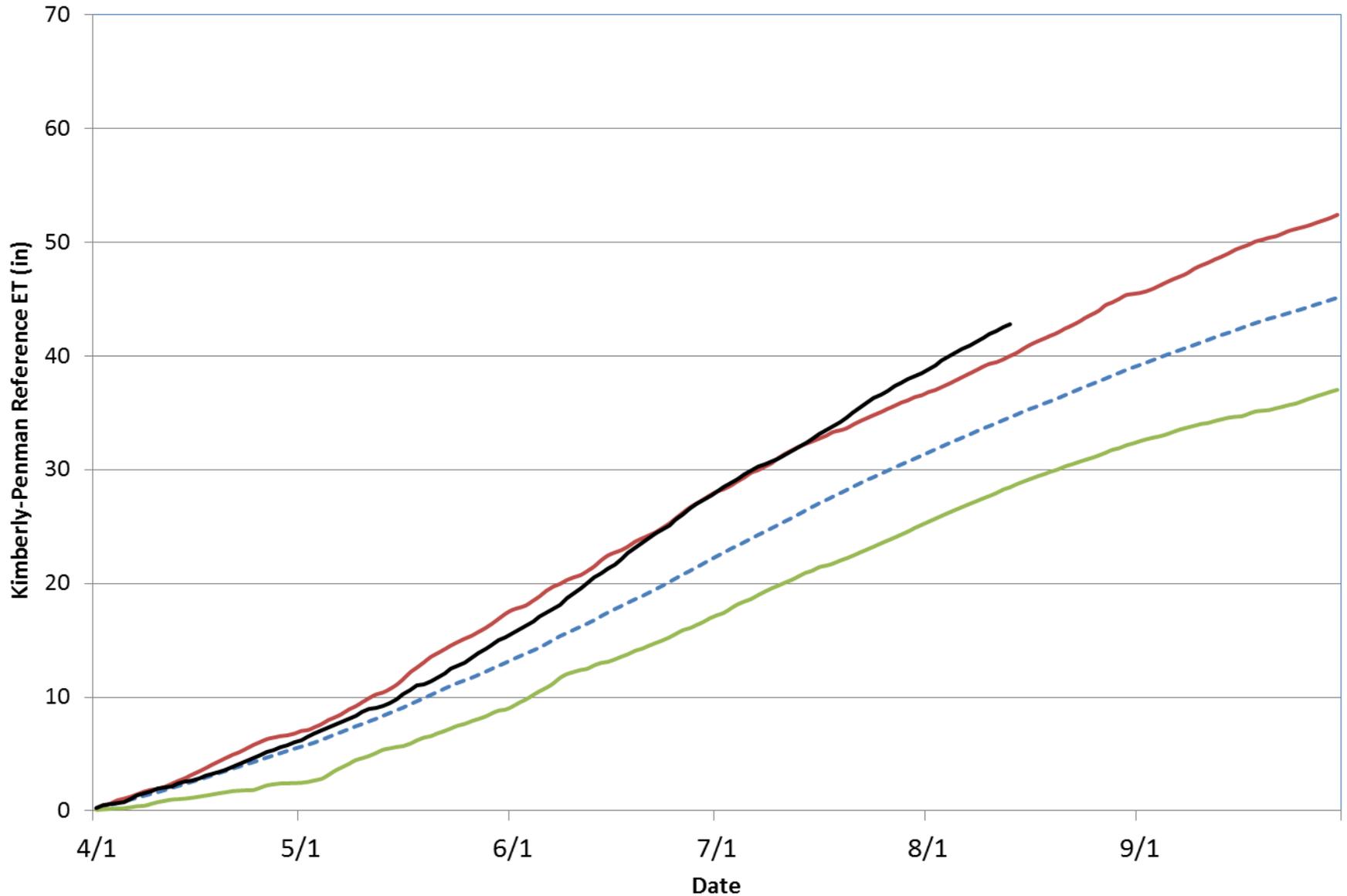
Idalia Kimberly-Penman Reference ET (1992 - 2012)

--- Average — 2002 — 2009 — 2012



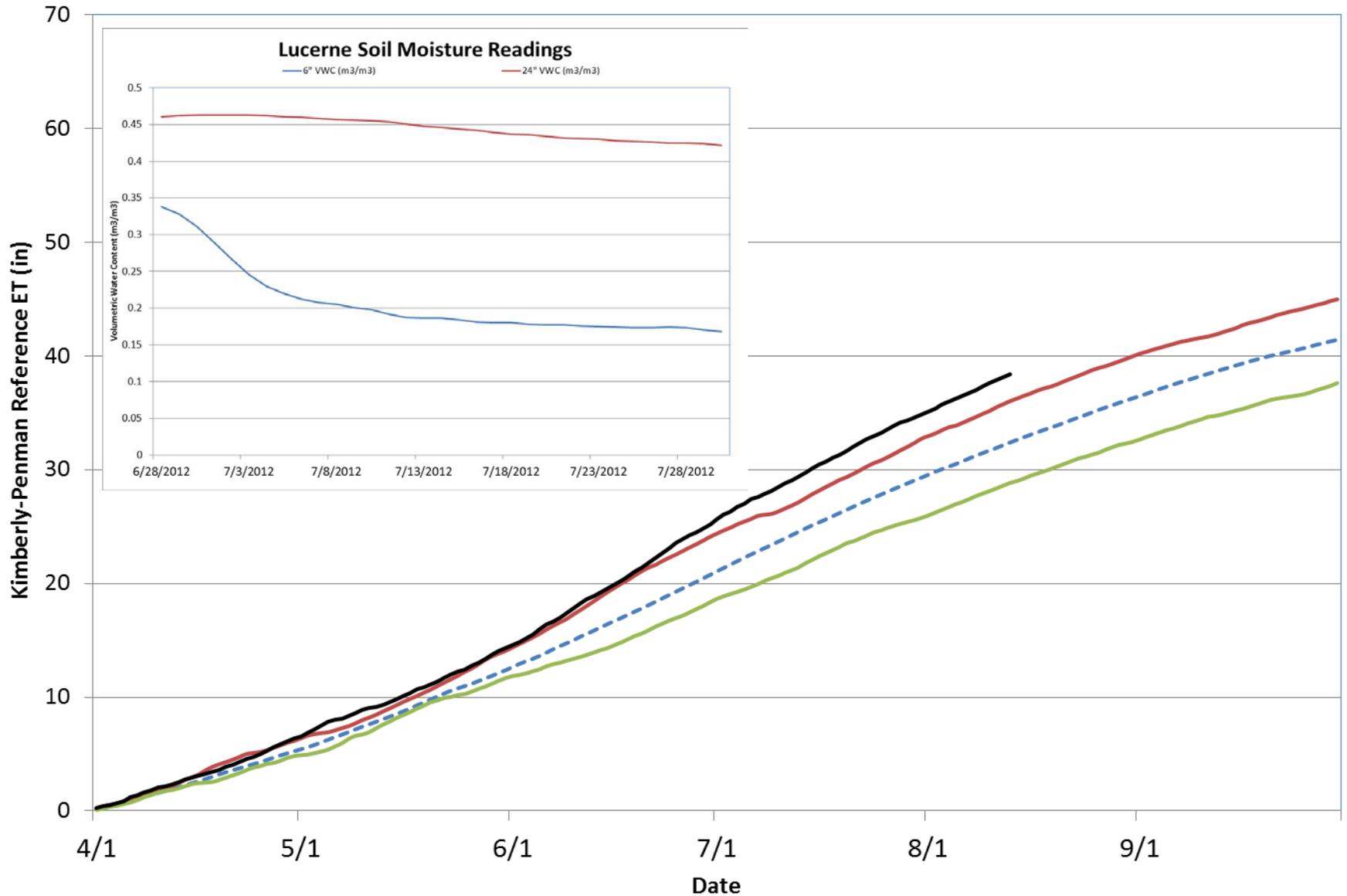
Holyoke Kimberly-Penman Reference ET (1992 - 2012)

--- Average — 1994 — 1999 — 2012



Lucerne Kimberly-Penman Reference ET (1992 - 2012)

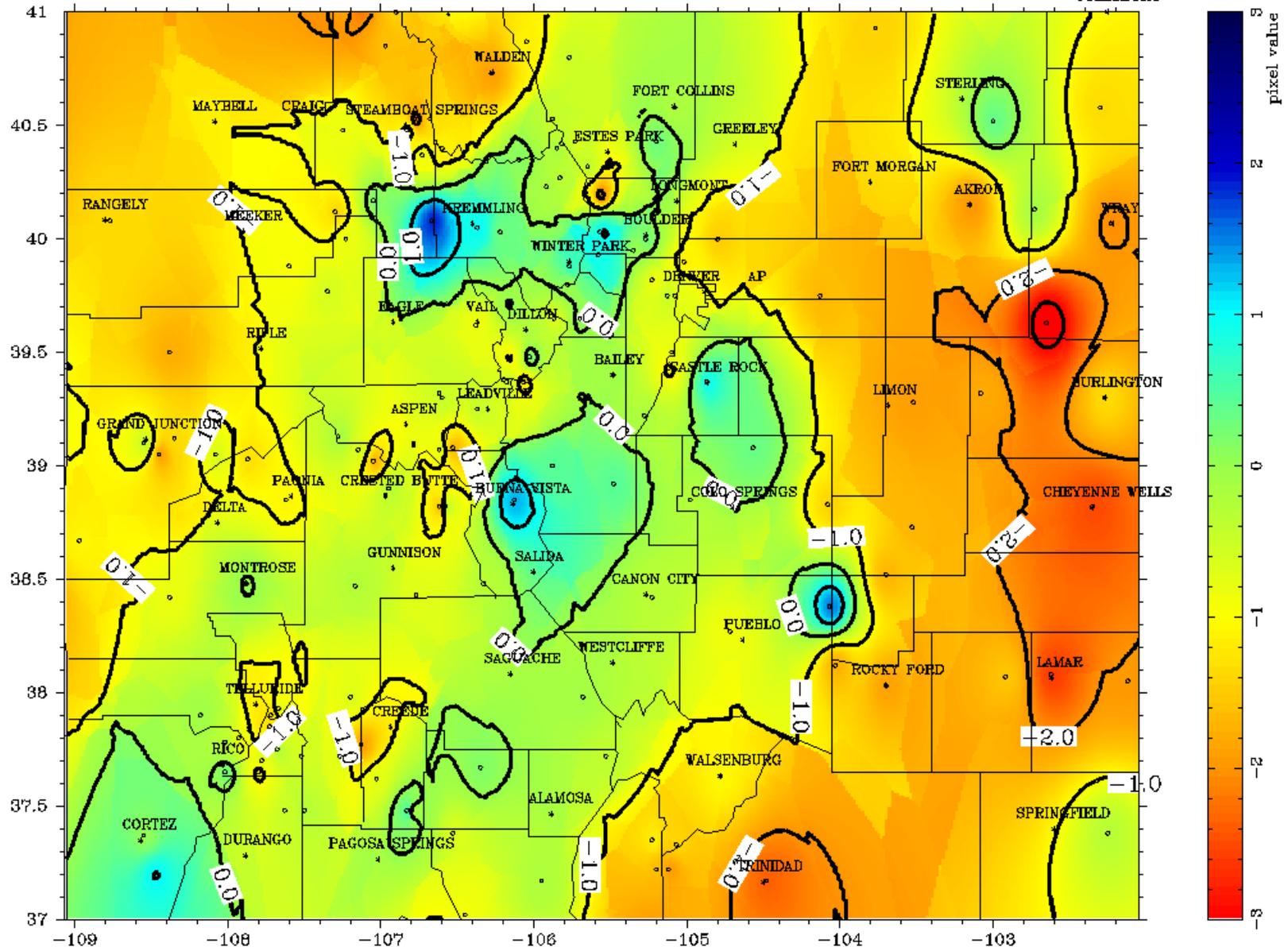
--- Average — 2006 — 2009 — 2012



Colorado

7/2012 3 mon. SPI

JULESBURG

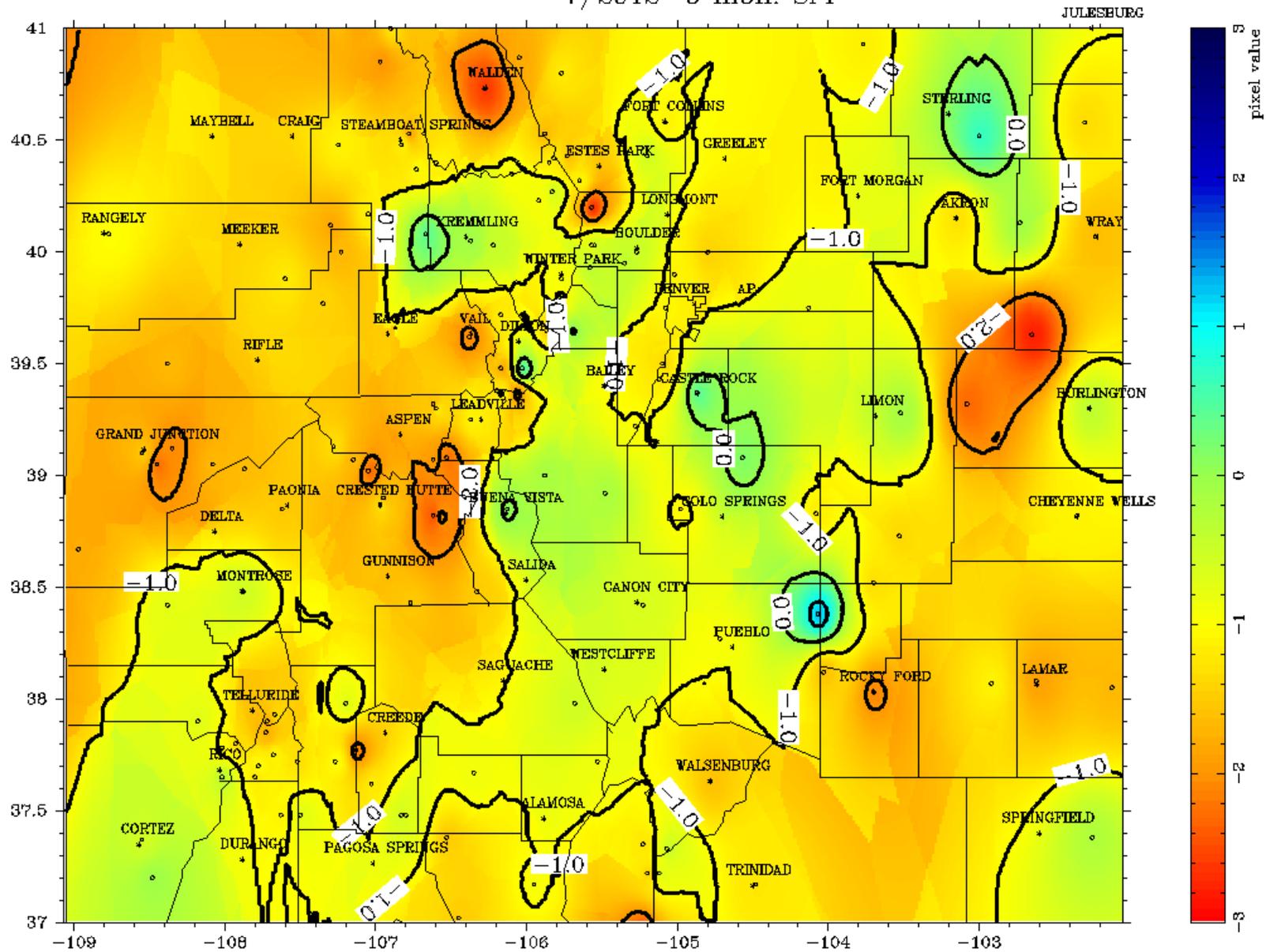


100 % < 2.0	48 % < -1.0
99 % < 1.0	6 % < -2.0
89 % < 0.0	0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

Colorado

7/2012 6 mon. SPI



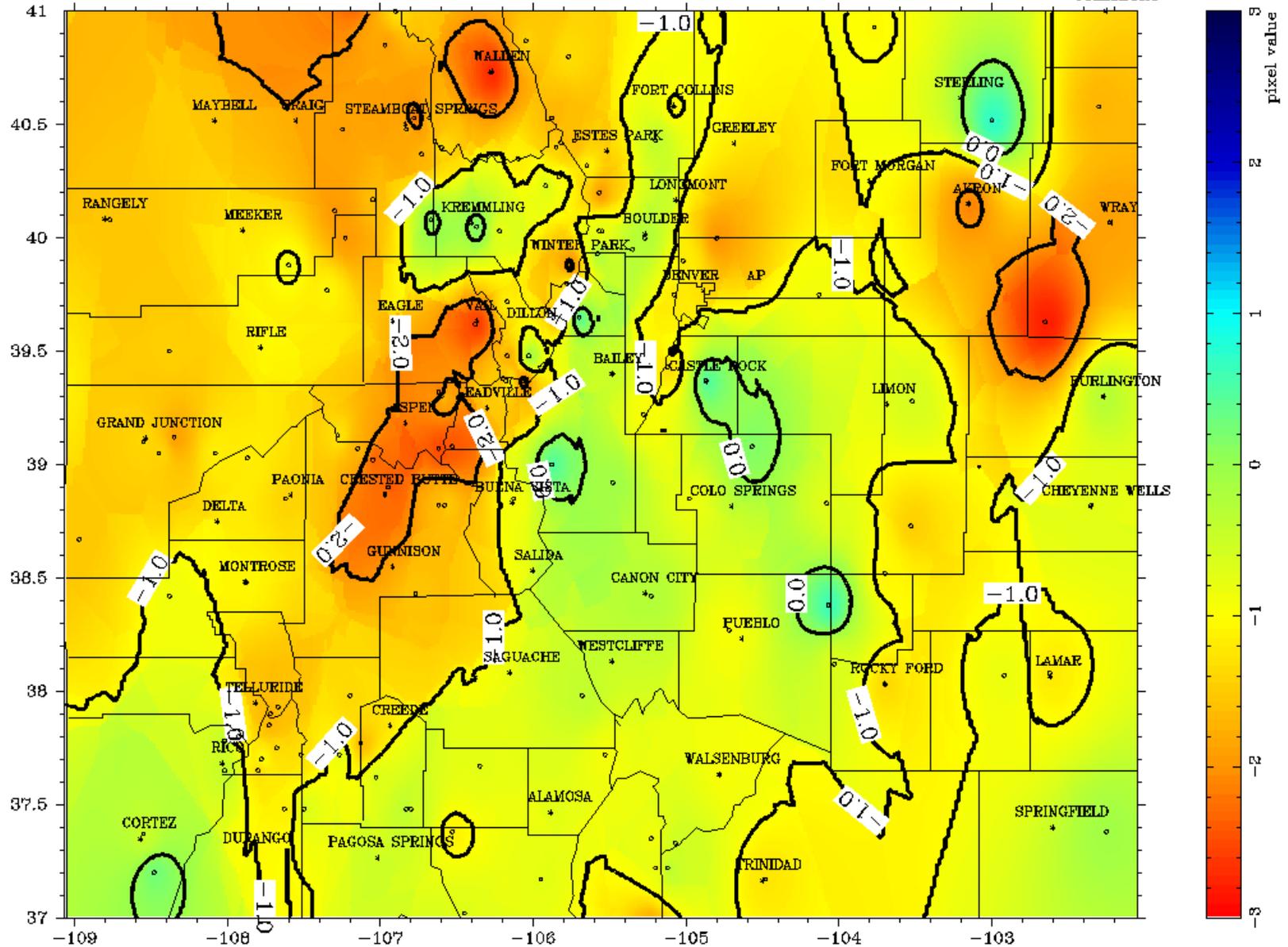
100 % < 2.0	63 % < -1.0
100 % < 1.0	2 % < -2.0
98 % < 0.0	0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

Colorado

7/2012 12 mon. SPI

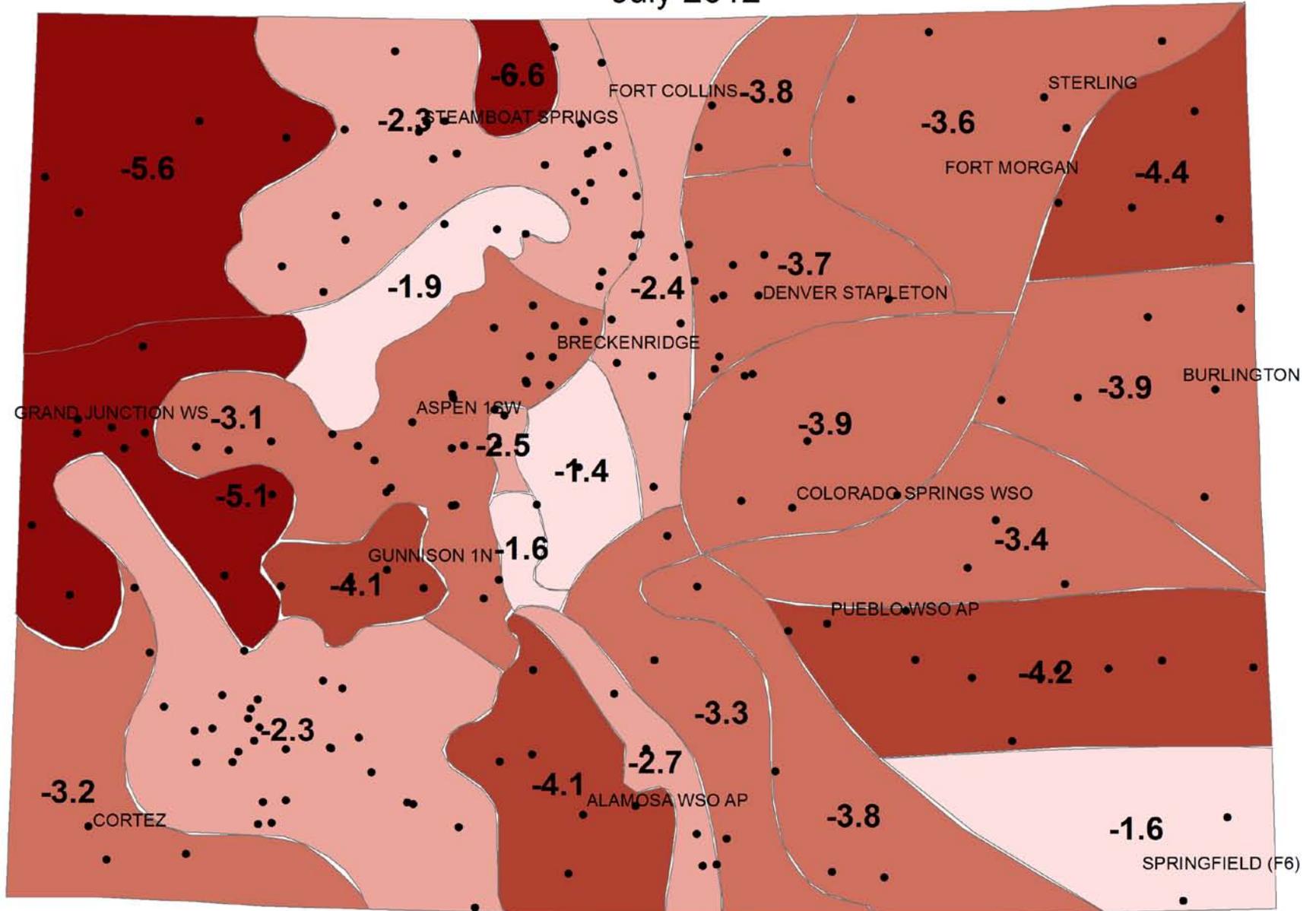
JULESBURG



100 % < 2.0	64 % < -1.0
100 % < 1.0	5 % < -2.0
98 % < 0.0	0 % < -3.0

Produced by:
Colorado Climate Center
Fort Collins, CO

PRELIMINARY Modified Palmer Drought Severity Index for Colorado July 2012



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