

# Colorado Climate Center – *WATF Climate Update*

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Becky Bolinger

Water Availability Task Force  
November 14, 2017



Colorado State University

Fort Collins reports its fifth consecutive May with snow.

Estes Park receives 3 feet of snow in a May snowstorm.

\* photo courtesy Adnan Akyuz



After one of the bleakest starts to the snowpack season in recorded history, high elevation snow came on strong in Dec-Jan. Crested Butte recorded 152" of snowfall, 6 feet over their Dec-Jan average!

\*Photo courtesy Denver Post



The costliest hailstorm in CO history pummeled the Denver area on May 8. Estimated at over \$1.4 Billion in damage, it closed down the Colorado Mills mall for several months.

\*photo courtesy Jerry Bell/KOA



39 stations top out over 80°F, and 61 stations report over 70°F in mid-February.

\*photo courtesy 9News



A late season blizzard at the end of April helped relieve drought conditions, but resulted in widespread and devastating livestock casualties.

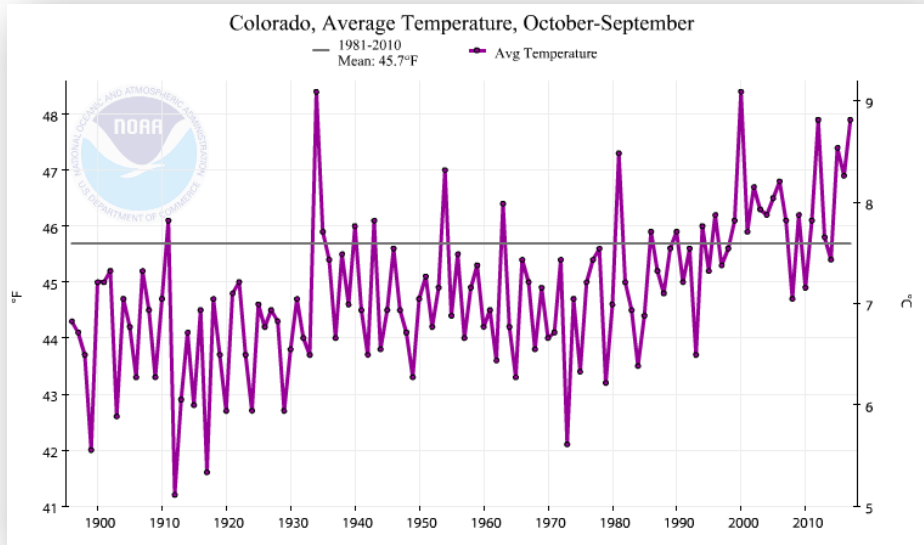
\*photo courtesy Brian Allmer



## Water Year 2017 Significant Events

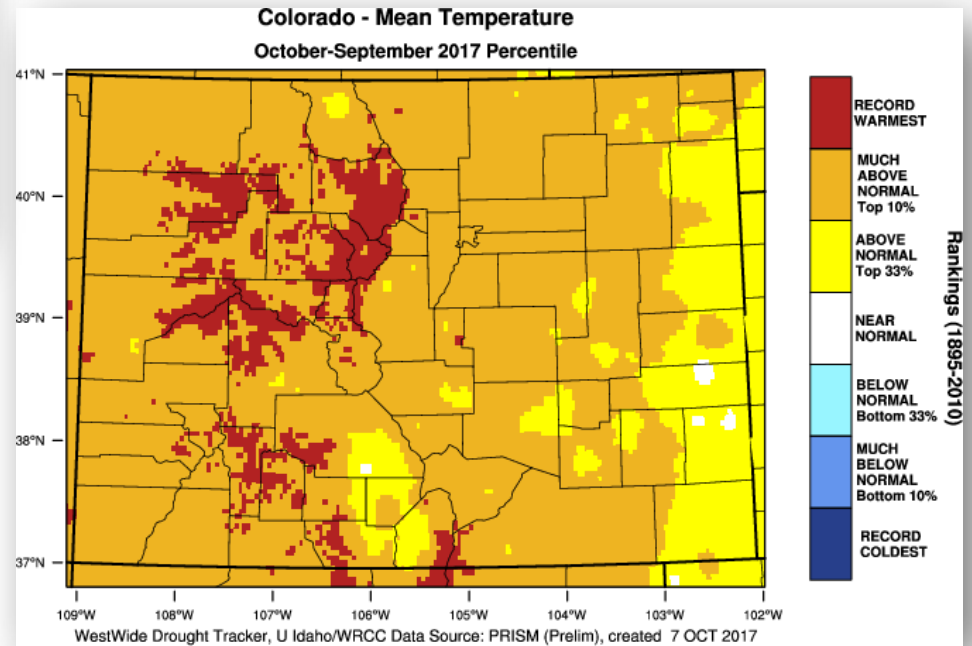
# Water Year 2017 Colorado's Climate in Review...

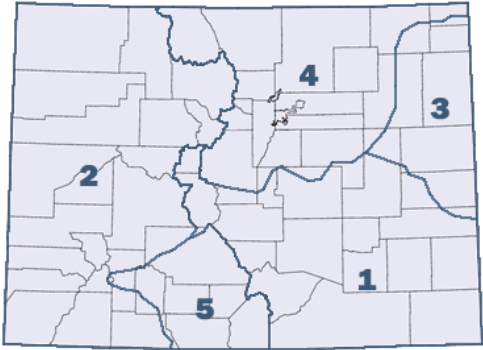




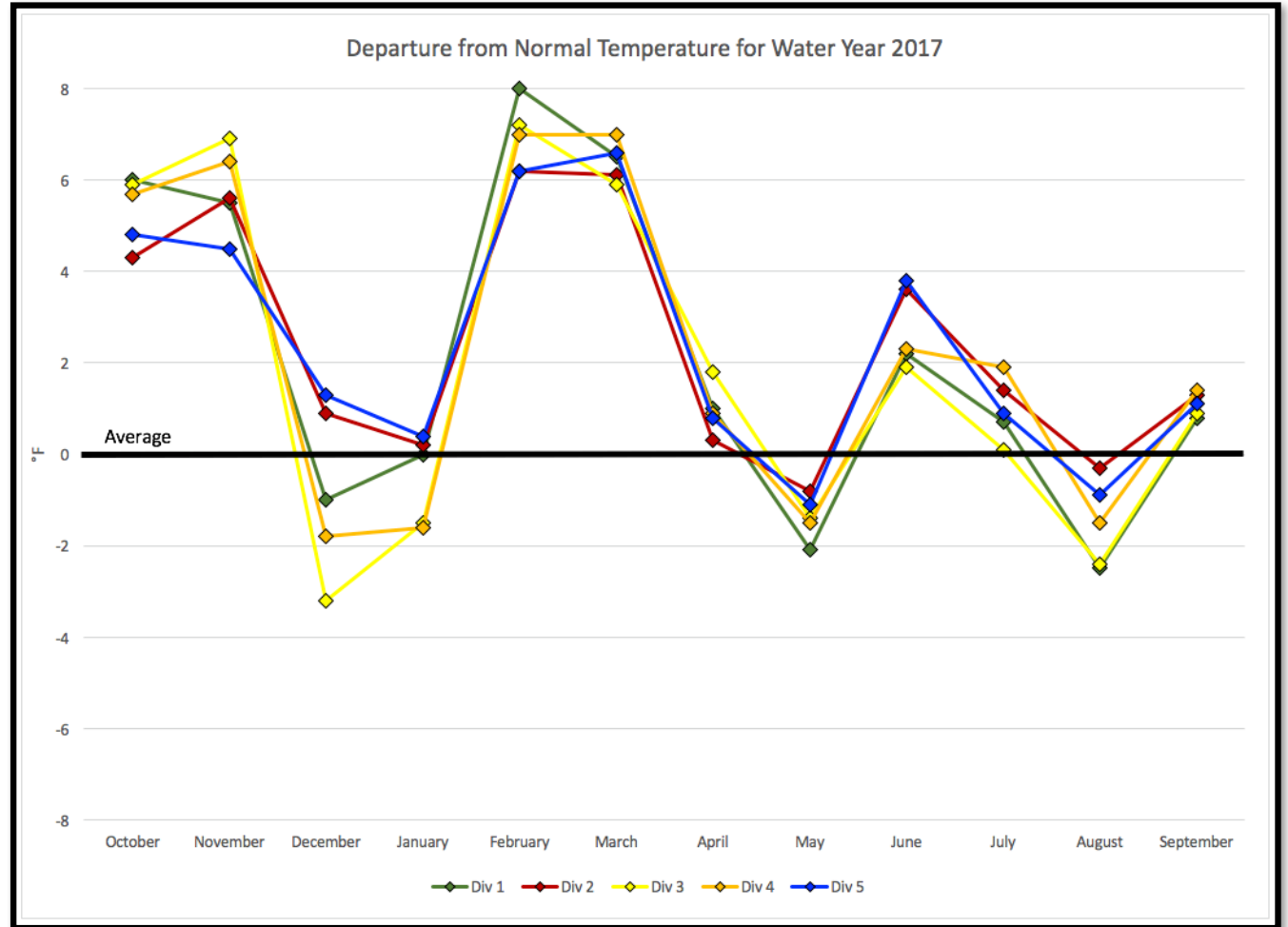
WY Average: 45.7°F  
 WY2017: 47.9°F

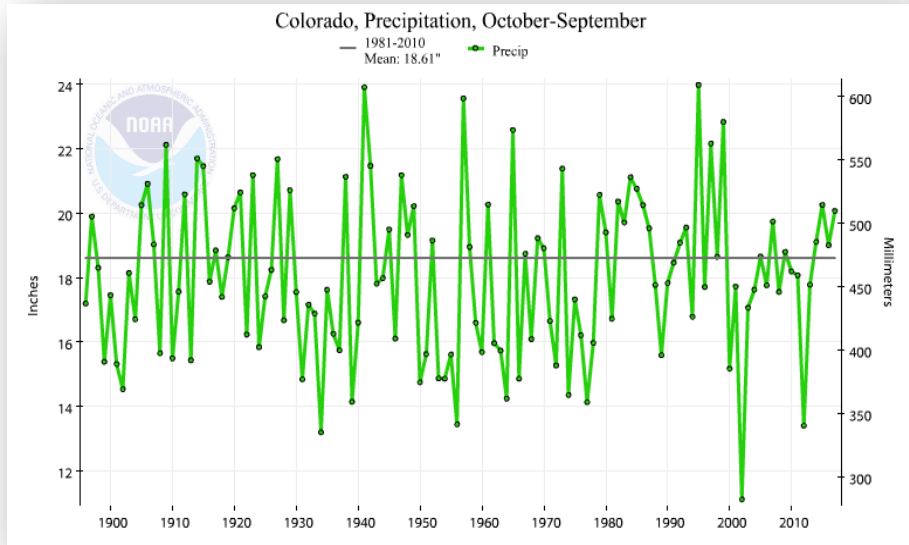
Tied for 3<sup>rd</sup> warmest on record





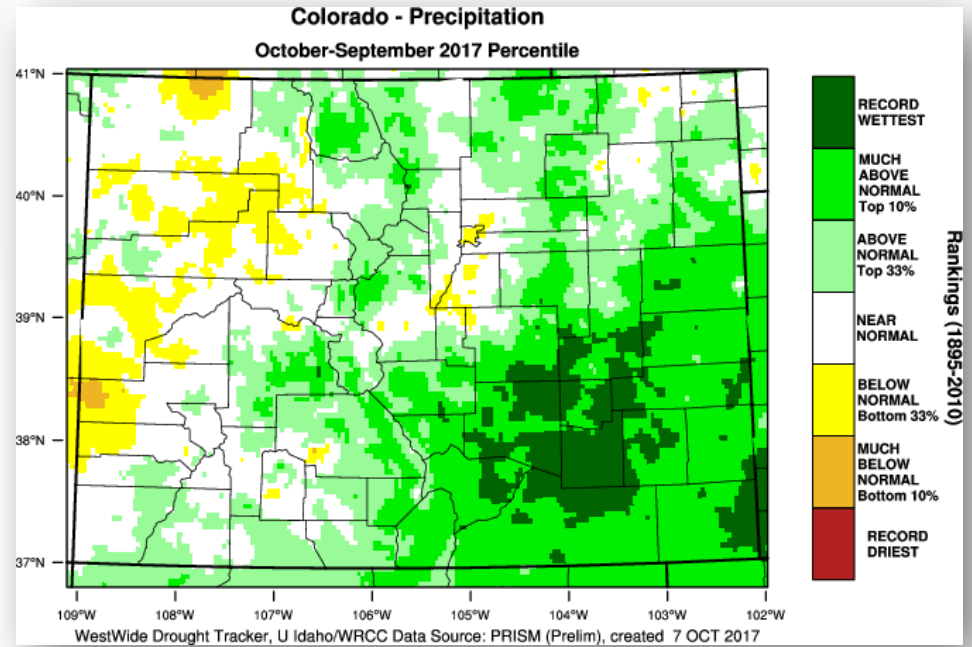
Colorado Climate Divisions

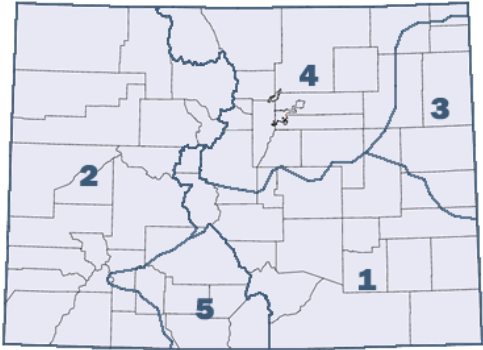




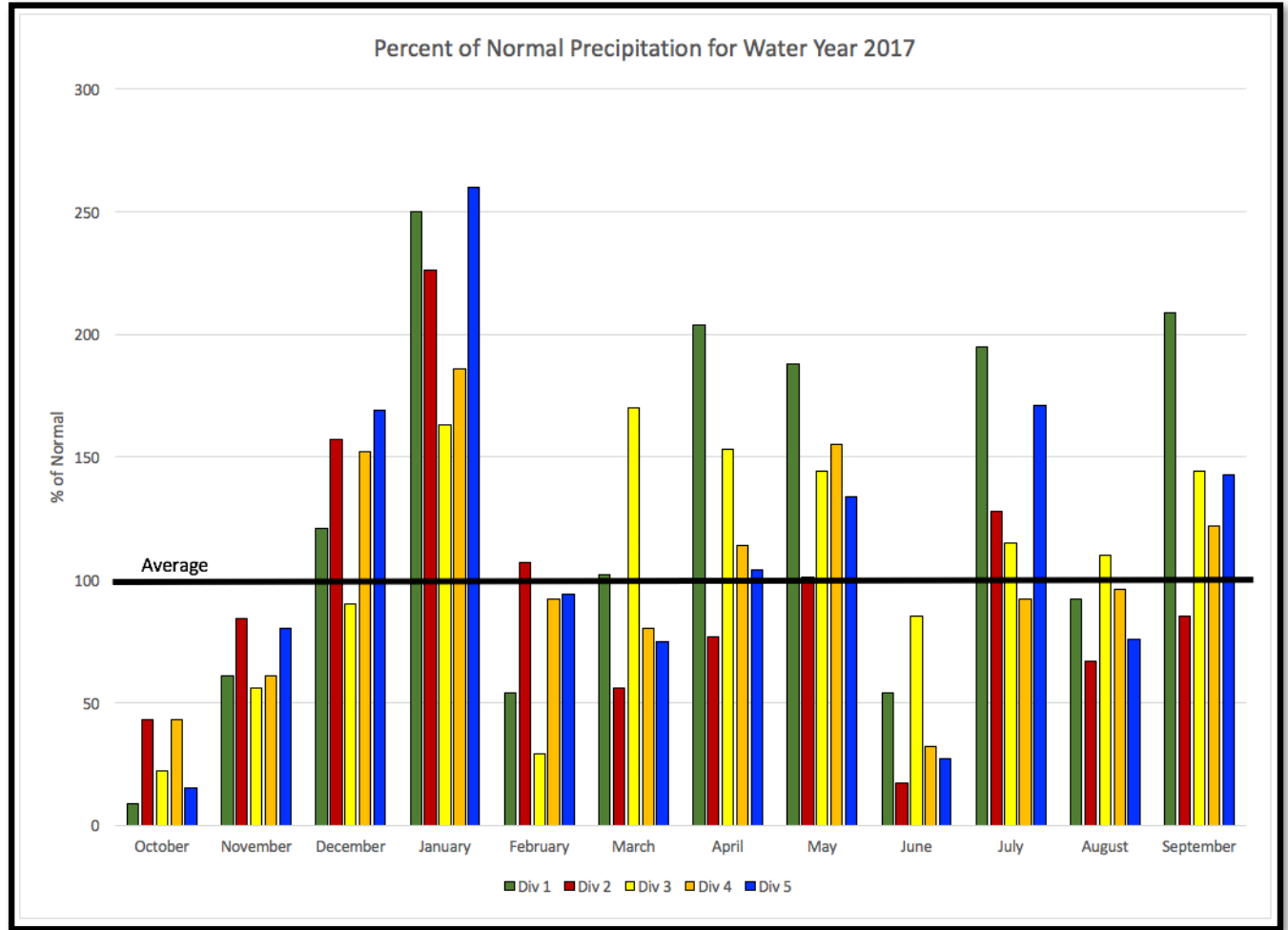
WY Average: 18.61 in.  
 WY2017: 20.07 in.

30<sup>th</sup> wettest on record





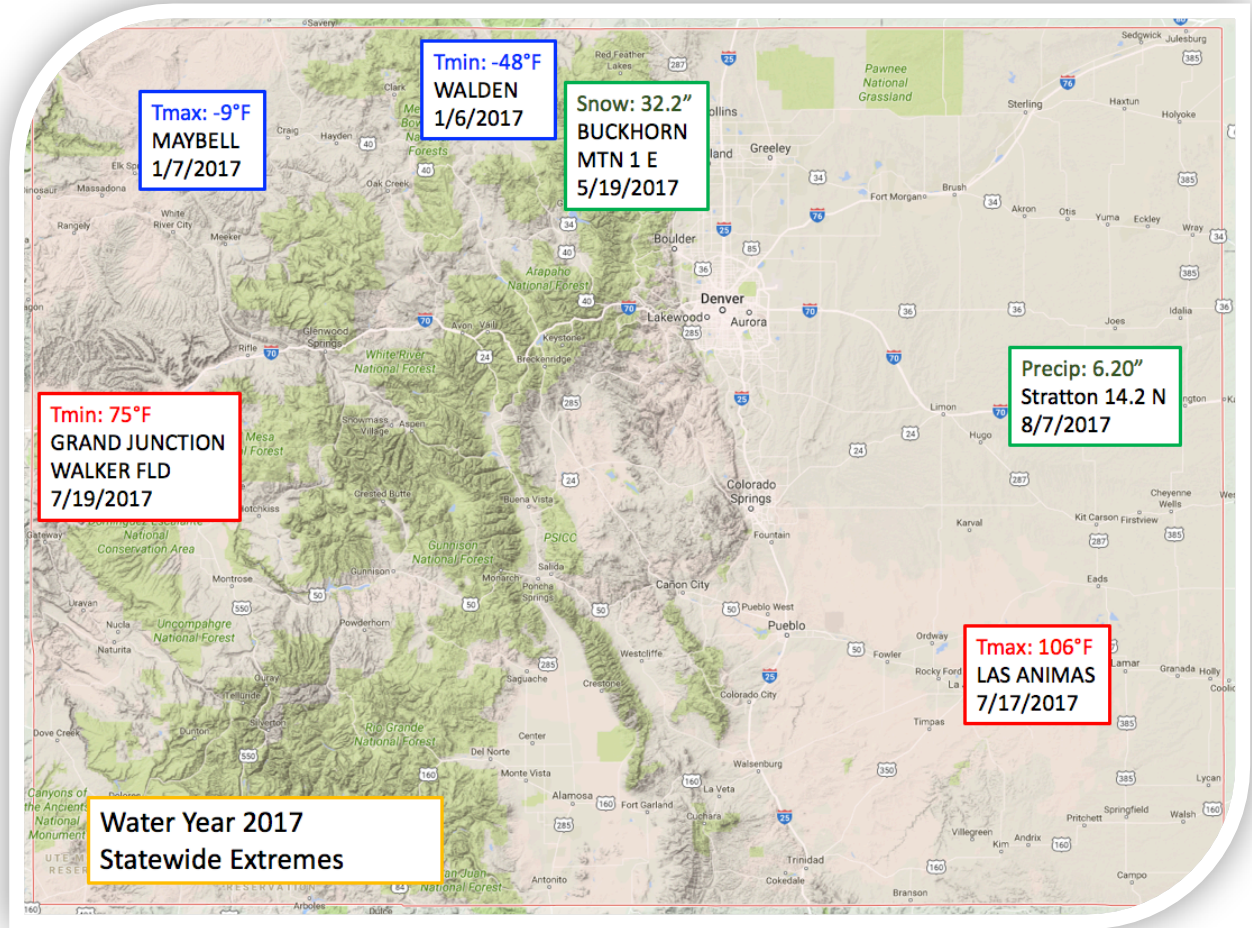
Colorado Climate Divisions



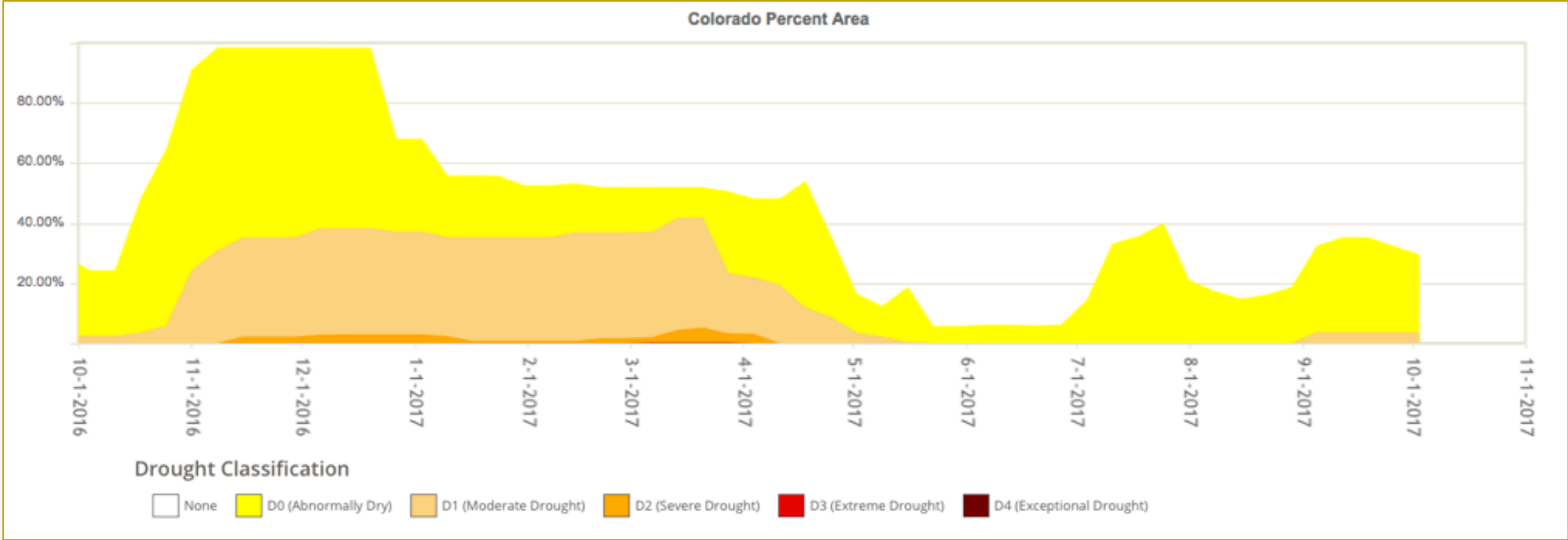
# Colorado Records

by the numbers...

Weather Record Broken	Record broken for a day	Record broken for a month
Highest Max Temperature	1,047	44
Highest Min Temperature	2,357	113
Lowest Max Temperature	613	2
Lowest Min Temperature	357	5
Highest Precipitation	1,152	35
Highest Snowfall	338	9

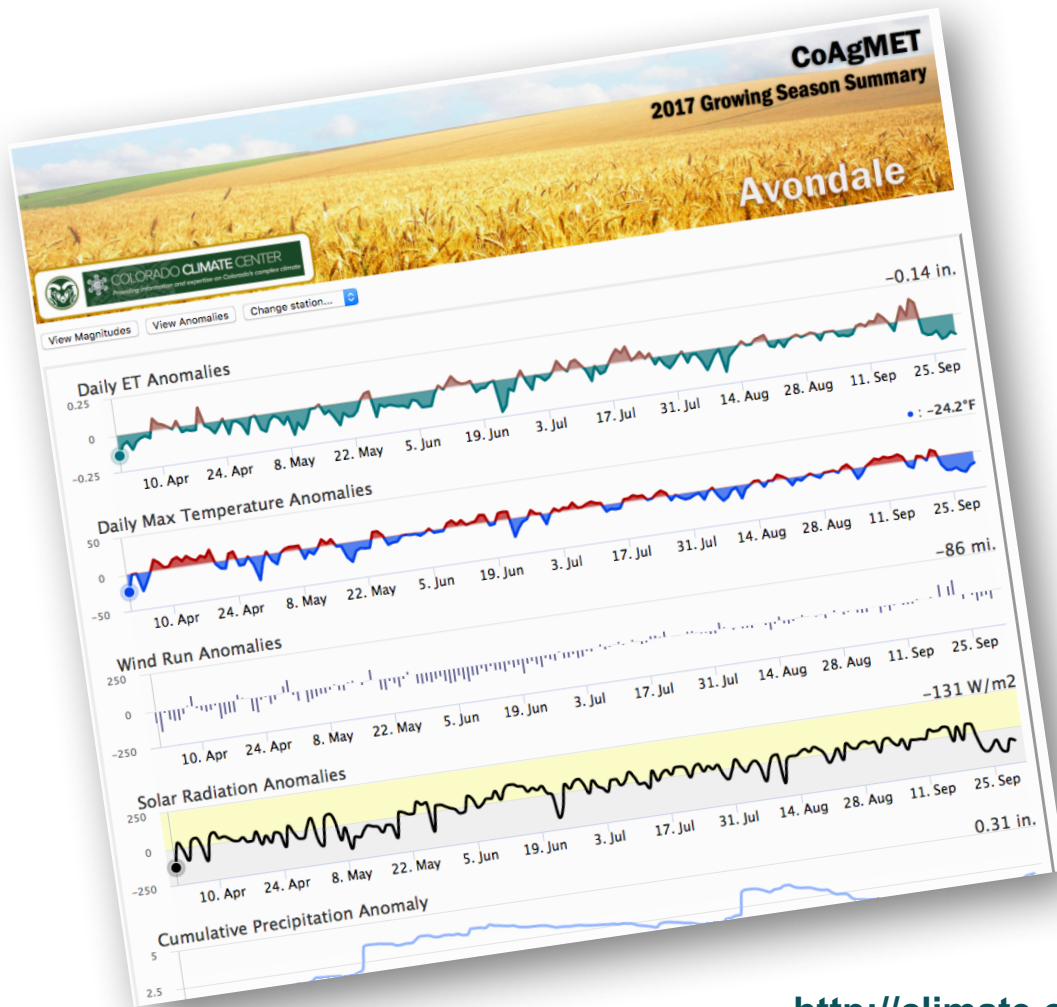


# Drought in WY2017 over Colorado





# Check out our CoAgMET 2017 Growing Season Interactive Report!

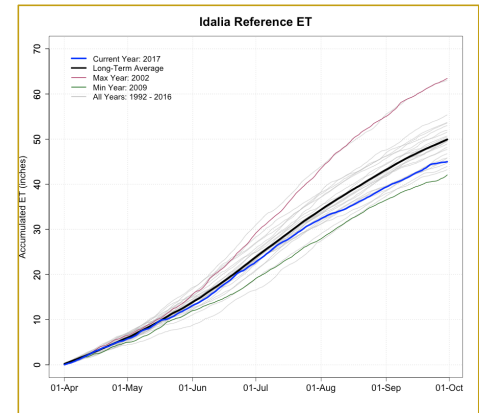
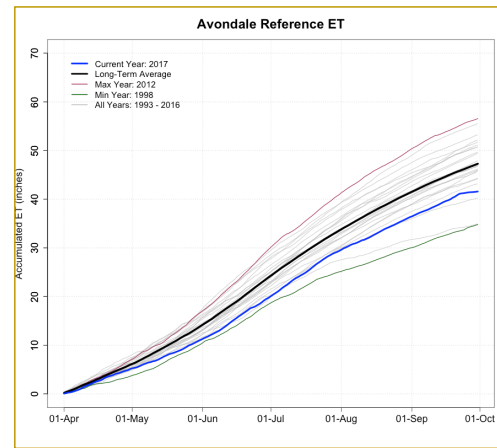
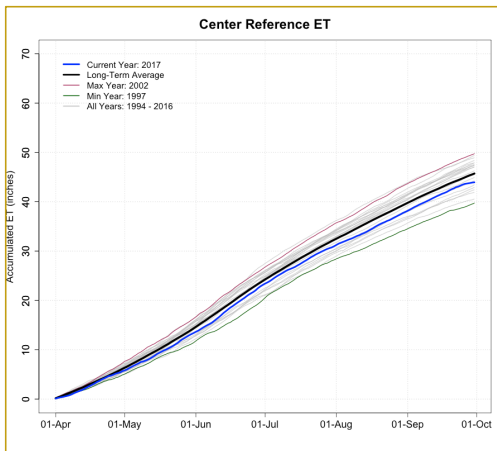
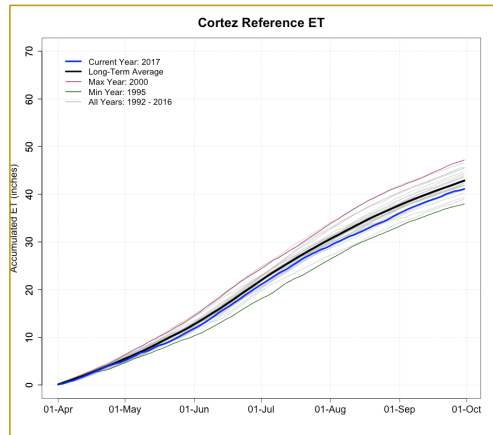
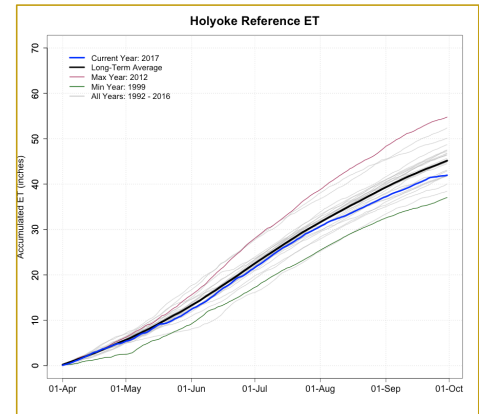
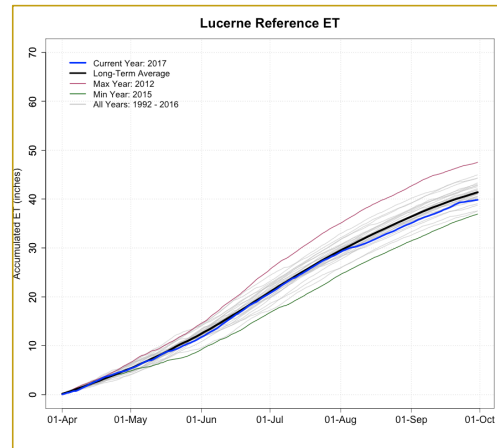
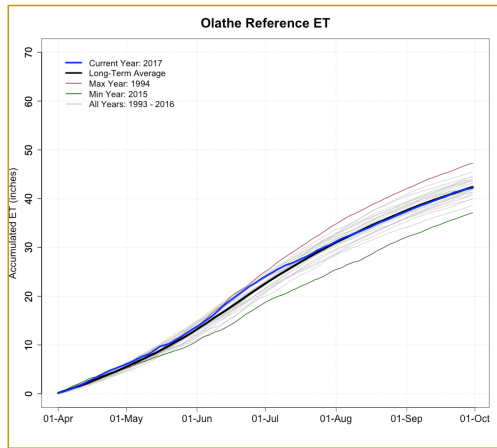
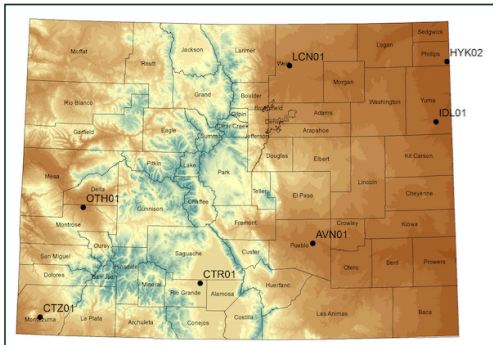


For each of our ET stations...

- ✓ view magnitudes of all variables
- ✓ view and compare anomalies
- ✓ See accumulated ET graph
- ✓ Read the brief summary

[http://climate.colostate.edu/2017ET/et\\_summary\\_avn.html](http://climate.colostate.edu/2017ET/et_summary_avn.html)





## CoAgMET 2017 Accumulated ET





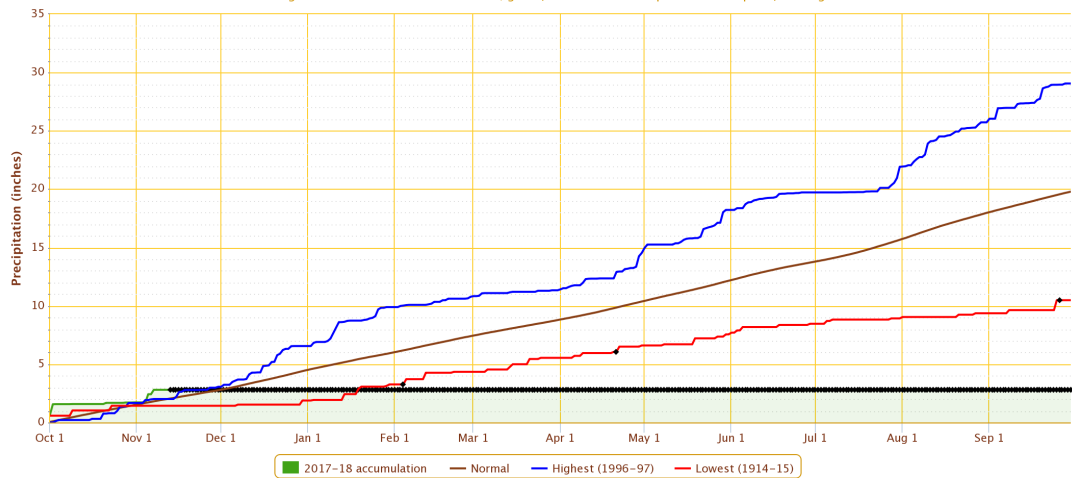
# 2018 Water Year To Date

temperature, precipitation,  
anomalies, drought conditions



### Accumulated Precipitation – GRAND LAKE 1 NW, CO

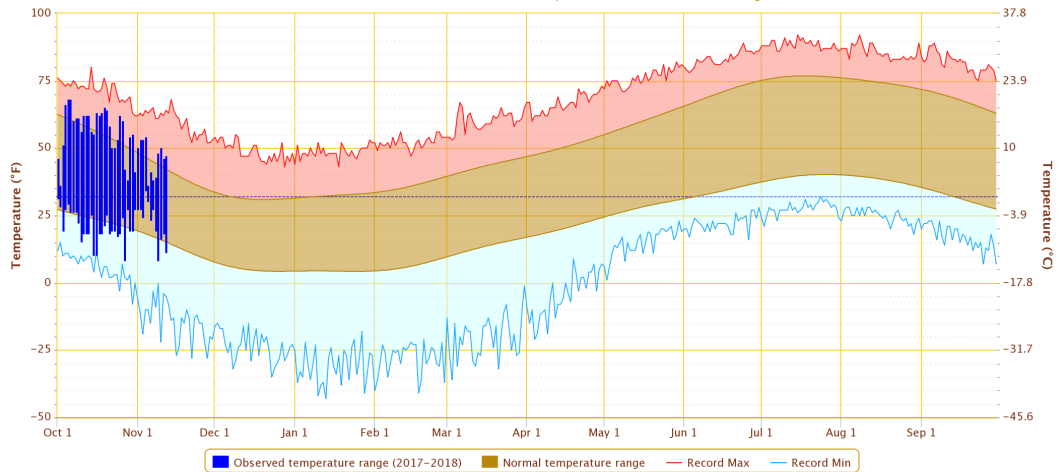
Click and drag to zoom to a shorter time interval, green/black diamonds represent subsequent/missing values



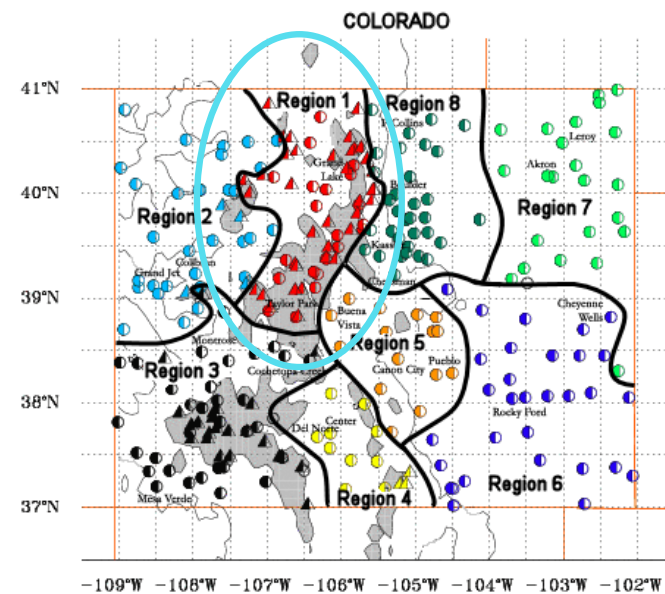
Powered by ACIS

### Daily Temperature Data – GRAND LAKE 1 NW, CO

Period of Record – 1939-10-01 to 2017-11-12. Normals period: 1981-2010. Click and drag to zoom chart.

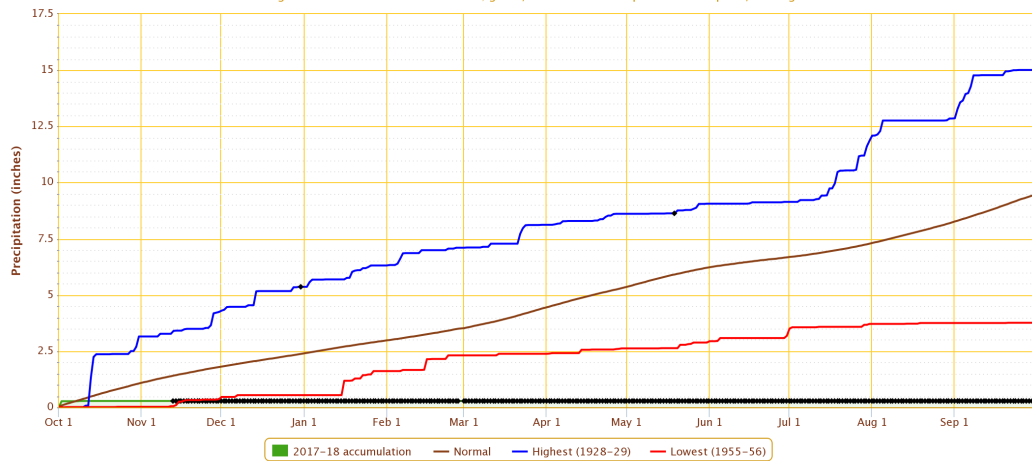


Powered by ACIS



### Accumulated Precipitation – GRAND JUNCTION WALKER FLD, CO

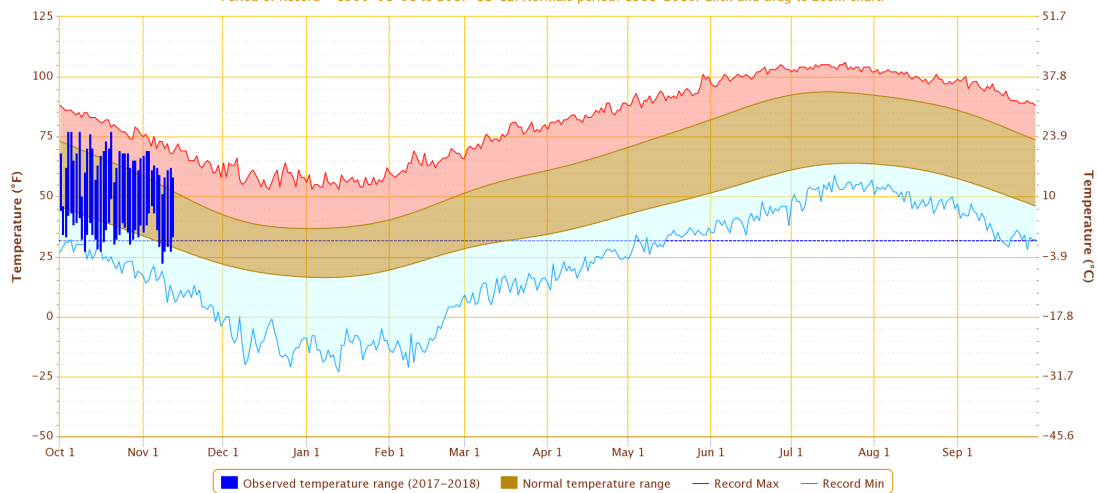
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



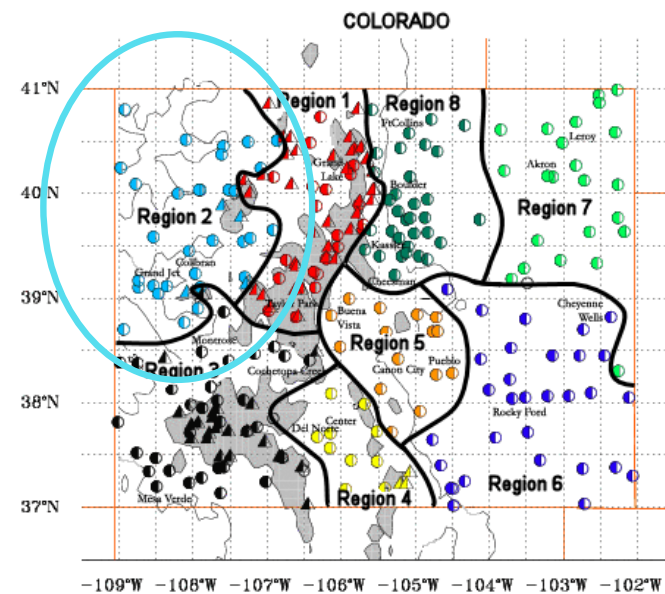
Powered by ACIS

### Daily Temperature Data – GRAND JUNCTION WALKER FLD, CO

Period of Record – 1900-01-01 to 2017-11-12. Normals period: 1981-2010. Click and drag to zoom chart.

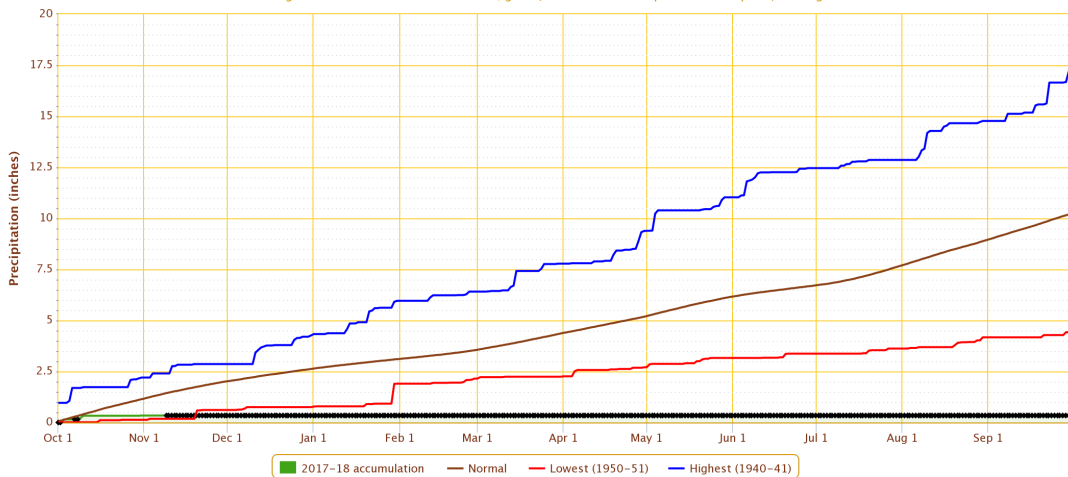


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### Accumulated Precipitation – MONTROSE #2, CO

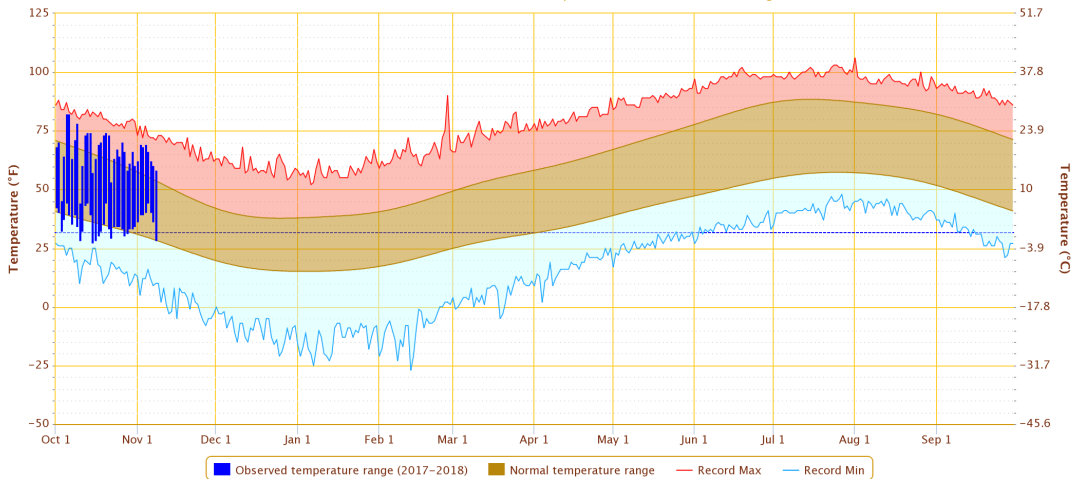
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



### Daily Temperature Data – MONTROSE #2, CO

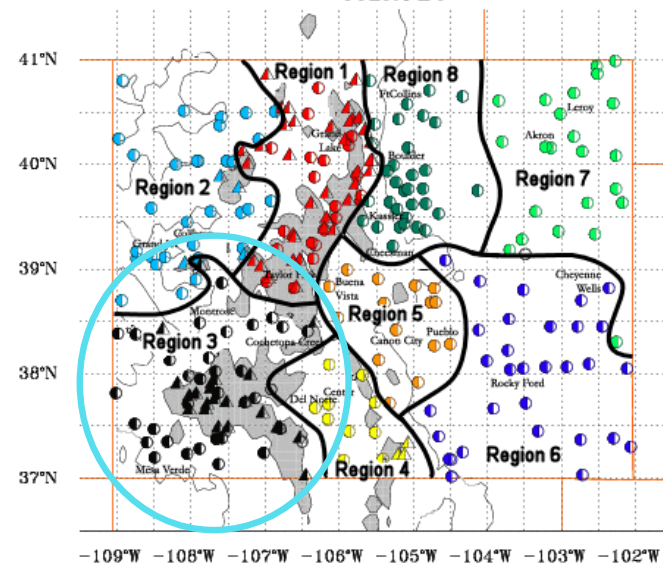
Period of Record – 1895-10-01 to 2017-11-08. Normals period: 1981-2010. Click and drag to zoom chart.

Powered by ACIS



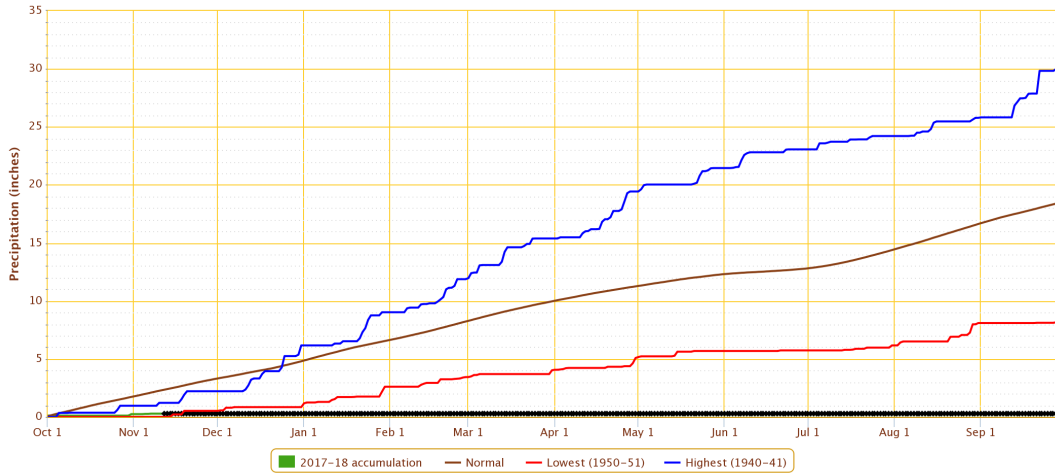
Powered by ACIS

### COLORADO



### Accumulated Precipitation – MESA VERDE NP, CO

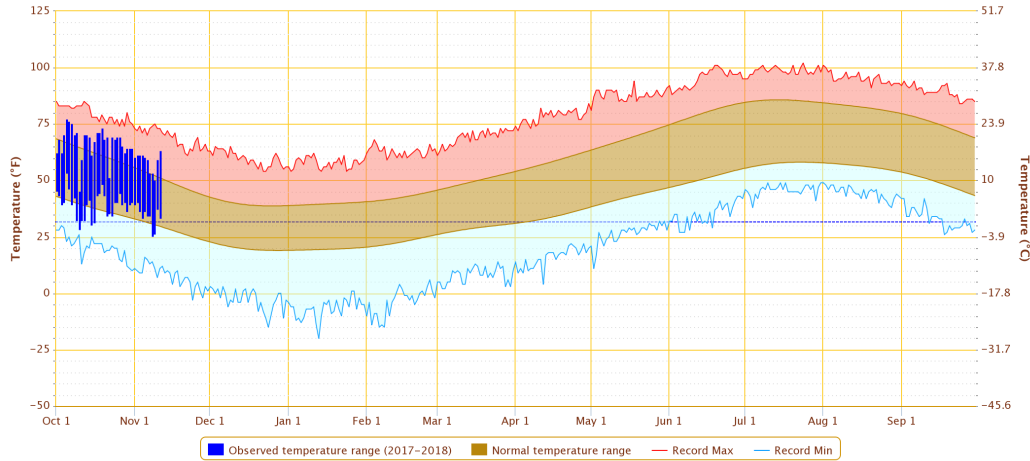
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



Powered by ACIS

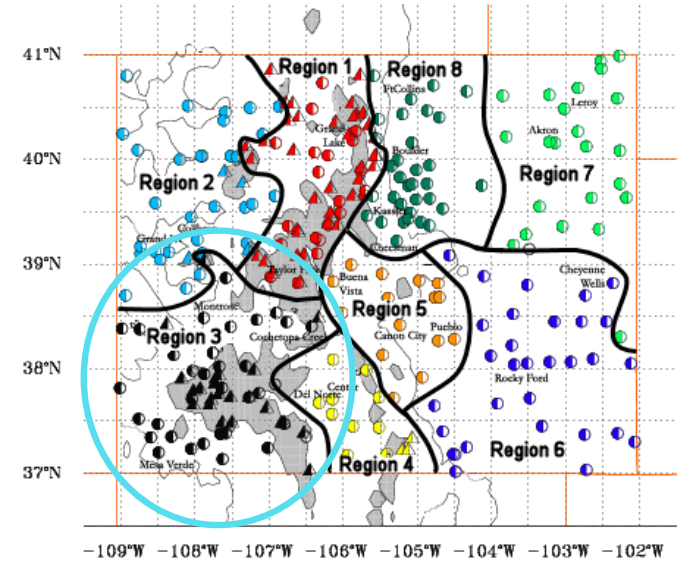
### Daily Temperature Data – MESA VERDE NP, CO

Period of Record – 1922-02-16 to 2017-11-11. Normals period: 1981-2010. Click and drag to zoom chart.



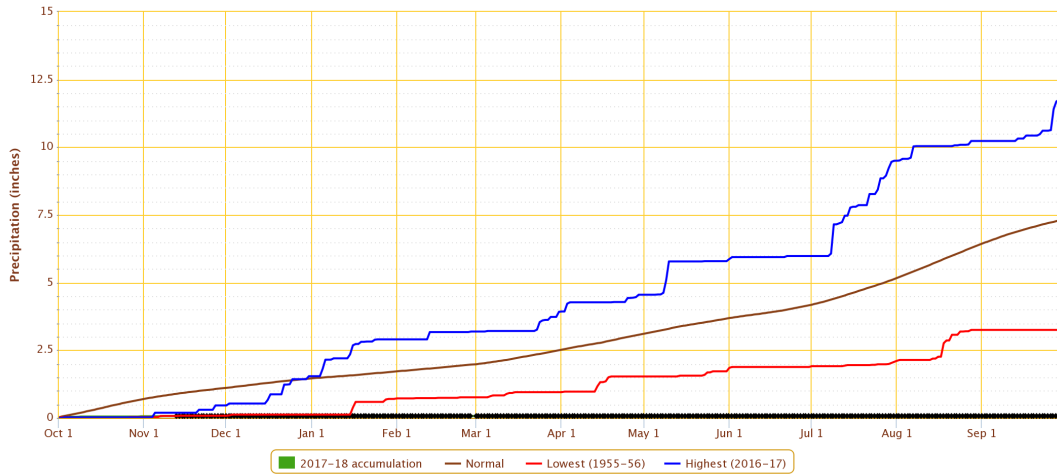
Powered by ACIS

### COLORADO



Accumulated Precipitation – ALAMOSA SAN LUIS AP, CO

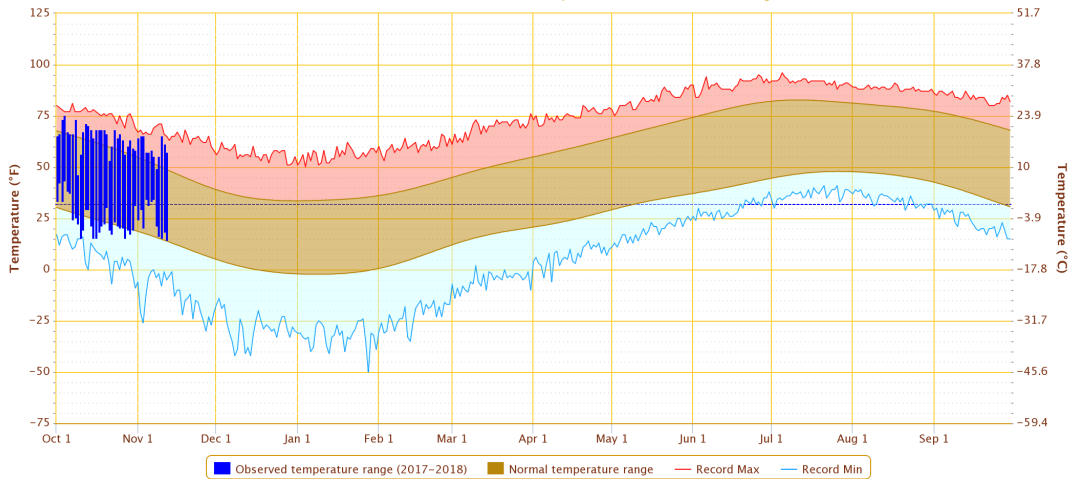
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



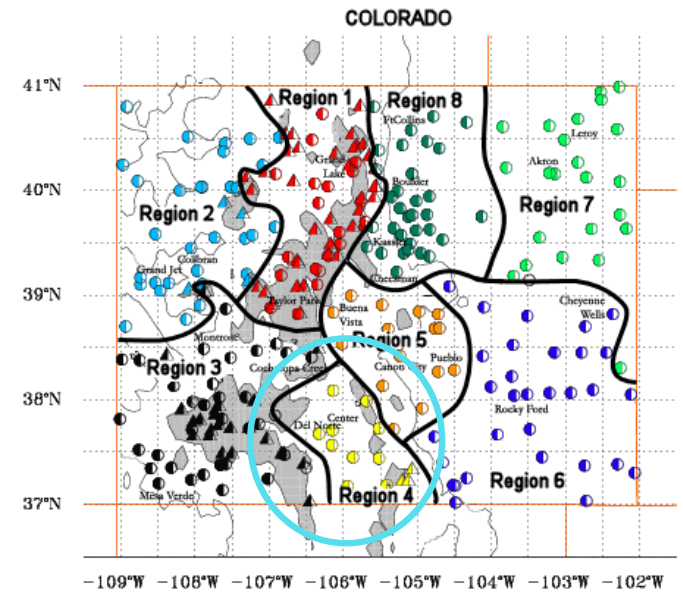
Powered by ACIS

Daily Temperature Data – ALAMOSA SAN LUIS AP, CO

Period of Record – 1948-01-01 to 2017-11-12. Normals period: 1981-2010. Click and drag to zoom chart.



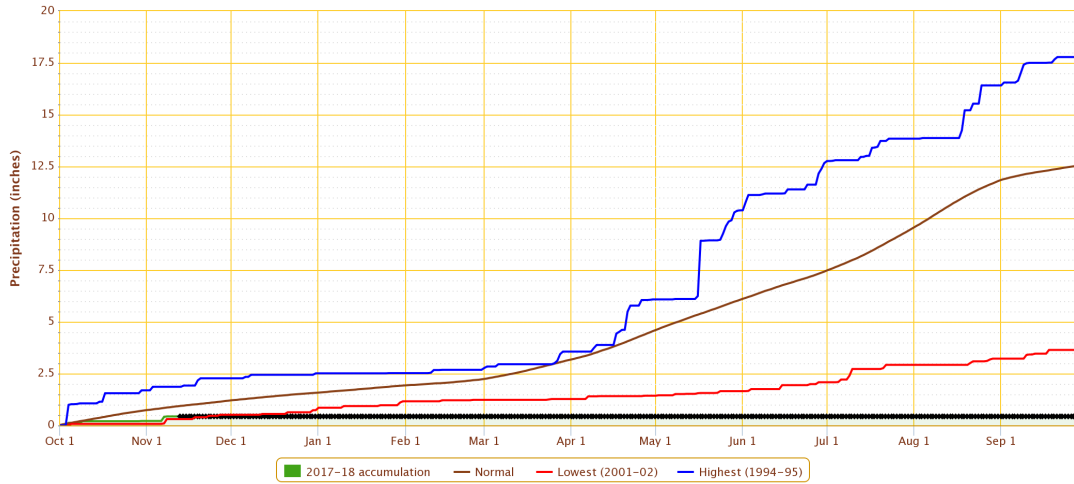
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### Accumulated Precipitation – PUEBLO MEM AP, CO

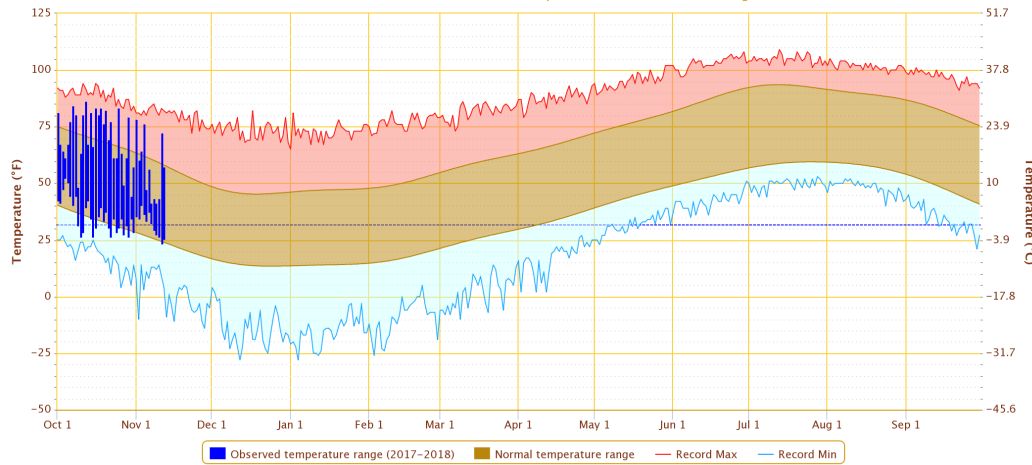
Click and drag to zoom to a shorter time interval. green/black diamonds represent subsequent/missing values



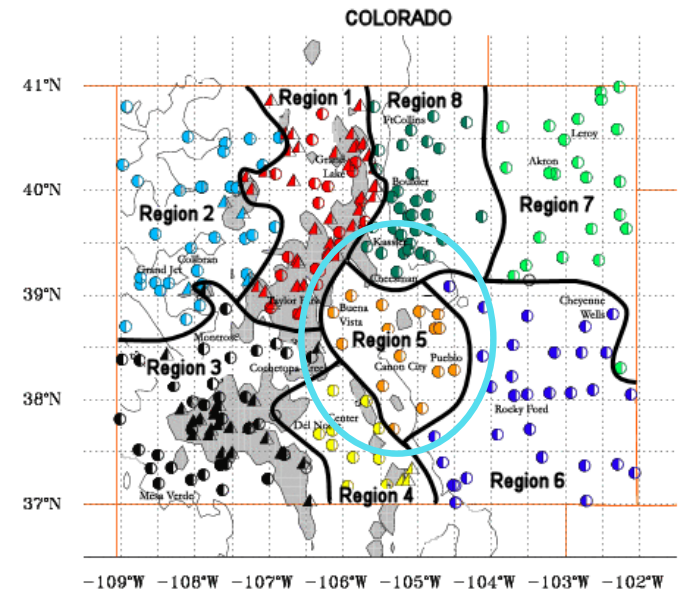
Powered by ACIS

### Daily Temperature Data – PUEBLO MEM AP, CO

Period of Record – 1954-06-16 to 2017-11-12. Normals period: 1981-2010. Click and drag to zoom chart.

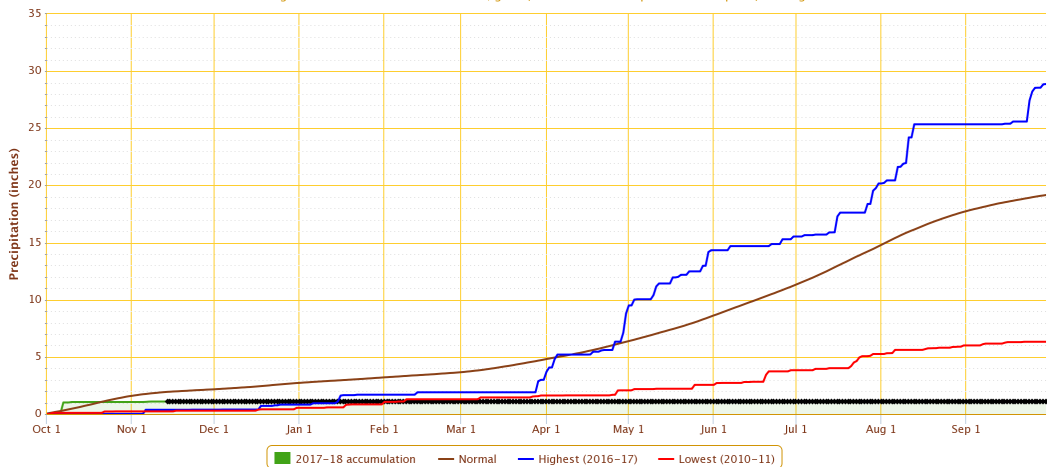


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### Accumulated Precipitation – WALSH 1 W, CO

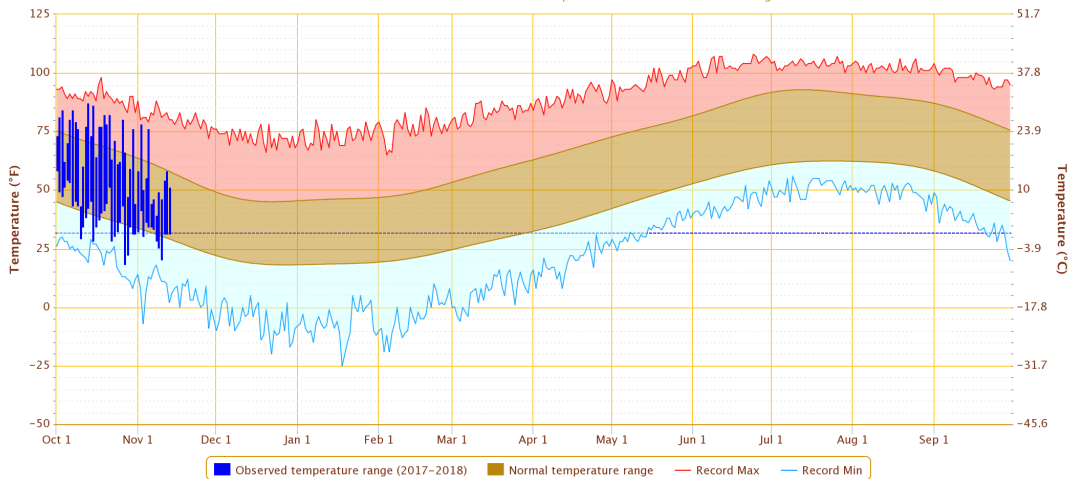
Click and drag to zoom to a shorter time interval, green/black diamonds represent subsequent/missing values



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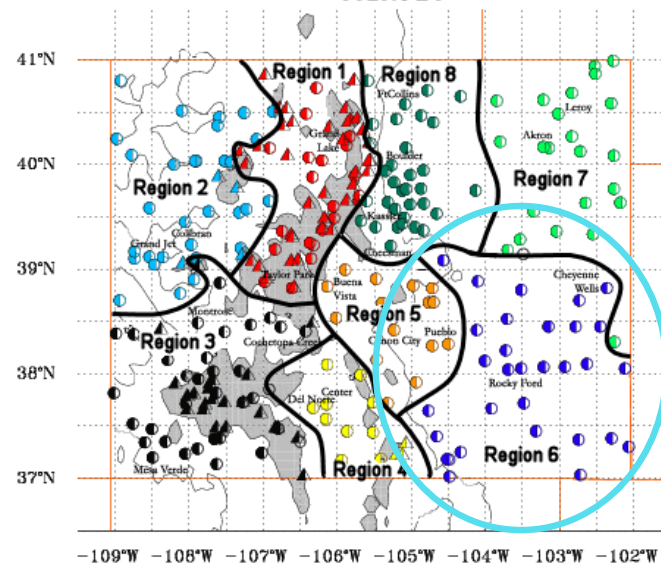
### Daily Temperature Data – WALSH 1 W, CO

Period of Record – 1967-09-01 to 2017-11-13. Normals period: 1981-2010. Click and drag to zoom chart.



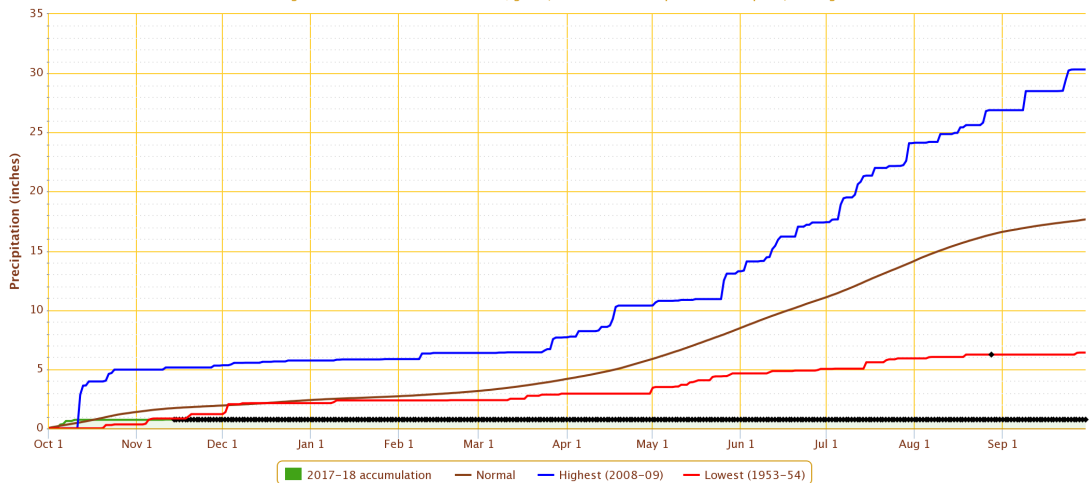
Powered by ACIS

### COLORADO



### Accumulated Precipitation – BURLINGTON, CO

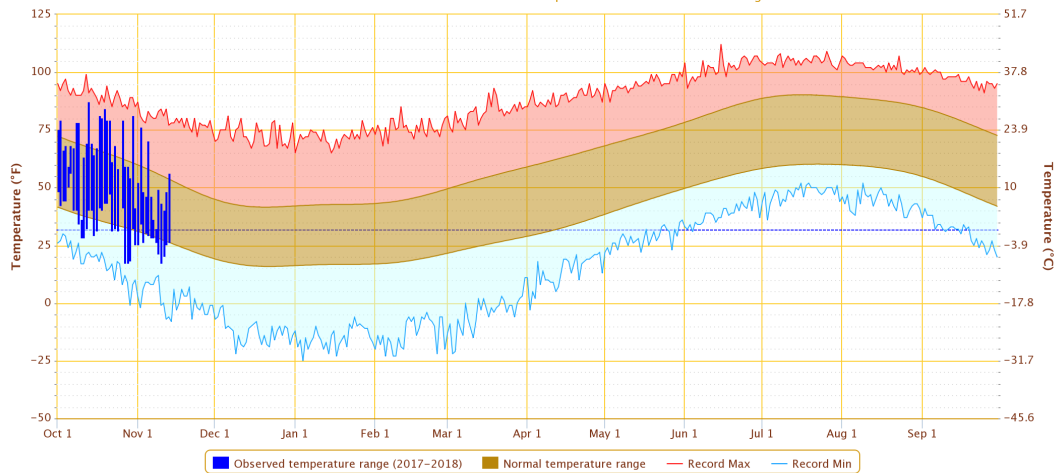
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



### Daily Temperature Data – BURLINGTON, CO

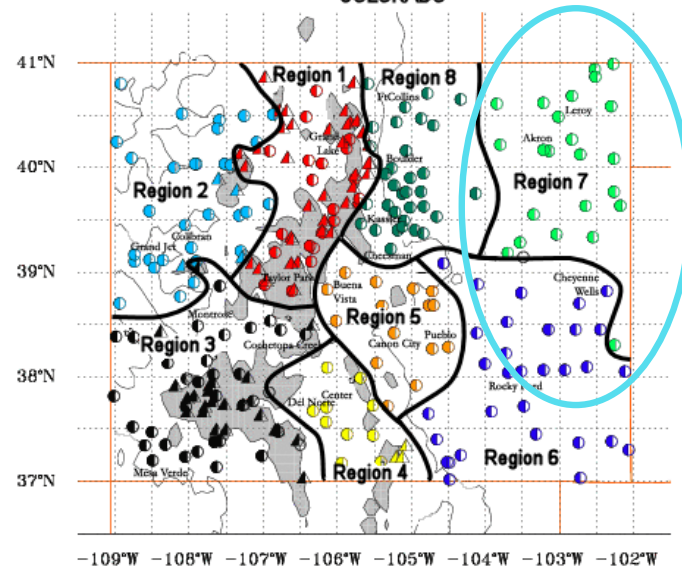
Period of Record – 1903-12-01 to 2017-11-13. Normals period: 1981-2010. Click and drag to zoom chart.

Powered by ACIS



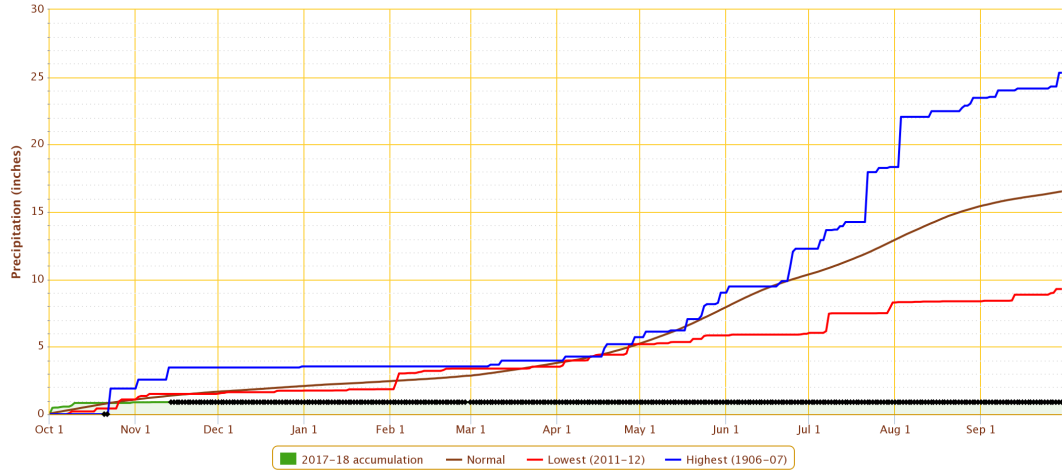
Powered by ACIS

### COLORADO



### Accumulated Precipitation – AKRON 4 E, CO

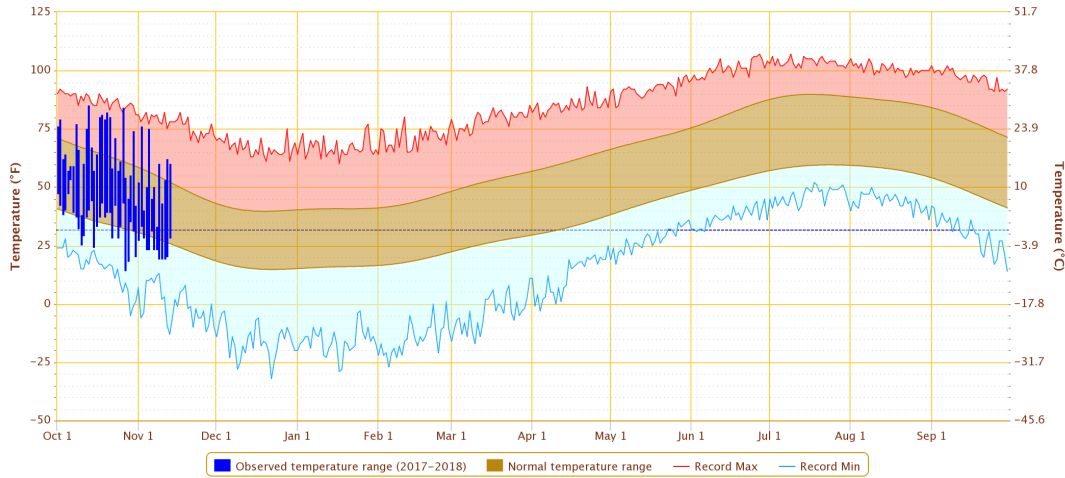
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



### Daily Temperature Data – AKRON 4 E, CO

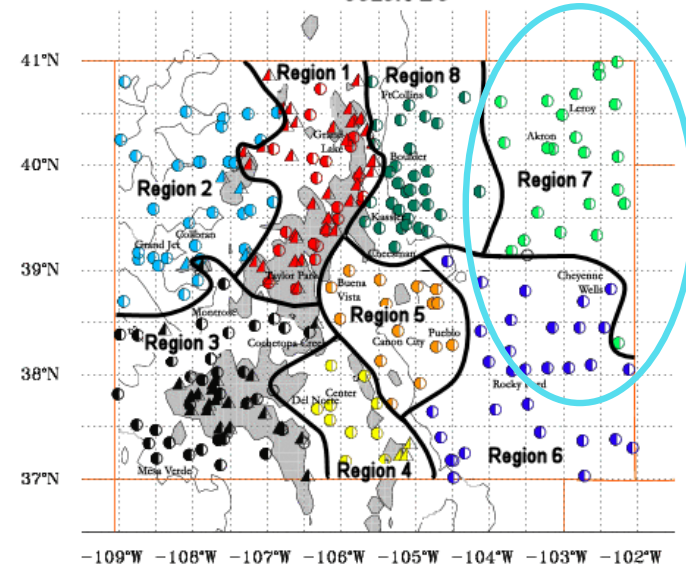
Period of Record – 1893-06-01 to 2017-11-13. Normals period: 1981-2010. Click and drag to zoom chart.

Powered by ACIS



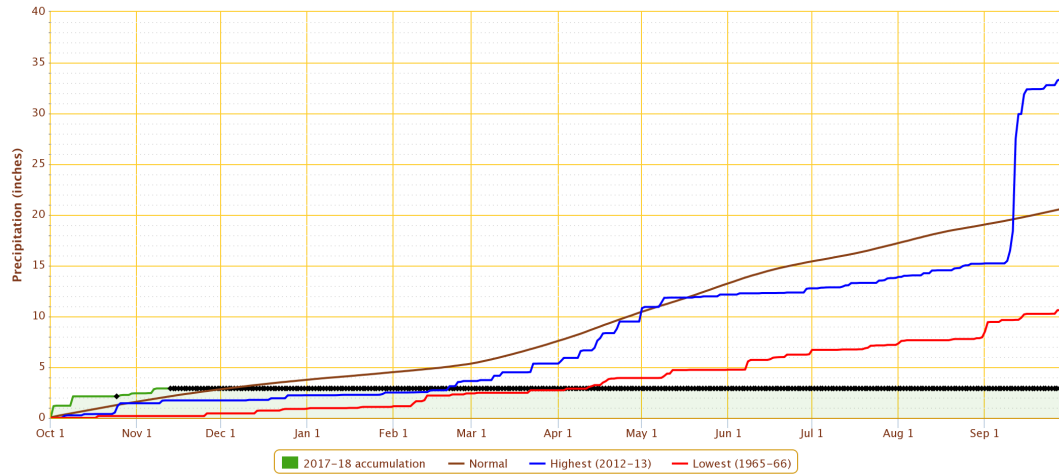
Powered by ACIS

### COLORADO



### Accumulated Precipitation – BOULDER, CO

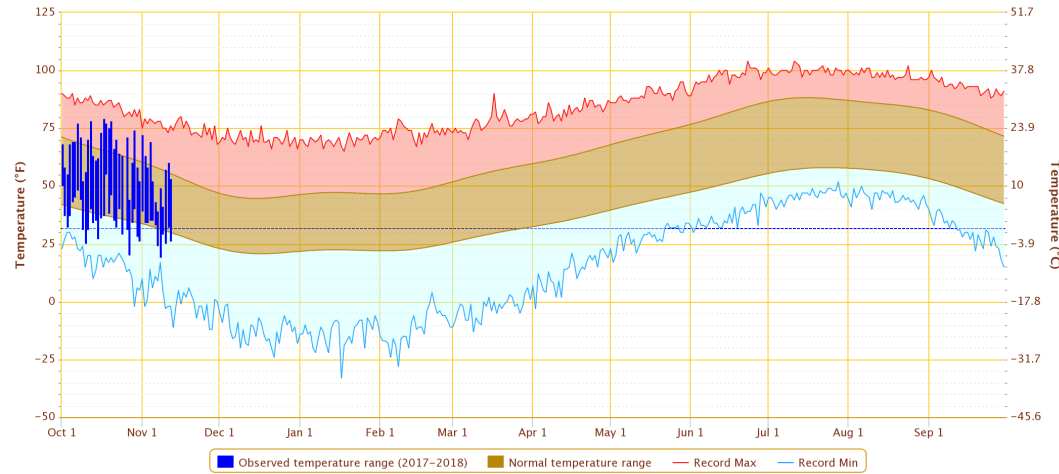
Click and drag to zoom to a shorter time interval; green/black diamonds represent subsequent/missing values



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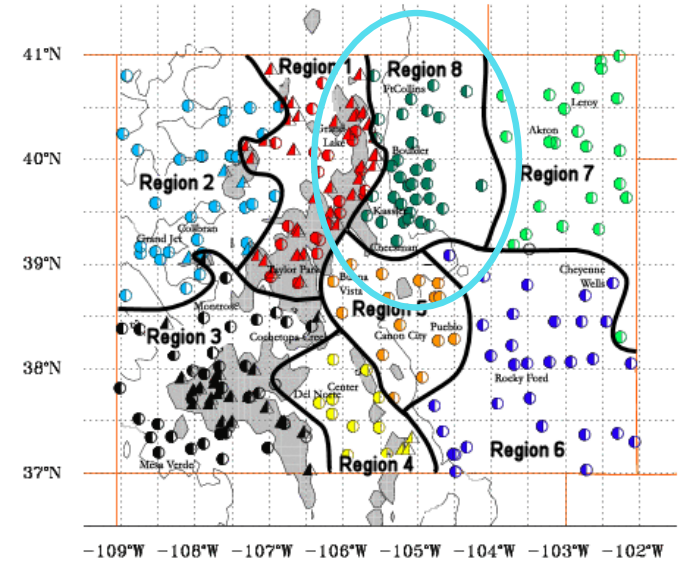
### Daily Temperature Data – BOULDER, CO

Period of Record – 1893-10-01 to 2017-11-12. Normals period: 1981-2010. Click and drag to zoom chart.

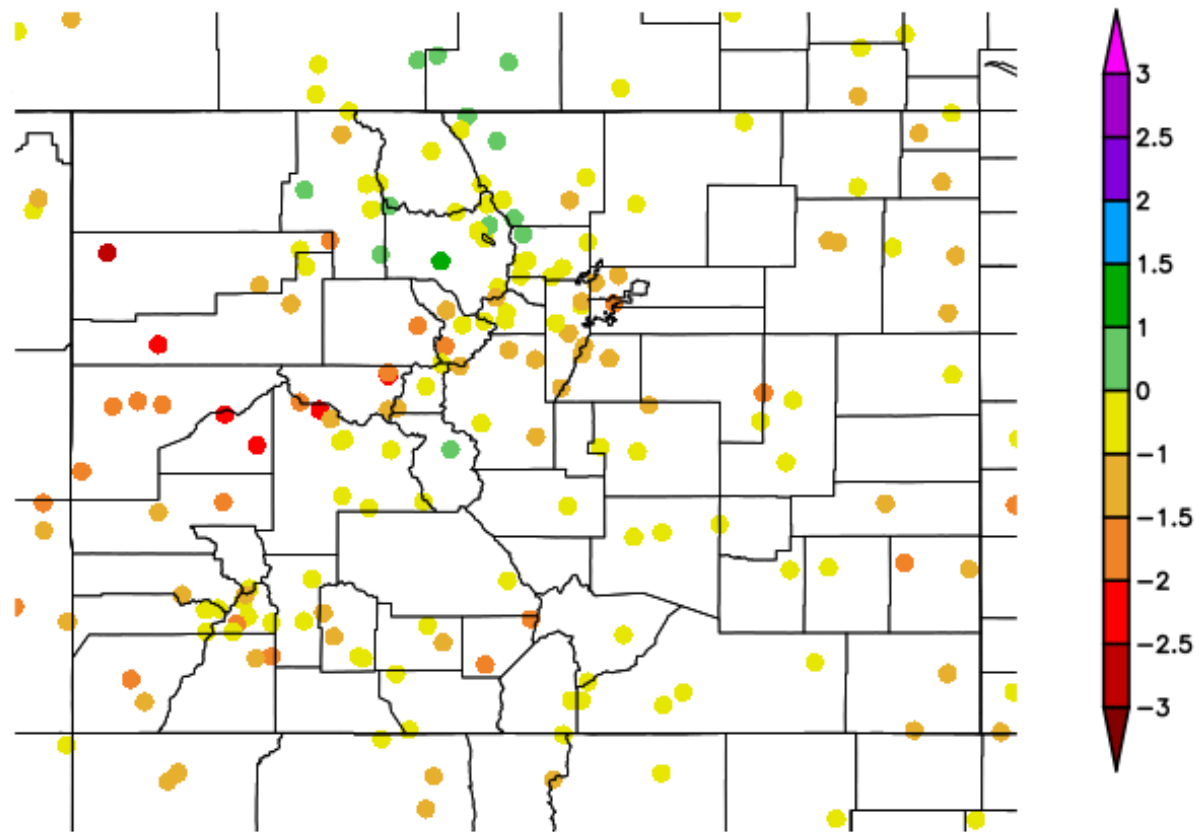


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### COLORADO



30 Day SPI  
10/14/2017 - 11/12/2017

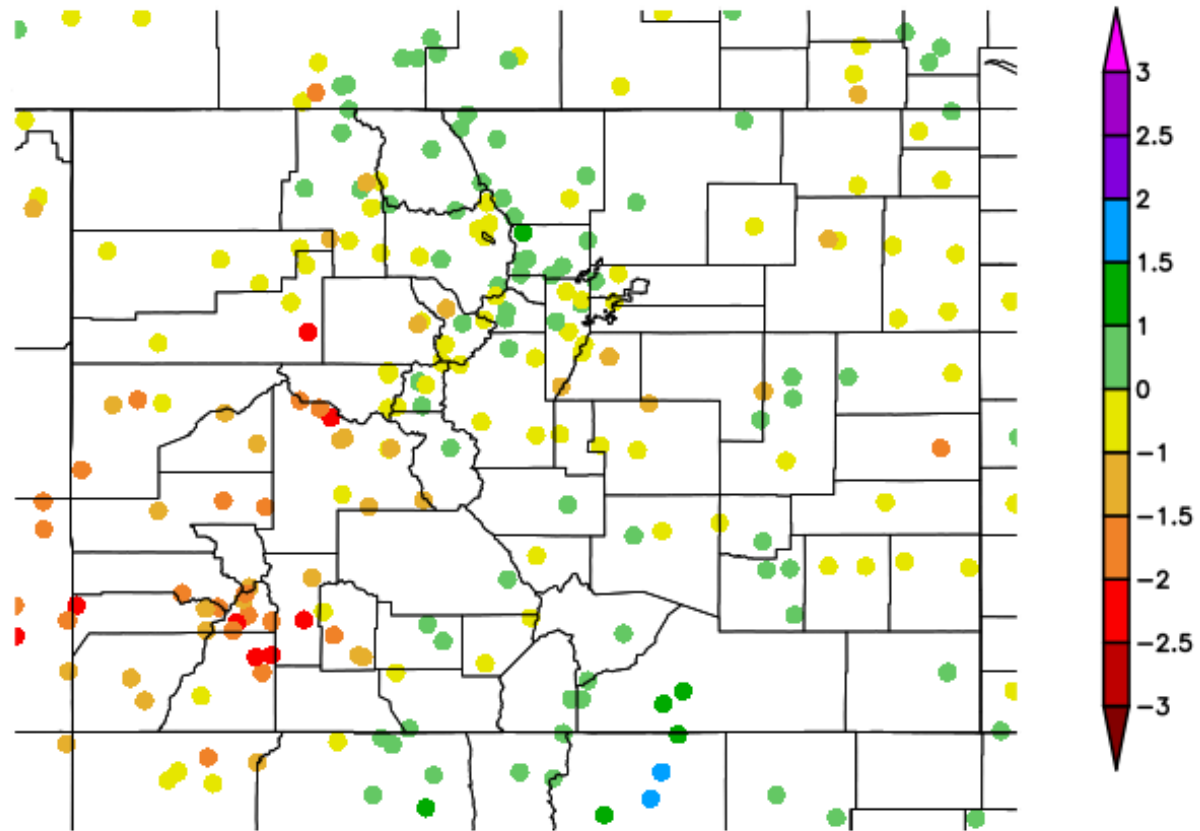


Generated 11/13/2017 at HPRCC using provisional data.

NOAA Regional Climate Centers



# 90 Day SPI 8/15/2017 - 11/12/2017

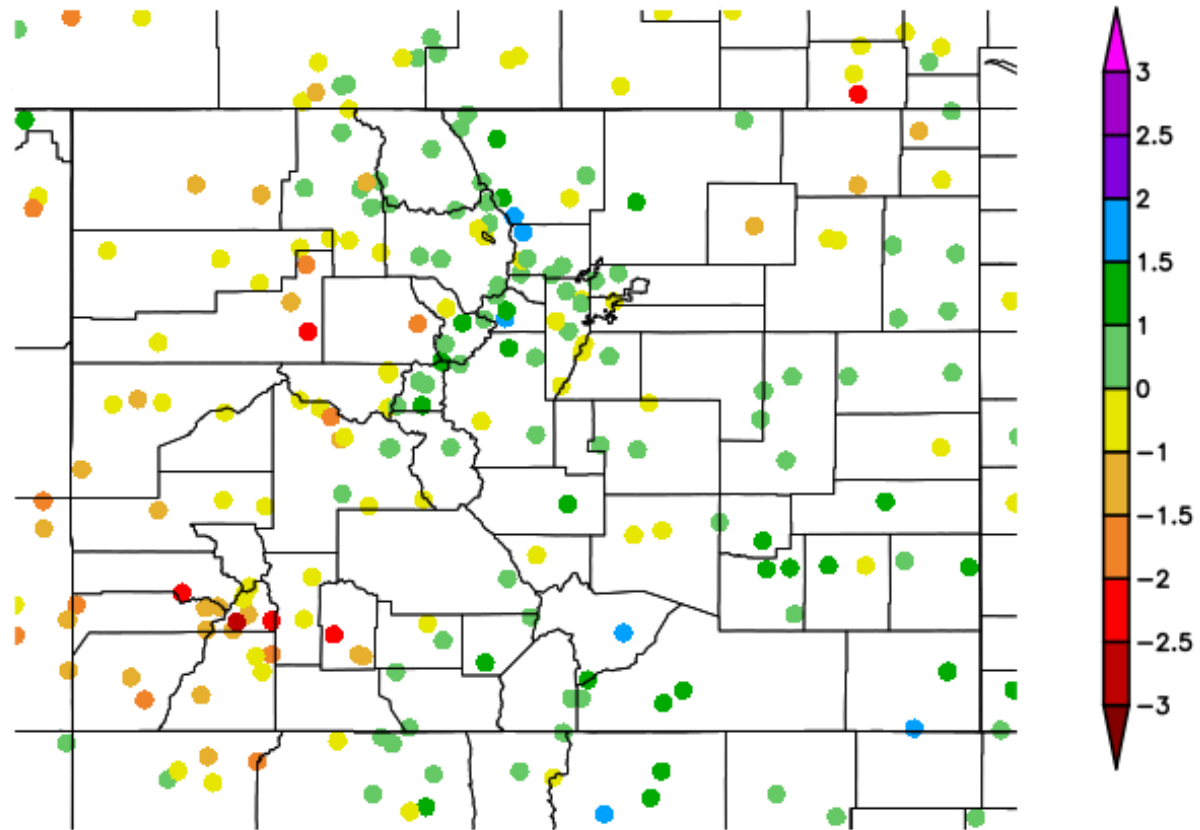


Generated 11/13/2017 at HPRCC using provisional data.

NOAA Regional Climate Centers



# 6 Month SPI 5/13/2017 - 11/12/2017



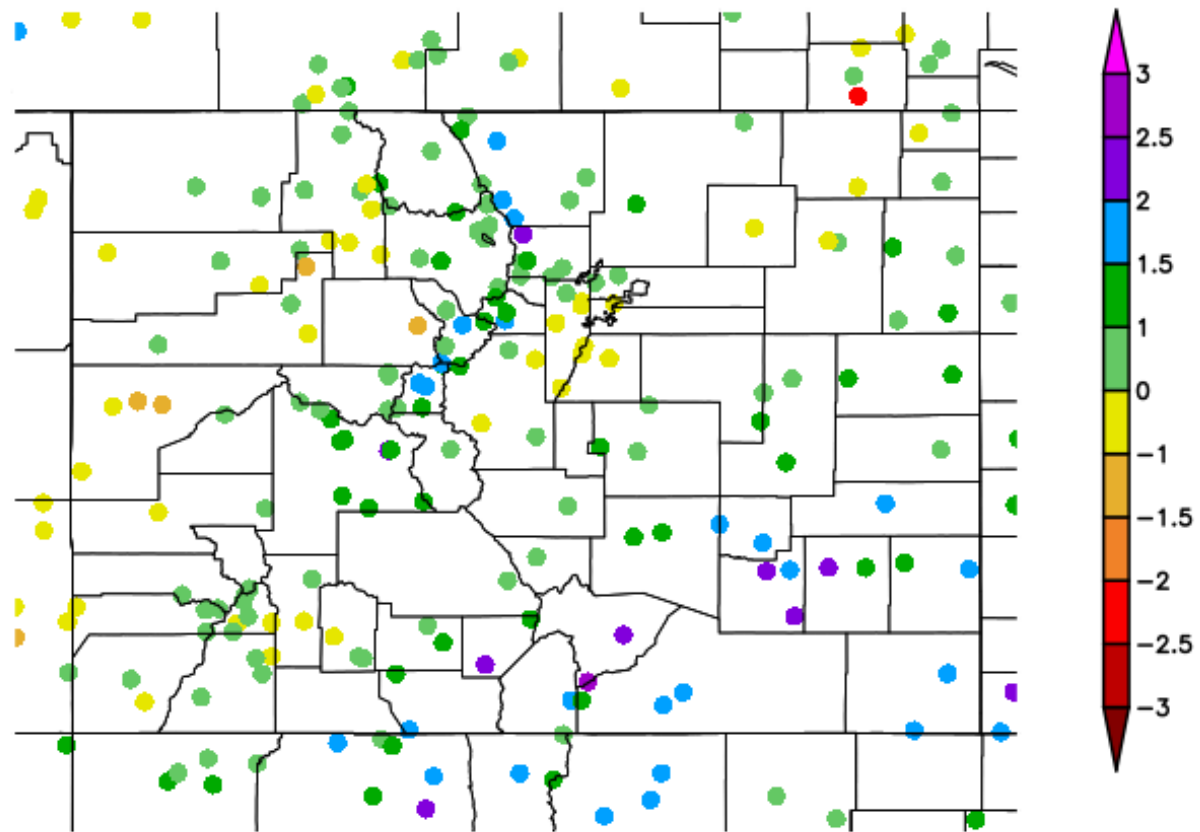
Generated 11/13/2017 at HPRCC using provisional data.

NOAA Regional Climate Centers





# 12 Month SPI 11/13/2016 - 11/12/2017



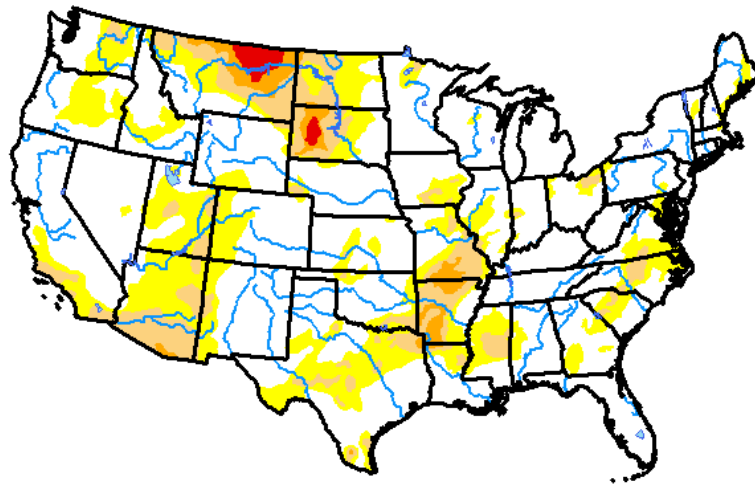
Generated 11/13/2017 at HPRCC using provisional data.

NOAA Regional Climate Centers



# U.S. Drought Monitor Continental U.S. (CONUS)

**November 7, 2017**  
(Released Thursday, Nov. 9, 2017)  
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	67.19	32.81	11.96	2.90	0.75	0.00
<b>Last Week</b> <i>10-31-2017</i>	66.47	33.53	11.95	2.67	0.88	0.00
<b>3 Months Ago</b> <i>08-08-2017</i>	70.23	29.77	11.24	5.38	2.37	0.76
<b>Start of Calendar Year</b> <i>01-03-2017</i>	53.89	46.11	22.53	8.63	3.15	0.96
<b>Start of Water Year</b> <i>09-26-2017</i>	63.07	36.93	13.81	4.99	2.36	0.87
<b>One Year Ago</b> <i>11-08-2016</i>	51.09	48.91	27.36	11.38	4.96	1.91

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.*

Author:

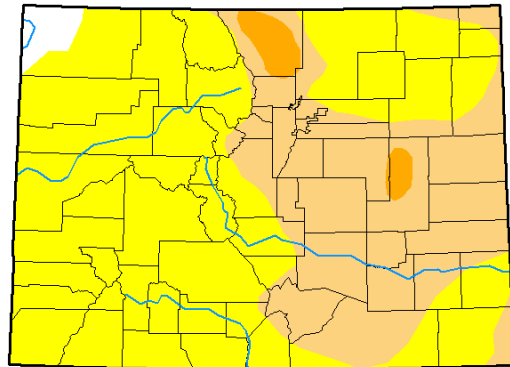
David Miskus  
NOAA/NWS/NCEP/CPC



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



**U.S. Drought Monitor  
Colorado**



**One Year Ago**

**November 15, 2016**  
(Released Thursday, Nov. 17, 2016)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	1.60	98.40	35.21	2.15	0.00	0.00
<b>Last Week</b> 11-08-2016	1.60	98.40	30.84	0.00	0.00	0.00
<b>3 Months Ago</b> 08-16-2016	71.05	28.95	1.47	0.00	0.00	0.00
<b>Start of Calendar Year</b> 12-29-2015	90.02	9.98	0.00	0.00	0.00	0.00
<b>Start of Water Year</b> 09-27-2016	70.49	29.51	2.45	0.00	0.00	0.00
<b>One Year Ago</b> 11-17-2015	82.15	17.85	0.00	0.00	0.00	0.00

**Intensity:**  
■ D0 Abnormally Dry    ■ D3 Extreme Drought  
■ D1 Moderate Drought    ■ D4 Exceptional Drought  
■ D2 Severe Drought

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

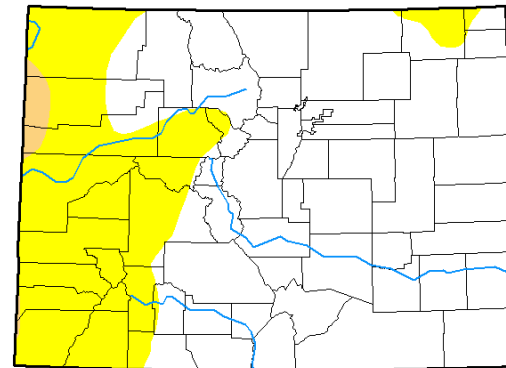
**Author:**  
Richard Heim  
NCEI/NOAA



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

**One Week Ago**

**U.S. Drought Monitor  
Colorado**



**November 7, 2017**  
(Released Thursday, Nov. 9, 2017)  
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	71.26	28.74	1.22	0.00	0.00	0.00
<b>Last Week</b> 10-31-2017	71.37	28.63	1.22	0.00	0.00	0.00
<b>3 Months Ago</b> 08-08-2017	82.69	17.31	0.00	0.00	0.00	0.00
<b>Start of Calendar Year</b> 01-03-2017	31.88	68.12	37.21	2.88	0.00	0.00
<b>Start of Water Year</b> 09-26-2017	67.63	32.37	3.72	0.00	0.00	0.00
<b>One Year Ago</b> 11-08-2016	1.60	98.40	30.84	0.00	0.00	0.00

**Intensity:**  
■ D0 Abnormally Dry    ■ D3 Extreme Drought  
■ D1 Moderate Drought    ■ D4 Exceptional Drought  
■ D2 Severe Drought

*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/>



**Becky.Bolinger@colostate.edu**

**To view this and other presentations:  
[http://climate.colostate.edu/ccc\\_archive.html](http://climate.colostate.edu/ccc_archive.html)**

**Thank you**



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