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## **Winter Weather Watches/Warnings and Advisories**

It is that time of year again to review what the NWS Winter Weather Watches, Warnings and Advisories mean. Although we have not had any meaningful snow as of yet along the I-25 corridor the slow start to the snow season is expected to pick up steam late November through January and finish strong from February through April. We will certainly see Winter Weather highlights coming from the NWS soon. Below are the common types of Watches, Warnings and Advisories we see here along the Front Range:

## **WATCHES AND WARNINGS**

### **SNOW:**

A **WINTER STORM WATCH** is issued when hazardous winter storm conditions are possible within the next 3 to 4 days, but the timing, intensity, or occurrence may still be uncertain.

A **BLIZZARD WATCH** is issued when blizzard conditions are possible in the next 12 to 36 hours.

A **WINTER STORM WARNING** is issued for the occurrence of heavy snow or any combination of heavy snow and other events. Other events include such things as blowing snow or very cold wind chill temperatures.

**WARNING CRITERIA for HEAVY SNOW** is defined by the following amounts.

**IN THE MOUNTAINS...8 inches of snow in 12 hours, or 12 inches or more in 24 hours.**

**ON THE PLAINS...6 inches in 12 hours, or 8 inches or more in 24 hours.**

A **BLIZZARD WARNING** is issued for the *plains* when the following conditions are expected to occur for at least 3 hours:

- Sustained winds of 35 mph or greater
- considerable falling and/or drifting snow
- with visibilities frequently less than 1/4 mile

A **BLIZZARD WARNING** is issued in the *mountains and foothills* for the conditions above, but with winds in excess of 50 mph at the higher elevations.

## **WIND:**

A **HIGH WIND WARNING** is issued for the following conditions:

### **MOUNTAINS and FOOTHILLS**

- sustained winds of 50 mph or more for at least 1 hour...or gusts of at least 75 mph for any duration.

### **LOWER ELEVATIONS**

- sustained winds of 40 mph or more for at least 1 hour...or gusts of at least 58 mph for any duration.

A **HIGH WIND WATCH** is issued when high wind conditions are expected to develop in the next 12 to 36 hours.

A **WIND CHILL WARNING** will be issued for the following wind chill temperatures...when combined with sustained winds of at least 10 mph.

**MOUNTAINS...minus 35 degrees Fahrenheit or colder**

**LOWER ELEVATIONS...minus 25 degrees Fahrenheit or colder**

A **WIND CHILL WATCH** is issued when wind chill warning criteria are possible in the next 12 to 36 hours.

## **ADVISORIES:**

Advisories for winter weather are issued for *potentially* hazardous conditions.

A **WINTER WEATHER ADVISORY** is issued when:

**MOUNTAINS...4 to 8 inches of snow falls in 12 hours, or 6 to 12 inches in 24 hours**

**LOWER ELEVATIONS...3 to 6 inches of snow falls in 12 hours, or 4 to 8 inches in 24 hours**

Or when the following conditions are expected:

- When falling snow is accompanied by blowing snow to cause travel problems due to lower visibilities.
- When wind blown snow will occasionally reduce visibilities and create a hazard for travelers.
- For freezing drizzle or a mix of precipitations types, such as snow and sleet, that will impact travel conditions.

A **WIND CHILL ADVISORY** is issued when the following is expected:

**MOUNTAINS...**wind chills between 25 below and 34 below zero

**LOWER ELEVATIONS...**wind chills between 18 below and 24 below zero

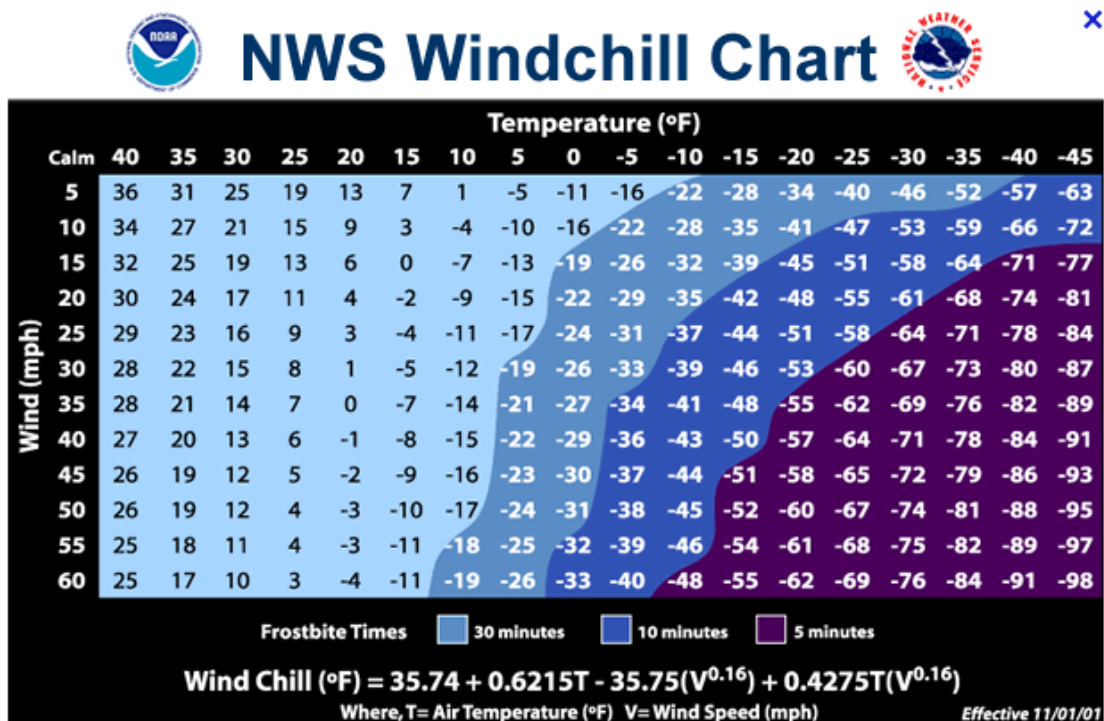
A **DENSE FOG ADVISORY** is issued for fog reducing visibilities to 1/4 mile or less.

## SUMMARY:

**Watches:** Indicates that conditions are favorable for the particular weather event in and near the Watch area, and which may pose a risk to life and property. Watches are issued up to 48 hours in advance with forecaster confidence around 50%.

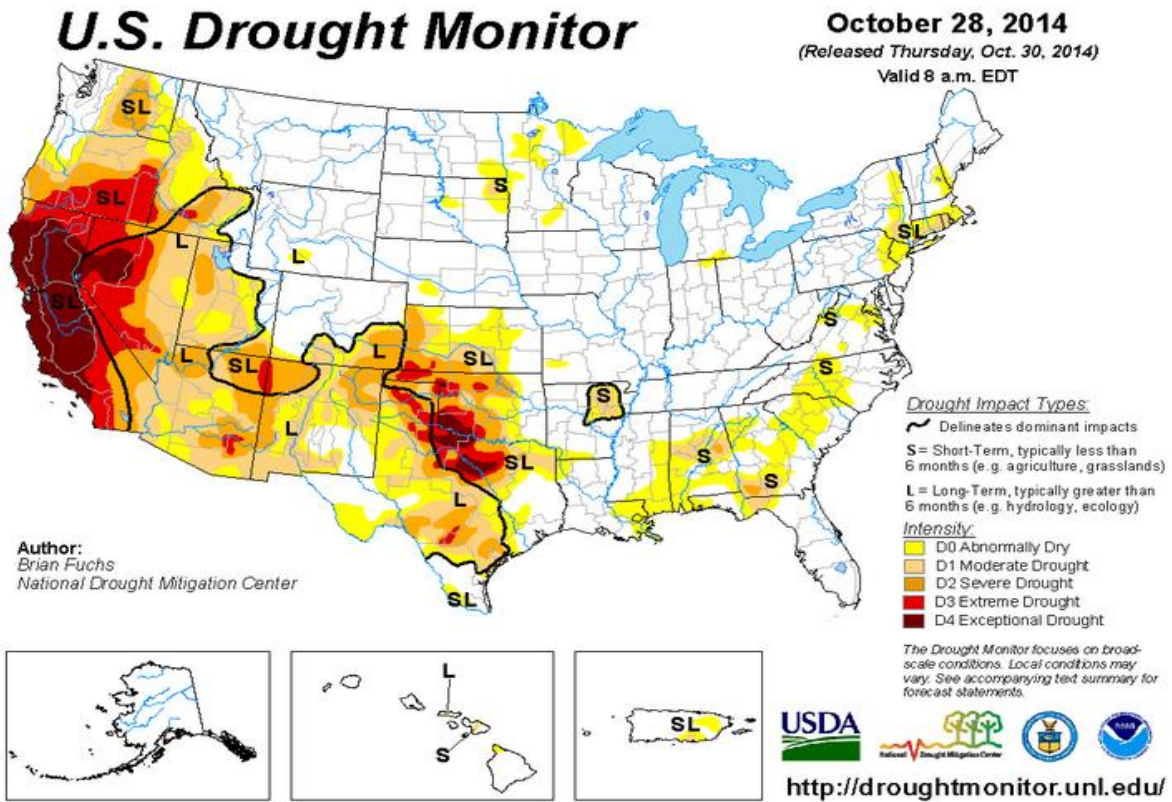
**Warning/Advisory:** Indicates that a particular weather event is imminent or occurring. **Advisories** are issued if the weather event will lead to nuisance conditions, while **Warnings** are issued for significant weather events which will pose a risk to life and property. Warnings and Advisories are issued up to 48 hours in advance with forecaster confidence of at least 80%.

## Wind Chill Chart:

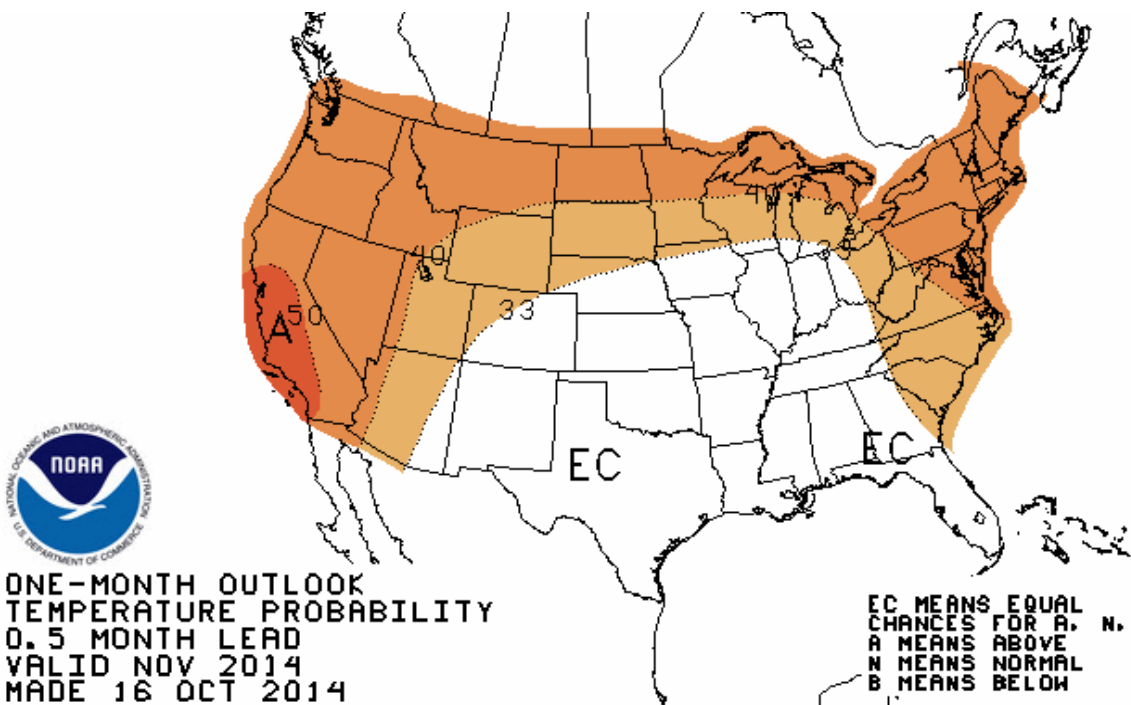


# Drought Update

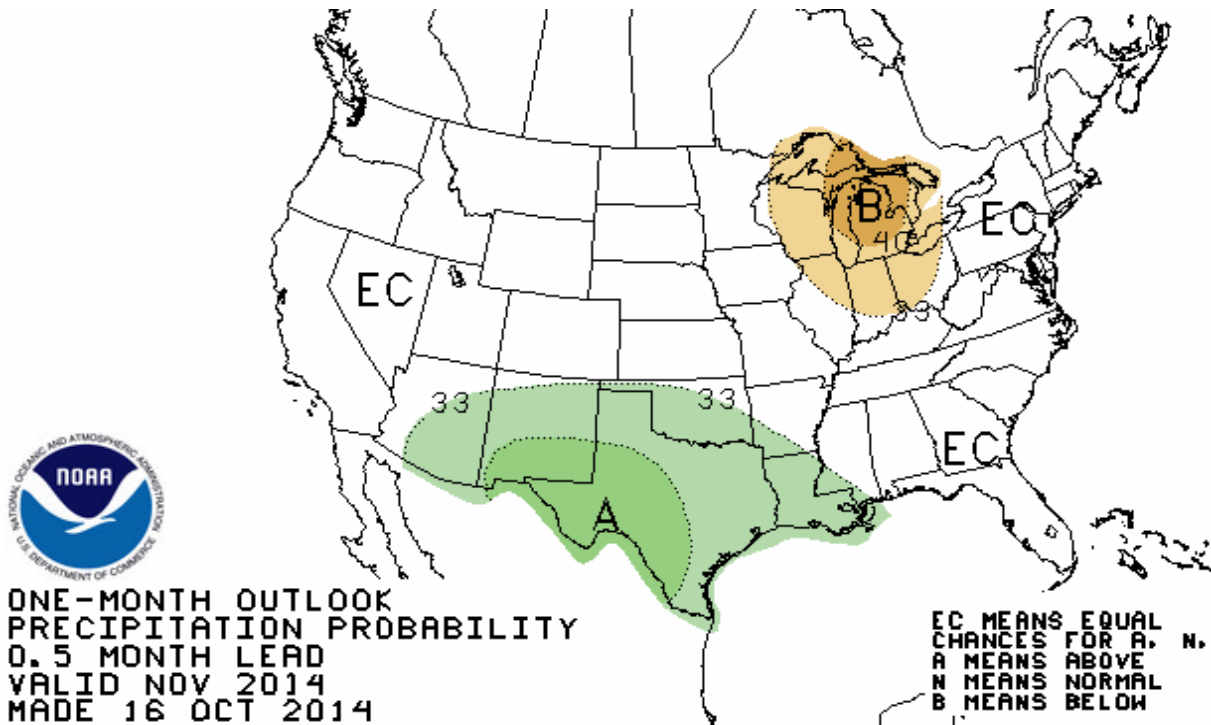
Drought severity has eased over AZ and NM with exceptional drought over a large area of CA persisting. Drought free conditions over much of Colorado with the exception of SE portions of the state. The eastern US remains relatively drought free.



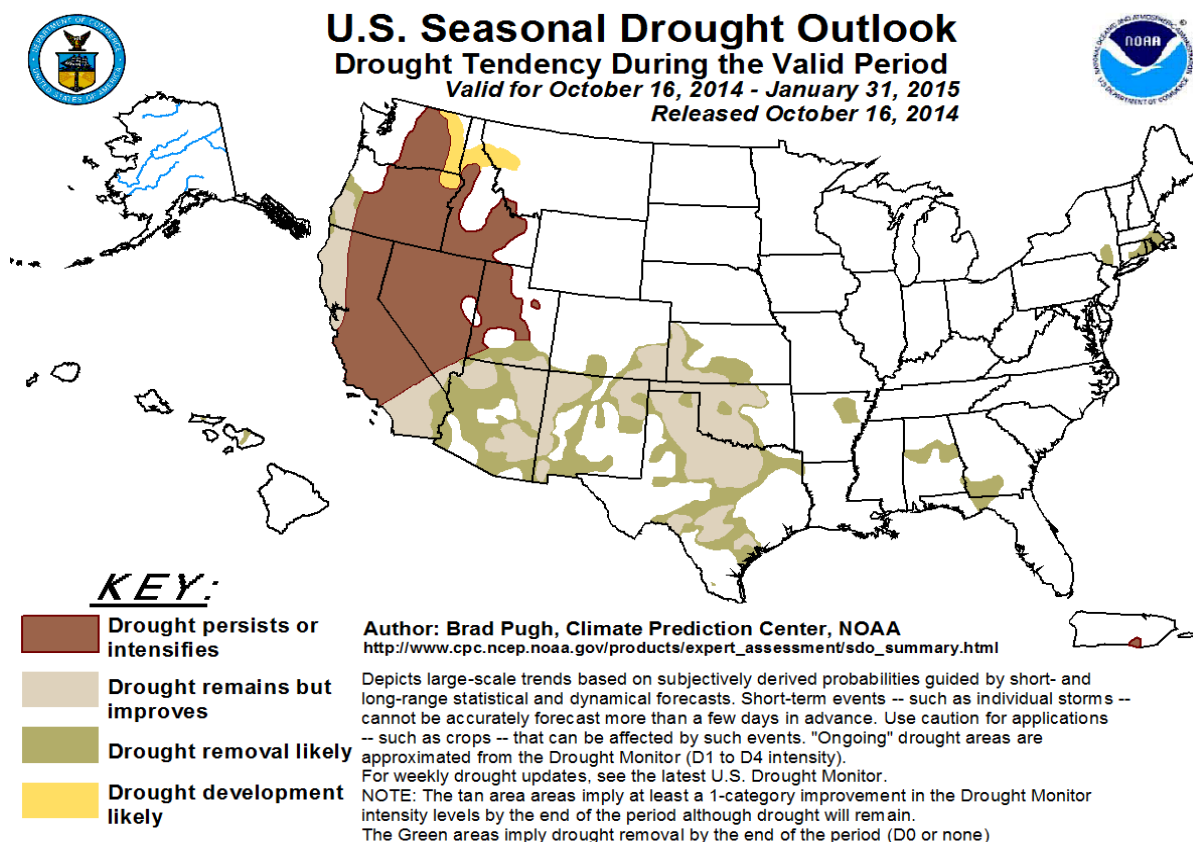
The map below shows forecasted temperature deviances for November 2014. A slight bias towards above normal temperatures exists over NW Colorado with equal chances for above or below normal temperatures over most of the state.



The map below shows forecasted precipitation deviances for November 2014. Near normal precipitation is expected over the state of Colorado.



Drought conditions are forecast to continue to improve over SE Colorado, AZ, NM, TX, OK and KS. Drought will likely persist and intensify over much of the W and NW as we transition into an El Niño type pattern.





## October Summary

October of 2014 was quiet weather wise with above normal temperatures, below normal snowfall and below normal precipitation for some areas. Average high and low temperatures were more than 4 degrees above normal resulting in a monthly mean temperatures of 55.2 degrees which is 4.3 degrees above the normal of 50.9. There were only 4 days during the month where the temperature reached or dropped below freezing. Normally in October we can expect 9 days with sub freezing temperatures. With the above normal temperatures there were multiple records broken. Two record highs were made on the 15<sup>th</sup> and 24<sup>th</sup> and we also tied a record high for the date on the 25<sup>th</sup>. One record high minimum temperature was set on the 26<sup>th</sup> as the overnight low only bottomed out at 49 degrees. With the above normal temperatures there was not any snow measured at DIA in October. Precipitation was about half of normal at DIA with 0.52" reported but other areas in and around the Denver Metro ended up closer to normal. There were 3 days with thunderstorms during the month and October is typically the last month of the year featuring thunderstorm activity.

## October Stats

### TEMPERATURE (IN DEGREES F)

AVERAGE MAX	69.7	NORMAL 65.3	DEPARTURE 4.4
AVERAGE MIN	40.7	NORMAL 36.6	DEPARTURE 4.1
MONTHLY MEAN	55.2	NORMAL 50.9	DEPARTURE 4.3
HIGHEST	83	on 10/15	
LOWEST	29	on 10/27	

DAYS WITH MAX 90 OR ABOVE	0	NORMAL	0
DAYS WITH MAX 32 OR BELOW	0	NORMAL	0
DAYS WITH MIN 32 OR BELOW	4	NORMAL	9
DAYS WITH MIN ZERO OR BELOW	0	NORMAL	0

### TEMPERATURE RECORDS

New Record Highs of 83 on 10/15, 82 on 10/24, Tied Record High of 80 on 10/25  
Tied Record High Minimum of 49 on 10/26

### HEATING DEGREE DAYS

MONTHLY TOTAL	296	NORMAL 440	DEPARTURE -144
SEASONAL TOTAL	394	NORMAL 581	DEPARTURE -187

### COOLING DEGREE DAYS

MONTHLY TOTAL	0	NORMAL 5	DEPARTURE -5
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YEARLY TOTAL                      701 NORMAL 769                      DEPARTURE -68

**PRECIPITATION (IN INCHES)**

MONTHLY TOTAL                      0.52    NORMAL                      1.02    DEPARTURE -0.50  
YEARLY TOTAL                      17.42    NORMAL                      13.34    DEPARTURE 4.08  
GREATEST IN 24 HOURS                      0.26" on 10/9-10/10  
DAYS WITH MEASURABLE PRECIP.                      5

**SNOWFALL (IN INCHES)**

MONTHLY TOTAL                      0.0    NORMAL 4.0                      DEPARTURE -5.3  
SEASONAL TOTAL                      TR    NORMAL 5.3                      DEPARTURE -5.3  
GREATEST IN 24 HOURS                      0.0  
GREATEST DEPTH                      0.0

**WIND (IN MILES PER HOUR)**

AVERAGE SPEED                      9.4mph  
PEAK WIND GUST                      44mph from the N on 10/2

**MISCELLANEOUS WEATHER**

NUMBER OF DAYS WITH THUNDERSTORM 3                      NORMAL                      4  
NUMBER OF DAYS WITH HEAVY FOG                      0                      NORMAL                      1  
NUMBER OF DAYS WITH HAIL                      0  
NUMBER OF SUNNY DAYS                      11  
NUMBER OF PARTLY CLOUDY DAYS                      17  
NUMBER OF CLOUDY DAYS                      3  
AVERAGE RELATIVE HUMIDITY                      49%

## November Preview

November is the month where the Front Range transitions into winter. Daytime highs on average to start the month are 59 degrees but by month's end average only 46 degrees. Average lows drop significantly as well starting out at 31 degrees and ending the month at 19 degrees. The record high for November is 80 degrees and the record low is -18 degrees, nearly a 100 degree temperature variation! Precipitation drops off from October with 0.61" on average but average snowfall increases to 8.7" which is the 2<sup>nd</sup> snowiest month in the Denver Metro area behind March. There are typically 5 events with measureable precipitation 3 of which produce greater than 1" of snow. The snowiest November on record produced 42.6" of snow back in 1946 and the least snowiest November produced no snow at all but only happened one year back in 1949. Typically storms systems become progressively colder as the month moves along with potentially the first outbreak of arctic air moving southward out of Canada which can push temperatures below zero. For November of 2014 temperatures are expected to be above normal and precipitation is expected to be near normal to below normal and snowfall may fall short this month for many areas.

### DENVER'S NOVEMBER CLIMATOLOGICALLY NORMAL (NORMAL PERIOD 1981-2010 DIA Data)

#### TEMPERATURE

AVERAGE HIGH	52.1
AVERAGE LOW	24.5
MONTHLY MEAN	38.3
DAYS WITH HIGH 90 OR ABOVE	0
DAYS WITH HIGH 32 OR BELOW	3
DAYS WITH LOW 32 OR BELOW	23
DAYS WITH LOWS ZERO OR BELOW	1

#### PRECIPITATION

MONTHLY MEAN	0.61"
DAYS WITH MEASURABLE PRECIPITATION	5
AVERAGE SNOWFALL IN INCHES	8.7"
DAYS WITH 1.0 INCH OF SNOW OR MORE	3

#### MISCELLANEOUS AVERAGES

HEATING DEGREE DAYS	801
COOLING DEGREE DAYS	0
WIND SPEED (MPH)	8.2mph
WIND DIRECTION	South
DAYS WITH THUNDERSTORMS	0
DAYS WITH DENSE FOG	1
PERCENT OF SUNSHINE POSSIBLE	64%

#### EXTREMES



RECORD HIGH	80 on 11/8/2006
RECORD LOW	-18 on 11/29/1877
WARMEST	50.9 in 1949
COLDEST	22.0 in 1880
WETTEST	3.21" in 1946
DRIEST	TR in 1949, 1901, 1899
SNOWIEST	42.6" in 1946
LEAST SNOWIEST	0.0" in 1949

## Sunrise/Sunset (July - December Denver area)

	JUL	AUG	SEP	OCT	NOV	DEC	
	SR - SS	SR - SS	SR - SS	SR - SS	SR - SS	SR - SS	
01	0534-0831	0558-0812	0627-0731	0655-0642	0728-0556	0701-0435	01
02	0535-0831	0559-0811	0628-0729	0656-0641	0729-0555	0702-0434	02
03	0535-0831	0600-0810	0629-0728	0657-0639	0630-0454	0703-0434	03
04	0536-0830	0600-0809	0630-0726	0658-0637	0631-0453	0704-0434	04
05	0536-0830	0601-0808	0631-0725	0659-0636	0632-0452	0705-0434	05
06	0537-0830	0602-0807	0631-0723	0700-0634	0634-0451	0706-0434	06
07	0538-0830	0603-0806	0632-0721	0701-0633	0635-0450	0707-0434	07
08	0538-0829	0604-0805	0633-0720	0702-0631	0636-0449	0708-0434	08
09	0539-0829	0605-0803	0634-0718	0703-0629	0637-0448	0708-0434	09
10	0540-0829	0606-0802	0635-0717	0704-0628	0638-0447	0709-0434	10
11	0540-0828	0607-0801	0636-0715	0705-0626	0639-0446	0710-0434	11
12	0541-0828	0608-0800	0637-0713	0706-0625	0640-0445	0711-0434	12
13	0542-0827	0609-0758	0638-0712	0707-0623	0642-0444	0712-0435	13
14	0542-0827	0610-0757	0639-0710	0708-0622	0643-0443	0712-0435	14
15	0543-0826	0611-0756	0640-0708	0709-0620	0644-0443	0713-0435	15
16	0544-0826	0612-0754	0641-0707	0710-0619	0645-0442	0714-0435	16
17	0545-0825	0613-0753	0642-0705	0711-0617	0646-0441	0714-0436	17
18	0546-0824	0614-0752	0643-0703	0712-0616	0647-0440	0715-0436	18
19	0546-0824	0615-0750	0644-0702	0714-0614	0648-0440	0715-0437	19
20	0547-0823	0616-0749	0645-0700	0715-0613	0649-0439	0716-0437	20
21	0548-0822	0616-0747	0646-0658	0716-0612	0651-0439	0717-0437	21
22	0549-0822	0617-0746	0646-0657	0717-0610	0652-0438	0717-0438	22
23	0550-0821	0618-0745	0647-0655	0718-0609	0653-0437	0717-0439	23
24	0551-0820	0619-0743	0648-0654	0719-0608	0654-0437	0718-0439	24
25	0551-0819	0620-0742	0649-0652	0720-0606	0655-0437	0718-0440	25
26	0552-0818	0621-0740	0650-0650	0721-0605	0656-0436	0719-0440	26
27	0553-0817	0622-0739	0651-0649	0722-0604	0657-0436	0719-0441	27
28	0554-0816	0623-0737	0652-0647	0723-0602	0658-0435	0719-0442	28
29	0555-0815	0624-0736	0653-0645	0724-0600	0659-0435	0719-0442	29
30	0556-0815	0625-0734	0654-0644	0726-0559	0700-0435	0720-0443	30
31	0557-0814	0626-0732		0727-0557		0720-0444	31

# Snowfall

## October 2014 to April 2015

City	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Aurora (Central)	0.0							0.0
Brighton	0.0							0.0
Broomfield	0.0							0.0
Castle Rock	0.2							0.2
Colo Sprgs Airport	0.0							0.0
Denver DIA	0.0							0.0
Denver Downtown	0.0							0.0
Golden	0.0							0.0
Fort Collins	0.0							0.0
Highlands Ranch	0.0							0.0
Lakewood	0.0							0.0
Littleton	0.0							0.0
Parker	TR							TR
Sedalia - Hwy 67	0.0							0.0
Thornton	0.0							0.0
Westminster	0.0							0.0
Wheat Ridge	0.0							0.0

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