

The Weather Wire

May 2014

Volume 21 Number 05

Contents:

- **Severe Weather/Definitions**
- **Drought Monitor**
- **April Summary/Statistics**
- **May Preview**
- **Sunrise/Sunset**
- **Snowfall Totals**

Severe Weather/Definitions

Severe Weather season in Colorado begins in May as warm and cold air clash over the Front Range. Storms moving in from off of the Pacific Ocean or dropping out of Canada can still contain the chill of winter aloft while the additional sunlight of spring warms our temperatures into the 70's and 80's at the surface. The large temperatures difference from air near the surface and the air higher in the atmosphere creates an unstable environment causing the air at the surface to rise much more rapidly than in the winter. The accelerated vertical motion in the air creates cumulus clouds and eventually cumulonimbus clouds which we know as thunderstorms. Throw in some moisture from the Gulf of Mexico as additional fuel and we have all the ingredients for super cell thunderstorms: cold air aloft, warm air at the surface, moisture, a passing cold front for a trigger and the jet stream aloft. These super cell thunderstorms quite often become severe producing large hail, damaging winds and tornadoes. The strongest storms are usually limited to areas east of I-25 but they do occur in and adjacent to the foothills from time to time. Once the jet stream begins its retreat northward later in the spring and summer severe storms become less common but slow moving moderate to heavy rainfall producing thunderstorms take their place as the monsoon season kicks in.

Since we are entering the severe weather season it is always beneficial to review what constitutes a severe thunderstorm and what the associated watches and warnings mean. Recently the NWS has changed from $\frac{3}{4}$ " to 1" hail size for severe thunderstorm criteria which was intended to give greater meaning to warnings with fewer warnings issued. This change over in Colorado occurred on January 5, 2010.

Severe Thunderstorm definition: A storm containing 1" hail or larger, or winds in excess of 58mph, or a tornado is present. One or all of these conditions may be experienced during a severe thunderstorm.

Severe Thunderstorm Watch: Conditions are favorable for the formation of severe thunderstorms in AND NEAR the watch area. By definition, a severe thunderstorm has hail 1" inch or larger, and/or winds greater than or equal to 58mph. Note heavy rain is not a necessary component of a severe thunderstorm. Watch the sky and stay tuned to know when warnings are issued.

Severe Thunderstorm Warning: Issued when severe weather is detected by radar or reported by storm spotters (Hail 1" or greater, winds 58mph or more). Information in this warning will include the location of the storm, what areas will be affected, and the primary threat associated with the storm. People in the affected area should seek safe shelter immediately. Remember that severe thunderstorms can produce tornadoes with little or no advance warning. Warnings can be issued without a watch already in effect.

Tornado Watch: Conditions are favorable for the formation of tornadoes in AND NEAR the watch area. Implicit in this watch are the possibility of severe thunderstorms, as defined above. Remain alert for approaching storms. Know what counties are in the watch area by listening to NOAA Weather Radio or your local radio/television outlets.

Tornado Warning: A tornado has been sighted by spotters in the field, or indicated by NWS Doppler radar.

With the wild land fire activity Colorado has experienced over the past few years flash flooding has become more common. For fresh burn scars it takes far less rainfall to produce excessive runoff, debris flows and flash flooding. We will likely see quite a few flood watches and warnings again this year for burn areas of the Front Range foothills.

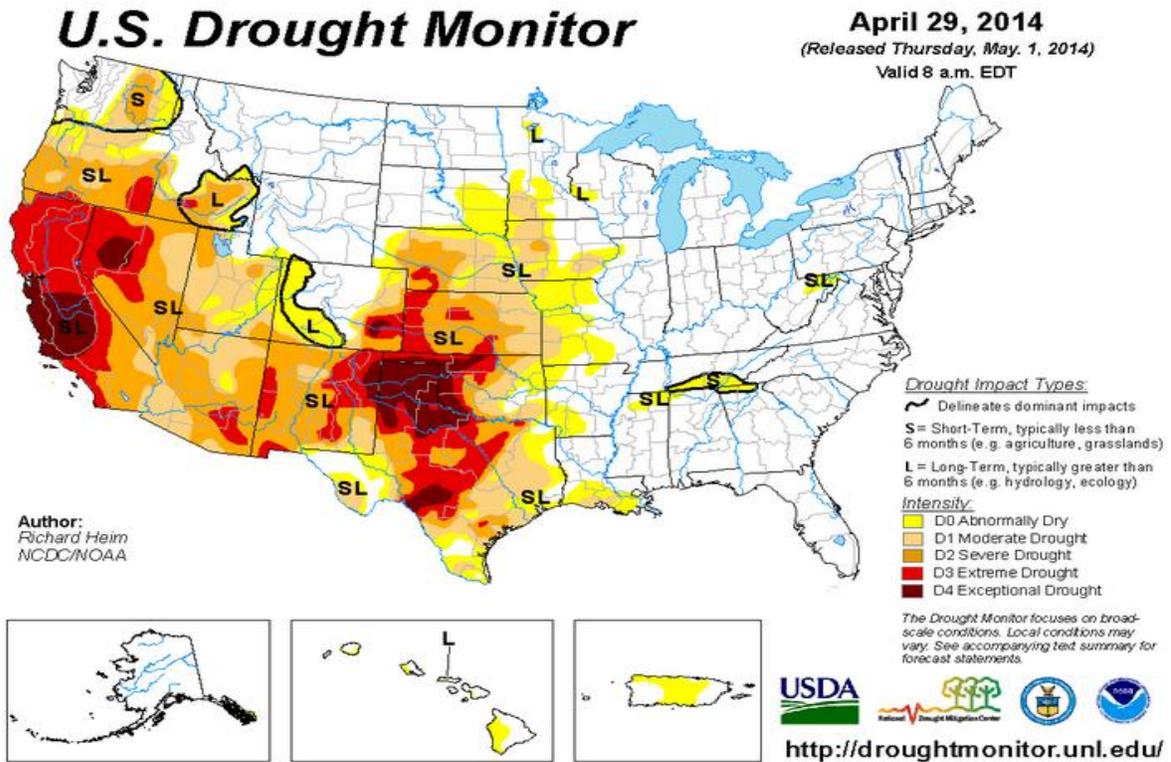
Flash Flood Watch: Issued when conditions are favorable for the development of severe weather in and close to the watch area. The size of the watch can vary depending on the weather situation and is usually issued for a duration of 4 to 8 hours. During the watch, people should review severe weather safety rules and be prepared to move to a place of safety if threatening weather approaches.

Flash Flood Warning: Issued when flash flooding is in progress, imminent, or highly likely. Those in the affected area should evacuate immediately or move to higher ground if possible. Information in this warning will include the locations in the flood and any areas which may be impacted. Flash Flood Warnings can be issued without a Flash Flood Watch in effect.

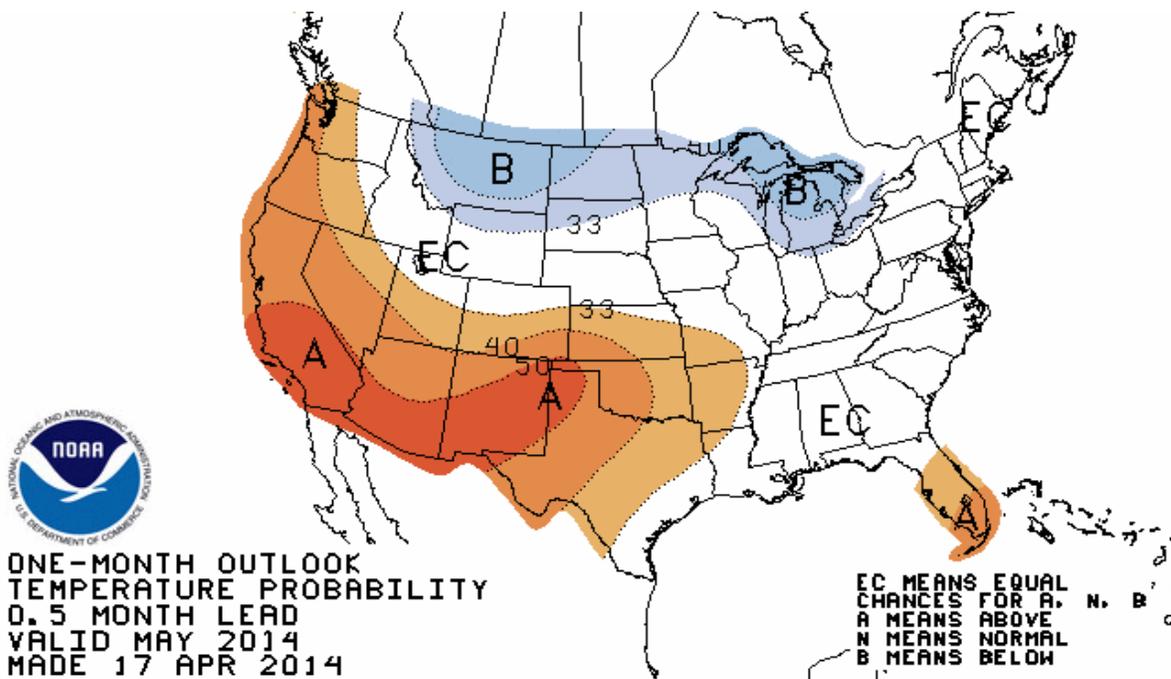
Definitions can be found at: http://www.crh.noaa.gov/lbf/?n=servere_terms

Drought Update

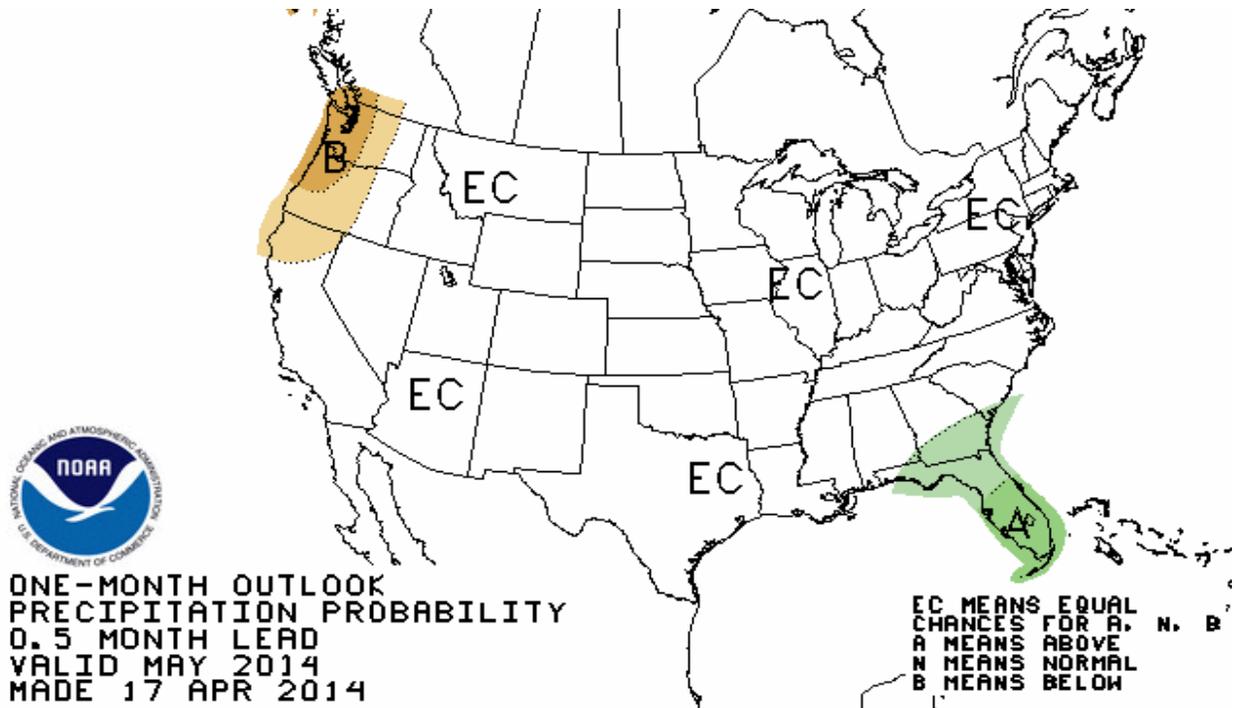
Drought persists over the majority of the SW states especially over portions of CA and NV and the TX panhandle with generally drought free conditions over the 1/3 of the US.



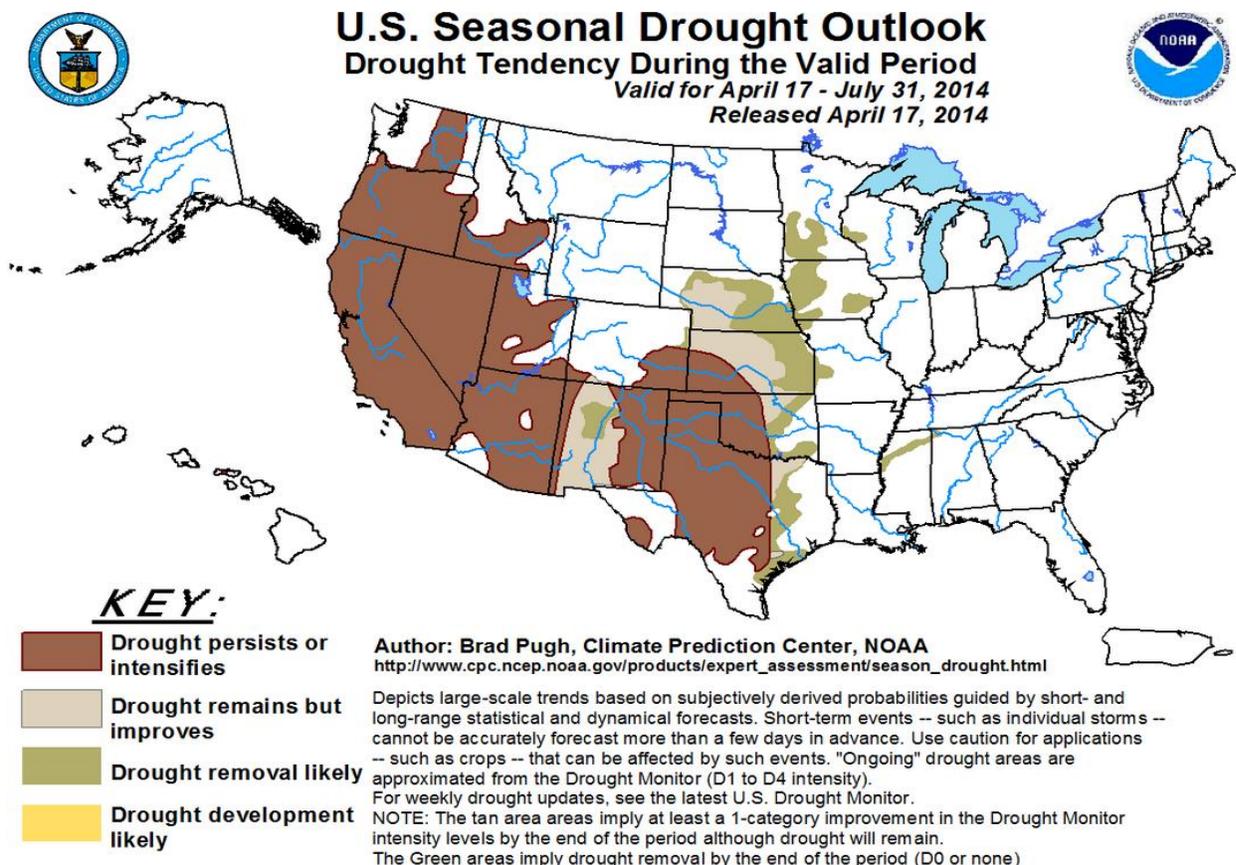
The map below shows forecasted temperature deviances for May 2014. Near normal temperatures expected over far northern Colorado with a bias towards warmer than normal temperatures over central and especially southeastern Colorado.



The map below shows forecasted precipitation deviances for May 2014. Near normal precipitation is forecast over most of the US including Colorado.



Drought conditions are forecast to persist over southeast Colorado with generally drought free conditions over the remainder of the state.



April Summary

April of 2014 was relatively quiet weather wise compared to what can happen during this time of year. Temperatures for the month were above normal with average highs of 62.8 degrees and average lows of 35.2 degrees. The average highs were 1.3 degrees above normal and the average lows 1.9 degrees above normal. The monthly mean was 1.6 degrees above the normal of 47.4 degrees. The highest temperature of the month was 80 on the 22nd and the coldest was 18 degrees on the 14th. There were not any temperature records tied or broken during the month. Both precipitation and snowfall came in below normal for DIA but other areas of the City did much better especially south of the Denver Metro area over the Palmer Divide where 10-16" of snow for the month was common. In total 1.24" of rain/melted snow was measured with 5.6" of total snow. There were 6 days with measureable precipitation with the heaviest falling on the 2nd into 3rd of the month. The 5.6" of snow was 1.2" below the normal of 6.8". For the snow season there has only been 37.3" of snow at DIA compared to 52.7" on average. There is no doubt about it that 2013-2014 will go down as a winter with well below normal snowfall for DIA. Over the western and southern suburbs snowfall totals were much closer to normal for the season. There were 2 days during the month with thunderstorms near DIA but none of the storms were particularly strong.

April Stats

TEMPERATURE (IN DEGREES F)

AVERAGE MAX	62.8	NORMAL 61.5	DEPARTURE 1.3
AVERAGE MIN	35.2	NORMAL 33.3	DEPARTURE 1.9
MONTHLY MEAN	49.0	NORMAL 47.4	DEPARTURE 1.6
HIGHEST	80 on the 22 nd		
LOWEST	18 on the 14 th		

DAYS WITH MAX 90 OR ABOVE	0	NORMAL	0
DAYS WITH MAX 32 OR BELOW	0	NORMAL	0
DAYS WITH MIN 32 OR BELOW	10	NORMAL	13
DAYS WITH MIN ZERO OR BELOW	0	NORMAL	0

TEMPERATURE RECORDS

No temperature records tied or broken

HEATING DEGREE DAYS

MONTHLY TOTAL	472	NORMAL 529	DEPARTURE -57
SEASONAL TOTAL	5730	NORMAL 5731	DEPARTURE -1

COOLING DEGREE DAYS

MONTHLY TOTAL	0	NORMAL 1	DEPARTURE -1
YEARLY TOTAL	0	NORMAL 1	DEPARTURE -1

PRECIPITATION (IN INCHES)

MONTHLY TOTAL	1.24	NORMAL 1.71	DEPARTURE -0.47
YEARLY TOTAL	3.20	NORMAL 3.41	DEPARTURE -0.21
GREATEST IN 24 HOURS	0.48" on 4/2 to 4/3		
DAYS WITH MEASURABLE PRECIP.	6		

SNOWFALL (IN INCHES)

MONTHLY TOTAL	5.6	NORMAL 6.8	DEPARTURE -1.2
SEASONAL TOTAL	37.3	NORMAL 52.7	DEPARTURE -15.4
GREATEST IN 24 HOURS	3.4" on 4/2 to 4/3		
GREATEST DEPTH	NA		

WIND (IN MILES PER HOUR)

AVERAGE SPEED	12.9mph
PEAK WIND GUST	66mph from the NNW on 4/29

MISCELLANEOUS WEATHER

NUMBER OF DAYS WITH THUNDERSTORM	2	NORMAL	2
NUMBER OF DAYS WITH HEAVY FOG	2	NORMAL	1
NUMBER OF DAYS WITH HAIL	1		
NUMBER OF SUNNY DAYS	1		
NUMBER OF PARTLY CLOUDY DAYS	22		
NUMBER OF CLOUDY DAYS	7		
AVERAGE RELATIVE HUMIDITY	50%		

May Preview

May is the wettest month of the year in Denver and surrounding areas with precipitation occurring on average once every three days. Precipitation can fall in almost any form with rain, snow, sleet, hail and graupel all possible during the month of May. Severe thunderstorm season begins in May with strong thunderstorms producing large hail and tornadoes on the eastern plains but winter usually has one last stand with 1.1" of snow on average and as of the 12th 1.1" of snow has been measured at DIA. Much higher amounts of 4-9" were reported in the Denver suburbs. If snow does fall it typically occurs during the first half of the month and this year did not disappoint with a heavy snow on the 11-12th. There are typically 6 thunderstorm days during the month with severe weather becoming more likely. The last freeze is typically over by May 5th but freezing temperatures can be felt all the way into June on colder years. This year we may still get another day or two with temperatures dropping below freezing. The average high for May is about 10 degrees warmer than April at 71.5 degrees. The average low is 42.7 resulting in a monthly mean of 57.1 degrees. The record high for the month is 95 degrees and the record low is 19 degrees creating a temperature spread of 76 degrees. Precipitation for the month is 2.12" on average. Since we have already experienced 1.37" as of the 12th it is likely that precipitation will be normal to possibly above normal with temperatures likely near normal for May 2014.

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

TEMPERATURE

AVERAGE HIGH	71.5
AVERAGE LOW	42.7
MONTHLY MEAN	57.1
DAYS WITH HIGH 90 OR ABOVE	1
DAYS WITH HIGH 32 OR BELOW	0
DAYS WITH LOW 32 OR BELOW	2
DAYS WITH LOWS ZERO OR BELOW	0

PRECIPITATION

MONTHLY MEAN	2.12"
DAYS WITH MEASURABLE PRECIPITATION	9
AVERAGE SNOWFALL IN INCHES	1.1"
DAYS WITH 1.0 INCH OF SNOW OR MORE	<1

MISCELLANEOUS AVERAGES

HEATING DEGREE DAYS	265
COOLING DEGREE DAYS	21
WIND SPEED (MPH)	9.3mpn
WIND DIRECTION	South

DAYS WITH THUNDERSTORMS	6
DAYS WITH DENSE FOG	1
PERCENT OF SUNSHINE POSSIBLE	64%

EXTREMES

RECORD HIGH	95 on 5/26/1942
RECORD LOW	19 on 5/3/1907
WARMEST	64.6 in 1934
COLDEST	48.7 in 1917
WETTEST	8.57" in 1876
DRIEST	0.06" In 1974
SNOWIEST	15.5" in 1898
LEAST SNOWIEST	0.0" in numerous years

Sunrise/Sunset (July - December Denver area)

	JAN	FEB	MAR	APR	MAY	JUN	
	SR - SS						
01	0720-0445	0706-0517	0631-0550	0642-0722	0559-0752	0532-0820	01
02	0720-0446	0705-0518	0630-0551	0641-0723	0558-0753	0532-0821	02
03	0720-0447	0704-0520	0628-0552	0639-0724	0556-0754	0532-0822	03
04	0720-0448	0703-0521	0627-0553	0637-0725	0555-0755	0531-0823	04
05	0720-0449	0702-0522	0625-0554	0636-0726	0554-0756	0531-0823	05
06	0720-0449	0701-0523	0624-0555	0634-0727	0553-0757	0531-0824	06
07	0720-0450	0700-0524	0622-0556	0633-0728	0552-0758	0531-0824	07
08	0720-0451	0659-0526	0621-0557	0631-0729	0551-0759	0530-0825	08
09	0720-0452	0658-0527	0619-0558	0630-0730	0550-0800	0530-0826	09
10	0719-0453	0657-0528	0717-0700	0628-0731	0549-0801	0530-0826	10
11	0719-0454	0656-0529	0716-0701	0627-0732	0548-0802	0530-0827	11
12	0719-0456	0654-0530	0714-0702	0625-0733	0547-0803	0530-0827	12
13	0719-0457	0653-0532	0713-0703	0624-0734	0546-0804	0530-0828	13
14	0718-0458	0652-0533	0711-0704	0622-0735	0545-0805	0530-0828	14
15	0718-0459	0651-0534	0710-0705	0621-0736	0544-0806	0530-0828	15
16	0717-0500	0649-0535	0708-0706	0619-0737	0543-0807	0530-0829	16
17	0717-0501	0648-0536	0706-0707	0618-0738	0542-0808	0530-0829	17
18	0717-0501	0647-0537	0705-0708	0616-0739	0541-0809	0530-0829	18
19	0716-0502	0645-0539	0703-0709	0615-0740	0540-0810	0530-0830	19
20	0715-0503	0644-0540	0702-0710	0613-0741	0540-0811	0531-0830	20
21	0715-0504	0643-0541	0700-0711	0612-0742	0539-0812	0531-0830	21
22	0714-0505	0641-0542	0658-0712	0611-0743	0538-0812	0531-0830	22
23	0714-0507	0640-0543	0657-0713	0609-0744	0537-0813	0531-0831	23
24	0713-0508	0639-0544	0655-0714	0608-0745	0537-0814	0532-0831	24
25	0712-0509	0637-0545	0653-0715	0606-0746	0536-0815	0532-0831	25
26	0711-0510	0636-0546	0652-0716	0605-0747	0535-0816	0532-0831	26
27	0711-0511	0634-0548	0650-0717	0604-0748	0535-0817	0533-0831	27
28	0710-0513	0633-0549	0649-0718	0603-0749	0534-0817	0533-0831	28
29	0709-0514		0647-0719	0601-0750	0534-0818	0533-0831	29
30	0708-0515		0645-0720	0600-0751	0533-0819	0534-0831	30
31	0707-0516		0644-0721		0533-0820		31

Snowfall

October 2013 to April 2014

City	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
Aurora (Central)	3.5	3.0	5.4	13.4	2.8	7.0	12.0	47.1
Brighton	2.0	2.4	4.5	15.3	3.1	4.6	4.1	36.0
Broomfield	3.9	3.1	4.5	20.5	3.0	10.2	9.6	54.8
Castle Rock	3.7	1.9	8.3	17.8	3.9	13.3	15.6	64.5
Colo Sprgs Airport	TR	3.9	2.9	14.2	2.0	2.8	7.5	33.3
Denver DIA	1.4	2.0	4.7	14.4	3.2	6.0	5.6	37.3
Denver Downtown	1.7	2.1	5.4	14.6	4.4	7.2	9.5	44.9
Golden	3.6	3.2	10.4	28.8	4.7	11.9	11.1	73.7

Fort Collins	4.1	3.0	6.3	18.1	5.0	4.5	3.2	44.2
Highlands Ranch	3.5	3.3	10.1	22.3	4.7	14.0	16.5	74.4
Lakewood	2.1	2.0	7.0	18.6	3.4	8.6	7.8	49.5
Littleton	2.5	2.2	7.9	20.7	3.3	10.2	10.6	57.4
Parker	3.2	2.7	6.4	17.3	3.0	10.8	11.5	54.9
Sedalia - Hwy 67	4.0	2.6	9.7	17.0	3.2	12.8	14.6	63.9
Thornton	2.9	2.7	6.9	17.9	2.9	7.3	5.0	45.6
Westminster	3.3	3.0	5.9	20.3	3.8	10.1	6.0	52.4
Wheat Ridge	3.0	2.3	9.2	18.5	6.5	8.2	7.1	54.8

Italics = 0.1" of snow was added to Jan as the tail end of a storm produced snowfall after midnight on the 31st. Technically 14.3" of snow accumulated at DIA for Jan and 3.3" for Feb.

Skyview Weather
2350 N Rocky View Rd
Castle Rock, CO 80108

Phone: (303) 688-9175
Fax: (303) 380-3338

E-mail: Tim@SkyviewWeather.com
On the web at www.SkyviewWeather.com

Copyright 2014 Skyview Weather