

The Weather Wire

March 2011

Volume 18 Number 3

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Colorado Snowpack

Although areas of the Front Range including the I-25 corridor and eastern Colorado have been experiencing below normal precipitation and snow this winter the Mountains have fared much better. If you have been up skiing you have likely hit a good powder day or experienced some slow traffic on I-70 due to falling snow. Snow storms have been numerous in the high country producing above normal snow for many mountain ranges that feed our river systems. The spring and summer runoff from the winter snows here in the state not only provide water for people here in Colorado but many other states as well. There is more water trapped in snow currently in the Colorado Mountains than Denver receives in an entire year and in some cases more than 2 years. One SNOTEL station in the Yampa and White river basin named "Tower" is currently reporting over 46" of snow water equivalent (SWE) which is nearly 3 years of normal precipitation in Denver locked away as snow to feed the streams this coming summer. Remember these SNOTEL sites are places where we can actually get information and they are far and few between. There are surely places tucked away in our high Country that have even more water stored away.

It is pretty much a lock at this point in the season that most if not all Colorado's river systems will end up with above normal snowfall. This should pay dividends in more than just the water stored in our reservoirs alone as there will be many tourists traveling to the state this summer expecting high water in our rivers for rafting and fisherman hoping to catch the "big" one, plus the wonderful scenery that our river valleys provided against the backdrop of snow covered peaks. Below is an SWE table taken from NRCS at: http://www.co.nrcs.usda.gov/snow/snow/snow_all.html

Colorado SNOTEL Snow/Precipitation Update Report

Valid: Saturday, March 5, 2010

River Basin	Snow Water Equivalent			Year to Date Precip		
	Current (in)	Avg(in)	% of Avg	Current(in)	Avg(in)	% of Avg
COLORADO RIVER						
BEAVER CK VILLAGE	11.0	9.6	115.0	13.0	12.1	107
BERTHOUD SUMMIT	18.8	14.8	127.0	24.7	18.3	135
COPPER MOUNTAIN	16.2	11.5	141.0	18.0	13.1	137
HOOSIER PASS	14.2	12.1	117.0	14.4	12.2	118
INDEPENDENCE PASS	16.9	13.6	124.0	16.8	14.8	114
STILLWATER CREEK	10.8	7.5	144.0	12.6	8.4	150
VAIL MOUNTAIN	19.1	17.5	109.0	20.0	17.7	113
WILLOW CREEK PASS	15.9	9.9	161.0	14.9	10.7	139
Basin-wide % of average			126.0			124
SOUTH PLATTE RIVER						
BEAR LAKE	17.8	13.7	130.0	20.3	16.0	127
ECHO LAKE	4.1	7.2	57.0	7.5	8.8	85
HOOSIER PASS	14.2	12.1	117.0	14.4	12.2	118
LOVELAND BASIN	21.8	13.3	164.0	20.3	14.2	143
NIWOT	11.3	10.1	112.0	14.0	11.4	123
ROUGH AND TUMBLE	3.4	8.3	41.0	5.1	8.4	61
WILLOW PARK	21.5	14.4	149.0	27.1	17.9	151
Basin-wide % of average			121.0			128
ARKANSAS RIVER						
BRUMLEY	11.6	8.1	143.0	13.1	10.9	120
FREMONT PASS	16.7	13.3	126.0	15.9	12.7	125
PORPHYRY CREEK	15.6	13.1	119.0	13.9	12.4	112
SOUTH COLONY	10.3	15.1	68.0	12.5	19.4	64
WHISKEY CK	7.6	8.5	89.0	9.0	12.6	71
Basin-wide % of average			101			95

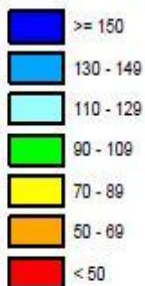
Selected locations have been chosen in the river basins most frequented by Front Range residents. The three columns to the left show the snow water equivalent or (SWE) currently compared to average. The water locked away is more important than the snow depth which is what is commonly reported by our ski resorts.

For those of you who like a more visual perspective of the state's current snowpack conditions here is a map below which can be found at: [p://ftp-fc.sc.egov.usda.gov/CO/Snow/snow/watershed/daily/co_update_snow.pdf](http://ftp-fc.sc.egov.usda.gov/CO/Snow/snow/watershed/daily/co_update_snow.pdf)

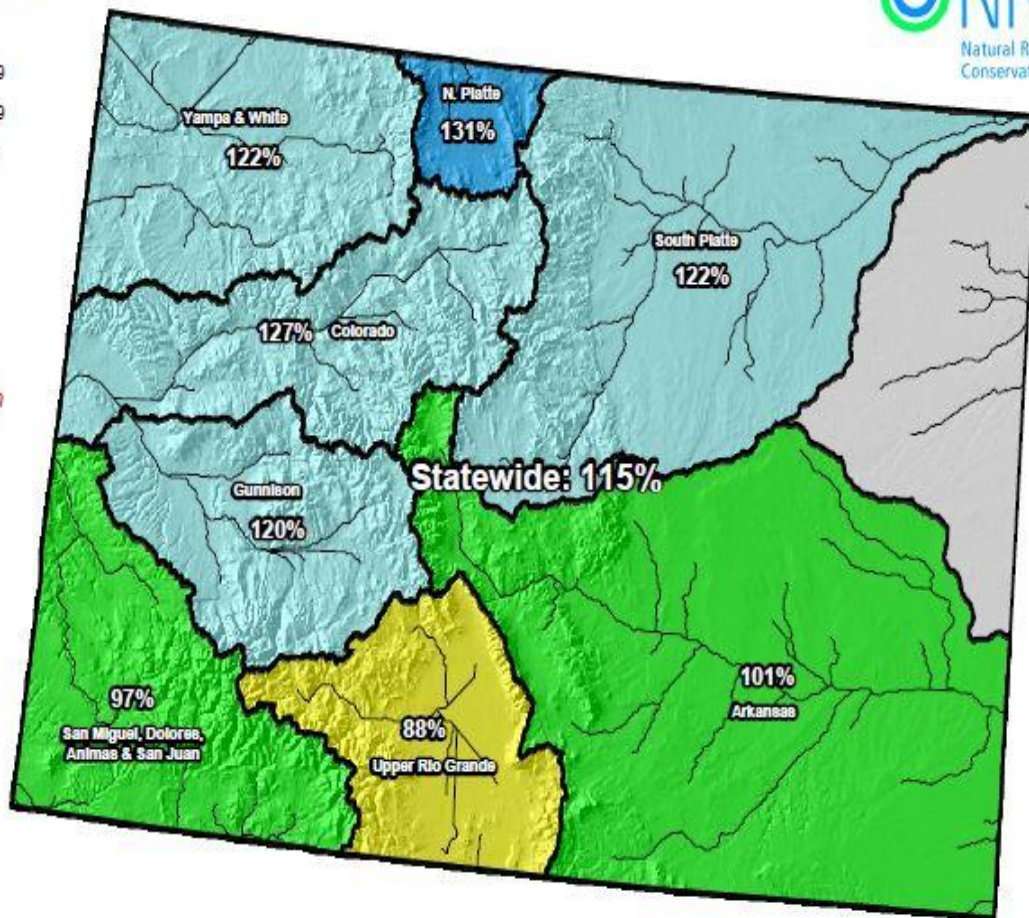
Colorado SNOTEL Snowpack Update Map



Percent of Average



*Provisional Data
Subject to Revision*



Current as of Mar 04, 2011

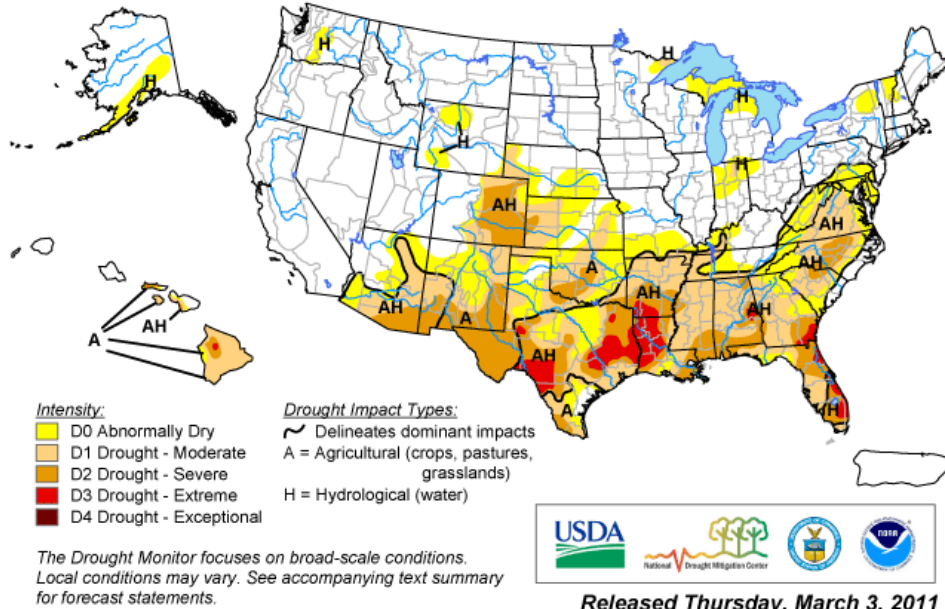
*Data may not provide a valid measure of conditions

Drought Update

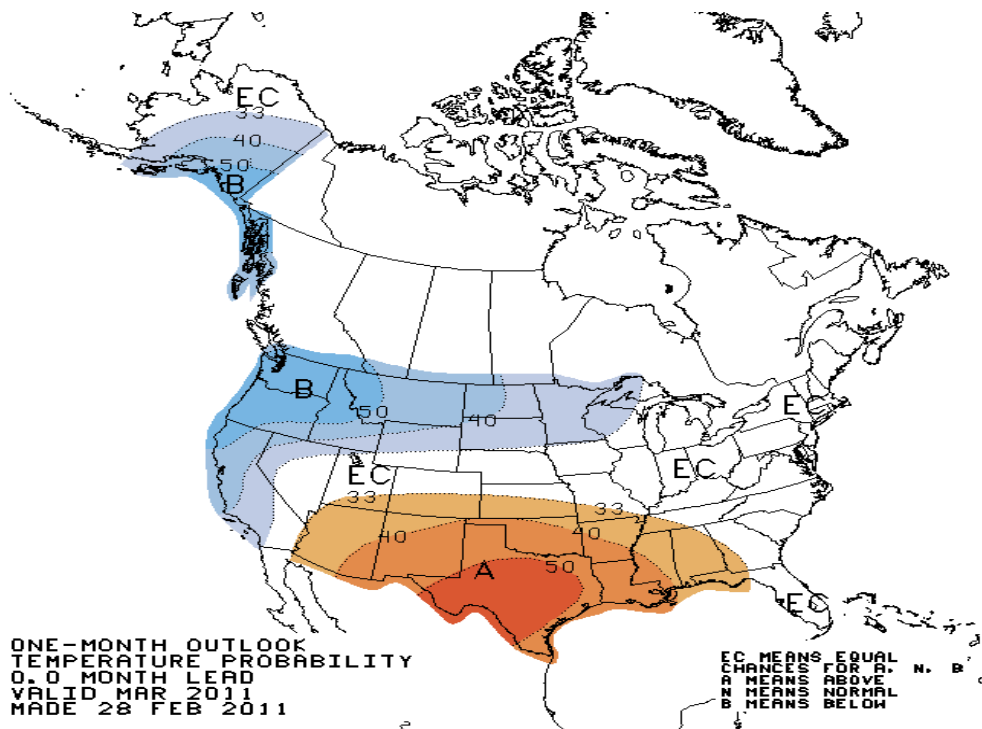
Dry conditions since mid August have brought drought conditions to eastern Colorado which is growing more severe each month.

U.S. Drought Monitor

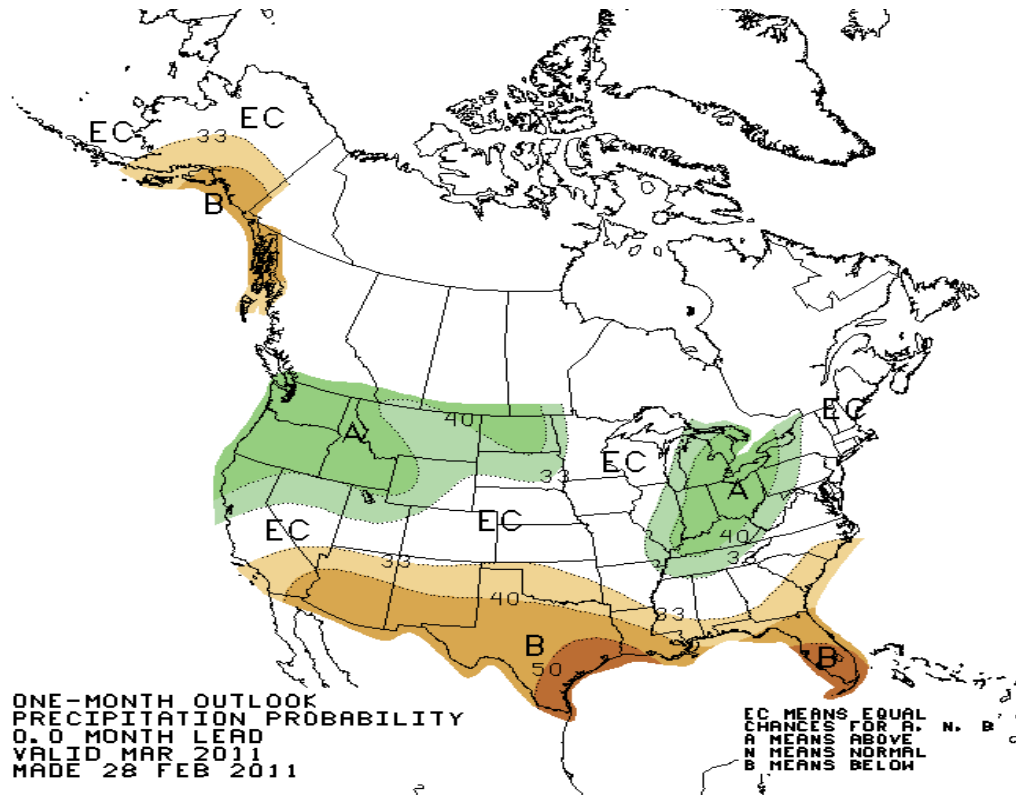
March 1, 2011
Valid 7 a.m. EST



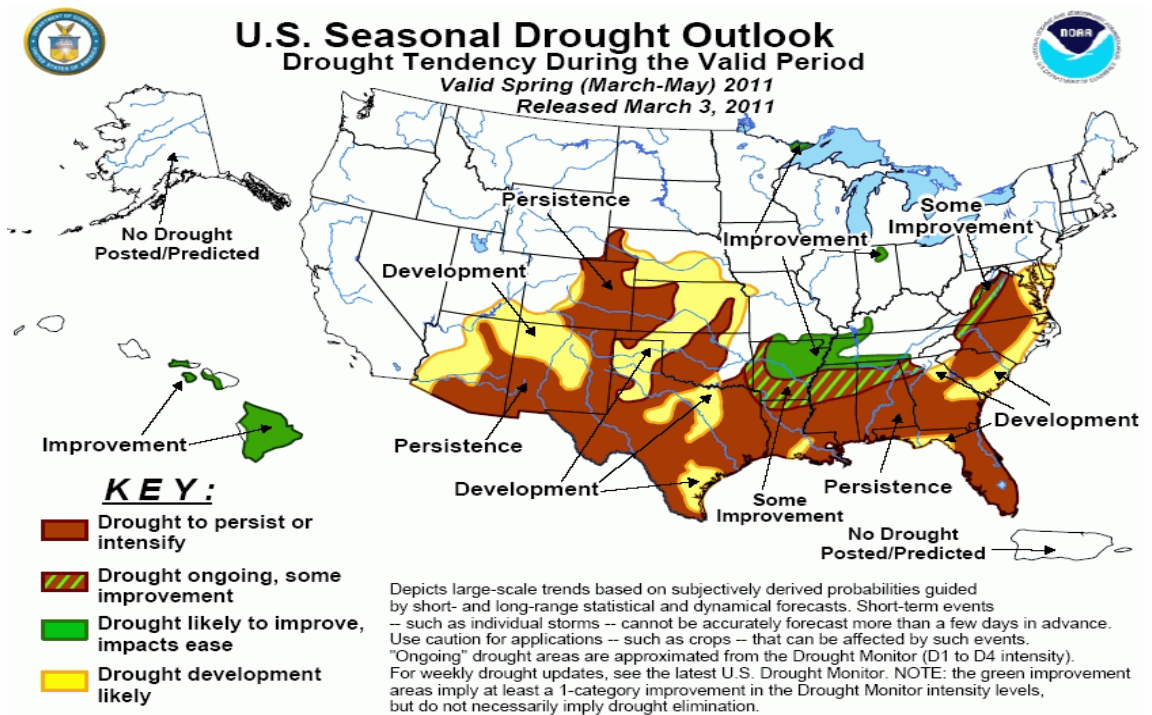
The map below shows forecasted temperature deviances for March 2011. As can be seen, normal temperatures are expected for northern Colorado, with above normal temperatures expected in southern Colorado.



The map below shows forecasted precipitation deviances for March 2011. Normal precipitation amounts are expected Colorado for the month.



More widespread areas of drought are expected to persist or intensify across eastern Colorado.



February Summary

February of 2011 was well below normal in temperatures and just slightly below normal in precipitation and snowfall. The month started out very cold with a couple of arctic outbreaks which resulted in 2 record low maximum temperatures set on the 1st and 8th of the month. Not surprising, most of the snow fell in the first half of the month with some Denver suburbs experiencing above normal snowfall. However, at DIA only 5.3" of snow was recorded resulting in a 1" deficit and now 21.5" below normal on the winter season. Total precipitation was not that far off with 0.42" compared to 0.49", a departure of 0.7". Most of the precipitation and snow fell from the 7-8th with 2.6" at DIA with double to triple that amount in the suburbs. Some of the temperature extremes were a high of 67 on the 16th and a low of -17 on the 2nd. There were 6 days with a minimum temperature below zero, about 21% of the days during the month. If you thought it was a little more windy than normal, you're right. The average wind speed was 10.6mph for the month, 8.8mph is normal. There were not any thunderstorms observed with 5 days of fog with visibility of ¼ mile or less.

February Stats

TEMPERATURE (IN DEGREES F)

AVERAGE MAX	43.4	NORMAL 47.2	DEPARTURE -3.8
AVERAGE MIN	14.7	NORMAL 19.1	DEPARTURE -4.4
MONTHLY MEAN	29.0	NORMAL 33.2	DEPARTURE -4.2
HIGHEST	67 on the 16 th		
LOWEST	-17 on the 2 nd		

DAYS WITH MAX 90 OR ABOVE	0	NORMAL	0
DAYS WITH MAX 32 OR BELOW	7	NORMAL	4.3
DAYS WITH MIN 32 OR BELOW	25	NORMAL	26
DAYS WITH MIN ZERO OR BELOW	6	NORMAL	0.3

TEMPERATURE RECORDS

-1 for a high on the 1st broke the record low maximum temperature of 2 degrees set back in 1985. There was another record tying low maximum temperature of 8 degrees on the 8th.

HEATING DEGREE DAYS

MONTHLY TOTAL	999	NORMAL 892	DEPARTURE 107
SEASONAL TOTAL	4151	NORMAL 4489	DEPARTURE -338

COOLING DEGREE DAYS

MONTHLY TOTAL	0	NORMAL 0	DEPARTURE 0
YEARLY TOTAL	0	NORMAL 0	DEPARTURE 0

PRECIPITATION (IN INCHES)

MONTHLY TOTAL	0.42	NORMAL	0.49	DEPARTURE	-0.7
YEARLY TOTAL	1.02	NORMAL	1.00	DEPARTURE	0.02
GREATEST IN 24 HOURS	0.19" from 2/7/2011-2/8/2011				
DAYS WITH MEASURABLE PRECIP.					5

SNOWFALL (IN INCHES)

MONTHLY TOTAL	5.3	NORMAL	6.3	DEPARTURE	-1.0
SEASONAL TOTAL	18.1	NORMAL	39.6	DEPARTURE	-21.5
GREATEST IN 24 HOURS	2.6" on the 7th through 8th				
GREATEST DEPTH	NA				

WIND (IN MILES PER HOUR)

AVERAGE SPEED	10.6 mph
PEAK WIND GUST	46 mph from the North

MISCELLANEOUS WEATHER

NUMBER OF DAYS WITH THUNDERSTORM	0	NORMAL	<1
NUMBER OF DAYS WITH HEAVY FOG	5	NORMAL	1
NUMBER OF DAYS WITH HAIL	0		
NUMBER OF SUNNY DAYS	6		
NUMBER OF PARTLY CLOUDY DAYS	19		
NUMBER OF CLOUDY DAYS	3		
AVERAGE RELATIVE HUMIDITY	52%		

March Preview

March is a transition month from winter to spring as there are frequent and rapid changes in the weather. March is well known for its "BIG" snow storms and should be as it is the snowiest month for the Denver area with 11.7" of snow on average. Some of the greatest snow storms in Denver history have occurred during the month of March. Most recently March of 2003 recorded the 2nd largest snow in Denver history with 31.8" of snow measured at the Stapleton site from the 17th to the 20th. March of 2003 became the snowiest March ever recorded in Denver with 35.2" total. Average highs for the month climb into the 50's with average lows in the mid 20's. The temperature extremes for the month range from a record high of 84 degrees to a record low of -11 degrees for a temperatures spread of 95 degrees! Referring to normal or average in March may be a little misleading as we are typically much warmer or colder with fast changing weather conditions. March of 2011 is expected to produce near normal snowfall with 3-5 storms, but hopes are high for above normal snow which is needed to make up for a deficit of nearly 22" of snow since last October.

DENVER'S NOVEMBER CLIMATOLOGICALLY NORMAL (NORMAL PERIOD 1971-2000)

TEMPERATURE

AVERAGE HIGH	53.7
AVERAGE LOW	25.4
MONTHLY MEAN	39.6
DAYS WITH HIGH 90 OR ABOVE	0
DAYS WITH HIGH 32 OR BELOW	3
DAYS WITH LOW 32 OR BELOW	24
DAYS WITH LOWS ZERO OR BELOW	1

PRECIPITATION

MONTHLY MEAN	1.28"
DAYS WITH MEASURABLE PRECIPITATION	9
AVERAGE SNOWFALL IN INCHES	11.7"
DAYS WITH 1.0 INCH OF SNOW OR MORE	4

MISCELLANEOUS AVERAGES

HEATING DEGREE DAYS	788
COOLING DEGREE DAYS	0
WIND SPEED (MPH)	9.7 mph
WIND DIRECTION	South
DAYS WITH THUNDERSTORMS	Less than 1
DAYS WITH DENSE FOG	1
PERCENT OF SUNSHINE POSSIBLE	69%

EXTREMES

RECORD HIGH	77 on 2/28/2006 and 2/4/1890
RECORD LOW	-25 on 2/1/1951 and 2/8/1936
WARMEST	43.7 in 1954
COLDEST	17.6 in 1899

WETTEST
 DRIEST
 SNOWIEST
 LEAST SNOWIEST

2.01" in 1934
 0.01" in 1970
 22.1" in 1912
 Trace in 2009

Sunrise/Sunset (Jan - June Denver area)

	JAN	FEB	MAR	APR	MAY	JUN	
	Sr - Ss	Sr - Ss	Sr - Ss	Sr - Ss	Sr - Ss	Sr - Ss	
01	0721-0446	0707-0518	0633-0550	0644-0722	0600-0753	0534-0821	01
02	0721-0447	0707-0519	0631-0551	0642-0723	0559-0754	0533-0821	02
03	0721-0447	0706-0520	0630-0552	0641-0724	0558-0755	0533-0822	03
04	0721-0448	0705-0521	0628-0553	0639-0725	0557-0756	0533-0823	04
05	0721-0449	0704-0522	0627-0555	0638-0726	0556-0757	0532-0823	05
06	0721-0450	0703-0524	0625-0556	0636-0727	0554-0758	0532-0824	06
07	0721-0451	0701-0525	0624-0557	0635-0728	0553-0759	0532-0825	07
08	0721-0452	0700-0526	0622-0558	0633-0729	0552-0800	0532-0825	08
09	0720-0453	0659-0527	0621-0559	0631-0730	0551-0801	0531-0826	09
10	0720-0454	0658-0528	0619-0600	0630-0731	0550-0801	0531-0826	10
11	0720-0455	0657-0530	0618-0601	0628-0732	0549-0802	0531-0827	11
12	0720-0456	0656-0531	0616-0602	0627-0733	0548-0803	0531-0827	12
13	0719-0457	0655-0532	0714-0703	0625-0734	0547-0804	0531-0828	13
14	0719-0458	0653-0533	0713-0704	0624-0735	0546-0805	0531-0828	14
15	0719-0459	0652-0534	0711-0705	0622-0736	0545-0806	0531-0829	15
16	0718-0500	0651-0535	0710-0706	0621-0737	0544-0807	0531-0829	16
17	0718-0500	0650-0537	0708-0707	0619-0738	0543-0808	0531-0830	17
18	0717-0501	0648-0538	0706-0708	0618-0739	0543-0809	0531-0830	18
19	0717-0503	0647-0539	0705-0709	0617-0741	0542-0810	0531-0830	19
20	0716-0504	0646-0540	0703-0710	0615-0742	0541-0811	0532-0830	20
21	0716-0505	0644-0541	0702-0711	0614-0743	0540-0812	0532-0831	21
22	0715-0506	0643-0542	0700-0712	0612-0744	0539-0813	0532-0831	22
23	0715-0507	0641-0543	0658-0713	0611-0745	0539-0814	0532-0831	23
24	0714-0508	0640-0545	0657-0714	0610-0746	0538-0814	0532-0831	24
25	0713-0509	0639-0546	0655-0715	0608-0747	0537-0815	0533-0831	25
26	0712-0511	0637-0547	0654-0716	0607-0748	0537-0816	0533-0831	26
27	0712-0512	0636-0548	0652-0717	0605-0749	0536-0817	0533-0832	27
28	0711-0513	0634-0549	0650-0718	0604-0750	0536-0818	0534-0832	28
29	0710-0514		0649-0719	0603-0751	0535-0818	0534-0832	29
30	0709-0515		0647-0720	0602-0752	0535-0819	0535-0832	30
31	0708-0517		0646-0721		0534-0820		31

Snowfall

Sept 2010 to May 2011

City	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Aurora (Central)	0.0	0.0	3.3	3.0	8.8	10.0				25.1
Brighton	0.0	0.0	0.7	4.0	6.6	5.4				16.7
Broomfield	0.0	0.0	1.6	4.1	8.9	10.5				25.1
Castle Rock 4 NE	0.0	0.0	4.4	4.0	8.1	13.0				29.5
Colo Sprgs Airport	0.0	0.0	0.2	4.0	1.5	2.5				8.2
Denver DIA	0.0	0.0	1.5	3.3	8.0	5.3				18.1
Denver Downtown	0.0	0.0	3.1	4.2	11.0	11.9				30.2
Golden	0.0	0.0	1.7	8.1	13.8	15.5				39.1
Fort Collins	TR	0.0	5.0	4.3	6.0	6.3				21.6
Highlands Ranch	0.0	0.0	1.5	5.8	11.6	14.5				33.4
Lakewood	0.0	0.0	1.1	3.5	8.7	10.6				23.9
Littleton	0.0	0.0	0.2	5.5	10.5	15.0				31.2
Parker	0.0	0.0	4.9	2.5	9.6	11.7				28.7
Sedalia - Hwy 67	0.0	0.0	5.0	4.0	9.3	12.8				31.1
Thornton	0.0	0.0	0.6	4.7	8.1	7.3				20.7
Westminster	0.0	0.0	2.0	4.6	10.9	11.2				28.7
Wheatridge	0.0	0.0	1.5	5.7	11.4	15.5				34.1



February 8, 2011 Parker, CO



February 25, 2011 Castle Rock, CO

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

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