

# The Weather Wire

January 2011

Volume 18 Number 1

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## A New Year

If you like the snow you are probably ready for a new calendar year as the start of the 2010-2011 winter season provided little in the way of snowfall and above normal temperatures for the Front Range. In September and October of 2010 there was not any snowfall at all at lower elevations; while this is not exceptionally rare what is rare is to follow a dry October with very little snowfall in November continuing into December. December would have been the second driest on record with only a trace of snow were it not for the last couple days of the month when we finally got a meaningful snow storm here along the Front Range which helped out the December snow totals. Below is a table showing precipitation and snowfall versus normal for selected Cities along the Front Range:

<b>September</b>	<b>Boulder</b>	<b>Castle Rock</b>	<b>Colo Sprgs</b>	<b>Denver</b>	<b>Ft Collins</b>
Normal Precip	1.61	1.15	1.21	1.14	1.26
2010 Precip	0.24	0.00	0.09	0.06	0.06
Normal Snow	1.50	0.70	0.90	2.10	0.50
2010 Snow	0.00	0.00	0.00	0.00	0.00
<b>October</b>	<b>Boulder</b>	<b>Castle Rock</b>	<b>Colo Sprgs</b>	<b>Denver</b>	<b>Ft Collins</b>
Normal Precip	1.30	1.01	0.80	0.99	1.13
2010 Precip	1.11	0.24	0.43	0.54	0.87
Normal Snow	5.00	4.20	3.10	4.10	3.00
2010 Snow	0.00	0.00	0.00	0.00	0.00
<b>November</b>	<b>Boulder</b>	<b>Castle Rock</b>	<b>Colo Sprgs</b>	<b>Denver</b>	<b>Ft Collins</b>
Normal Precip	1.21	0.85	0.47	0.98	0.59
2010 Precip	0.46	0.31	0.07	0.49	0.70
Normal Snow	13.30	7.90	5.20	10.70	6.50
2010 Snow	2.10	4.40	0.20	1.50	5.00

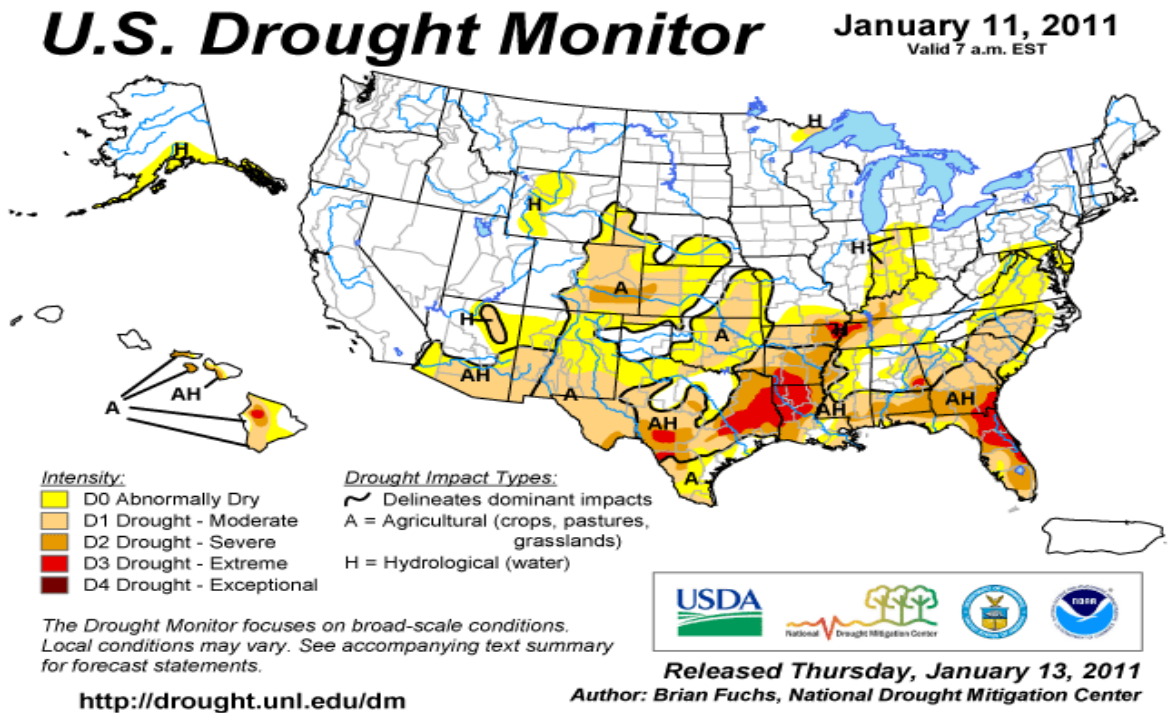
<b>December</b>	<b>Boulder</b>	<b>Castle Rock</b>	<b>Colo Sprgs</b>	<b>Denver</b>	<b>Ft Collins</b>
Normal Precip	0.67	0.60	0.32	0.63	0.49
2010 Precip	0.49	0.18	0.07	0.22	0.22
Normal Snow	10.20	8.70	5.10	8.70	6.70
2010 Snow	9.50	5.30	4.00	3.30	4.30
<i>Italics = Trace</i>					
<b>Totals (sept - Dec 2010)</b>					
<b>Normal Precip</b>	4.79	3.61	2.80	3.74	3.47
<b>Actual Precip</b>	2.30	0.73	0.66	1.31	1.85
<b>Difference (-)</b>	2.49	2.88	2.14	2.43	1.62
<b>% of Normal</b>	48.02	20.22	23.57	35.03	53.31
<b>Normal Snow</b>	30.00	21.50	14.30	25.60	16.70
<b>Actual Snow</b>	11.60	9.70	4.20	4.80	9.30
<b>Difference (-)</b>	18.40	11.80	10.10	20.80	7.40
<b>% of Normal</b>	38.67	45.12	29.37	18.75	55.69

By looking at the numbers northern Colorado has had more precipitation with around 50% of normal precipitation in Boulder and in Fort Collins. From the Denver areas southward only 20-35% of normal precipitation has fallen. The snow totals vary with location with the Denver area only receiving around 19% of normal snow so far this year. Fort Collins has fared the best with over 50% of normal snowfall. These numbers would have been significantly lower without the snow on the last couple days of December.

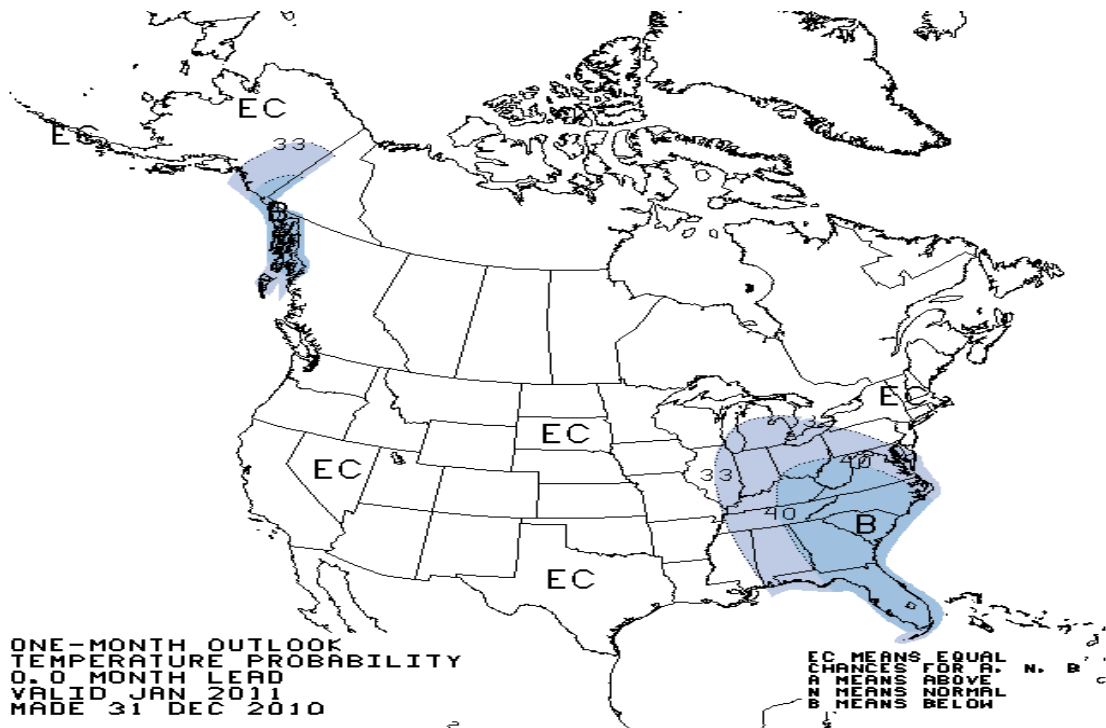
Just in the last couple weeks has the weather pattern changed allowing for the jet stream to drop further south and bring meaningful snow to the Front Range. This pattern change is more typical of January with arctic air masses making a visit to the eastern plains with a bout of snow then a lengthy dry period between systems with pleasant weather but cool temperatures. This more "normal" weather pattern for the time of year will likely continue through the remaining winter and spring months with precipitation closer to normal. However, damage has already been done as of the 1<sup>st</sup> of January DIA is over 20" below normal snowfall and many other Front Range locations share a similar deficit. Although it is unlikely that the deficit will be made up, it will likely not get much worse either.

## Drought Update

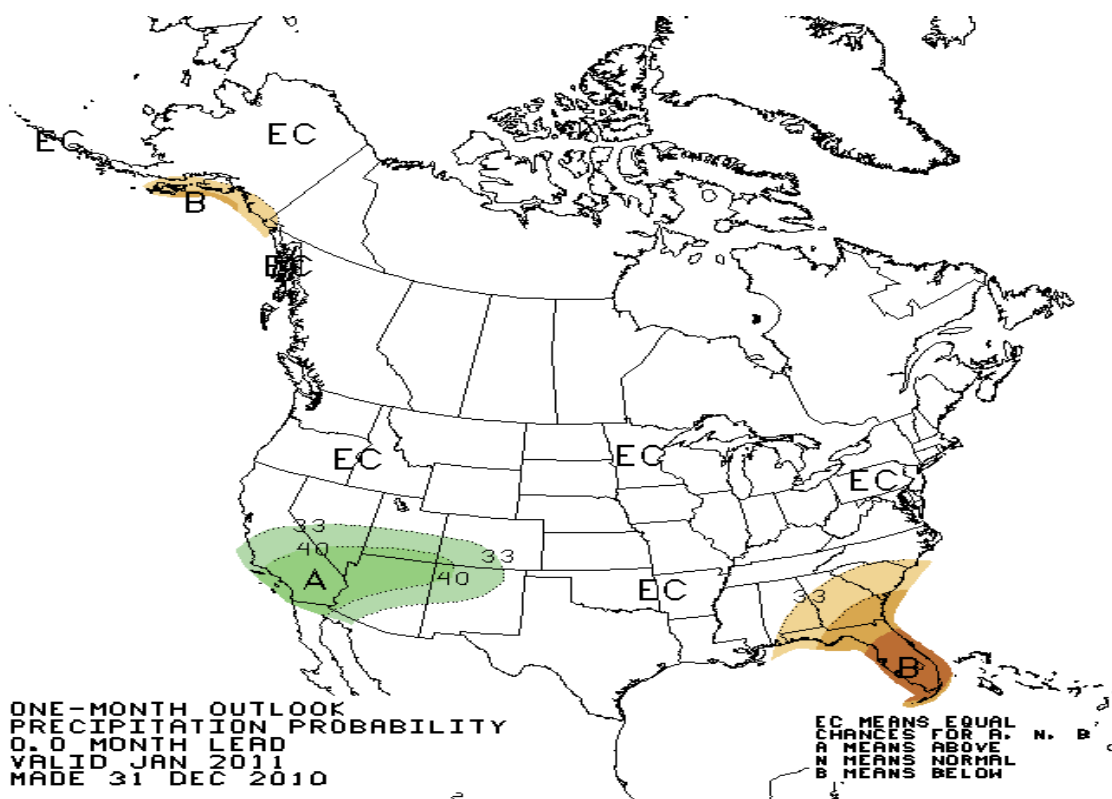
Dry conditions since mid August have brought drought conditions to eastern Colorado which is growing more severe each month.



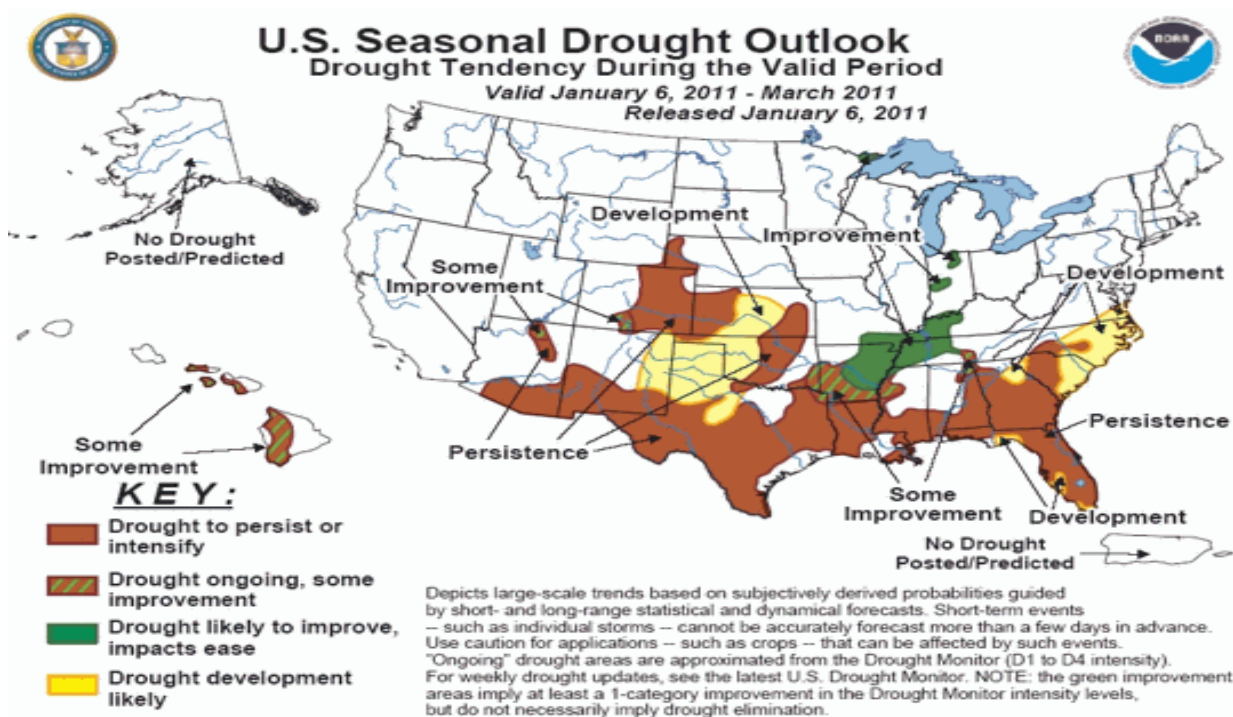
The map below shows forecasted temperature deviances for January 2011. As can be seen, normal temperatures are expected for much of Colorado for the month.



The map below shows forecasted precipitation deviances for January 2011. Normal precipitation amounts are expected across most of Colorado, with the southwestern portion of Colorado likely seeing above normal precipitation.



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



## December Summary

2010 ended warm and dry with above normal temperatures and below normal precipitation. The average high for the month was 48.9 degrees, a whopping 4.8 degrees above normal. Average lows were 19.6 degrees, 3.2 degrees above normal. These two combined resulted in a monthly mean temperature of 34.3 which is 4.0 degrees above normal. Not surprising that there were 2 record highs tied or broken on the 3rd and again on the 14th with 69 and 70 degrees respectively. December of 2010 would have gone down as the driest on record had it not been for the snow storm the last two days of the month. Only 3.3" was measured at DIA from that storm which was the monthly total. For the season the snow deficit now stands at 20.8" below normal with only 4.8" so far this year at DIA.

## December Stats

### TEMPERATURE (IN DEGREES F)

AVERAGE MAX	48.9	NORMAL 44.1	DEPARTURE 4.8
AVERAGE MIN	19.6	NORMAL 16.4	DEPARTURE 3.2
MONTHLY MEAN	34.3	NORMAL 30.3	DEPARTURE 4.0
HIGHEST	70	on the 14th	
LOWEST	0	on the 31st	
DAYS WITH MAX 90 OR ABOVE	0	NORMAL	0
DAYS WITH MAX 32 OR BELOW	2	NORMAL	5.3
DAYS WITH MIN 32 OR BELOW	28	NORMAL	29.2
DAYS WITH MIN ZERO OR BELOW	1	NORMAL	2.8

### TEMPERATURE RECORDS

Tied Record High of 69 degrees on the 3rd, New Record High of 70 on the 14th

### HEATING DEGREE DAYS

MONTHLY TOTAL	944	NORMAL 1078	DEPARTURE -134
SEASONAL TOTAL	2072	NORMAL 2486	DEPARTURE -414

### COOLING DEGREE DAYS

MONTHLY TOTAL	0	NORMAL 0	DEPARTURE 0
YEARLY TOTAL	870	NORMAL 696	DEPARTURE 174

### PRECIPITATION (IN INCHES)

MONTHLY TOTAL	0.22	NORMAL 0.63	DEPARTURE -0.41
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YEARLY TOTAL	11.87	NORMAL 15.96	DEPARTURE -3.09
GREATEST IN 24 HOURS	0.21" from 12/30 to 12/31		
DAYS WITH MEASURABLE PRECIP.	2		

### SNOWFALL (IN INCHES)

MONTHLY TOTAL	3.3	NORMAL 8.7	DEPARTURE -5.4
SEASONAL TOTAL	4.8	NORMAL 25.6	DEPARTURE -20.8
GREATEST IN 24 HOURS	2.2" on the 30th through 31st		
GREATEST DEPTH	NA		

### WIND (IN MILES PER HOUR)

AVERAGE SPEED	8.7 mph
PEAK WIND GUST	40 mph from the south

### MISCELLANEOUS WEATHER

NUMBER OF DAYS WITH THUNDERSTORM	0	NORMAL	0
NUMBER OF DAYS WITH HEAVY FOG	2	NORMAL	1
NUMBER OF DAYS WITH HAIL	0		
NUMBER OF SUNNY DAYS	1		
NUMBER OF PARTLY CLOUDY DAYS	26		
NUMBER OF CLOUDY DAYS	4		
AVERAGE RELATIVE HUMIDITY	50%		

## January Preview

January is the coldest month of the year along the Front Range and it is also the 2nd driest with only 0.51" on average. It is typical for every night to fall below freezing and the coldest temperature ever recorded in Denver history occurred in 1875 when the mercury fell to -29 below zero. Even though the month is cold there is typically only a hand full of storms during the month with 7.7" of snow on average. The snow that falls in January is very dry and powdery with liquid to snow ratios of 20:1 or more. January of 2011 is expected to produce near normal temperatures with near normal to slightly above normal snowfall and 3 storms likely for the month.

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

#### TEMPERATURE

AVERAGE HIGH	43.2
AVERAGE LOW	15.2
MONTHLY MEAN	29.2
DAYS WITH HIGH 90 OR ABOVE	0
DAYS WITH HIGH 32 OR BELOW	7
DAYS WITH LOW 32 OR BELOW	30
DAYS WITH LOWS ZERO OR BELOW	4

#### PRECIPITATION

MONTHLY MEAN	0.51"
DAYS WITH MEASURABLE PRECIPITATION	6
AVERAGE SNOWFALL IN INCHES	7.7"
DAYS WITH 1.0 INCH OF SNOW OR MORE	2

#### MISCELLANEOUS AVERAGES

HEATING DEGREE DAYS	1111
COOLING DEGREE DAYS	0
WIND SPEED (MPH)	8.6 mph
WIND DIRECTION	South
DAYS WITH THUNDERSTORMS	Less than 1
DAYS WITH DENSE FOG	1
PERCENT OF SUNSHINE POSSIBLE	71%

#### EXTREMES

RECORD HIGH	76 on 1/27/1888
RECORD LOW	-29 on 1/9/1875
WARMEST	40.3 in 1986
COLDEST	16.9 in 1930
WETTEST	2.35" in 1883
DRIEST	0.01" in 1933, 1934, 1952
SNOWIEST	24.3" in 1992
LEAST SNOWIEST	TR in 1934, 2003



## Sunrise/Sunset (Jan - June Denver area)

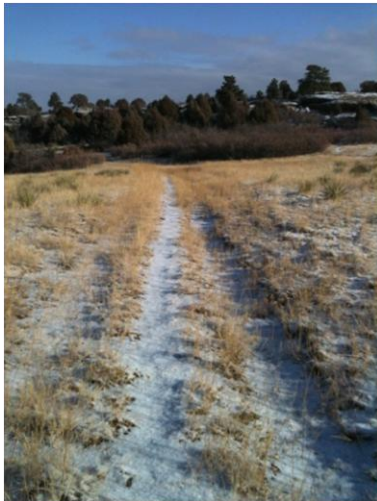
	JAN	FEB	MAR	APR	MAY	JUN	
	sr - ss	sr - ss	sr - ss	sr - ss	sr - ss	sr - ss	
01	0721-0446	0707-0518	0633-0550	0644-0722	0600-0753	0534-0821	01
02	0721-0447	0707-0519	0631-0551	0642-0723	0559-0754	0533-0821	02
03	0721-0447	0706-0520	0630-0552	0641-0724	0558-0755	0533-0822	03
04	0721-0448	0705-0521	0628-0553	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						6.3
Brighton	0.0	0.0	0.7	4.0						4.7
Broomfield	0.0	0.0	1.6	4.1						5.7
Castle Rock 4 NE	0.0	0.0	4.4	4.0						8.4
Colo Sprgs Airport	0.0	0.0	0.2	4.0						4.2
Denver DIA	0.0	0.0	1.5	3.3						4.8
Denver Downtown	0.0	0.0	3.1	4.2						7.3
Golden	0.0	0.0	1.7	8.1						9.8
Fort Collins	TR	0.0	5.0	4.3						9.3
Highlands Ranch	0.0	0.0	1.5	5.8						7.3
Lakewood	0.0	0.0	1.1	3.5						4.6
Littleton	0.0	0.0	0.2	5.5						5.7
Parker	0.0	0.0	4.9	2.5						7.4
Sedalia - Hwy 67	0.0	0.0	5.0	4.0						9.0
Thornton	0.0	0.0	0.6	4.7						5.3
Westminster	0.0	0.0	2.0	4.6						6.6
Wheatridge	0.0	0.0	1.5	5.7						7.2



Dec 17, 2010 near Franktown, CO



December 31, 2010 Castle Rock, CO

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