

The Weather Wire

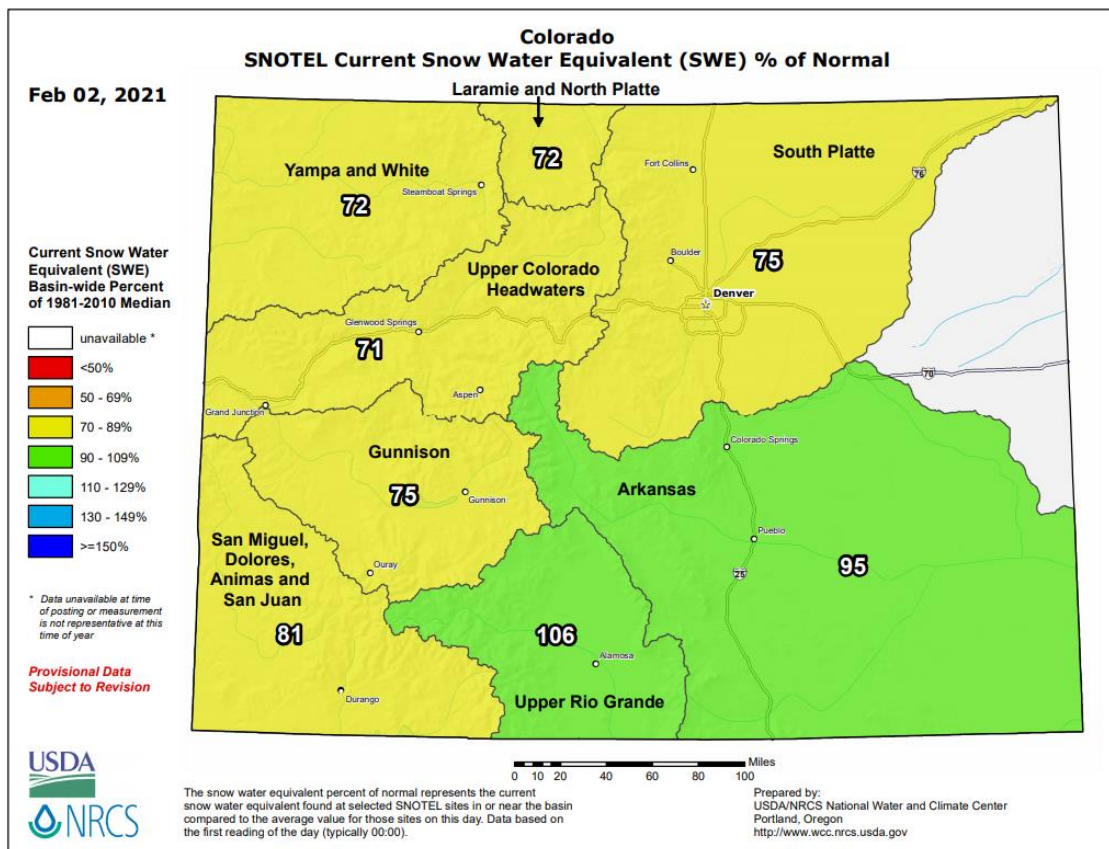
February 2021

Volume 28 Number 2

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Updated Colorado Snowpack Map



Snowpack over the state remains below normal in most areas with the exception being the upper Rio Grande River drainage with the Arkansas River drainage not far behind at 95% of normal. Most of the state where people get their water from in the Denver Metro area is between 71-75% of normal over the Colorado and South Platte River drainages.

February vs March Snowfall past 5 years

March is known to be our biggest snow month historically as we average more snow during the month of March than any other month in Denver's history. If you moved here just recently though (In the past 5 years) one might question whether or not March really is our snowiest month here in Denver... And there is some data to back it up. Below are snow totals for selected locations during the months of February and March over the past 5 years showing a trend towards more snow in February?

Location	February	March	Differential (Feb-Mar)	Year
Aurora/Eaglecrest	11.3	19.7	-8.4	2016
	2.2	1.5	0.7	2017
	11.2	13.5	-2.3	2018
	13.2	19.3	-6.1	2019
	26.4	11.0	15.4	2020
Average	12.9	13.0		
Boulder South	22.0	30.6	-8.6	2016
	9.9	TR	9.9	2017
	16.6	6.7	9.9	2018
	12.8	16.2	-3.4	2019
	37.3	16.8	20.5	2020
Average	19.7	14.1		
DIA	11.8	18.4	-6.6	2016
	1.6	TR	1.6	2017
	6.2	4.8	1.4	2018
	13.4	12.9	0.5	2019
	16.5	7.5	9	2020
Average	9.9	8.7		
Fort Collins	14.5	20.3	-5.8	2016
	4.0	0.0	4	2017
	13.5	0.1	13.4	2018
	3.8	11.7	-7.9	2019
	13.9	4.3	9.6	2020
Average	9.9	7.3		
Littleton	15.0	25.1	-10.1	2016
	4.5	TR	4.5	2017
	11.0	8.8	2.2	2018
	15.5	12.3	3.2	2019
	27.6	9.0	18.6	2020
Average	14.7	11.0		
Westminster	15.0	28.1	-13.1	2016
	3.0	0.0	3	2017
	11.2	7.1	4.1	2018
	9.1	13.6	-4.5	2019
	23.5	8.7	14.8	2020
Average	12.4	11.5		

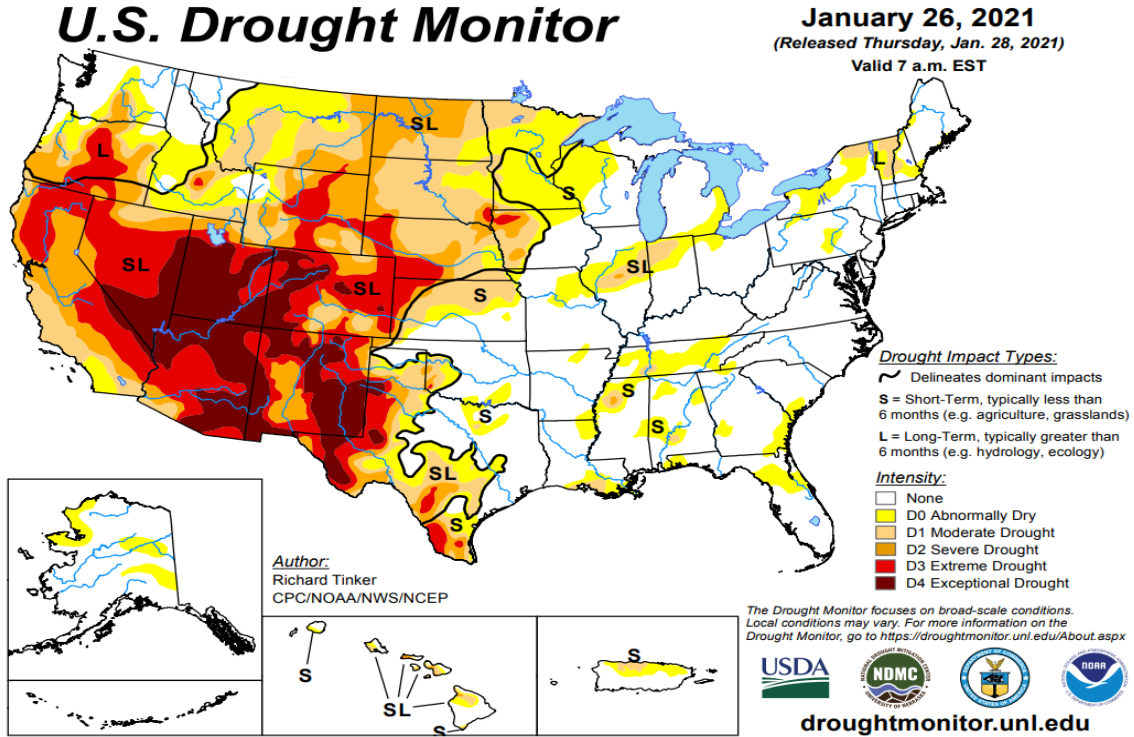
Sure enough, over the past 5 years some locations have indeed experienced more snow during the month of February than during the month of March but the trend is not as strong as I would have thought. Maybe people have short memories and we remember last winter more clearly than the previous 4 winters? 5 years does NOT make a trend as Aurora/Eaglecrest and much of SE Denver Metro area for that matter actually had more snow on average in March than February, mainly due to an outlier year in 2016 however. The trend of more snow in February versus March seems to be more prominent over the western Denver suburbs and in particular from the City of Boulder northward where Boulder and Fort Collins have some of the higher spreads between average February and March snowfall since 2016.

Weather events and patterns that result in climate averages are highly variable. Each year is highly different here in Colorado and it takes much more than 5 or even 10 years to get close to what an average is as, "average" only happens on paper in the highly variable western climate of the US. La Nina and El Nino patterns can last for a year or two sometimes 3 with many years of El Nino and La Nina neutral conditions. Each of these patterns provide stark changes from year to year leaving a mark on our climate record. The trend of February producing more snow than March has not held historically as March is the snowiest month of the year going back to the 1800's so I would not expect the trend to hold going forward even in the face of global warming... Global warming for Colorado may actually mean more snow in our future? Remember warm air holds more moisture and warm is a relative term in the winter... Food for thought!

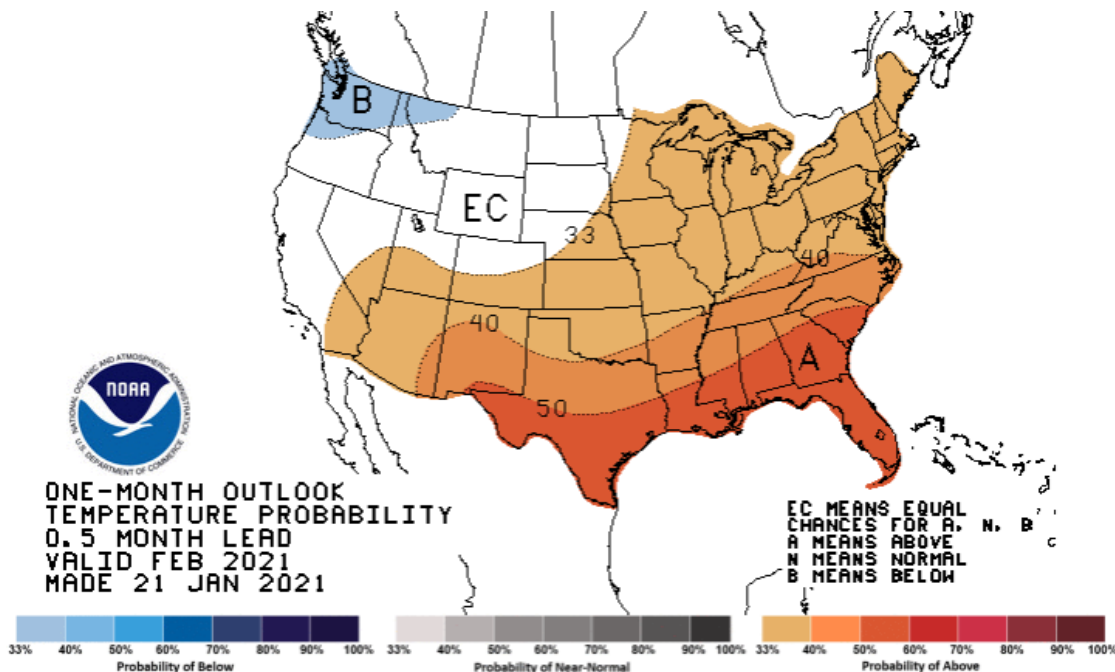
If you have any weather questions or have a topic you would like for us to cover in a future newsletter please let us know by emailing one of our team members at forecasts@skyview.com.

Drought Update

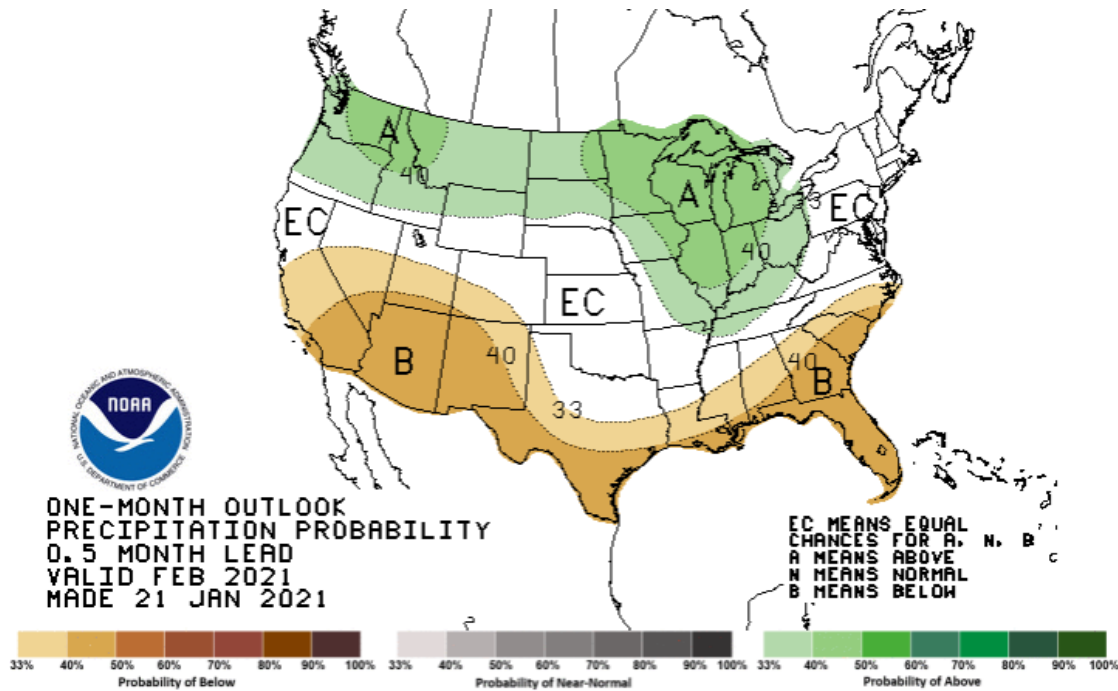
Drought conditions in Colorado continue to be severe to extreme with areas of exceptional drought, encompassing the majority of the state. All of the 4-Corners states are experiencing extreme to exceptional drought over large geographic areas despite recent storms.



The map below shows forecasted temperature deviances for February 2021. There is a slight bias over southern portions of the state for above normal temperatures with equal chances for above or below normal temperatures over northern areas of the state through the month of February.



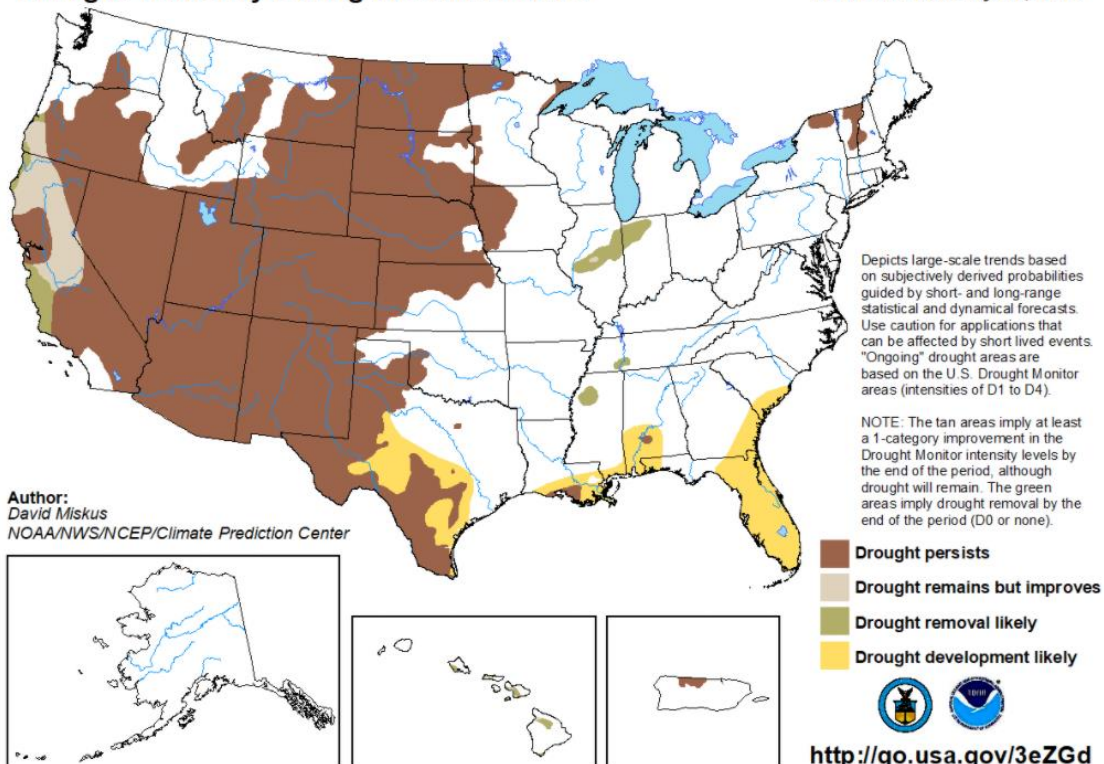
The map below shows forecasted precipitation deviances for February 2021. Equal chances for above or below normal precipitation over about 2/3's of CO with a slight bias towards below normal precipitation over SW CO.



Colorado will continue to see drought conditions persist over the state during the month of February. Some improvement in the drought conditions are expected over portions of central and northern CA due to recent rain/snow and more storms projected to impact the region through the month.

U.S. Monthly Drought Outlook
Drought Tendency During the Valid Period

Valid for February 2021
Released January 31, 2021



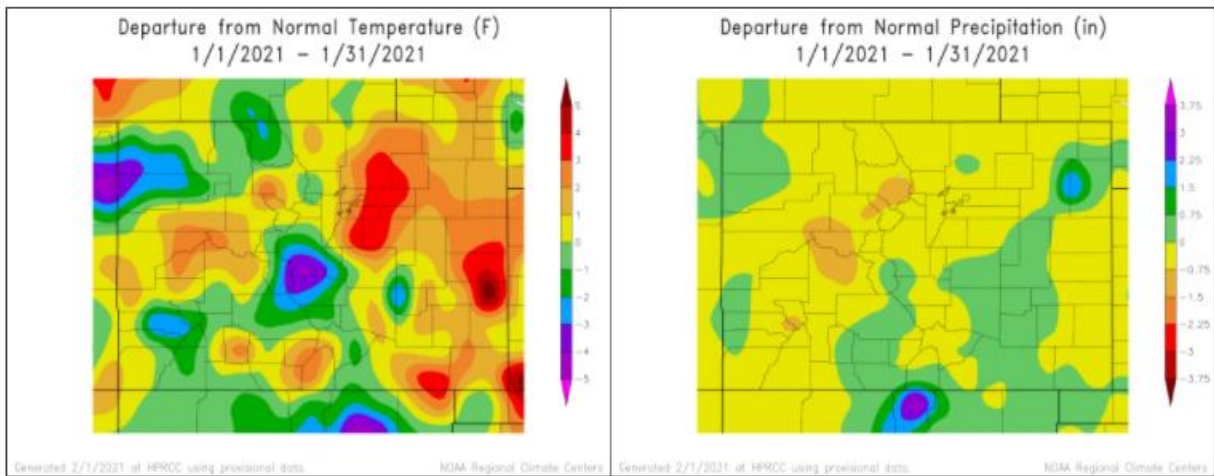
January Summary

January of 2021 was above normal in temperature and well below average in precipitation. High-pressure dominated over the region through most of the month, although a few storm systems moved through during January resulting in measurable snowfall across Northeastern Colorado. The average high temperature for Denver at DIA was 46.2 degrees with an average low of 21.6 degrees. Combining the monthly highs and the lows resulted in an average mean temperature of 33.9 degrees which was 3.2 degrees warmer than normal monthly average of 30.7 degrees. There were no record setting high or low temperature days for the month of January. Precipitation for the month of January was below average for most areas, with DIA receiving 0.22" of total moisture with 3.1" of snowfall. The total moisture at DIA was 0.19" below the normal average of 0.41" while snowfall was 3.9" below the normal of 7.0". Throughout the month of January there were eight total weather events with three producing more than generally a trace of snowfall for the Denver Metro area. The first storm to impact the foothills occurred on January 5th, although no snowfall fell around the Denver Metro area. January would be generally dry through the first week before a few rounds of storms moved through the region January 9th through the 10th, the 18th through 19th and the 24th through the 27th where two separate storm systems moved through. January 24th through the 27th where the two separate storm systems moved through brought the best snowfall during the month with totals for the Denver Metro area anywhere from 2-5". Another notable storm system on January 9th through the 10th impacted northern Colorado bringing good snowfall to areas north of I-70 where anywhere from 3-5" of snow fell from North Denver to in and around the Ft. Collins area. Overall, January had the typical amount of storm systems move through but the amount of snow they produced fell short of normal. Total amounts for the month of January for all Northeastern Colorado were between 3-6", with the foothills coming in between 6-8". The 3.1" of snow and 0.22" of moisture resulted in a snow to liquid ratio of 14.1" of snow to 1" of liquid which is a relatively "wet" snow for January standards.

Over SE CO, January of 2021 was above normal in temperature and above average in precipitation for Colorado Springs, with above average precipitation for Pueblo as well. Although high-pressure dominated over the region most of the month, a couple of weeks during January we had a more active weather pattern resulting in better snowfall for SE CO versus NE CO as the storms tracked through AZ and NM. The average monthly high temperature at the Colorado Springs airport was 43.5 degrees with an average monthly low temperature of 19.5 degrees. The average highs and lows combined resulted in a monthly mean temperature of 31.5 degrees, 1.0 degrees above the average of 30.5 degrees. Precipitation at the Colorado Springs airport was 0.57" of moisture with 7.9" of measurable snowfall. The 0.57" of moisture was 0.25" above the average of 0.32" for the month of January.

Pueblo had a monthly normal temperature of 32.2 degrees, 1.7 degrees warmer than the average monthly normal temperature of 30.5 degrees. Total moisture for the month of January in Pueblo was 0.57" with 7.5" of snowfall. The total moisture for Pueblo was 0.22" above the normal average of 0.35". Seven weather events occurred in Southeast Colorado during December with four of those storms producing more than generally a trace for most areas. January would be generally dry through the first week before a few rounds of storms moved through the region January 9th through the 10th, the 18th through 19th and the 24th through the 27th where two separate storm systems moved through. January 24th through the 27th where the

two separate storm systems moved through brought the best snowfall during the month with totals for the Colorado Springs area with anywhere from 3-6" or more and Northern El Paso County with 5-8", the Pueblo area with 5-8" and Canon City between 3-5". On the 25th the Colorado Springs airport received a daily record breaking 2.9". Another notable storm system on January 9th through the 10th impacted Southeastern Colorado bringing good snowfall to areas along the I-25 corridor where anywhere from 2-4" of snow fell around Colorado Springs, 2-5" Northern El Paso County and 1-3" for Pueblo and Canon City. On the 9th of January, the Colorado Springs airport once again received a record-breaking daily total of 2.2" of snowfall. Overall, January had the typical amount of storm systems move through with record breaking daily snowfall on two separate occasions for the Colorado Springs airport. Total amounts for the month of January for Northern El Paso County were between 8-12", with Colorado Springs between 6-8.5", Pueblo with 7-13" and Canon City between 5-7". Snow to liquid ratios for Colorado Springs was 13.9" snow to 1" liquid 13.2/1 in Pueblo.



January Stats

TEMPERATURE (IN DEGREES F)

AVERAGE MAX	45.5	NORMAL 42.8	DEPARTURE 2.7
AVERAGE MIN	20.7	NORMAL 17.1	DEPARTURE 3.6
MONTHLY MEAN	33.1	NORMAL 30.0	DEPARTURE 3.1
HIGHEST	68 on the 9 th		
LOWEST	5 on the 14 th		

DAYS WITH MAX 90 OR ABOVE	0	NORMAL 0.0
DAYS WITH MAX 32 OR BELOW	8	NORMAL 5.8
DAYS WITH MIN 32 OR BELOW	29	NORMAL 29.4
DAYS WITH MIN ZERO OR BELOW	0	NORMAL 2.0

TEMPERATURE RECORDS

None

HEATING DEGREE DAYS

MONTHLY TOTAL	983	NORMAL	1086	DEPARTURE	-103
SEASONAL TOTAL	2218	NORMAL	2469	DEPARTURE	-251

COOLING DEGREE DAYS

MONTHLY TOTAL	0	NORMAL	0	DEPARTURE	0
YEARLY TOTAL	1155	NORMAL	769	DEPARTURE	386

PRECIPITATION (IN INCHES)

MONTHLY TOTAL	0.57	NORMAL	0.35	DEPARTURE	0.22
YEARLY TOTAL	8.74	NORMAL	14.54	DEPARTURE	-5.80

GREATEST IN 24 HOURS 0.16" on 12/12

DAYS WITH MEASURABLE PRECIP. 7

SNOWFALL (IN INCHES)

MONTHLY TOTAL	7.0	NORMAL	8.5	DEPARTURE	-1.5
SEASONAL TOTAL	17.0	NORMAL	22.5	DEPARTURE	-5.5

GREATEST IN 24 HOURS 3.1"

GREATEST DEPTH 3.0"

WIND (IN MILES PER HOUR)

AVERAGE SPEED	9.8	mph
PEAK WIND GUST	60 mph from the NW on 12/22	

MISCELLANEOUS WEATHER

NUMBER OF DAYS WITH THUNDERSTORM	0	NORMAL	0
NUMBER OF DAYS WITH HEAVY FOG	1	NORMAL	1
NUMBER OF DAYS WITH HAIL	0		
NUMBER OF SUNNY DAYS	13		
NUMBER OF PARTLY CLOUDY DAYS	13		

NUMBER OF CLOUDY DAYS	5
AVERAGE RELATIVE HUMIDITY	NA

February Preview

Average highs begin to climb into the mid 40s in February as we begin to gain sunlight each day. On the 1st of the month the sun rises at 7:08am and at the end of the month the sunrise is 6:34am a gain of 34 minutes on the sunrise side alone. The sun sets at 5:20pm on the 1st and 5:51 on the 28th adding 31 minutes on the sunset times. For the month there is a gain of 1 hour and 5 minutes of daylight! Average lows climb 1.5 degrees from December and average highs gain 2.2 degrees from December at 46.2 and 18.9 degrees. The monthly mean temperature is just above the freezing mark at 32.5 degrees. There are on average 4 days during the month where high temperatures remain below freezing with one overnight period where temperatures fall below zero. Average precipitation for February is only 0.32" with 5.7" of snowfall, which equates to a 17.8"/1" water ratio. There are usually 5 days during the month with measureable precipitation greater than a trace. February 2021 is expected to feature the main storm track remaining to the N of the Denver Metro area with numerous disturbances moving through but producing mainly low single digit type snowfall. Towards the end of the month there is a chance for a more impactful snow event, but it's just a chance and the more likely outcome is more underwhelming storms along the I-25 corridor and most of the snow remaining in the mountains resulting in snowfall slightly above or below normal for any given location. The Palmer Divide which received a decent snow on the 3rd will have above normal snowfall. Temperature wise the trend of above normal temperatures is expected to end with a NW flow pattern looking to dominate keeping temperatures cooler between storms and allowing some arctic air to make its way into Colorado.

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

TEMPERATURE

AVERAGE HIGH	46.2
AVERAGE LOW	18.9
MONTHLY MEAN	32.5
DAYS WITH HIGH 90 OR ABOVE	0
DAYS WITH HIGH 32 OR BELOW	4
DAYS WITH LOW 32 OR BELOW	27
DAYS WITH LOWS ZERO OR BELOW	1

PRECIPITATION

MONTHLY MEAN	0.32"
DAYS WITH MEASURABLE PRECIPITATION	5
AVERAGE SNOWFALL IN INCHES	5.7"
DAYS WITH 1.0 INCH OF SNOW OR MORE	3 - Estimate

MISCELLANEOUS AVERAGES

HEATING DEGREE DAYS	908
COOLING DEGREE DAYS	0
WIND SPEED (MPH)	8.8mph
WIND DIRECTION	South
DAYS WITH THUNDERSTORMS	0
DAYS WITH DENSE FOG	2
PERCENT OF SUNSHINE POSSIBLE	70%

EXTREMES

RECORD HIGH	77 on 2/4/1980, 2/28/2006
RECORD LOW	-25 on 2/8/1936, 2/1/1951
WARMEST	43.7 in 1954
COLDEST	17.6 in 1899
WETTEST	2.01" in 1934
DRIEST	0.01" in 1970
SNOWIEST	22.5" in 2015
LEAST SNOWIEST	TR in 2009

Snowfall

October 2020 to May 2021

City	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr/May	Total
Aurora (Central)	1.0	3.3	5.2	6.5	3.7				19.7
Boulder	5.7	12.5	7.5	6.2	6.0				37.9
Brighton	0.6	5.6	6.7	6.2	4.0				23.1
Broomfield	1.5	8.0	5.1	5.7	4.9				25.2
Castle Rock	2.8	7.0	3.8	8.4	4.1				27.1
Colorado Springs	2.6	3.2	0.2	5.1	7.9				19.0
Denver DIA	1.0	4.0	5.0	7.0	3.1				20.1
Denver Downtow	1.5	4.7	6.0	7.1	3.0				22.3
Golden	2.8	6.7	7.2	8.1	2.8				27.6
Fort Collins	2.3	14.5	3.7	7.0	5.2				32.7
Highlands Ranch	2.6	6.3	5.3	6.3	2.9				23.4
Lakewood	2.4	5.0	7.4	6.5	3.0				24.3
Littleton	3.0	6.8	7.1	7.4	2.6				26.9
Monument	7.7	6.0	4.7	15.4	9.4				43.2
Parker	2.0	6.8	6.8	6.1	2.8				24.5
Sedalia - Hwy 67	4.0	6.2	6.7	10.1	4.5				31.5
Thornton	1.7	5.5	7.4	5.2	5.7				25.8
Westminster	2.0	6.6	9.6	6.9	5.2				30.3
Wheat Ridge	2.8	5.1	7.8	7.0	3.9				26.6

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