

The Weather Wire

November 2020

Volume 27 Number 11

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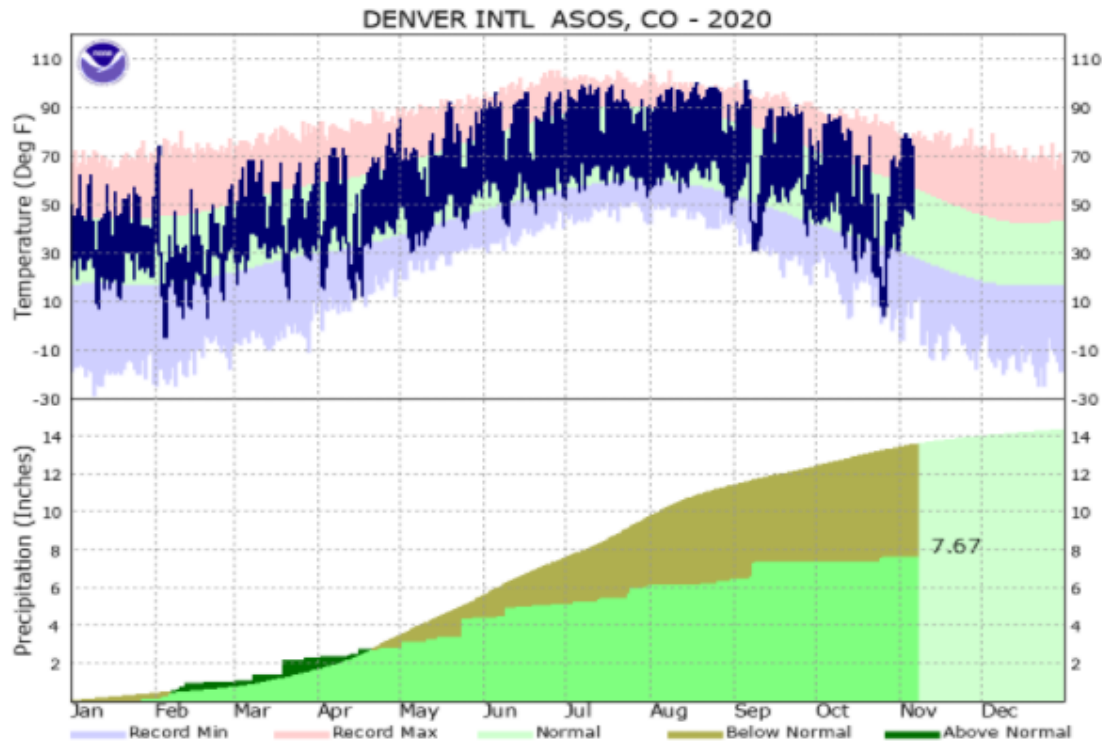
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November Extreme Weather/Records

We are just through the first week of November and multiple high temperature records have been tied or broken along the I-25 corridor. A new record high of 79 was set in Denver on the 3rd tying the old record of 79 set back over 100 years ago in 1915. Another record was set on the 4th with a high of 77 degrees breaking the old record of 76 set back in 1915. On the 5th DIA recorded the warmest minimum temperature for the date of 46 tying the old record set back in 1890 and the high of 77 also tied the record high last set in 2009. Denver wasn't the only City breaking records as Colorado Springs and Pueblo also got in on the action setting new records of their own. Since we have been experiencing some extreme weather here in Colorado on the temperature side I figured it would be fun to look a little deeper into Denver's climate history...

2020 began promising in the precipitation department with above normal precipitation for the Denver area through about mid April then the dry weather pattern set up and has continued to our present situation. The winter started earlier than every other year except for one in CO history as the snow on the 8-9th produced accumulating snow and record breaking cold. The record cold was replaced with record warmth and solidifies my opinion that whatever we call "normal" weather here in Colorado only happens on paper and not in real life. Below is a graph of 2020 so far showing the climate history for DIA up to date. This map can be found on the web at :

https://www.weather.gov/bou/local_climate



The upper portion of the graph shows the daily ticks of high and low temperature compared to our daily records. The bottom portion of the graph shows precipitation, indicating that only 7.67" of rain has been recorded year to date at DIA which is 5.91" below normal as of the 1st of November. It is safe to say that we will not be able to make up that kind of moisture deficit and this year will end up well below normal in precipitation.

Each month of the year contains some extremes in the weather and temperature over the state of Colorado but the fall can have some of the greatest temperature swings of the year with temperature spreads of up to 100 degrees. The record high for November is 81 and the record low is -18 making for a 99 degree temperature swing for the month. The 99 degree swing between a monthly high and low ranks 4th behind January and February (105) and December (104) so these kinds of temperature swings are not just limited to December but all of the winter months. The summer months have much smaller temperature swings.

I know it is silly to even suggest this but... If the month ended today temperatures would be 15 degrees above normal and smash the warmest November on record. Well, what are the warmest Novembers on record? Below are not only the warmest November's on record but the wettest, snowiest, coldest, driest and least snowiest Novembers. Also included are the daily records for November on the monthly breakdown. This information can be found on the web at:

https://www.weather.gov/bou/den_extreme_nov

https://www.weather.gov/bou/den_records_nov

NATIONAL WEATHER SERVICE - DENVER, COLORADO
 MONTHLY TEMPERATURE, RAINFALL, AND SNOWFALL EXTREMES
 FOR NOVEMBER

20 WARMEST NOVS
(1872-2019)

1	50.9	1949
2	47.2	1999
3	46.2	1933
	46.2	1914
5	45.9	1981
	45.9	1927
7	45.6	1910
	45.6	1901
9	45.5	1917
10	45.3	2017
11	45.1	2016
12	44.8	1899
	44.8	1894
14	44.4	1934
	44.4	1924
16	44.3	1954
	44.3	1941
18	44.0	1990
	44.0	1932
20	43.9	1904
	43.9	1885

21 WETTEST NOVS
(1872-2019)

1	3.21	1946
2	2.67	1991
3	2.63	1983
4	2.13	2015
5	1.95	1922
6	1.93	1886
7	1.88	1975
8	1.74	1908
9	1.69	1972
10	1.68	1881
11	1.66	1979
12	1.62	1987
13	1.58	1928
14	1.50	1876
15	1.46	1992
16	1.38	1993
17	1.34	1994
18	1.32	1929
19	1.31	2019
	1.31	1952
21	1.30	1906

20 SNOWIEST NOVS
(1882-2019)

1	42.5	1946
2	29.9	1991
3	29.3	1983
4	23.1	1929
5	23.1	1928
6	22.9	1908
7	22.3	1979
8	21.3	1956
9	20.1	1992
10	19.4	1972
11	17.4	1993
12	17.0	1985
13	16.9	1994
14	15.6	1931
15	15.4	1922
16	15.3	1938
17	15.2	1975
18	14.5	1952
	14.5	1951
20	14.2	1918

20 COLDEST NOVS
(1872-2019)

1	22.0	1880
2	28.9	2000
3	29.7	1985
4	31.5	1929
5	32.3	1952
6	32.5	1889
7	32.8	1972
8	33.0	1886
9	33.1	1872
10	33.3	1979
11	33.9	1992
12	34.6	1919
13	34.7	1993
	34.7	1991
	34.7	1961
16	34.8	1997
17	34.9	1947
18	35.2	1898
19	35.6	1982
20	35.7	1968

20 DRIEST NOVS
(1872-2019)

1	T	1949
	T	1901
	T	1899
4	0.01	1939
5	0.03	1917
6	0.04	1905
	0.04	1904
8	0.05	2003
9	0.07	1903
10	0.08	1920
	0.08	1874
12	0.10	1896
13	0.14	1924
14	0.15	1989
15	0.16	1971
	0.16	1910
	0.16	1873
18	0.18	2008
	0.18	1933
20	0.19	1884

LEAST SNOWIEST NOVS
(1882-2019)

1	0.0	1949
2	T	2017
	T	2005
	T	1939
	T	1917
	T	1905
	T	1901
	T	1899
9	T	1884
10	0.3	1883
11	0.5	1885
12	0.8	1900
13	0.9	1896
14	1.3	1910
15	1.4	1971
16	1.5	2010
	1.5	1903
18	1.6	1989
	1.7	2016
	1.7	2012
	1.7	2008

National Weather Service - Denver, Colorado
 Temperature Normals & Extreme for November

DATE	Normal High	Record High	Year Set	Record Warmest Minimum	Year Set	Normal Low	Record Low	Year Set	Record coldest Maximum	Year Set
1	59	78	1988	46	2008	31	- 6	1951	24	1951^
2	58	78	2008^	46	2008	30	- 6	1951	19	1991
3	58	79	2020^	48	2020	30	- 4	1936	23	1935
4	58	77	2020	47	2020	29	10	1967	30	1889
5	57	77	2020^	46	2020^	29	3	1889	28	1933
6	57	79	1934	46	2010^	29	10	1889	27	1938
7	56	78	1999	48	1934	28	10	2000^	27	1929
8	56	80	2006	52	1910	28	12	1888	27	1948
9	55	77	2019	43	1934	27	- 8	1950	17	1950
10	55	78	1973	47	2007	27	- 8	1950	19	1985
11	54	76	1989	45	1926	26	- 2	1911	19	1916
12	54	76	1989	45	2009	26	-13	2014	6	2014
13	53	75	1999	45	1932	25	-14	2014	12	1959
14	53	79	1990	44	1928	25	- 7	1872	17	1872
15	52	78	1942	48	1941	25	- 3	1997^	18	1909
16	52	80	2016	44	1941^	24	- 4	1955	15	1891
17	51	76	1999	49	1941	24	-14	1880	1	1880
18	51	78	2008	47	2008	23	-12	1880	19	1937^
19	50	79	1989	49	2007	23	- 2	1961	16	1906
20	50	72	2006^	46	1927	22	1	1985^	23	1906^
21	49	73	1974	49	1924	22	0	1929	13	1929
22	49	74	1998	45	1998	22	- 2	1880	5	1931
23	49	73	1915	45	1946^	21	- 3	2003	13	1918
24	48	74	1990	56	1949	21	- 8	1993	9	1993
25	48	77	1990	48	1910	21	- 7	1952	18	1993
26	47	74	2017	47	1909	20	-12	1887	15	1952
27	47	81#	2017	52	1949	20	-14	1887	- 1	1919
28	46	72	1901	44	1949	20	-10	1877	11	1919
29	46	74	1899	43	1892^	19	-18*	1877	16	1877
30	46	73	1883	43	1995^	19	-10	1877	17	1985

The Normal High and Low Temperatures are calculated from 1981-2010 data.
 The Temperature Extremes range from 1872-2020.

^ - Also in previous years.

- Highest Temperature of the Month: 81 degrees on 11/27/2017

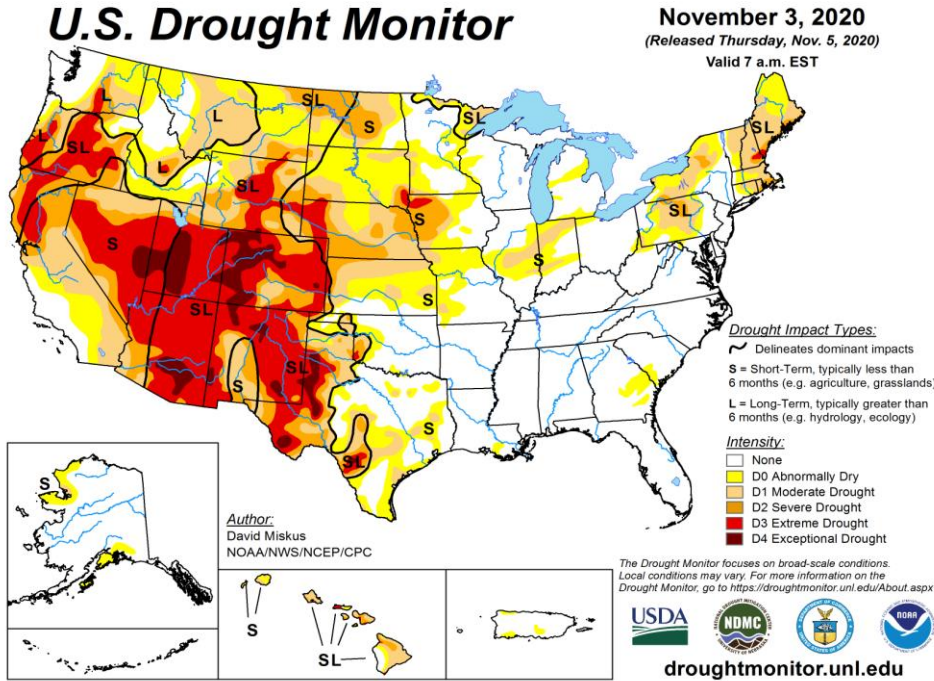
* - Lowest Temperature of the Month: -18 degrees on 11/29/1877.

- The November Mean Temperature is 38.3 degrees (from 1981-2010 DIA data).

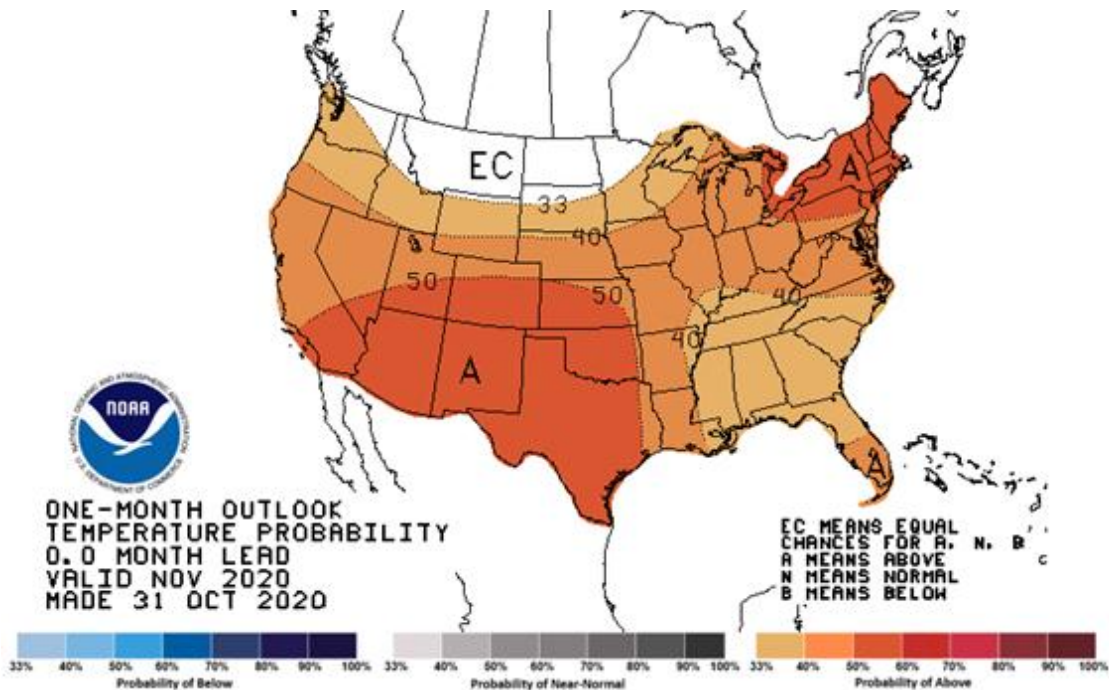
- Data collected at the Downtown City Office from 1872-December 1949, then at the Stapleton Airport Office from January 1950-February 1995, then at Denver International Airport from March 1995-Present.

Drought Update

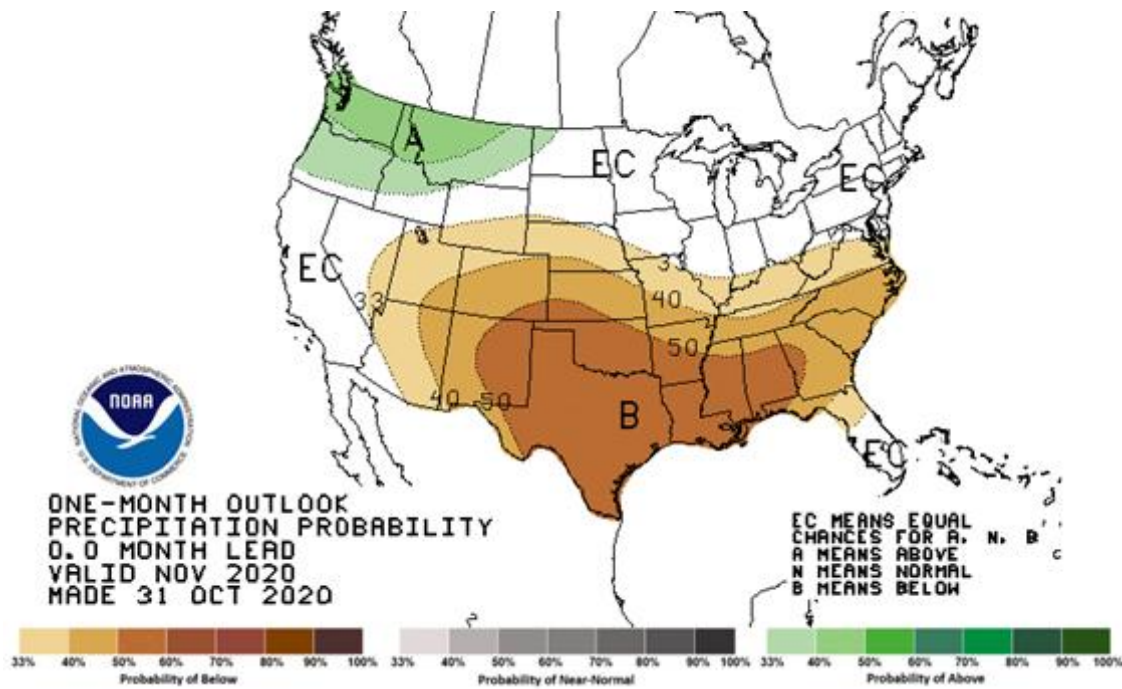
Drought conditions in Colorado continue to become more severe due to the lack of moisture this spring and summer. Nearly all of the southwest and west are experiencing some severity of drought conditions with many areas in the extreme to exceptional category.



The map below shows forecasted temperature deviances for November 2020. There is a strong bias toward above normal temperatures across Colorado through the month of November.



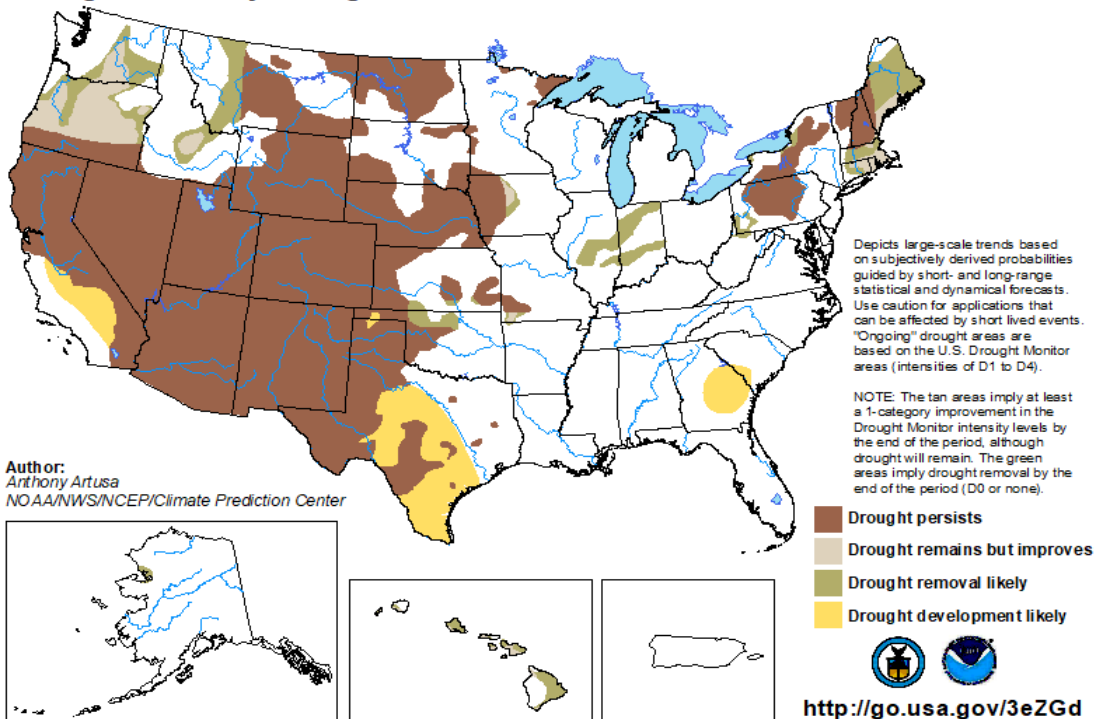
The map below shows forecasted precipitation deviances for November 2020. There is a large swath of below average precipitation for most of the Central and Southern United States, including Colorado which will only increase drought conditions through November.



Colorado will continue to see drought conditions persist over the state during November. Some improvement in the drought conditions are expected over the Pacific NW as an active La Nina storm track will continue to steer storms into this region.

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

Valid for November 2020
Released October 31, 2020



October Summary

October of 2020 was slightly above normal in temperature and well below normal in precipitation as high pressure dominated the weather pattern through most of the month. The average high for Denver at DIA was 66.3 degrees which was 1.0 degrees warmer than the normal of 65.3 degrees. The average low for the month was 33.4 degrees which was 3.2 degrees below the normal of 36.6 degrees. Combining the monthly highs and lows resulted in an average mean temperature of 49.8 degrees which was 1.1 degrees below the normal of 50.9 degrees. There were a couple of daily record highs set with highs of 87 degrees on October 6th and 85 degrees set on October 8th. A record low temperature was set on the 27th with a low of only 8 degrees. DIA reported a trace of moisture or more only 3 calendar days with only 2 of those days producing measurable precipitation beyond a trace. The first measurable snow fell on the 25th where 2.9" was measured at DIA with an additional 1.1" of snow measured on the 26th bringing the monthly total to 4.0". There was only 1 additional day during the month that produced only a trace of snow on the 22nd. Rain and melted snow tallied up to 0.26" for the month, well below the 1.02" on average. There were 13 days considered sunny and 16 days partly cloudy with 2 being cloudy. The highest snowfall totals for Front Range communities was from Boulder County northward through Fort Collins where the 25th and 26th storm produced between 10-18". The Denver Metro area reported 3-8" of snow most areas with higher amounts of 10-20" for the month in the foothills of Larimer, Boulder and Jefferson Counties.

Southeast Colorado generally experienced warmer than average temperatures and well below normal precipitation in October. Colorado Springs reported average highs for the month of 66.8 degrees and average lows of 35.2 degrees. The combination resulted in a monthly mean temperature of 51.0 degrees which was 1.6 degrees above normal. The airport in Colorado Springs reported only 0.25" of moisture which was .57" below the normal of 0.82". Further south into Pueblo average highs for the month of October were 70.3 degrees with average lows of 32.8 degrees producing a monthly mean temperature of 51.5 degrees which was 0.3 degrees below normal. Precipitation in Pueblo was 0.67" for the month which was only 0.05" below the normal of 0.72". Colorado Springs received between 5-10" of snow in and around the City with Northern El Paso between 8-14". Pueblo received quite a bit of snow in October with areas reporting between 8-15" resulting in close to normal monthly values.

October Stats

TEMPERATURE (IN DEGREES F)

AVERAGE MAX	66.3	NORMAL65.3	DEPARTURE	1.0
AVERAGE MIN	33.4	NORMAL36.6	DEPARTURE	-3.2
MONTHLY MEAN	49.8	NORMAL50.9	DEPARTURE	-1.1
HIGHEST	87 on the 6 th			
LOWEST	16 on the 26 th			

DAYS WITH MAX 90 OR ABOVE	0	NORMAL	0.0
DAYS WITH MAX 32 OR BELOW	2	NORMAL	0.4
DAYS WITH MIN 32 OR BELOW	14	NORMAL	8.5

DAYS WITH MIN ZERO OR BELOW 0 NORMAL 0.0

TEMPERATURE RECORDS

Record highs of 87 degrees on the 6th and 85 on the 8th

A record low of 8 degrees was set on the 27th

HEATING DEGREE DAYS

MONTHLY TOTAL	477	NORMAL	440	DEPARTURE	37
SEASONAL TOTAL	603	NORMAL	581	DEPARTURE	22

COOLING DEGREE DAYS

MONTHLY TOTAL	10	NORMAL	5	DEPARTURE	5
YEARLY TOTAL	1155	NORMAL	769	DEPARTURE	386

PRECIPITATION (IN INCHES)

MONTHLY TOTAL	0.26	NORMAL	1.02	DEPARTURE	-0.76
YEARLY TOTAL	7.67	NORMAL	13.58	DEPARTURE	-5.91

GREATEST IN 24 HOURS 0.26" on 10/25~26

DAYS WITH MEASURABLE PRECIP. 3

SNOWFALL (IN INCHES)

MONTHLY TOTAL	4.0	NORMAL	4.0	DEPARTURE	0
SEASONAL TOTAL	5.0	NORMAL	5.3	DEPARTURE	-0.3

GREATEST IN 24 HOURS 2.9 on 10/25

GREATEST DEPTH 3

WIND (IN MILES PER HOUR)

AVERAGE SPEED 9.7 mph

PEAK WIND GUST 59 mph from the NW on 10/11

MISCELLANEOUS WEATHER

NUMBER OF DAYS WITH THUNDERSTORM	0	NORMAL	1
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	16
NUMBER OF CLOUDY DAYS	2
AVERAGE RELATIVE HUMIDITY	49%

November Preview

Temperatures begin to cool off significantly during the month of November as the start of meteorological winter nears. November is also the second snowiest month on average in Denver, behind only March. Over the course of the month, the average high in November falls from 59 on the 1st to 46 by the 30th. Overall, the average high for the month is 52.1 and the average low for the month is 24.5. The all-time record high for November of 80 degrees occurred in 2006, while the all-time record low of -18 occurred all the way back in 1877. Usually, the first arctic cold front of the season occurs in late November with the first single-digit or subzero temperatures, but so far in 2020 we have had a few days towards the end of October that dropped into single digits and even areas with subzero lows overnight. Denver typically experiences 2-4 measurable snowfall events over the course of November with a monthly average of 8.7", and occasionally can experience major snowstorms similar to those that occur in the spring. Denver's largest snow event on record in November occurred in 1946 when 30.4" fell. This is also the third largest snowstorm ever in Denver's history. An average of 0.61" of precipitation occurs in Denver in November, with much of this falling as snow. Snowfall in early and mid November is often heavier and wetter in nature with some melt on pavement occurring, but toward the end of the month, snow tends to more easily accumulate on pavement due to colder temperatures and lower solar angles. For November 2020 Skyview Weather expects above normal temperatures and below normal precipitation and snowfall.

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 1949
COLDEST	22.0 1880
WETTEST	3.21" in 1946
DRIEST	Trace in 1949, 1901, 1899
SNOWIEST	42.6" in 1946
LEAST SNOWIEST	0.0" in 1995

Snowfall

October 2020 to May 2020

City	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr/May	Total
Aurora (Central)	1.0	3.3							4.3
Boulder	5.7	12.5							18.2
Brighton	0.6	5.6							6.2
Broomfield	1.5	8.0							9.5
Castle Rock	2.8	7.0							9.8
Colo Sprgs Airpo	2.6	3.2							5.8
Denver DIA	1.0	4.0							5.0
Denver Downtow	1.5	4.7							6.2
Golden	2.8	6.7							9.5
Fort Collins	2.3	14.5							16.8
Highlands Ranch	2.6	6.3							8.9
Lakewood	2.4	5.0							7.4
Littleton	3.0	6.8							9.8
Monument	7.7	6.0							13.7
Parker	2.0	6.8							8.8
Sedalia - Hwy 67	4.0	6.2							10.2
Thornton	1.7	5.5							7.2
Westminster	2.0	6.6							8.6
Wheat Ridge	2.8	5.1							7.9

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