



The Weather Wire

November 2021

Volume 28 Number 11

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November Extreme Weather Records & Statistics

Fall 2021 has been a complete 180-degree shift from 2020, as the Denver metropolitan area has not received its first real snowfall of the season. In 2020, Denver had several snowstorms prior to November with the earliest on September 8th where DIA received an inch of snow. By the end of October 2020, DIA was already up to 4” of snowfall. As of now, not a single measurable snowfall has impacted the Denver metropolitan area and with warmer than average temperatures currently, along with a persistent high-pressure ridge, snowfall continues to look less likely at least over the next week or two. This year, Denver could very well break the latest first snowfall record, or at least be in contention this year. Below are the first snowfall dates in the last 10 years, followed by the top ten latest snowfalls:

Denver's First Snowfall Dates last 10 Years (at least 0.1")

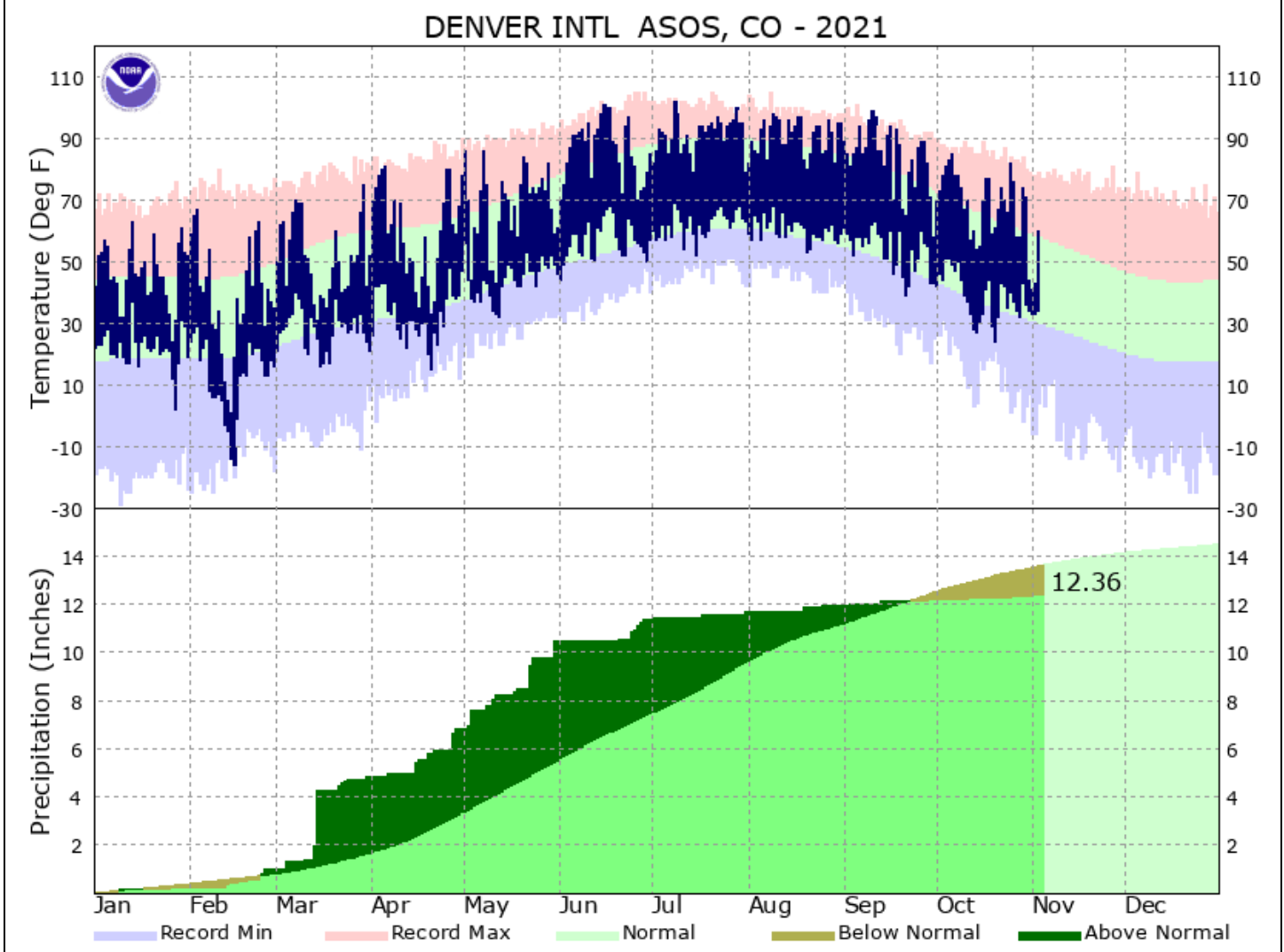
<u>Date</u>
9/8/2020
10/10/2019
10/6/2018
10/9/2017
11/17/2016
11/5/2015
11/11/2014
10/18/2013
10/5/2012
10/25/2011

Denver's Latest First Snowfall Dates since 1882 (at least 0.1")

<u>Rank</u>	<u>Date</u>	<u>Snow</u>
1	11/21/1934	1.0"
2	11/19/1931	1.0"
3	11/17/2016	1.7"
4	11/16/1894	2.6"
5	11/15/2010	1.5"
	11/15/1988	2.5"
	11/15/1987	6.1"
	11/15/1902	4.0"
9	11/14/2008	0.1"
	11/14/1964	4.2"
10	11/14/1944	0.1"

November is generally the time of year Denver starts to get its first real taste of winter with overnight temperatures usually dropping into the single digits by the end of the month. Below provides some statistical information for the Denver metropolitan area for the month of November:

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 12.36" of rain has been recorded year to date at DIA which is 0.42" below normal as of the 1st of November.



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 the winter months. The summer months have much smaller temperature swings. 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/local_climate

Denver's MONTHLY TEMPERATURE, RAINFALL, AND SNOWFALL EXTREMES FOR NOVEMBER									
Top 20 Warmest November's			Top 20 Wettest November's			Top 20 Snowiest November's			
(1872-Present)			(1872-Present)			(1882-Present)			
Rank	Avg	Year	Rank	Total	Year	Rank	Total	Year	
1	50.9	1949	1	3.21	1946	1	42.6	1946	
2	47.2	1999	2	2.67	1991	2	29.6	1991	
3	46.2	1933	3	2.63	1983	3	29.3	1983	
	46.2	1914	4	2.13	2015	4	23.1	1929	
5	45.9	1981	5	1.95	1922		23.1	1928	
	45.9	1927	6	1.93	1886	6	22.9	1908	
7	45.6	1910	7	1.88	1975	7	22.3	1979	
	45.6	1901	8	1.74	1908	8	21.3	1956	
9	45.5	1917	9	1.69	1972	9	20.1	1992	
10	45.3	2017	10	1.68	1881	10	19.4	1972	
11	45.1	2016	11	1.66	1979	11	17.4	1993	
12	44.8	1899	12	1.62	1987	12	17	1985	
	44.8	1894	13	1.58	1928	13	16.9	1994	
14	44.4	1934	14	1.5	1876	14	15.6	1931	
	44.4	1924	15	1.46	1992	15	15.4	1922	
16	44.3	1954	16	1.38	1993	16	15.3	1938	
	44.3	1941	17	1.34	1994	17	15.2	1975	
18	44	1990	18	1.32	1929	18	14.5	1952	
	44	1932	19	1.31	2019		14.5	1951	
20	43.9	1904		1.31	1952	20	14.2	1918	
	43.9	1885							
Top 20 Coldest November's			Top 20 Driest November's			Top 20 Least Snowiest November's			
(1872-Present)			(1872-Present)			(1882-Present)			
Rank	Avg	Year	Rank	Total	Year	Rank	Total	Year	
1	22	1880	1	T	1949	1	0	1949	
2	28.9	2000		T	1901	2	T	2017	
3	29.7	1985		T	1899		T	2005	
4	31.5	1929	4	0.01	1939		T	1939	
5	32.3	1952	5	0.03	1917		T	1917	
6	32.5	1889	6	0.04	1905		T	1905	
7	32.8	1972		0.04	1904		T	1901	
8	33	1886	8	0.05	2003		T	1899	
9	33.1	1872	9	0.07	1903		T	1884	
10	33.3	1979	10	0.08	1920	10	0.3	1883	
11	33.9	1992		0.08	1874	11	0.5	1885	
12	34.6	1919	12	0.1	1896	12	0.8	1900	
13	34.7	1993	13	0.14	1924	13	0.9	1896	
	34.7	1991	14	0.15	1989	14	1	2005	
	34.7	1961	15	0.16	1971	15	1.3	1910	
16	34.8	1997		0.16	1910	16	1.4	1971	
17	34.9	1947		0.16	1873	17	1.5	2010	
18	35.2	1898	18	0.18	2008		1.5	1903	
19	35.6	1982		0.18	1933	19	1.6	1989	
20	35.7	1968	20	0.21	1884	20	1.7	2016	
							1.7	2012	
							1.7	2008	

- Temperatures in degrees Fahrenheit.
- Precipitation and Snowfall amounts in inches.

- Average November Temperature is 39.4 degrees (from 1991-2020 DIA data).
- Average November Precipitation is 0.64 inches (from 1991-2020 DIA data).

- Average November Snowfall is 7.4 inches (from 1882-2020 Historical Record).
- Average November Snowfall is 7.3 inches (from 1991-2020 Stapleton data).

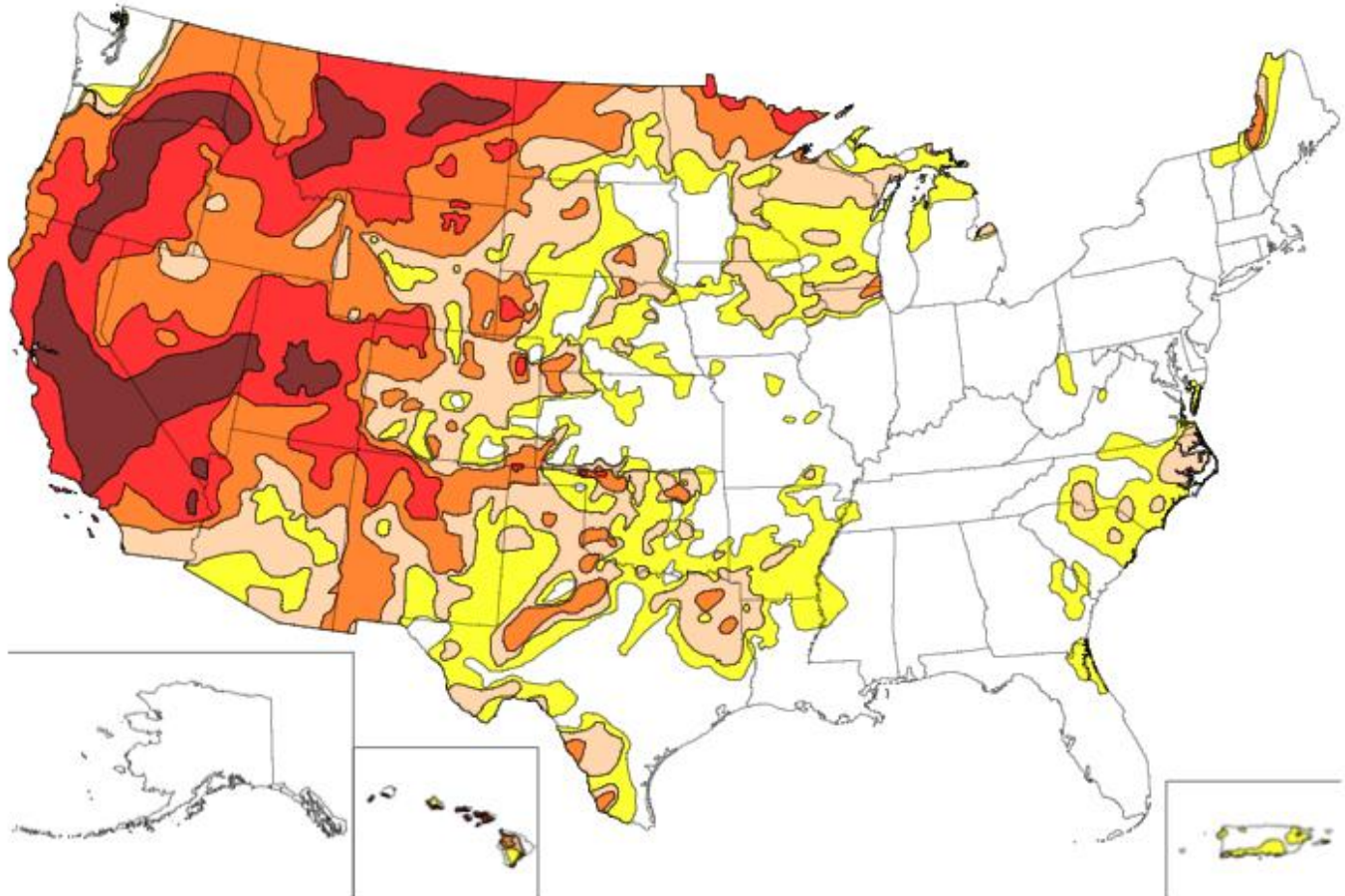
- Official Snowfall Observations, for DIA, didn't start until the 2007-2008 snow season, so no 30 Year Average is available.

- 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 remain moderate in eastern Colorado, with worsening Severe and Extreme drought along parts of the western slopes. Nearly all of the western US is experiencing some severity of drought conditions with many areas in the extreme to exceptional category.

Current Conditions and Outlooks: U.S. Drought Monitor



U.S. Drought Monitor Category

-  D0 - Abnormally Dry
-  D1 - Moderate Drought
-  D2 - Severe Drought
-  D3 - Extreme Drought
-  D4 - Exceptional Drought

% of U.S.

- 52.5%
- 39.9%
- 27.5%
- 15.0%
- 4.8%

Source(s): NDMC, NOAA, USDA
Updates Weekly - 11/02/21

Drought.gov

The map below shows forecasted temperature deviances for November 2021. There is a strong bias toward above normal temperatures across Colorado and most of the desert southwest through the month of November.

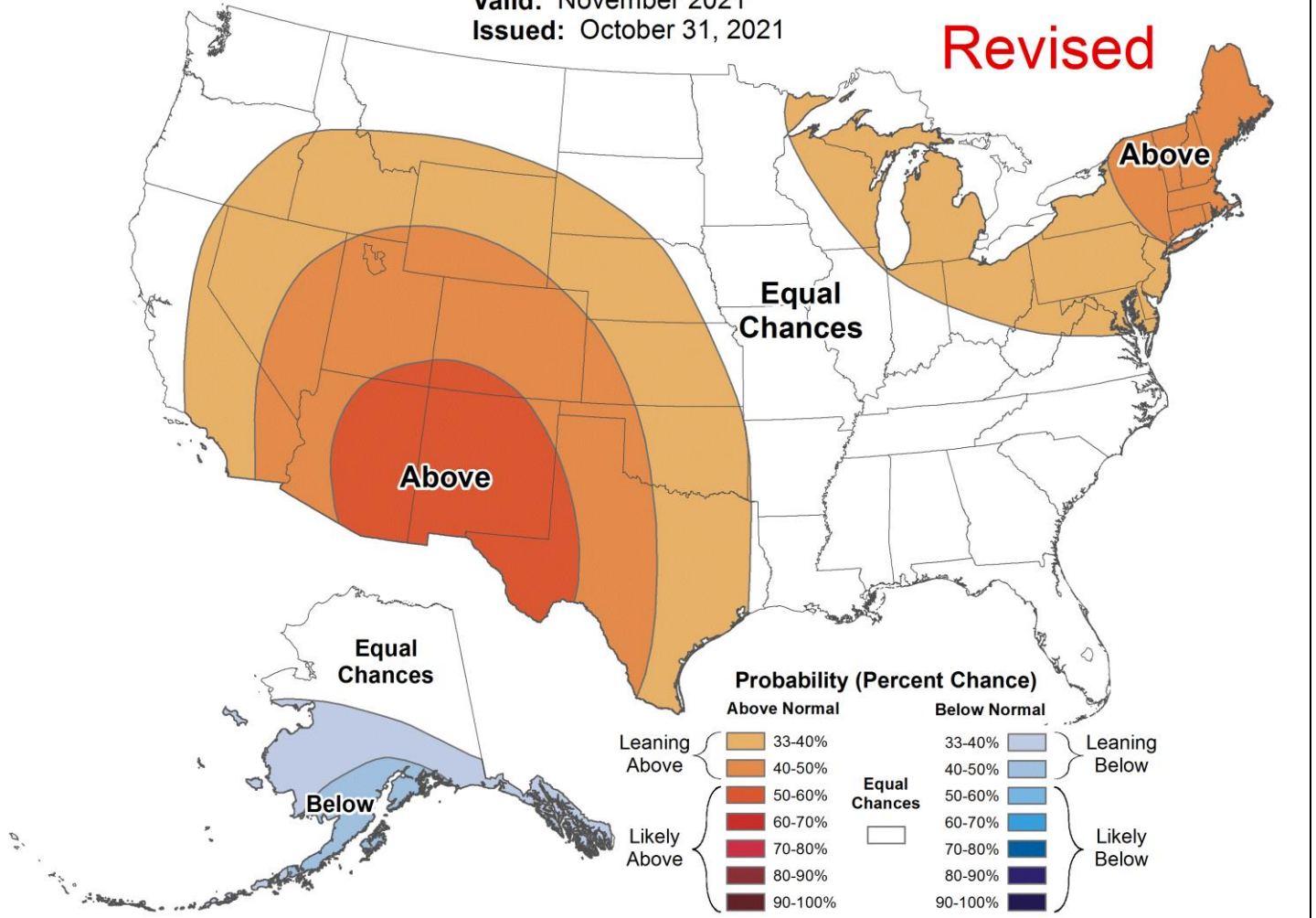


Monthly Temperature Outlook



Valid: November 2021
Issued: October 31, 2021

Revised



The map below shows forecasted precipitation deviances for November 2021. There is a large swath of below average precipitation for most of the Southern United States, with above average precipitation forecasted in the Pacific Northwest and Great Lakes Region. For Colorado, "Equal Chances" can be interpreted as average precipitation.

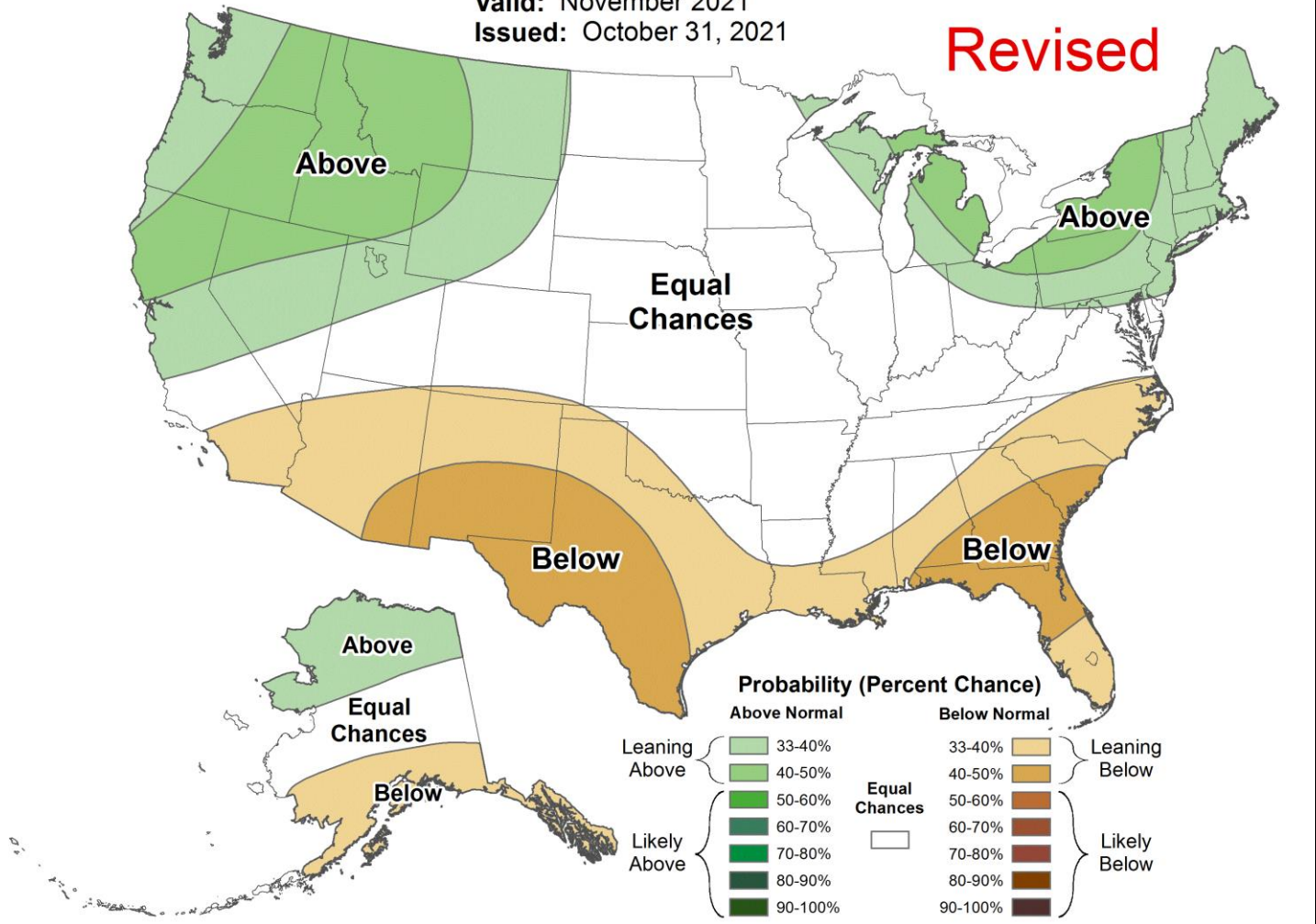


Monthly Precipitation Outlook



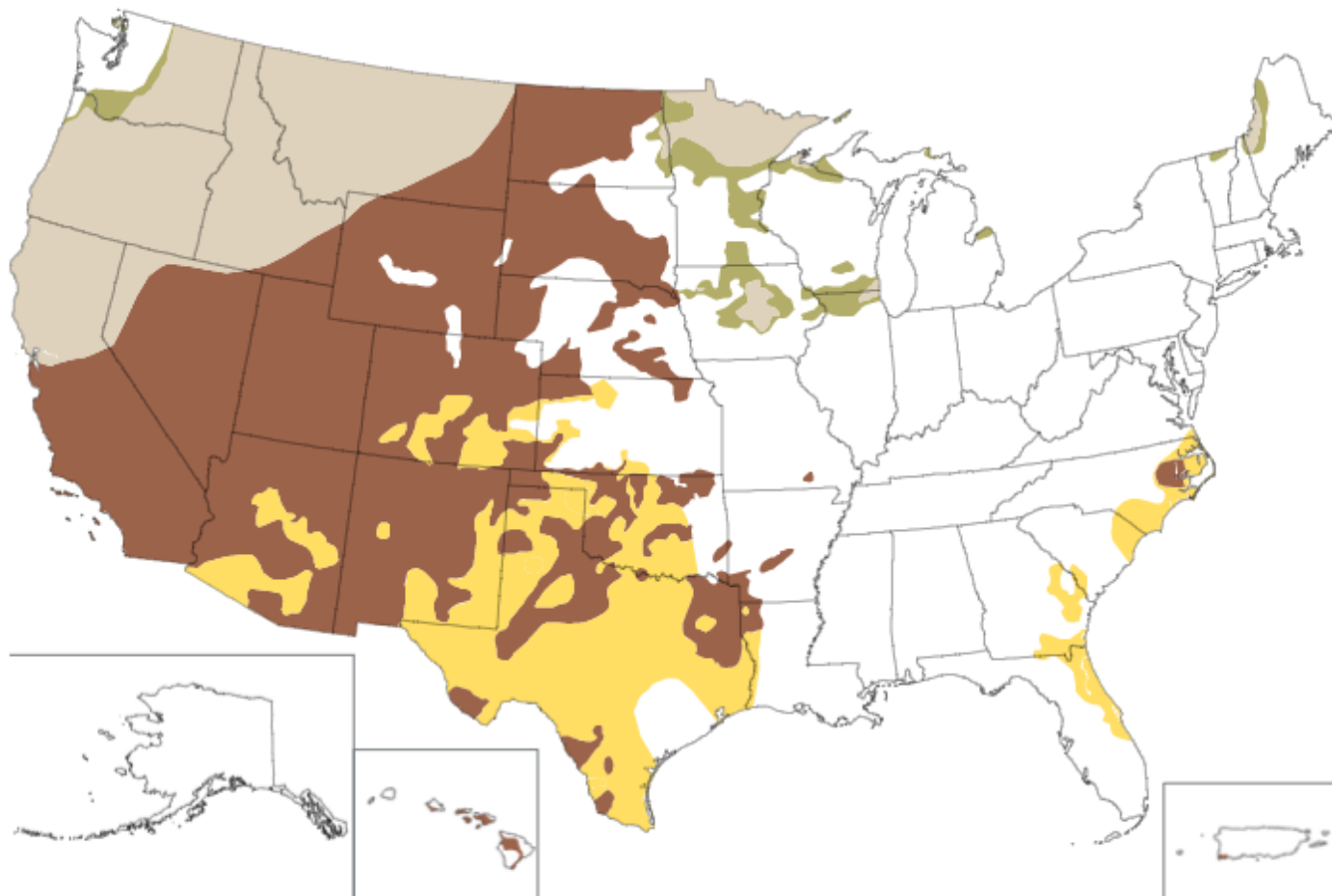
Valid: November 2021
 Issued: October 31, 2021

Revised







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

Featured Outlooks and Forecasts: Drought Outlooks & Forecasts: Monthly Outlook



Drought Outlook

-  Drought persists
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

Source(s): CPC
Updates Monthly - 10/31/21

Drought.gov

October Summary

October of 2021 was above normal in temperature and well below normal in precipitation as high pressure dominated the weather pattern throughout most of the month. The average high for Denver at DIA was 69.3 degrees which was 4.0 degrees warmer than the normal of 65.3 degrees. The average low for the month was 38.6 degrees which was 1.6 degrees above the normal of 37.0 degrees. Combining the monthly highs and lows resulted in an average mean temperature of 53.9 degrees which was 2.8 degrees above the normal of 51.1 degrees. There were no record setting temperatures days during the month of October with the warmest day of the month on the 6th with 85 degrees and the lowest temperature recorded on the 20th with an overnight low of 24 degrees. October was extremely dry with only 3 days with more than a trace of precipitation recorded, on the 12th, 15th, and 26th respectively. No accumulating snowfall was recorded in the Denver metropolitan area throughout the month of October. However, on October 15th, very minimal snowfall was reported for the foothills, areas along the Palmer Divide, including Monument Hill and isolated spots through Castle Rock with no snow accumulating on pavement.

Southeast Colorado generally experienced warmer than average temperatures and well below normal precipitation in October. Colorado Springs reported average highs for the month of 67.7 degrees and average lows of 38.5 degrees. The combination resulted in a monthly mean temperature of 53.1 degrees which was 2.4 degrees above normal of 50.7 degrees. The airport in Colorado Springs reported only 0.26” of moisture which was 0.51” below the normal of 0.77”. Further south into Pueblo average highs for the month of October were 73.0 degrees with average lows of 37.1 degrees producing a monthly mean temperature of 55.0 degrees which was 2.2 degrees above the normal of 52.8 degrees. Precipitation in Pueblo was only 0.14” for the month which was 0.62” below the normal of 0.76”. There were no meaningful snowfall events in October for the majority of southeast Colorado with very little precipitation overall for the month which has quickly increased drought conditions heading into November.

October Statistics

TEMPERATURE (IN DEGREES F)	OBSERVED VALUE	NORMAL VALUE		DEPARTURE FROM NORMAL
AVERAGE MAX	69.3	65.3		4
AVERAGE MIN	38.6	37.0		1.6
MONTHLY MEAN	53.9	51.1		2.8
DAYS WITH MAX 90 OR ABOVE	0	3.4		-3.4
DAYS WITH MAX 32 OR BELOW	0	0		0
DAYS WITH MIN 32 OR BELOW	7	0.8		6.2
DAYS WITH MIN ZERO OR BELOW	0	0		0
	OBSERVED VALUE	DATE(S)	NORMAL VALUE	DEPARTURE FROM NORMAL
HIGHEST	85	10/6		
LOWEST	24	10/20		
HEATING DEGREE DAYS				
MONTHLY TOTAL	341		436	-95
SEASONAL TOTAL	496		561	-65

COOLING DEGREE DAYS				
MONTHLY TOTAL	5		7	-2
YEARLY TOTAL	1183		1104	-79
PRECIPITATION (IN INCHES)				
MONTHLY TOTAL	0.08		0.99	-0.91
YEARLY TOTAL	11.96		12.78	-0.82
GREATEST IN 24 HOURS	0.04	10/12		
DAYS WITH MEASURABLE PRECIP.	3	12 th ,15 th ,26 th		
SNOWFALL (IN INCHES)				
MONTHLY TOTAL	0	0		
SEASONAL TOTAL	0	0		
GREATEST IN 24 HOURS	0	0		
GREATEST DEPTH	0	0		

November Preview

Temperatures begin to cool off significantly during the month of November as the start of meteorological winter nears. In recent years, November has fallen to the fifth snowiest month on average in Denver, behind March, April, December, and February respectively. 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 58.7 and the average low for the month is 28.7. The all-time record high for November of 81 degrees occurred in 2017, 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 through the overnight hours. Denver typically experiences 2-4 measurable snowfall events over the course of November with a monthly average of 7.5", 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. An average of 0.64" 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 accumulate on pavement due more easily to colder temperatures and lower solar angles. For November 2021 Skyview Weather expects above normal temperatures and at or below normal precipitation and snowfall.

DENVER'S NOVEMBER CLIMATOLOGICALLY NORMAL	
(NORMAL PERIOD 1981-2010 DIA Data)	OBSERVED VALUE
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

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