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NWS Watch, Warning and Advisory Review

This list has the watch, warning, and advisory criteria for Colorado along and east of the Continental Divide. Heavy snow criteria for eastern and central Colorado are representative values applied over a large geographic area...

Mountains - 8 inches of snow in 12 hours, 12 or more inches in 24 hours

Lower elevations - 6 inches of snow in 12 hours, 8 or more inches in 24 hours

Winter watches and warnings

A winter storm watch is issued when winter storm conditions are possible within the next 3 days, but the timing, intensity, or occurrence may still be uncertain.

A winter storm warning is issued when heavy snow is occurring or will develop in the next 36 hours. The heavy snow may be accompanied by wind greater than 15 mph and blowing snow.

A blizzard watch is issued when blizzard conditions are possible in the next 12 to 36 hours.

A blizzard warning is issued in lower elevations when the following conditions are expected for at least 3 hours...

- sustained winds of 35 mph or greater.
- considerable falling and or drifting snow lowering
- visibilities less than 1/4 mile.

A blizzard warning is issued in the mountains and foothills for the conditions above, but with winds in excess of 50 mph at the higher elevations.

A wind chill watch is issued when wind chill warning criteria are possible in the next 12 to 36 hours.

A wind chill warning is issued for wind chills of at least minus 25 degrees on the plains, and minus 35 degrees in the mountains and foothills.

A freeze watch is issued when freeze conditions are possible in the next 12 to 36 hours.

A freeze warning is issued during the growing season when widespread temperatures are expected to drop to below 32 degrees.

A high wind watch is issued when high wind conditions are expected to develop in the next 12 to 36 hours. Sometimes it will be issued late in the first forecast period...6 to 12 hours...if the potential for high wind exists...but there is some uncertainty.

A high wind warning is issued for the following conditions...

Mountains, Foothills and nearby adjacent plains including Fort Collins, Boulder, and western Denver suburbs - sustained winds of 50 mph for at least 1 hour or gusts to 75 mph for any duration in the mountains and foothills

Lower Elevations away from the foothills - sustained winds of 40 mph for at least 1 hour...or gusts to 58 mph for any duration at lower elevations away from the foothills.

Advisories

A winter weather advisory is issued...

When general snow accumulations are expected between 4 and 8 inches in 12 hours in the mountains and foothills, and between 3 and 6 inches in 12 hours at lower elevations.

When falling snow is accompanied by blowing snow to cause travel problems due to lower visibilities.

When wind-blown snow will occasionally reduce visibilities and create a hazard for travelers.

For freezing drizzle or a mix of precipitation types, such as snow and sleet, that will impact travel conditions.

A dense fog advisory is issued when fog will reduce visibilities to 1/4 mile or less.

A wind chill advisory is issued on the plains when wind and temperature combine to produce wind chill values of minus 18 degrees to minus 25 degrees.

A wind chill advisory is issued for the mountains and foothills when wind and temperature combine to produce wind chill values of minus 25 degrees.

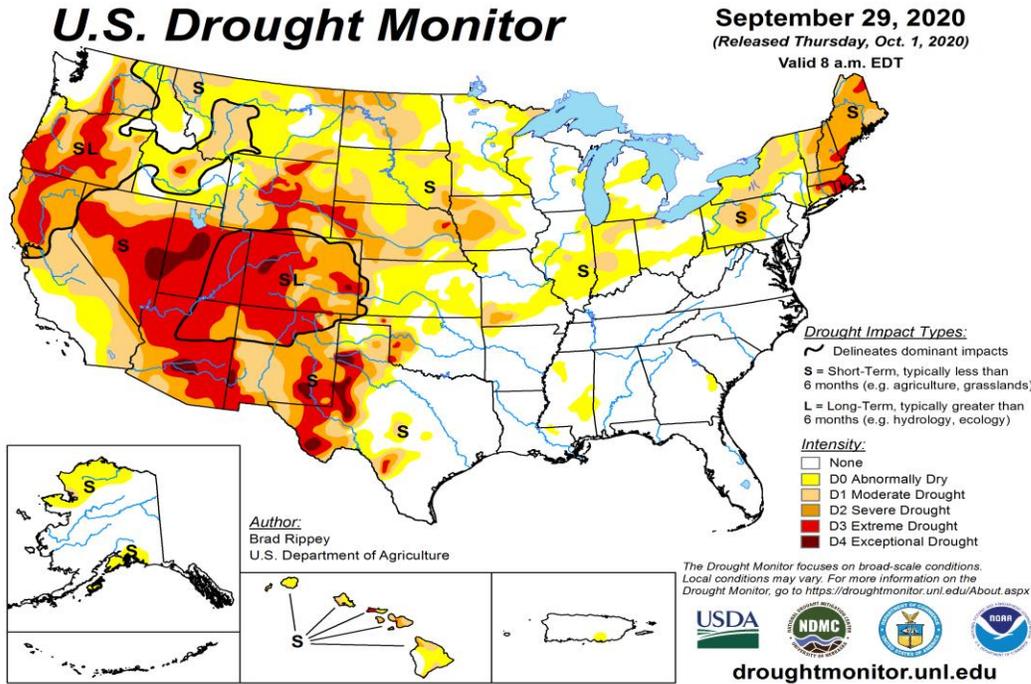
A frost advisory is issued during the growing season when temperatures are expected to drop to between 32 and 35 degrees on clear calm nights.

A blowing dust advisory is issued when blowing dust reduces visibilities to between a quarter of a mile and a mile.

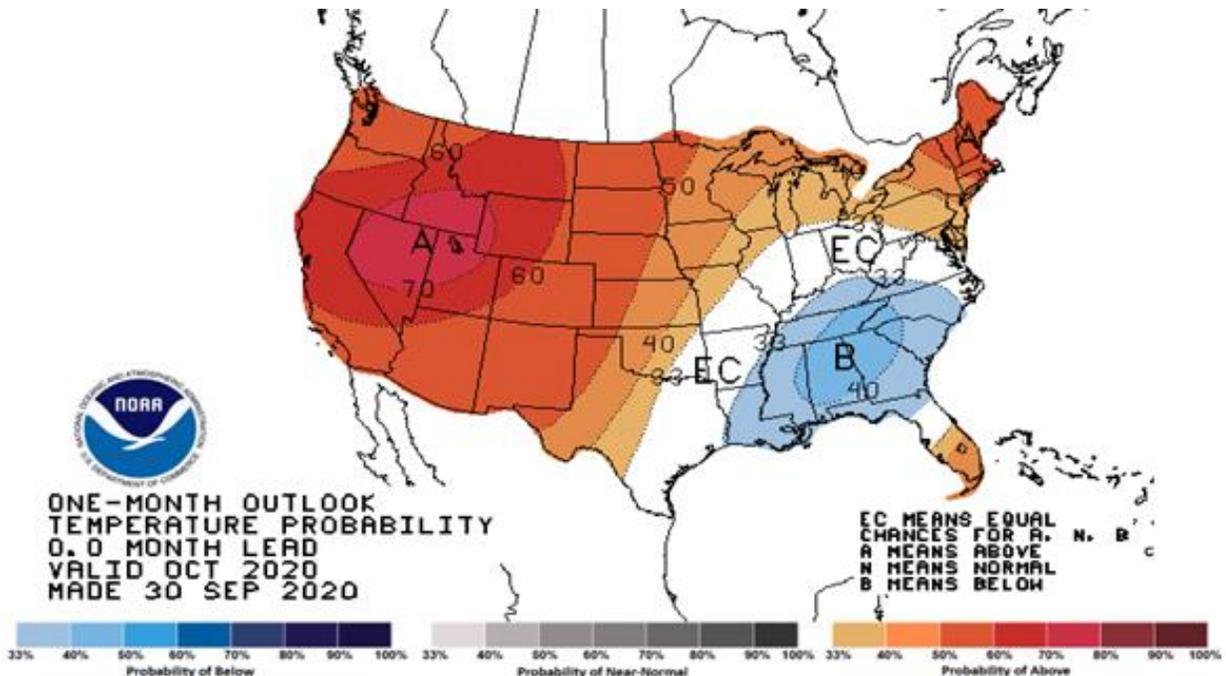
<https://www.weather.gov/bou/watchwarningadvisoryexplained>

Drought Update

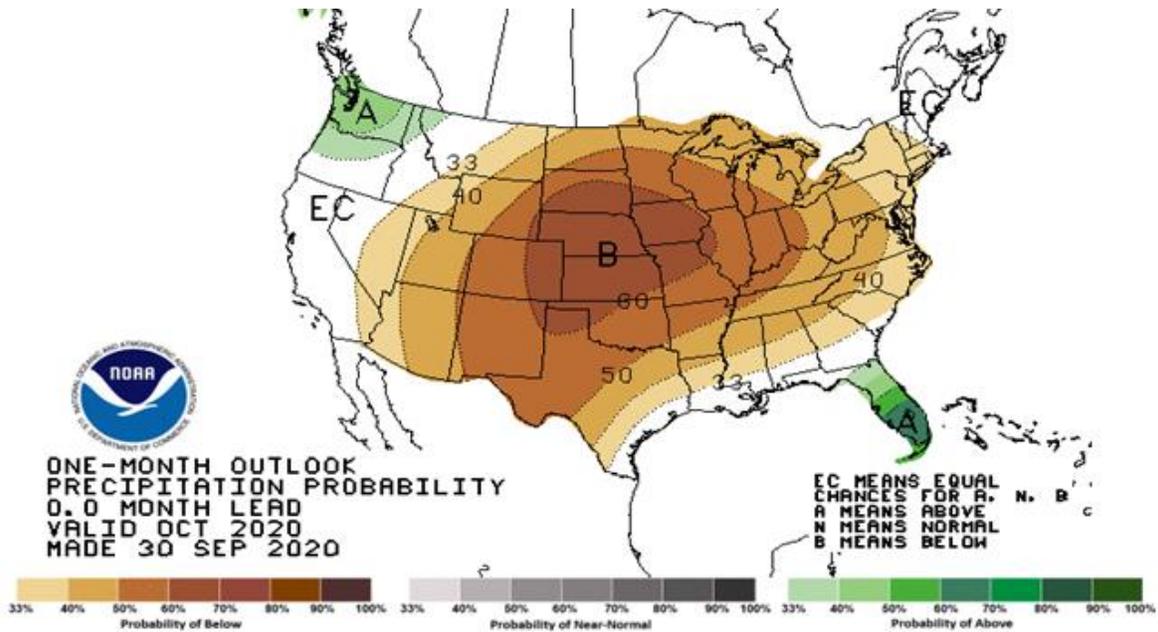
Colorado has had abnormally dry conditions with moderate to exceptional drought due to the lack of moisture this summer over most of the state. Currently, Colorado has very isolated areas of moderate drought, with most areas unfortunately in the extreme drought scenario. Much of the southwest and west are experiencing extreme to exceptional drought.



The map below shows forecasted temperature deviances for October 2020. There is a strong bias toward above normal temperatures across all of Colorado.



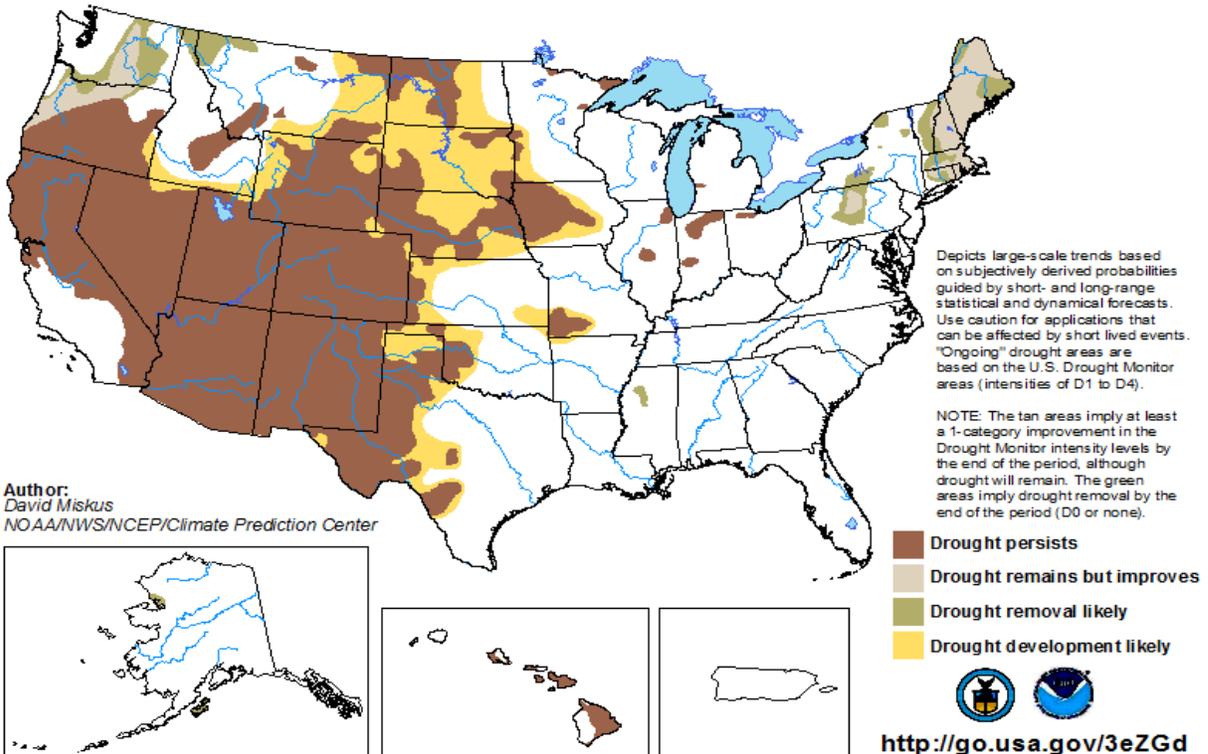
The map below shows forecasted precipitation deviances for October 2020. There is a large swath of below average precipitation for most of the United States, including Colorado which will only increase drought conditions through October.



Colorado is expected to see some worsening of drought conditions this month with areas of drought likely persisting over the entire state. Drought development is expected to increase in coverage over the SW and Western United States through the month of October.

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

Valid for October 2020
Released September 30, 2020



September Summary

September of 2020 was above normal in temperature and just below normal in precipitation as high pressure dominated the weather pattern. The average high for Denver at DIA was 80.7 degrees which was 2.2 degrees warmer than the normal of 78.5 degrees. The average low for the month was 50.2 degrees which was 1.9 degrees above the normal of 48.3 degrees. Combining the monthly highs and lows resulted in an average mean temperature of 65.4 degrees which was 2.0 degrees above the normal of 63.4 degrees. There were a couple of daily record highs set with highs of 101 degrees on September 5th, 97 degrees set on September 6th and 91 degrees set on September 24th. On the 5th of September, the official high at DIA reached 101 degrees which was the latest 100-degree day in Denver history beating 2019 by 3 days. The previous latest 100-degree day prior to 2019, was August 16th in 2002! There were 7 days during the month when the temperature reached or exceeded 90 degrees. Interestingly, just after 2 record setting days on the 5th and 6th, a strong winter storm pushed through the region during the overnight on the 7th, bringing an early season snow along with record low temperatures on the 8th, 9th (31 degrees) and 10th (35 degrees). Precipitation was minimal through the month and most of it occurred in just a few days. At DIA 0.93" of moisture was observed which was only 0.03" below the normal of 0.96". For the year DIA has reported 7.41" of moisture which is an astounding 4.91" below the normal of 12.32". There was 1 thunderstorm day reported at DIA and only 5 days produced any measurable rain greater than a trace with the 8th receiving 1 inch of accumulating snow. With all the warm and dry weather there was abundant sunshine during the month with 12 days considered sunny to mostly sunny and 15 days considered partly cloudy and 3 cloudy days.

Southeast Colorado also experienced warmer than average temperatures and below normal precipitation in September. Colorado Springs reported average highs for the month of 78.7 degrees and average lows of 48.7 degrees. The combination resulted in a monthly mean temperature of 63.7 degrees which was 2.8 degrees above normal. The airport in Colorado Springs reported only 0.35" of moisture which was .84" below the normal of 1.19". Further south into Pueblo average highs for the month of September were 84.0 degrees with average lows of 47.7 degrees producing a monthly mean temperature of 65.8 degrees which was 1.1 degrees above normal. Precipitation in Pueblo was 0.71" for the month which was only 0.06" below the normal of 0.77".

September Stats

TEMPERATURE (IN DEGREES F)

AVERAGE MAX	80.7	NORMAL 78.5	DEPARTURE 2.2
AVERAGE MIN	50.2	NORMAL 48.3	DEPARTURE 1.9
MONTHLY MEAN	65.4	NORMAL 63.4	DEPARTURE 2.0
HIGHEST	101 on the 5 th		
LOWEST	31 on the 8 th & 9 th		

DAYS WITH MAX 90 OR ABOVE	7	NORMAL	3.4
DAYS WITH MAX 32 OR BELOW	0	NORMAL	0.0
DAYS WITH MIN 32 OR BELOW	2	NORMAL	0.8
DAYS WITH MIN ZERO OR BELOW	0	NORMAL	0.0

TEMPERATURE RECORDS

Record high of 101 on the 5th and 97 on the 6th

Record high of 101 on the 5th (Latest 100+ degree day in Denver history!)

HEATING DEGREE DAYS

MONTHLY TOTAL	125	NORMAL	125	DEPARTURE	0
SEASONAL TOTAL	126	NORMAL	125	DEPARTURE	1

COOLING DEGREE DAYS

MONTHLY TOTAL	147	NORMAL	76	DEPARTURE	71
YEARLY TOTAL	1145	NORMAL	764	DEPARTURE	381

PRECIPITATION (IN INCHES)

MONTHLY TOTAL	0.93	NORMAL	0.96	DEPARTURE	-0.03
YEARLY TOTAL	7.41	NORMAL	12.32	DEPARTURE	-4.91
GREATEST IN 24 HOURS	0.83" on 9/7-8				
DAYS WITH MEASURABLE PRECIP.	6				

SNOWFALL (IN INCHES)

MONTHLY TOTAL	1.0	NORMAL	1.3	DEPARTURE	-0.3
SEASONAL TOTAL	1.0	NORMAL	1.3	DEPARTURE	-0.3
GREATEST IN 24 HOURS	1.0				
GREATEST DEPTH	1.0				

WIND (IN MILES PER HOUR)

AVERAGE SPEED	8.7 mph				
PEAK WIND GUST	41 mph from the N/NE on 9/7				

MISCELLANEOUS WEATHER

NUMBER OF DAYS WITH THUNDERSTORM	1	NORMAL	4
NUMBER OF DAYS WITH HEAVY FOG	0	NORMAL	1
NUMBER OF DAYS WITH HAIL	0		
NUMBER OF SUNNY DAYS	12		

NUMBER OF PARTLY CLOUDY DAYS	15
NUMBER OF CLOUDY DAYS	3
AVERAGE RELATIVE HUMIDITY	45%

October Preview

October is one of Denver's drier months on average, but it also is the month when typically, the first taste of winter occurs. Although, this year we have already experienced that as an early September snow impacted the state. The average date of Denver's first freeze of the season is on October 7th and the average date of the first measurable snow of the season is on October 18th. These both were hit in September with snow on the 8th and temperatures dropping below freezing on the 8th and 9th. The average high for the month of October is 65.3 and the average low for the month is 36.6, with an average of 8.5 days of below freezing temperatures. October is also the month in which Denver's latest 90 degree day and earliest subzero day have occurred, although it's been about 100 years or more since either of these instances. The hottest temperature on record in October is 90, which happened in 1892, and the coldest temperature on record in October is -2, which happened in 1917. Typically, 1-3 cool, wet systems will occur during the month, most of which produce light to moderate precipitation with an average monthly precipitation of 1.02" and an average monthly snowfall of 4.0". Most of the snowfall events that occur during October are "wet" in nature and have less impacts on pavement compared to other months due to typical warmer surface temperatures. However, heavy snowfall events can occasionally occur during October, which can significantly impact roadways, especially when snowfall rates exceed 1"/hour like in 2019 where record breaking snowfall occurred during the month of October for areas around Boulder. The biggest snow event on record in October occurred in 1906 when 22.7" fell, but the second heaviest October snow event of 21.9" occurred more recently in 1997. The snowiest October on record occurred in 1969 with a monthly total of 31.2". October 1969 was also the coldest and wettest October on record. The most notable "cold and snowy" October for Denver in recent years occurred in 2009, which was the second coldest and fifth snowiest October on record. For October 2020 we expect many areas of NE Colorado to experience less than average snowfall with above average temperatures throughout most of the month. So far, due to a La Niña set up, October has been well above average in temperatures with mid 70's to low 80's with high-pressure dominating over the region. The first impactful storm is expected in the early second week of October, although with above average temperatures going into the second week, not much snowfall will be expected below 6k feet and any snowfall that does occur should have no issues melting on contact. High-pressure will build back over the region through most of the rest of October, although a few days with precipitation cannot be completely ruled out as October typically has at least 5 days on average, with almost 2 days with above 1" of snow for DIA.

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

TEMPERATURE

AVERAGE HIGH 65.3
 AVERAGE LOW 36.6
 MONTHLY MEAN 50.9
 DAYS WITH HIGH 90 OR ABOVE 0
 'DAYS WITH HIGH 32 OR BELOW 0.4
 DAYS WITH LOW 32 OR BELOW 8.5
 DAYS WITH LOWS ZERO OR BELOW 0

PRECIPITATION

MONTHLY MEAN 1.02"
 DAYS WITH MEASURABLE PRECIPITATION 5.3
 AVERAGE SNOWFALL IN INCHES 4.0"
 DAYS WITH 1.0 INCH OF SNOW OR MORE 1.7

MISCELLANEOUS AVERAGES

HEATING DEGREE DAYS 440
 COOLING DEGREE DAYS 5
 WIND SPEED (MPH) 8.8mph
 WIND DIRECTION South
 DAYS WITH THUNDERSTORMS 1
 DAYS WITH DENSE FOG 1
 PERCENT OF SUNSHINE POSSIBLE 72%

EXTREMES

RECORD HIGH 90 on 10/1/1982
 RECORD LOW -2 on 10/29/1917
 WARMEST 59.0 in 1950
 COLDEST 38.9 in 1969
 WETTEST 4.17" in 1969
 DRIEST Trace in 1934
 SNOWIEST 31.2" in 1969
 LEAST SNOWIEST 0.0" in many years

Rainfall

May 2020 to September 2020

City	May	Jun	Jul	Aug	Sep	Total	Sept/Snw
Aurora (Central)	1.61	1.77	0.51	0.35	0.91	5.15	1.0
Brighton	1.34	1.42	1.02	0.43	0.24	4.45	0.6
Broomfield	0.94	1.14	0.47	0.36	0.67	3.58	1.5
Castle Rock	1.03	2.11	1.35	0.83	0.75	6.07	2.8
Colo Sprgs Airport	1.15	0.78	1.53	2.74	0.35	6.55	2.6
Denver DIA	1.65	0.71	0.95	0.35	0.93	4.59	1.0
Denver Downtown	1.38	1.14	0.67	0.16	0.91	4.26	1.5
Golden	1.77	1.38	0.75	0.16	0.91	4.97	2.8
Fort Collins	2.33	1.69	0.33	0.35	1.36	6.06	2.3

Highlands Ranch	0.98	0.55	0.43	0.16	0.79	2.91	2.5
Lakewood	1.38	1.42	0.94	0.12	0.83	4.69	2.4
Littleton	1.06	0.83	0.20	0.20	0.79	3.08	3.0
Parker	1.18	0.98	0.43	0.43	0.63	3.65	2.0
Sedalia - Hwy 67	1.26	0.98	0.71	0.39	0.63	3.97	4.0
Thornton	1.10	1.02	0.47	0.55	0.47	3.61	1.7
Westminster	2.01	1.30	0.71	0.43	0.75	5.20	2.0
Wheat Ridge	1.38	2.20	0.63	0.24	0.91	5.36	2.8

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