



The Weather Wire

June 2019

Volume 26 Number 6

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Perils of Weather Apps

Now that nearly everyone has a cell phone and access to a plethora of data, including weather and radar apps, how reliable are those sources and what is the end users experience in recognizing what is acceptable data and what isn't? Weather apps are a great tool to have in order to get an overall idea of what will be in store for the next couple of days, but they lack the ability to precisely account for individual storms or storm systems that may have a major impact on someone's daily life. For example, a weather app will let you know that tomorrow has a 30% chance for rain/thunderstorms, which is good that a person will know that there is a chance for inclement weather. However, it generally doesn't state what types of storms, whether or not they will be severe, where will these storms will occur or what type of threat to expect, heavy rain? Hail? Tornadoes? This type of information is more important for most people and not just what percentage chance there is for the weather that day, or a few days later. Additionally, a few big-name weather apps have recently been sued for collecting user's location data, which is another reason, on top of accuracy, to be wary of using weather apps for your personal weather information.

For someone to get "real time" data, they would have to download a radar app. Radar apps are another great tool in a person's arsenal; however, the value really depends on which app the person is going to use and whether they understand how to interpret that data. For instance, most, if not all, free radar apps use a composite type data set. Radar scans the horizon at many different levels, from the bottom of the cloud all the way to the top. Each scan is a rotation of radar and each scan takes time to complete. Why is this important? When a free radar app uses a composite type data set, it takes every scan of that cloud in order to update, and only updates once all scans have been completed. This takes time in order to complete, and as a result will have a built-in delay when using composite data versus single tilt data. Another issue with composite type data is that it will take the highest radar return from each scan and will show that highest radar return on the display. That higher display, may, or may not, be representative of what's happening on the ground. There are a few apps that can be purchased that will allow a person to see individual scans at different heights, which can give a much better, more detailed picture of storm development, but is generally not very intuitive for most people and can quickly become confusing if a person doesn't understand how to interpret that information. Again, even though individual scans load faster to the end user, it is always good to remember that no matter how fast it uploads, the data is always behind once it gets to an end user's phone. Typical delays on radar can run anywhere from 5 to 15 minutes and a storm can completely change strength as well as move in amount of time, whether in the dissipating stage, or strengthening and becoming severe. Another option someone can pay for on these apps is lightning detection. Again, this option is better than nothing at all, but unfortunately

is delayed as well up to several minutes and does not define the type of lightning, i.e. Cloud to cloud, cloud to ground, positive or negative strikes. Without that data, it is just a guessing game as to what type of lightning, when and where that strike truly occurred. This is very important information to have and is not available through any current app on the market. Another issue that can arise from any app-based platform is that the data has stopped collecting, or the radar site is down or not functioning correctly. Usually the app will not display that it is currently not working and instead will leave the last image taken which could be hours old. Someone that is not trained or just doesn't know that the app has stopped working could use this information incorrectly. All these reasons are something to be wary about when using any type of weather or radar app, especially when lives are at stake.

Although not an app, per se, cell phone providers send Tornado Warnings and Flash Flood Warnings to cell phones. Although the concept is good, the devil is in the details. Just because the cell phone alerts you to either a Tornado Warning or Flash Flood Warning, this does NOT mean you are necessarily in the warning area, rather the warning system determines which cell phone towers are included in the warning area, with alerts going to ALL cell phones connected to that tower. You could very well be miles away from the actual warning area, so care must be taken. If a warning is received on your phone, you should check another source (when safe to do so), for instance, an NWS web page, to see the actual polygon of the warning area.

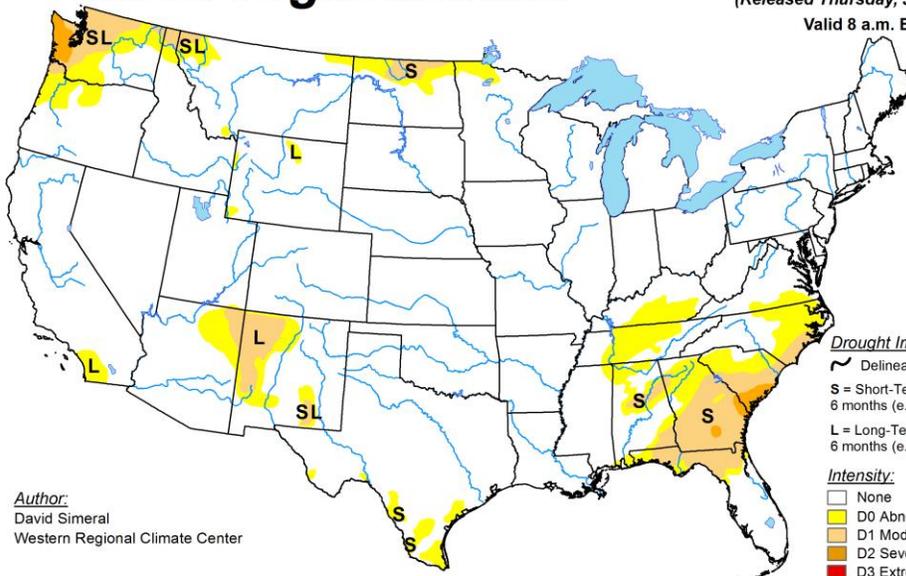
What can a person do to get accurate and accountable information in the quickest time possible? Thankfully here at Skyview Weather we have that covered, all our employees have a multitude of years combined in recognizing patterns in one of the country's most notoriously tough forecasting climates, Colorado. Skyview Weather provides a detailed explanation of the weather including types of storms, best chance for storms and biggest threat to expect daily, with the ability for a person to call and get a detailed explanation of what to expect at that person's precise location. Everyone at Skyview Weather has the best software along with top of the line radar and lightning detection, along with the experience needed to successfully get that information out quickly. This also unburdens an individual who not only has to do their regular job duties, but also would have to look at weather data from an app that may or may not be accurate. Here at Skyview Weather we will provide you with that peace of mind.

Drought Update

For the first time ever since the UNL Drought Monitor began issuing products, the state of Colorado is 100% drought-free! This is an amazing change from last summer, when much of the state was experiencing extreme to exceptional drought. Most of the U.S. is drought-free as well, with the lone exceptions being Western Washington, portions of New Mexico, and portions of the Southeast U.S.

U.S. Drought Monitor

June 4, 2019
 (Released Thursday, Jun. 6, 2019)
 Valid 8 a.m. EDT



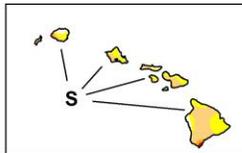
Author:
 David Simeral
 Western Regional Climate Center

Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

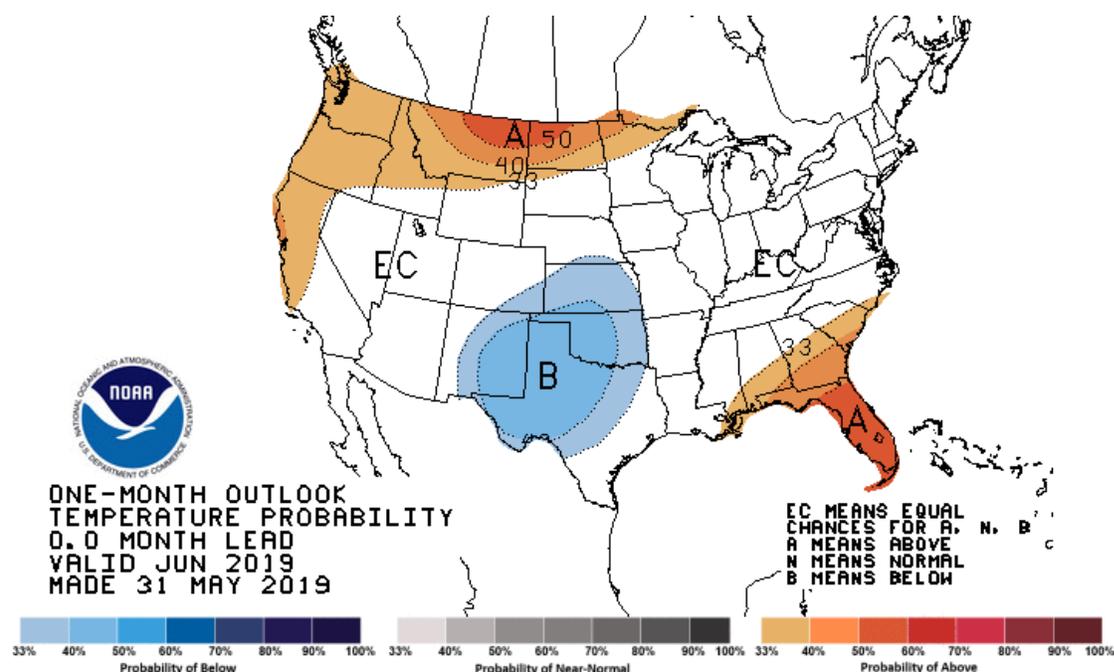


The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

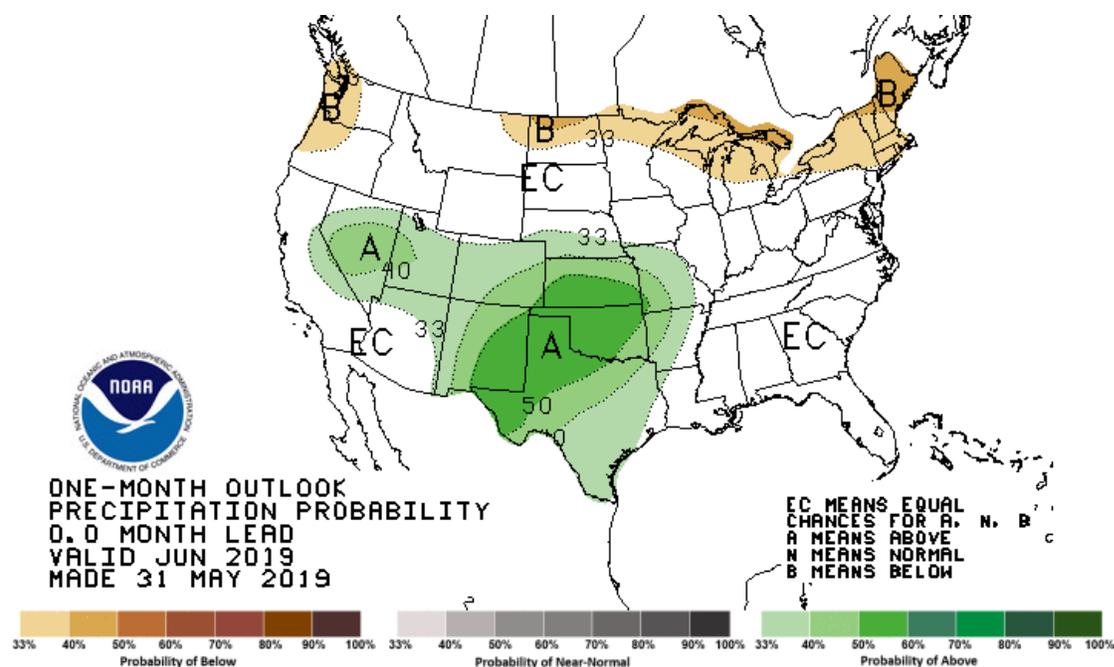


droughtmonitor.unl.edu

The map below shows forecasted temperature deviances for June 2019. There are equal chances for below or above normal temperatures across most of Colorado, with a slight bias toward below normal temperatures across the southeast corner of the state.



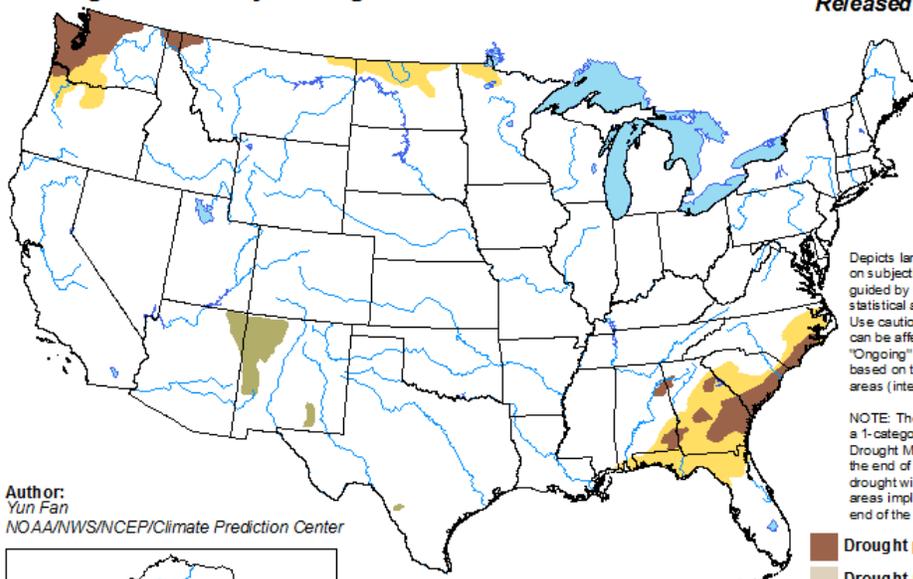
The map below shows forecasted precipitation deviances for June 2019. There is a slight bias toward above normal precipitation across most of Colorado, with a moderate bias toward above normal precipitation across the southeast corner of the state.



Colorado is expected to remain drought-free this month, while drought removal is expected across the small portion of New Mexico where moderate drought conditions are still present. Drought is expected to persist and expand across the Cascades and Olympic Peninsula in Washington

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

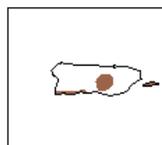
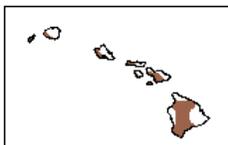
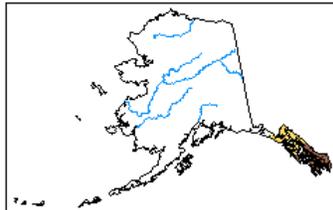
Valid for June 2019
Released May 31, 2019



Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Use caution for applications that can be affected by short lived events. "Ongoing" drought areas are based on the U.S. Drought Monitor areas (intensities of D1 to D4).

NOTE: The tan areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period, although drought will remain. The green areas imply drought removal by the end of the period (D0 or none).

Author:
Yun Fan
NOAA/NWS/NCEP/Climate Prediction Center



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



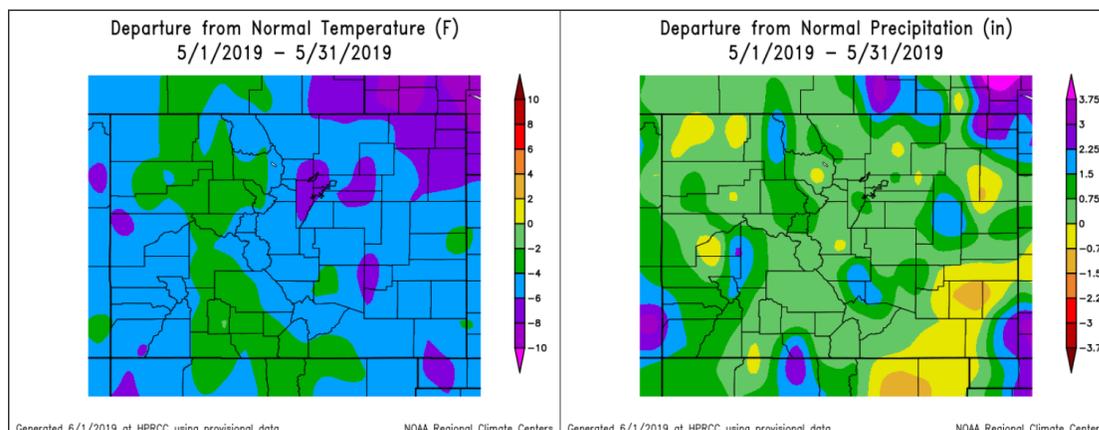
<http://go.usa.gov/3eZGd>

May Summary

May 2019 was a very active month, featuring well below average temperatures, above average precipitation, and above average snowfall. Temperatures at DIA were 5.5 degrees below normal for May, making it the 7th coldest May on record in Denver. For the state of Colorado as a whole, this was the 4th coldest May on average. The month featured an active storm track with frequent cold low-pressure systems tracking across the area. Two late season accumulating snowfall events occurred across the lower elevations, on the 8-9th and on the 21-22nd. The snow event on the 21st-22nd ranks in the top 10 for the latest accumulating snowfall events on record in Denver. The 3.7" recorded at DIA during this time also makes it the latest 3" or more snowfall event since 1975. DIA recorded a total of 3.9" of snow in May, which is well above the average value of 1.1". Snowfall totals generally ranged from 3-8" for the month across the I-25 corridor from Denver northward, while the Palmer Divide saw impressive totals in the 10-20" range, thanks in part to heavy snowfall that occurred on the 21-22nd. The average high temperature for the month at DIA was 63.9, which is 7.6 degrees below normal, and the average low for the month was 39.2, which is 3.5 degrees below normal. There were 7 days of below freezing temperatures at DIA, which is well above the monthly average of 2. The final freeze of the year occurred on May 22nd, which is about two and a half weeks later than the average last freeze date of May 4th. The low of 30 on the 22nd was also a record low for the date, and the low of 31 on the 21st tied a record low for the date. Precipitation for the month of May totaled 3.23" at DIA, which is 1.11" above average. Across the I-25 corridor, precipitation totals generally ranged from 2-4". Thunderstorm activity in May was right around average with 6 days of thunder recorded at DIA. Toward the end of the month, there was some severe thunderstorm activity across Northeast Colorado, including a middle-of-the-night hailstorm in Denver during the early morning hours of the 28th.

Southeast Colorado also saw colder than average temperatures and above average precipitation during May. The average temperature in Colorado Springs was 4.1 degrees below normal, making it the 13th coldest May on record. The Colorado Springs Airport recorded 2.49" of precipitation in May, which is 0.46" above normal. Snowfall in May was quite impressive across El Paso County, especially from the heavy snow event that occurred on the 21-22nd. Snowfall for the month generally ranged from 4-10" across central/southern Colorado Springs, while areas from northern Colorado Springs to Monument Hill received 8-20" for the month. The Colorado Springs Airport received a total of 5.1" of snow in May, which makes it the 7th snowiest May on record.

The maps below show departure from normal temperature and precipitation for the month of May.



May Stats

TEMPERATURE (IN DEGREES F)

AVERAGE MAX	63.9	NORMAL 71.5	DEPARTURE -7.6
AVERAGE MIN	39.2	NORMAL 42.7	DEPARTURE -3.5
MONTHLY MEAN	51.6	NORMAL 57.1	DEPARTURE -5.5
HIGHEST	83 on 5/15		
LOWEST	30 on 5/1, 5/22		

DAYS WITH MAX 90 OR ABOVE	0	NORMAL	0.8
DAYS WITH MAX 32 OR BELOW	0	NORMAL	0.0
DAYS WITH MIN 32 OR BELOW	7	NORMAL	1.9
DAYS WITH MIN ZERO OR BELOW	0	NORMAL	0.0

TEMPERATURE RECORDS

5/21 – Record low of 31 tied

5/22 – Record low of 30 set

5/22 – Record low maximum of 39 set

HEATING DEGREE DAYS

MONTHLY TOTAL	414	NORMAL 265	DEPARTURE 149
SEASONAL TOTAL	6219	NORMAL 5996	DEPARTURE 223

COOLING DEGREE DAYS

MONTHLY TOTAL	5	NORMAL 21	DEPARTURE -16
YEARLY TOTAL	5	NORMAL 22	DEPARTURE -17

PRECIPITATION (IN INCHES)

MONTHLY TOTAL	3.23	NORMAL 2.12	DEPARTURE 1.11
YEARLY TOTAL	7.34	NORMAL 5.53	DEPARTURE 1.81
GREATEST IN 24 HOURS	1.07 on 5/20		
DAYS WITH MEASURABLE PRECIP.	14		

SNOWFALL (IN INCHES)

MONTHLY TOTAL	3.9	NORMAL 1.1	DEPARTURE 2.8
SEASONAL TOTAL	48.1	NORMAL 53.8	DEPARTURE -5.7
GREATEST IN 24 HOURS	3.7" on 5/20-21		
GREATEST DEPTH	3" on 5/21		

WIND (IN MILES PER HOUR)

AVERAGE SPEED	10.0 mph
PEAK WIND GUST	50 mph from the NW on 5/17

MISCELLANEOUS WEATHER

NUMBER OF DAYS WITH THUNDERSTORM	6	NORMAL	6
NUMBER OF DAYS WITH HEAVY FOG	7	NORMAL	1
NUMBER OF DAYS WITH HAIL	2		
NUMBER OF SUNNY DAYS	3		
NUMBER OF PARTLY CLOUDY DAYS	16		
NUMBER OF CLOUDY DAYS	12		
AVERAGE RELATIVE HUMIDITY	64%		

June Preview

June is typically the peak of severe weather season for the Denver metro area and eastern Colorado, with an overall average of 10 thunderstorm days during the course of the month. More tornadoes occur in June in Colorado than any other month, with the greatest threat occurring for areas east of I-25, but occasionally tornadoes can occur across central and western portions of the metro area. The threat for large hail is also higher during June compared to other months. Average temperatures continue their upward trend during June, which is the first month of meteorological summer. The average high temperature during June is 82.4 degrees, with an average of 9 days exceeding 90 degrees during the month. The average low temperature for the month is 52.3. Freezing temperatures are very rare in Denver during June, but it has occurred in the past with an all-time monthly record low of 30 occurring in 1951. Snow is also extremely rare in June in Denver, but it has occurred before with a record amount of 0.5" occurring in 1953. Average precipitation in June is 1.98", making it the third wettest month on average behind May and July. Often, the bulk of the month's precipitation can occur from just one or two heavy thunderstorms, and precipitation amounts tend to be more variable in June than during other months due to the convective nature of precipitation. For June 2019, we are expecting above normal rainfall and cooler than average temperatures as the active upper level pattern experienced during May looks to continue. Soil moisture across the central and southern plains states continues to run much higher than normal, and this will likely contribute to a low-level moisture feedback into Eastern Colorado. As a result, we are expecting a more active than usual severe weather season across the I-25 corridor and Eastern Colorado. We also expect the day-to-day frequency of thunderstorms to be higher than normal in June.

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

TEMPERATURE

AVERAGE HIGH	82.4
AVERAGE LOW	52.3
MONTHLY MEAN	67.4
DAYS WITH HIGH 90 OR ABOVE	8
DAYS WITH HIGH 32 OR BELOW	0
DAYS WITH LOW 32 OR BELOW	0
DAYS WITH LOWS ZERO OR BELOW	0

PRECIPITATION

MONTHLY MEAN	1.98"
DAYS WITH MEASURABLE PRECIPITATION	8
AVERAGE SNOWFALL IN INCHES	0.0"
DAYS WITH 1.0 INCH OF SNOW OR MORE	0

MISCELLANEOUS AVERAGES

HEATING DEGREE DAYS	133
COOLING DEGREE DAYS	62
WIND SPEED (MPH)	8.9mph
WIND DIRECTION	South
DAYS WITH THUNDERSTORMS	10
DAYS WITH DENSE FOG	<1
PERCENT OF SUNSHINE POSSIBLE	70%

EXTREMES

RECORD HIGH	105 on 6/25/2012, 6/26/2012
RECORD LOW	30 on 6/2/1951
WARMEST	75.0 in 2012
COLDEST	60.6 in 1967
WETTEST	4.96" in 1882
DRIEST	TR in 1890
SNOWIEST	0.5" in 1953
LEAST SNOWIEST	0.0" in numerous years

Snowfall

October 2018 to May 2019

City	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Aurora (Central)	2.5	4.6	0.9	12.7	9.5	12.8	6.2	4.2	53.4
Boulder	10.0	15.9	5.7	13.9	12.8	16.2	10.2	7.4	92.1
Brighton	3.4	4.6	0.7	3.4	8.5	12.6	4.6	2.6	40.4
Broomfield	5.1	8.3	2.1	20.0	11.3	17.5	10.5	5.0	79.8
Castle Rock	5.5	9.2	3.2	25.0	8.3	19.7	7.4	10.2	88.5
Colo Sprgs Airpor	5.3	2.8	1.5	2.6	6.1	7.4	5.4	5.1	36.2
Denver DIA	3.2	4.5	0.5	6.2	13.4	12.9	3.5	3.9	48.1
Denver Downtowr	3.9	5.2	2.3	15.4	14.7	13.2	6.6	5.5	66.8
Golden	7.0	7.0	2.4	16.9	13.0	17.6	10.8	5.4	80.1
Fort Collins	6.0	5.6	1.1	1.6	3.8	11.7	12.7	2.7	45.2
Highlands Ranch	6.5	7.0	1.2	19.8	9.4	12.2	5.4	4.0	65.5
Lakewood	3.4	6.6	1.2	15.2	12.0	12.1	6.1	5.2	61.8
Littleton	4.5	6.2	2.2	16.5	15.5	12.3	6.3	3.8	67.3
Parker	3.8	7.4	2.1	17.6	8.3	13.4	7.1	6.2	65.9
Monument	9.3	14.3	6.0	31.1	11.8	25.8	9.3	16.9	124.5
Sedalia - Hwy 67	5.2	6.6	2.4	23.1	8.8	19.6	7.3	8.0	81.0
Thornton	5.0	5.9	0.7	13.4	10.6	12.4	6.5	4.2	58.7
Westminster	3.2	6.8	2.5	19.8	9.1	13.6	9.2	5.0	69.2
Wheat Ridge	4.1	8.5	1.5	13.8	13.7	11.7	8.4	4.9	66.6

Rainfall

May 2019 to October 2019

City	May	Jun	Jul	Aug	Sep	Oct	Total
Aurora (Central)	2.71						2.71
Boulder	3.46						3.46
Brighton	3.26						3.26
Broomfield	2.46						2.46
Castle Rock	2.19						2.19
Colo Sprgs Airport	2.49						2.49
Denver DIA	3.23						3.23
Denver Downtown	3.56						3.56
Golden	3.01						3.01
Fort Collins	2.93						2.93
Highlands Ranch	2.44						2.44
Lakewood	3.60						3.60
Littleton	2.68						2.68
Monument	2.60						2.60
Parker	2.50						2.50
Sedalia - Hwy 67	2.02						2.02
Thornton	2.53						2.53
Westminster	2.70						2.70
Wheat Ridge	2.27						2.27

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