

Colorado State University, Fort Collins, CO Weather Station Monthly Summary Report

Month: January
Year: 2023



Temperature:

Mean T_{\max} was 38.6° , which is 6.4° below the January 1991-2020 normal. This ranks as the 32nd coolest in the 135-year record (1889-2023). The last January this cold or colder was 2007 (36.9°).

Mean T_{\min} was 18.3° , which matches the January 1991-2020 normal. This ranks as the 28th warmest in the 135-year record (1889-2023). The last January this warm was 2021 (20.1°). This was a surprising contrast from the definitively cooler than normal high temperatures. The reduced diurnal temperature range in January may be due in part to an anomalously cloudy month. This hypothesis would be interesting to investigate in more detail.

Mean T_{mean} was 28.4° , which is 3.2° below the January 1991-2020 normal. This ranks as the 65th coolest in the 135-year record (1889-2023). The last January this cold or colder was 2008 (27.2°).

The maximum temperature this month was 59° , and occurred on 10 January 2023.

The minimum temperature this month was -7° , and occurred on 31 January 2023.

A time series of January temperatures for Fort Collins, CO is shown in Figure 1 below.

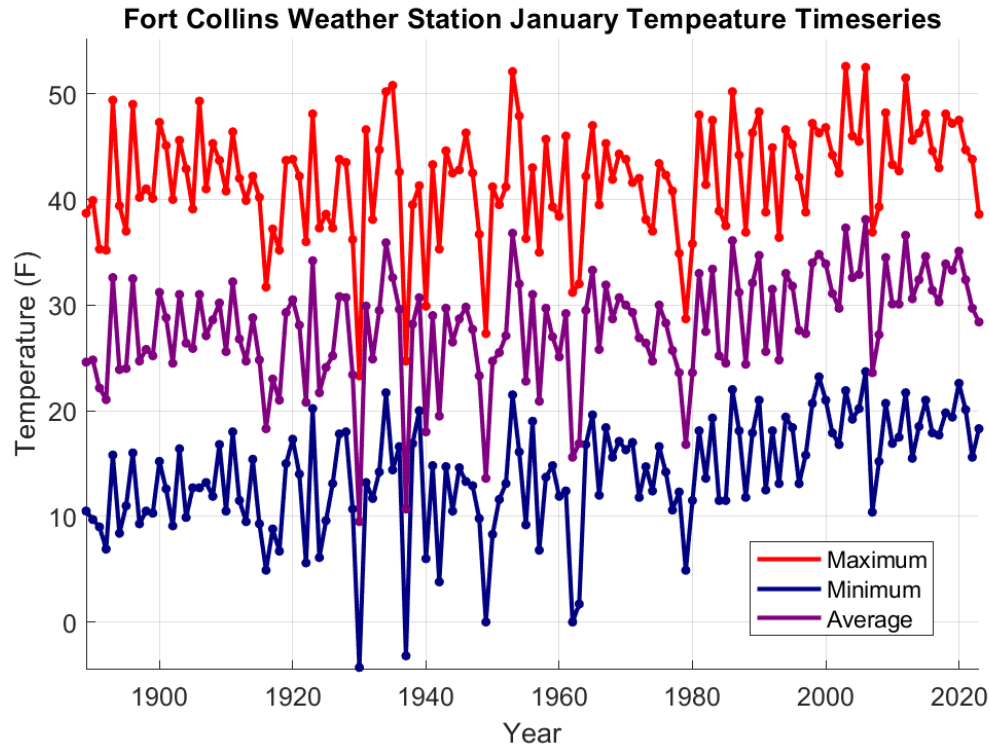


Figure 1: January temperature time series

Precipitation and Snowfall:

Total monthly precipitation was 0.79". This mark is 0.38" above the January 1991-2020 normal (192% of normal). This ranks as the 13th wettest January in the 135-year record (1889-2023). The last January this wet or wetter was 2022 (0.85").

Water year (beginning Oct. 1) 2023 precipitation through January is 2.23". This mark is 0.64" below normal (78% of normal). This ranks as the 64th driest water year in the 134-year data record (1890-2023). The last water year to start this dry was 2022 (1.86").

Total monthly snowfall was 8.8". This mark is 2.1" above the normal (131% of normal). This ranks as the 37th snowiest January in the 135-year record (1889-2023). The last January with greater snowfall was 2022 (11.9").

Seasonal snowfall through January is 22.2", 4.4" below normal for the season-to-date (83% of normal). This ranks as the 63rd snowiest season-to-

date in the 134-year data record (1890-2023). October-January this snowy was 2021 (33.4”).

January precipitation and snowfall time series are shown in figure 2. January temperature and precipitation rankings with respect to previous years are shown in the figure 3 quadrant chart. October-January temperature and precipitation rankings with respect to previous years are shown in the figure 4 quadrant chart.

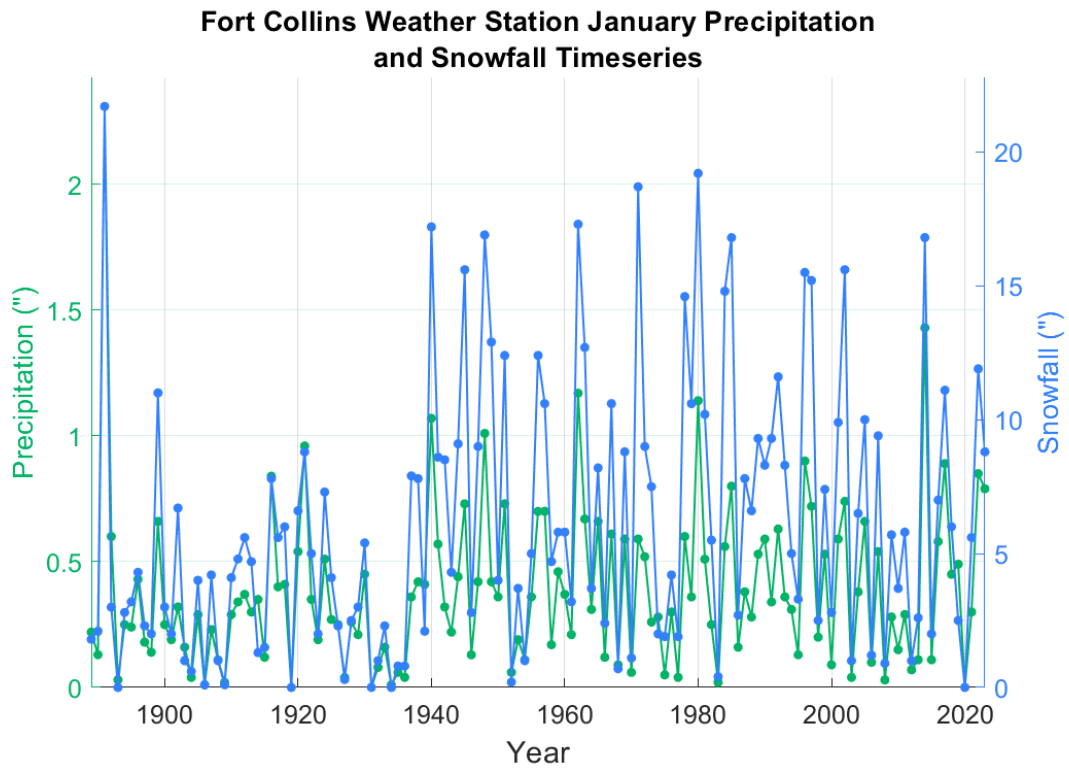


Figure 2: January precipitation (left) and snowfall (right) time series.

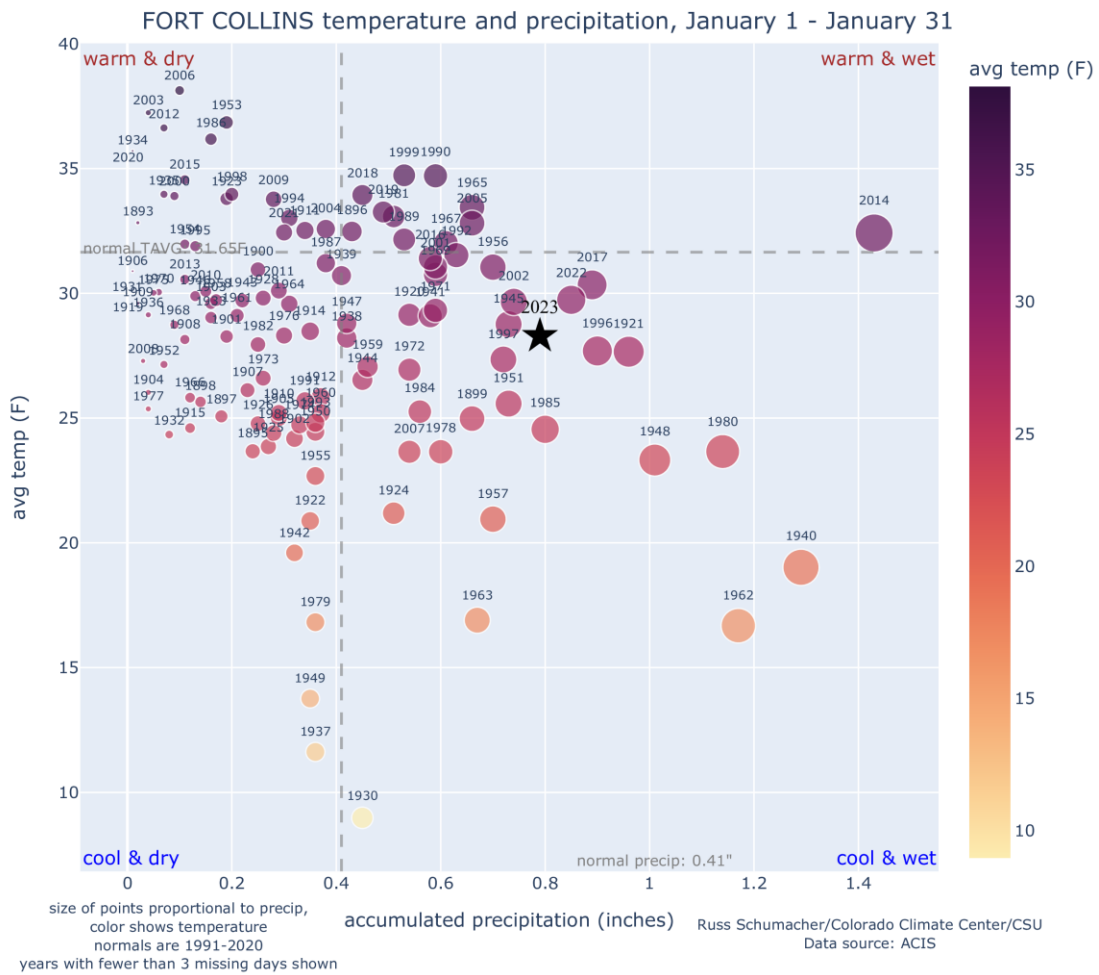


Figure 3: January 2023 precipitation and temperature data plot. Each dot plots monthly average temperature and precipitation at Fort Collins for the period of record. From left to right, monthly precipitation is shown on the x-axis, where the wettest years are plotted furthest to the right. Dot sizes are proportional to precipitation amounts. From bottom to top on the y-axis, average monthly temperature is shown, where the warmest years are plotted towards the top. The dots are also color coded with darker colors indicating higher temperatures. The horizontal and vertical dotted lines indicate the 1991-2020 normals. December was drier and cooler than normal and the calendar year ended right on the normal temperature but drier than normal.

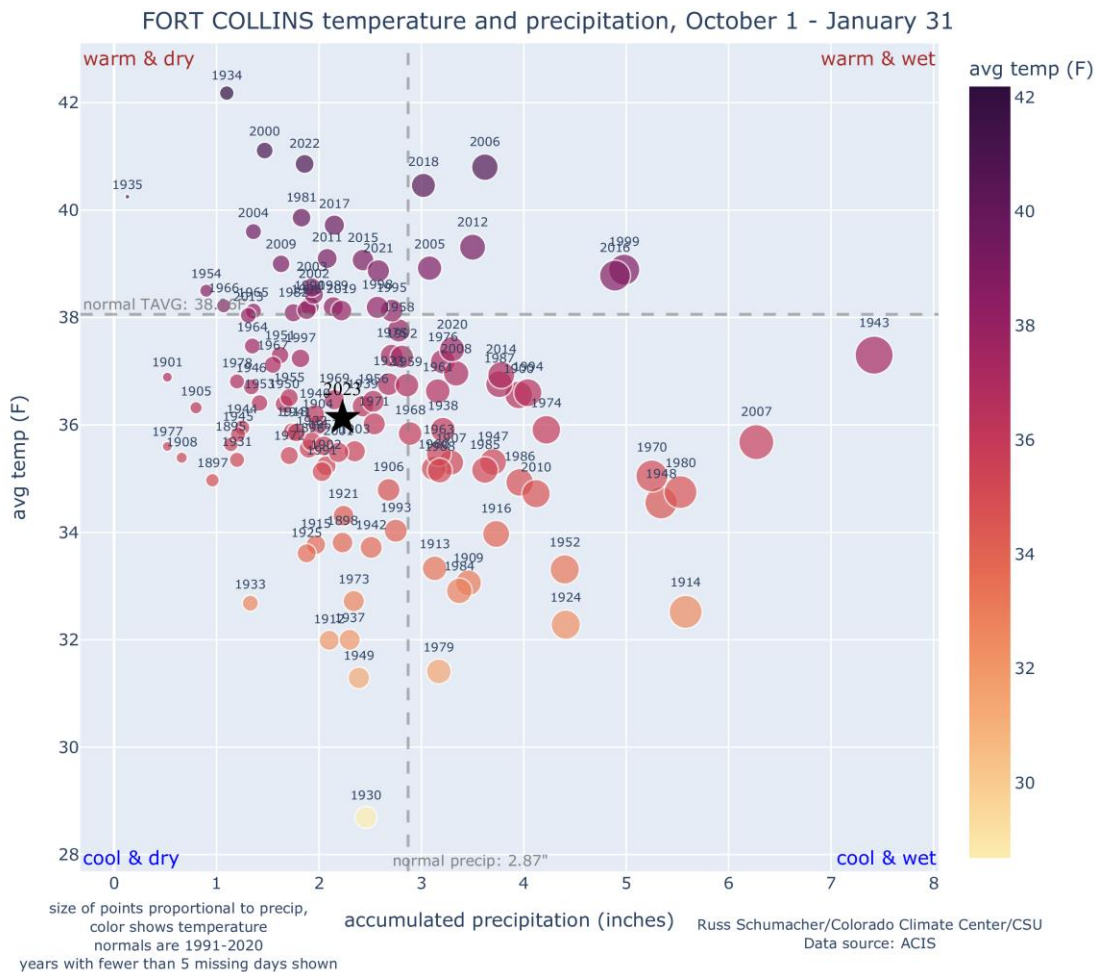
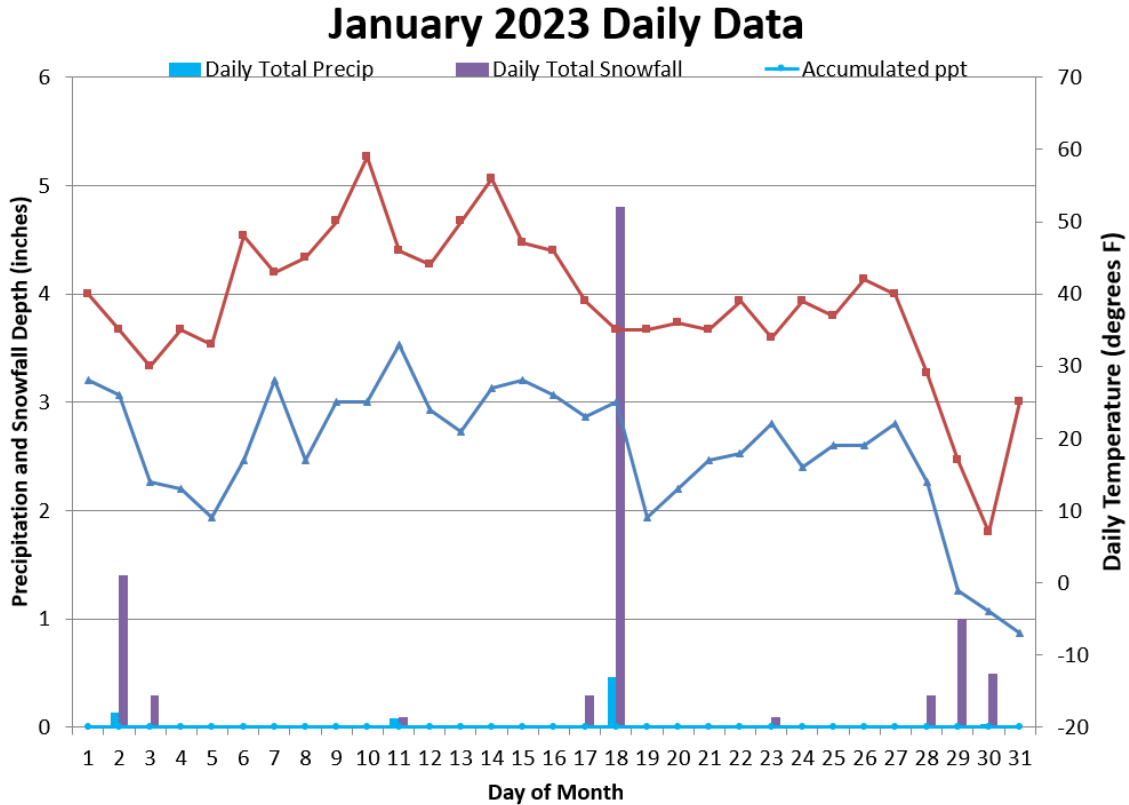


Figure 4: October-January 2023 precipitation and temperature data plot. Each dot plots monthly average temperature and precipitation at Fort Collins for the period of record. From left to right, monthly precipitation is shown on the x-axis, where the wettest years are plotted furthest to the right. Dot sizes are proportional to precipitation amounts. From bottom to top on the y-axis, average monthly temperature is shown, where the warmest years are plotted towards the top. The dots are also color coded with darker colors indicating higher temperatures. The horizontal and vertical dotted lines indicate the 1991-2020 normals. December was drier and cooler than normal and the calendar year ended right on the normal temperature but drier than normal.

Misc. Precipitation (predominant type, record status, etc.):

It has been an unusually cool start to the water year. Mean temperature for October-January 2023 has been 36.1°. The last water year with a first four months this cold or colder was 2010 (34.7°).

We did experience record precipitation (0.47”) and snowfall (4.8”) on January 18th. These marks broke records of 0.29” in 1980 and 3.5” in 1985 respectively. Both were fairly soft records.



Wind:

In January 2023 there were 3 days with maximum wind gusts ≥ 20 mph and 0 days ≥ 30 mph. The lack of chinook winds was instrumental in keeping snow cover on the ground. There were 18 days with one inch or greater of snow on the ground.

The maximum daily wind gust for the month was 24 mph and occurred on 9 January 2023 from 308°.