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2020 Weather in Review: Valley Forge National Historical Park

In all, 2020 was extremely warm and precipitation was also above normal. The year ended as the 3rd warmest and 23rd wettest on record.

Weather data collected from surrounding areas indicate that annual average temperature and annual total precipitation have both increased over the last century

(+0.25 °F per decade and +0.34 inches per decade, respectively).

This brief provides county-scale weather data for Chester and Montgomery counties, PA, including data from 1895–2020 (i.e. period of record). Individual weather station data may vary from what is reported here.

Temperature

In total, 2020 was the 3rd warmest year ever recorded at the park with all seasons being very warm except the spring (Figure 1). Ten months had higher than normal temperatures with January, February, and March all being more than 6.0 °F above long-term averages (Table 1).

Table 1. Average monthly, average annual, and departures from long-term average temperatures. Departures from average are based on a comparison of 2020 average temperatures to relevant averages from 1895-2019. Data are available at <https://www.ncdc.noaa.gov/cag/county/time-series>.

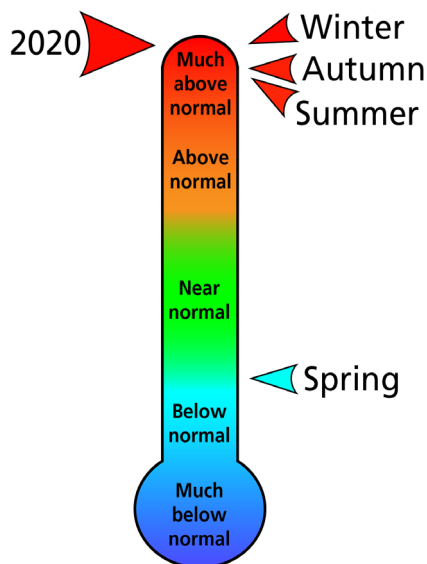


Figure 1. Seasonal and annual temperature rankings. An arrow at the top of the figure would represent the warmest year/season on record (since 1895); at the bottom, the coldest year/season on record. Data are available at <https://www.ncdc.noaa.gov/cag/county/rankings>.

Month/ Year	Average temperature (°F)	Departure from average (°F)
January	36.4	+7.0
February	38.9	+8.1
March	46.0	+6.2
April	49.0	-1.5
May	59.0	-2.0
June	71.3	+1.8
July	79.1	+4.7
August	75.3	+3.0
September	66.2	+0.6
October	56.3	+2.2
November	48.9	+5.8
December	36.0	+3.0
2020	55.2	+3.2

Precipitation

It all, 2020 was the 23rd wettest year ever recorded at the park (Figure 2). In all, 51.6 inches of precipitation fell, almost 6 inches more than the long-term average (Table 2).

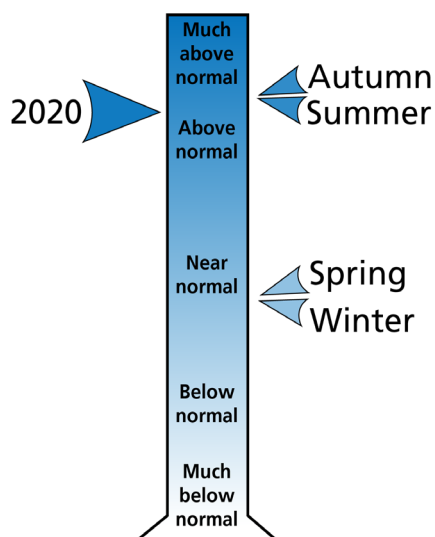


Figure 2. Seasonal and annual precipitation rankings. An arrow at the top of the figure would represent the wettest year/season on record (since 1895); at the bottom, the driest year/season on record. Data are available at <https://www.ncdc.noaa.gov/cag/county/rankings>.

Table 2. Monthly and annual total precipitation and departure from long-term averages. Departures from average are based on a comparison of 2020 precipitation to relevant averages from 1895–2019. Data are available at <https://www.ncdc.noaa.gov/cag/county/time-series>.

Month/ Year	Total precipitation (in.)	Departure from average (in.)
January	3.0	-0.4
February	2.8	-0.2
March	3.9	+0.1
April	4.9	+1.1
May	3.0	-1.0
June	3.2	-0.9
July	5.6	+1.0
August	8.4	+3.9
September	3.2	-0.8
October	4.1	+0.6
November	4.0	+0.6
December	5.5	+1.9
2020	51.6	+5.9

Temperature and Precipitation (1895–2020)

Data for Chester and Montgomery counties, PA indicate that annual average temperature has increased approximately +0.25 °F per decade and annual total precipitation has increased approximately +0.34 inches per decade since 1895 (Figure 3).

National Park Service scientists have forecast future changes in climate too. Models estimate that by 2100, annual average temperature at the park will increase by 3.1–9.0 °F (from a best-case to worst-case scenario, respectively). Annual total precipitation is expected to increase by 7–14% (see [Gonzalez et al., 2018](#) for details).

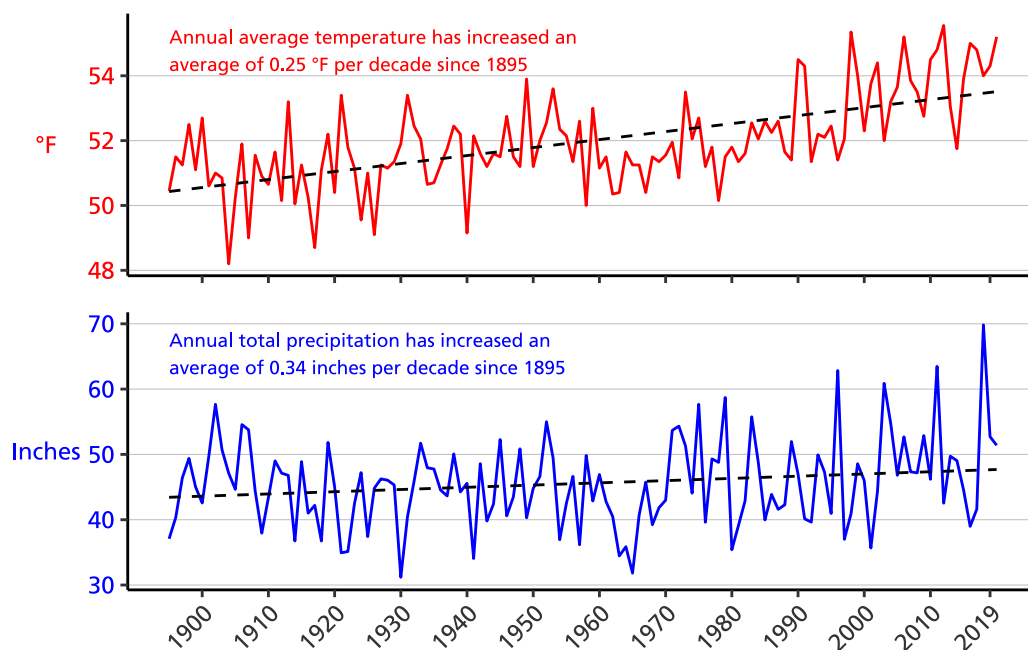


Figure 3. Annual average temperature (°F) and annual total precipitation (in.) from 1895–2020 for Chester and Montgomery counties, PA. Dashed lines represent linear estimates of change. Data are available at <https://www.ncdc.noaa.gov/cag/county/time-series>.

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