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## 2021 Weather in Review: Gettysburg National Military Park and Eisenhower National Historic Site

In all, 2021 was an extremely warm year with precipitation that was near normal. The year ended as the 4<sup>th</sup> warmest and 61<sup>st</sup> wettest on record.

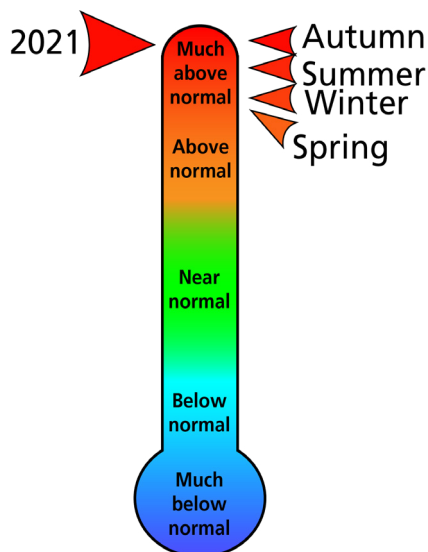
Data indicate that over the long term, annual average temperature and annual total precipitation have both increased (+0.21 °F per decade and +0.28 inches per decade, respectively).

This brief provides county-scale weather data for Adams County, PA, including data from 1895–2021 (i.e. period of record). Data and analyses herein are courtesy of the National Oceanic and Atmospheric Administration's (NOAA) Climate at a Glance Program.

### Temperature

In total, 2021 was the 4<sup>th</sup> warmest year at the parks since 1895 with all seasons being much warmer than normal (Figure 1). Ten months had higher than normal temperatures with March, August, October, and December all being more than 4 °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 2021 average temperatures to relevant averages from 1895-2020. Data are available at <https://www.ncdc.noaa.gov/cag/county/time-series>.



| Month/<br>Year | Average<br>temperature (°F) | Departure from<br>average (°F) |
|----------------|-----------------------------|--------------------------------|
| January        | 32.6                        | +3.8                           |
| February       | 30.7                        | +0.3                           |
| March          | 44.2                        | +4.6                           |
| April          | 52.8                        | +2.6                           |
| May            | 60.3                        | -0.4                           |
| June           | 71.6                        | +2.5                           |
| July           | 75.1                        | +1.5                           |
| August         | 75.7                        | +4.1                           |
| September      | 67.4                        | +2.6                           |
| October        | 60.3                        | +6.8                           |
| November       | 41.8                        | -0.5                           |
| December       | 39.5                        | +7.2                           |
| <b>2021</b>    | <b>54.3</b>                 | <b>+2.9</b>                    |

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>.

# Precipitation

Total precipitation in 2021 was near normal (i.e. 61<sup>st</sup> wettest year recorded; Figure 2). That said, the summer was very wet though the other seasons were dry. In all, the county received just 0.09 inches more than the long-term average (Table 2).

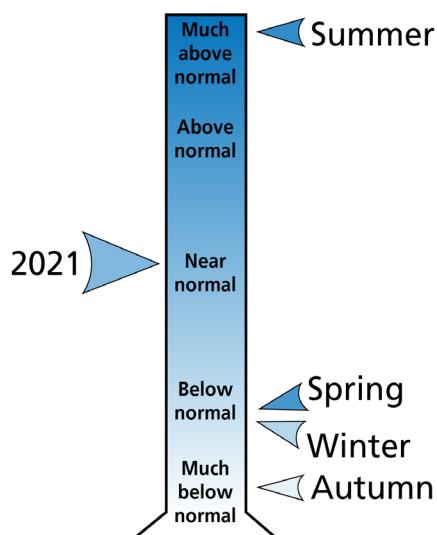


Figure 2. Seasonal and annual precipitation rankings. An arrow at the top of the figure would represent the wettest year/season on record (since 1895); at the bottom, the driest year/season on record. Data are available at <https://www.ncdc.noaa.gov/cag/county/rankings>.

Table 2. Monthly and annual total precipitation and departure from long-term averages. Departures from average are based on a comparison of 2021 precipitation to relevant averages from 1895–2020. Data are available at <https://www.ncdc.noaa.gov/cag/county/time-series>.

| Month/Year  | Total precipitation (in.) | Departure from average (in.) |
|-------------|---------------------------|------------------------------|
| January     | 1.47                      | -1.62                        |
| February    | 3.37                      | +0.56                        |
| March       | 2.82                      | -0.81                        |
| April       | 2.76                      | -0.80                        |
| May         | 3.60                      | -0.42                        |
| June        | 2.90                      | -1.11                        |
| July        | 4.14                      | +0.17                        |
| August      | 5.43                      | +1.50                        |
| September   | 10.55                     | +6.75                        |
| October     | 3.41                      | -0.03                        |
| November    | 1.47                      | -1.62                        |
| December    | 0.76                      | -2.50                        |
| <b>2021</b> | <b>42.68</b>              | <b>+0.09</b>                 |

## Temperature and Precipitation (1895–2021)

Data for Adams County, PA indicate that annual average temperature has increased approximately +0.21 °F per decade and annual total precipitation has increased approximately +0.28 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 3.1–9.2 °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).

Data in this brief are preliminary and were retrieved from NOAA on 01/10/22.

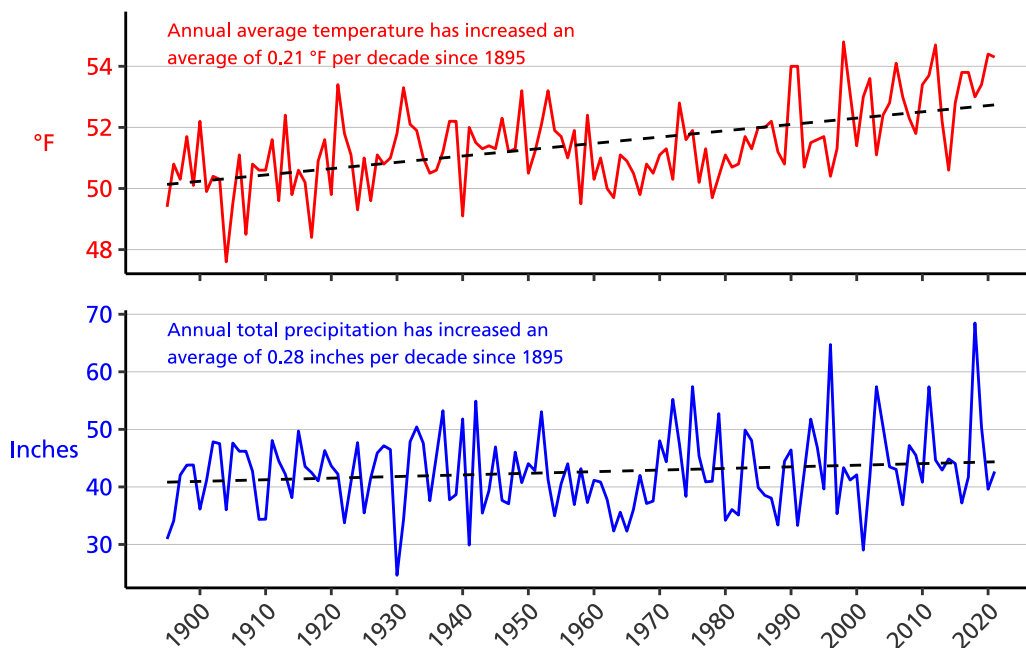


Figure 3. Annual average temperature (°F) and annual total precipitation (in.) from 1895–2021 for Adams County, PA. Dashed lines represent linear estimates of change. Data are available at <https://www.ncdc.noaa.gov/cag/county/time-series>.

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**Parks monitored:** Appomattox Court House NHP • Booker T. Washington NM • Eisenhower NHS • Fredericksburg & Spotsylvania NMP • Gettysburg NMP • Hopewell Furnace NHS • Petersburg NB • Richmond NBP • Shenandoah NP • Valley Forge NHP