

# Water Year 2020 Climate Summary for Hovenweep National Monument

Matthew Van Scoyoc

2020-10-30

This document summarizes current temperature and precipitation anomalies relative to 30-year (1981-2010) averages for Hovenweep National Monument (HOVE) during the 2020 water year (October 2019 through September 2020). The data for these analyses were collected at the Visitor Center by NPS personnel and downloaded from the [Global Historical Climatology Network](#) on 26 October, 2020 using R (ver. 4.0.3, R Core Team, 2020) and the rnoaa package (ver 1.2.0, Chamberlain, et al. 2020).

## Temperature

Water year 2020 was the 7th warmest water year in the 64-year record for HOVE (1957 to 2020); the average annual temperature was 1.43°C above the 30-year average (figure 1A).

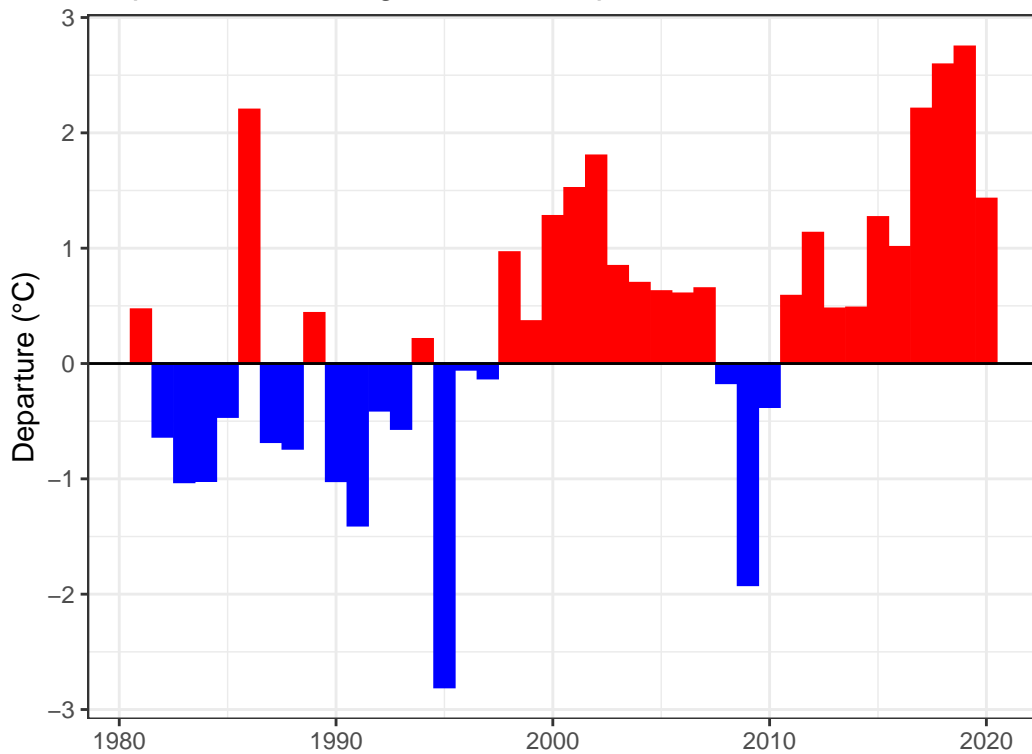
The annual average daily high (TMAX) was 1.43°C above average at 21.8°C (figure 1B). The 30-year annual average daily high is 20.37°C. The monthly average daily high was exceeded 10 times (Nov, Jan, Feb, Mar, Apr, May, Jun, Jul, Aug, and Sep; figure 1C).

The annual average daily low (TMIN) was 1.31°C above average at 3.52°C (figure 1B). The 30-year annual average daily low is 2.21°C. The monthly average daily low was exceeded 9 times (Dec, Jan, Mar, Apr, May, Jun, Jul, Aug, and Sep; figure 1C).

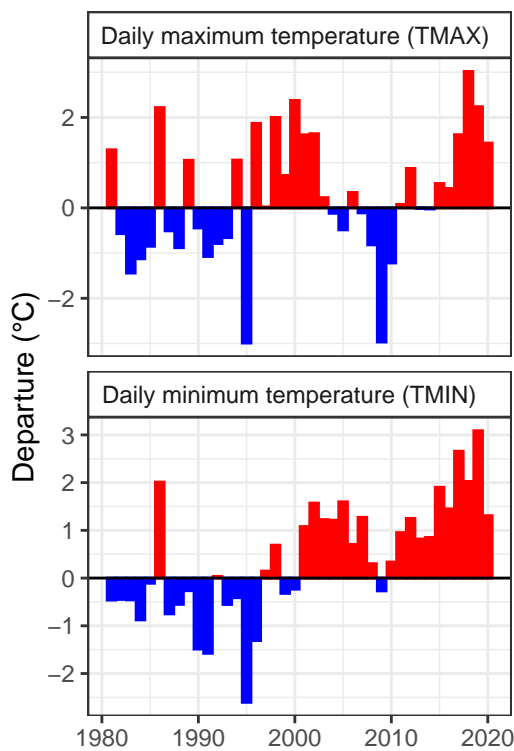
## Precipitation

Water year 2020 was the 11th driest on record for HOVE (figures 2A and 2B). Total precipitation was 145.1 mm less than the 30-year average, totaling 123.2 mm. The 30-year average water year precipitation total for HOVE is 268.3 mm. Dec, Mar, and Jun received above average precipitation, but they were not enough to compensate for the 9 months that were below average (Oct, Nov, Jan, Feb, Apr, May, Jul, Aug, and Sep; figures 2B and 2D).

**A.** Departure of average annual temperatures



**B.** Avg annual TMAX & TMIN



**C.** WY 2020 relative to past year

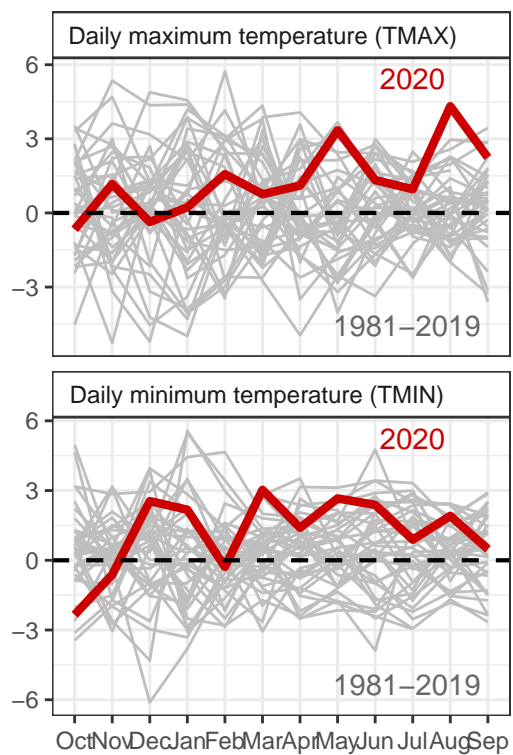


Figure 1: Departure of average temperatures from 30-year averages.

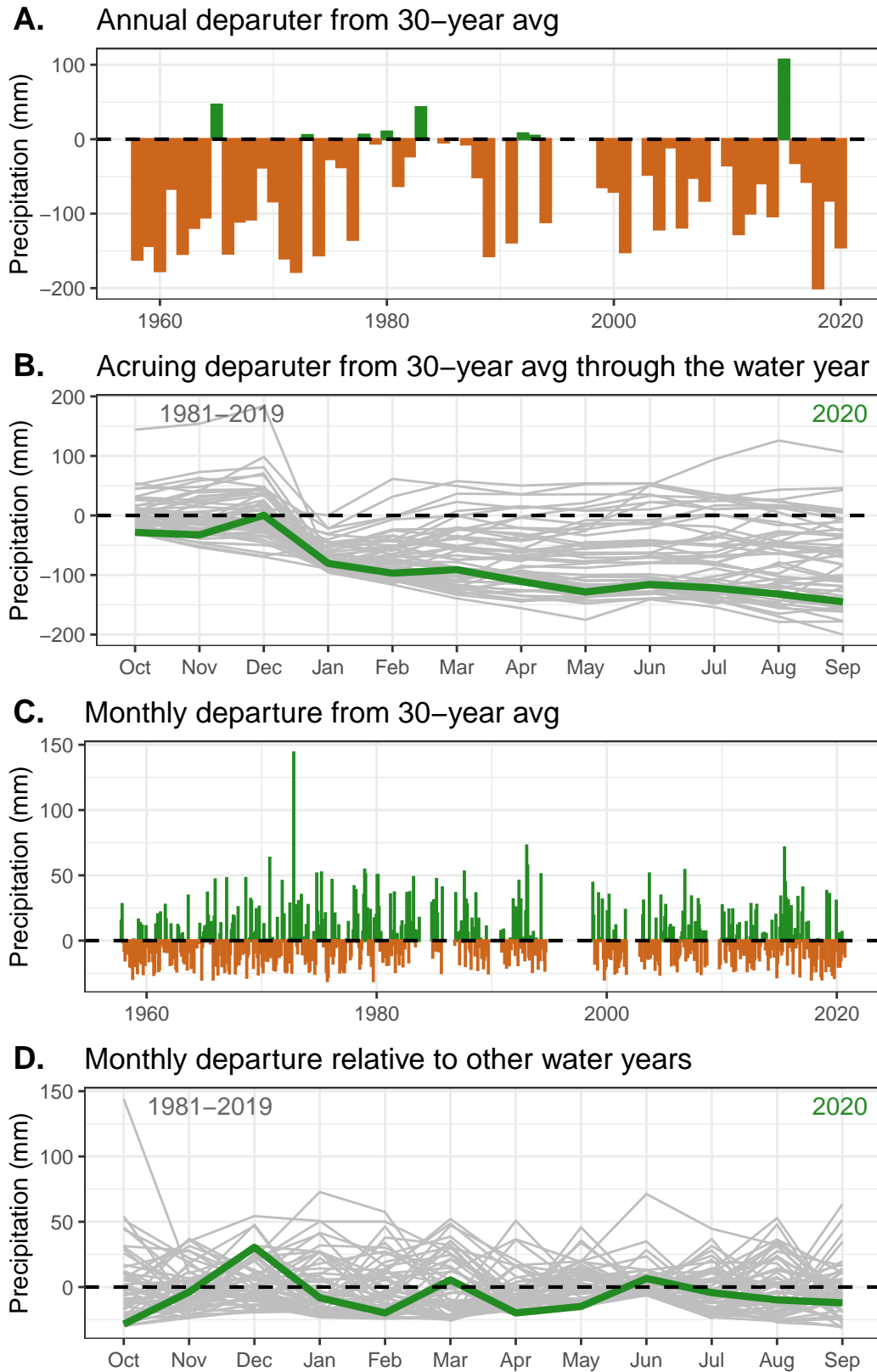


Figure 2: Departure of annual precipitation from 30-year averages.