

Water Year 2020 Climate Summary for Arches National Park

Matthew Van Scoyoc

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This document summarizes current temperature and precipitation anomalies relative to 30-year (1981-2010) averages for Arches National Park (ARCH) 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 18th warmest water year in the 40-year record for ARCH (1980 to 2020); the average annual temperature was 0.28°C above the 30-year average (figure 1A).

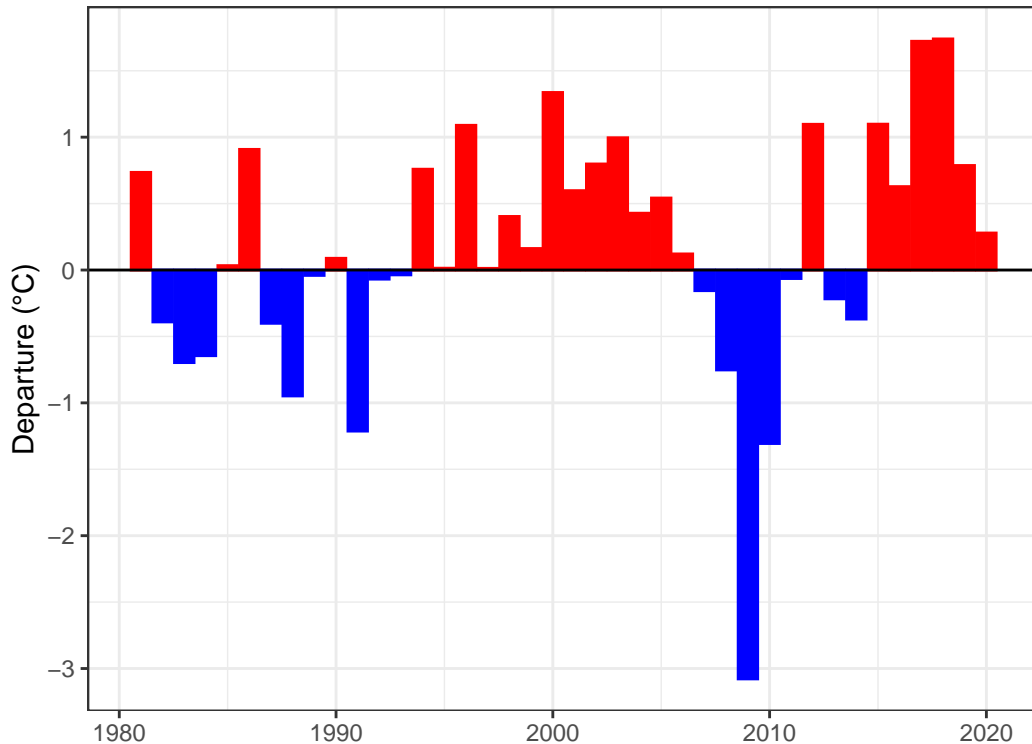
The annual average daily high (TMAX) was 0.37°C below average at 21.45°C (figure 1B). The 30-year annual average daily high is 21.82°C. The monthly average daily high was exceeded 7 times (Nov, Mar, Apr, May, Jun, Aug, and Sep; figure 1C).

The annual average daily low (TMIN) was 1.08°C above average at 7.21°C (figure 1B). The 30-year annual average daily low is 6.13°C. The monthly average daily low was exceeded 9 times (Dec, Jan, Mar, Apr, May, Jun, Jul, Aug, and Sep; figure 1C).

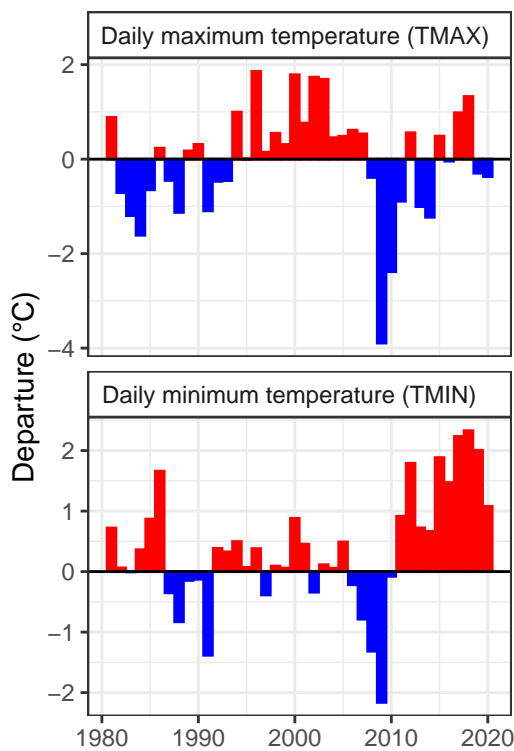
Precipitation

Water year 2020 was the 2nd driest on record for ARCH (figures 2A and 2B). Total precipitation was 146.6 mm less than the 30-year average, totaling 74.9 mm. The 30-year average water year precipitation total for ARCH is 221.5 mm. Nov, Dec, and Jun received above average precipitation, but they were not enough to compensate for the 9 months that were below average (Oct, Jan, Feb, Mar, 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

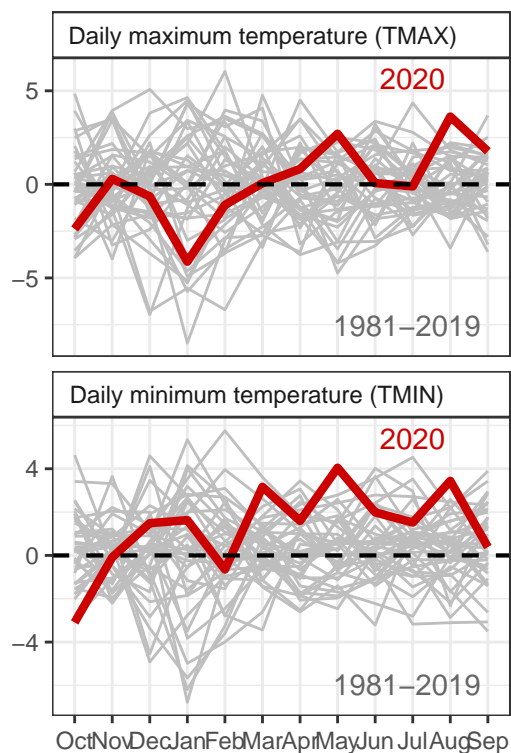


Figure 1: Departure of average temperatures from 30-year averages.

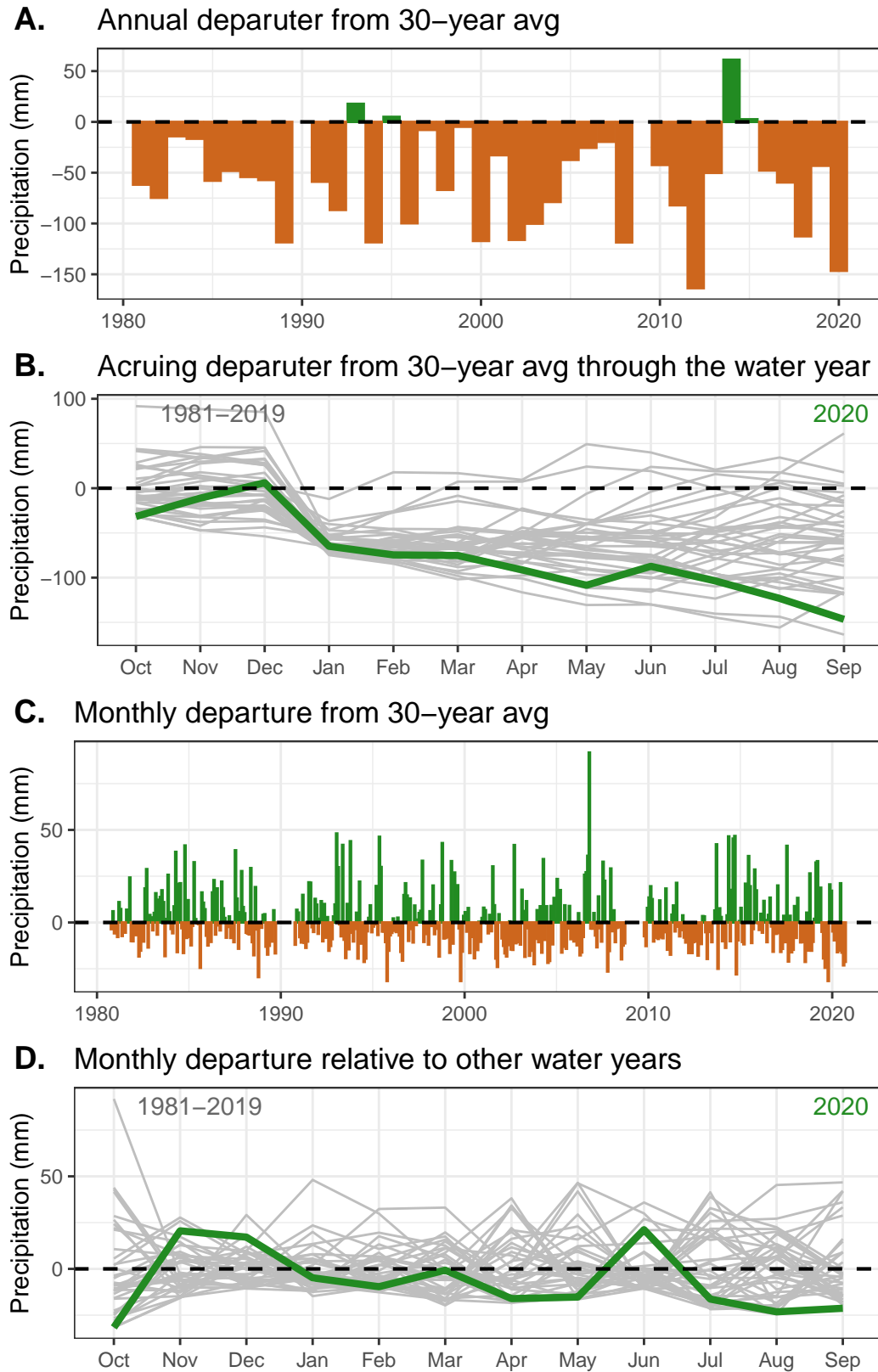


Figure 2: Departure of annual precipitation from 30-year averages.