Arches National Park
Water Year 2020 Climate Summary

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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 Co-op weather station at the visitor center by NPS personnel and downloaded from ClimateAnalyzer.org on 25 February, 2021 using R (ver. 4.0.3, R Core Team, 2020) and the climateAnalyzeR package (ver 0.0.0.9000, Van Scoyoc, 2021). The data used for these analyses include the daily high temperature (TMAX), daily low temperature (TMIN), and daily precipitation accumulation (PRCP). This is an automated summary and all results are provisional.

Temperature

Water year 2020 was the 11th warmest water year in the 40-year record for ARCH (1980 to 2020). The average annual temperature was 58.41, which is 1.04°F above the 30-year average (57.37°F). This summary suggests that temperatures are increasing 0.38°F per decade (Figure 1A). The monthly average TMAX was above normal most of the year and exceeded the 30-year monthly average 8 times (Nov, Mar, Apr, May, Jun, Jul, Aug, and Sep ; Figure 1B). The monthly average TMIN was above normal most of the year and exceeded the 30-year monthly average 10 times (Nov, Dec, Jan, Mar, Apr, May, Jun, Jul, Aug, and Sep ; Figure 1C).

Precipitation

Water year 2020 was the 5th driest on record for ARCH. Total accumulated precipitation was 5.65 inches and was 3.27 inches below the 30-year average (8.92 inches). This summary suggests that precipitation is decreasing at a rate of 0.34 inches per decade (Figure 2A). Nov, Dec, and Jun received above average precipitation (Figure 2B), but were not enough to compensate for the 9 months that were below average (Oct, Jan, Feb, Mar, Apr, May, Jul, Aug, and Sep ; Figure 2C).

Figures

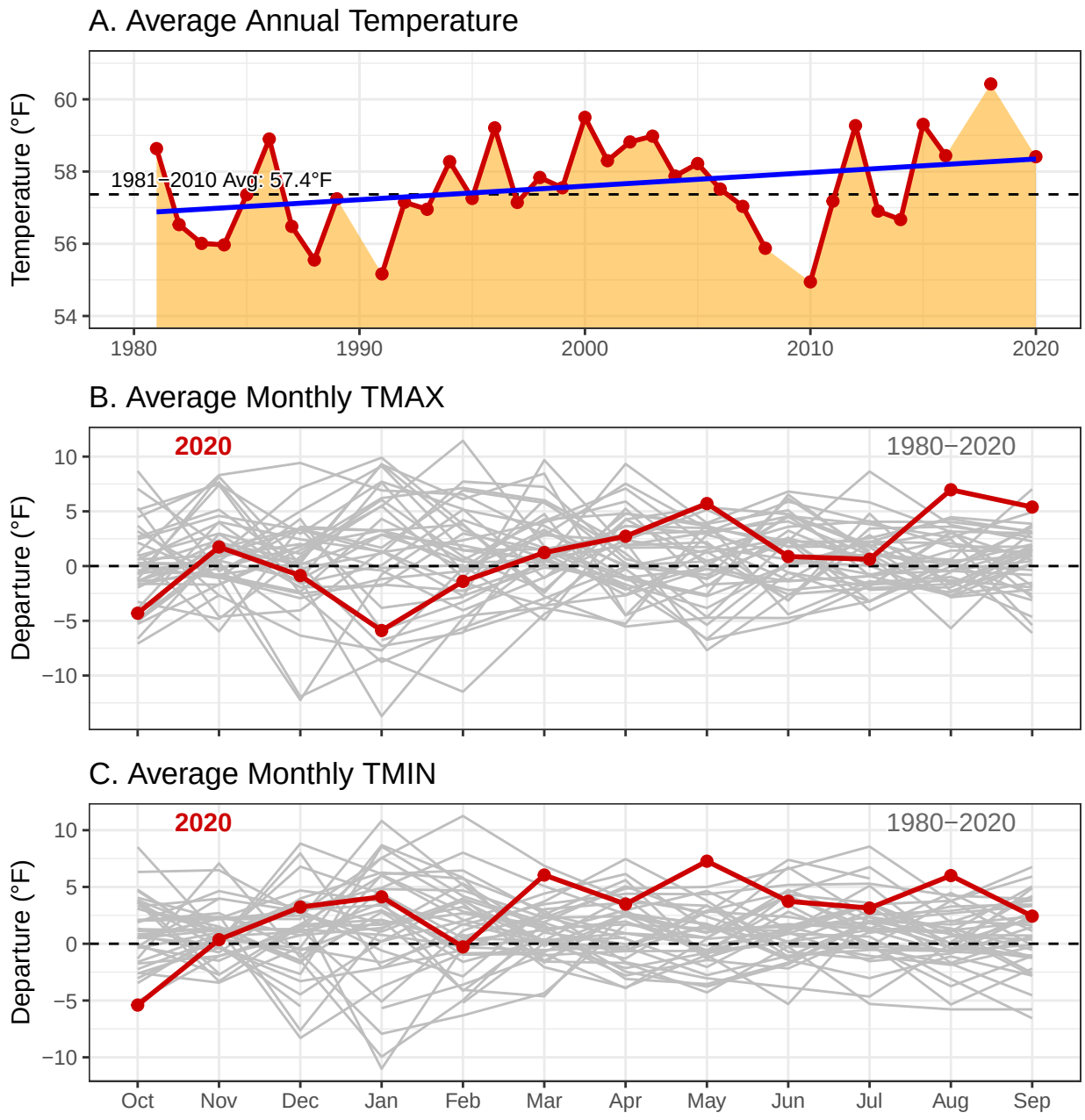

Figure 1: Trends in average temperature.

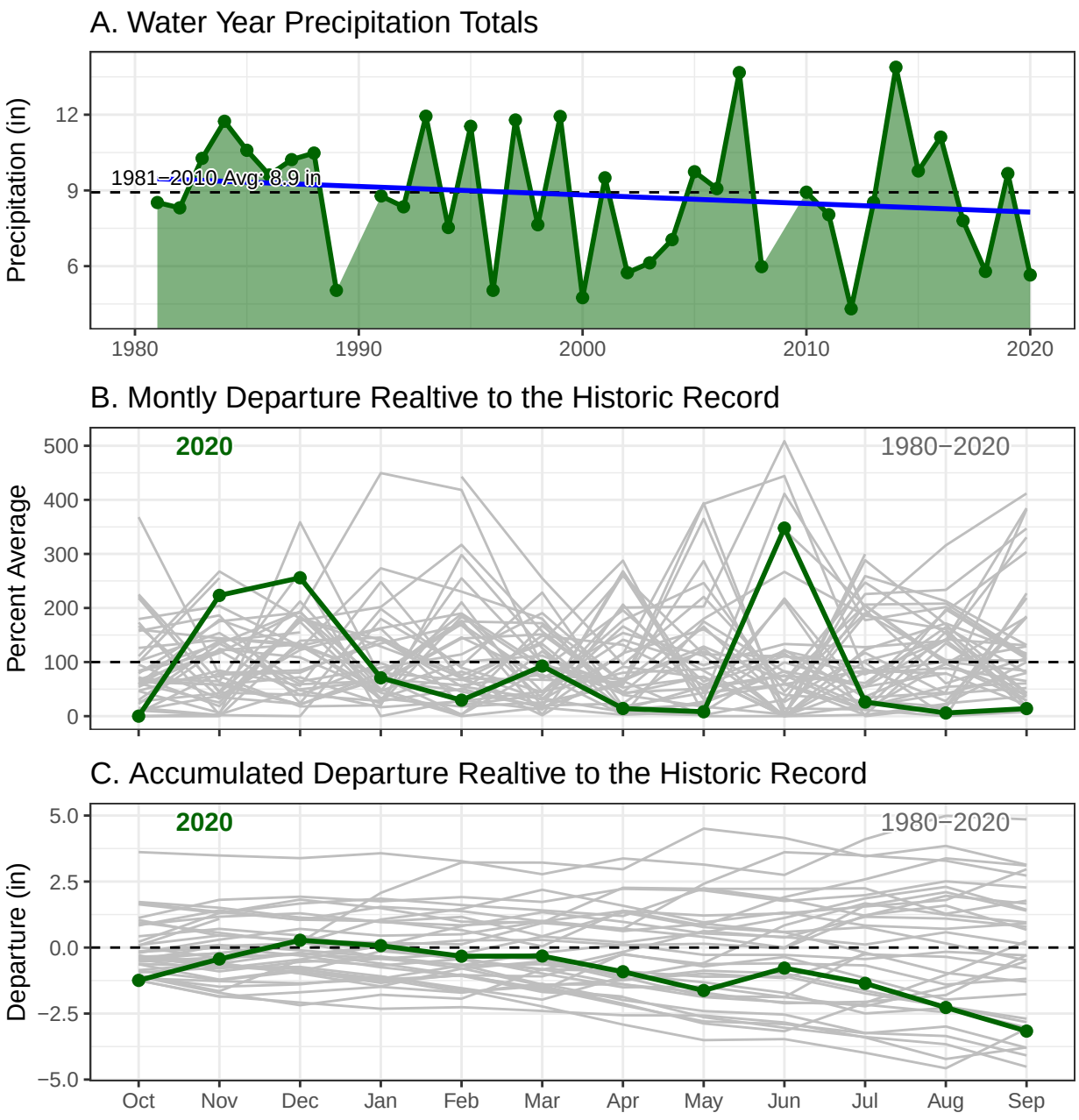

Figure 2: Trends in precipitation.