

Climate

RESOURCE BRIEF

Importance

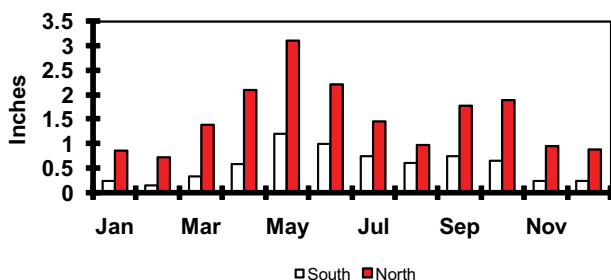
Climate is the set of long-term, average meteorological conditions that occur over several decades or longer. Unlike weather, which fluctuates greatly in the short-term and is difficult to predict, climate is relatively stable, and many organisms have adapted to its predictable rhythms. As a result, climate is the driving force behind many ecological processes. For example, average temperature and moisture are factors in determining which species can live in an area, the rate at which they grow, and the frequency and severity of forest fires. Temperature and precipitation regimes also strongly influence the intensity and timing of stream flows, which are important factors in both agricultural and natural ecosystems.

Climate Zones

There are two weather stations within Bighorn Canyon National Recreation Area and more than 30 in the surrounding area. Measurements beginning in 1948 show two climate zones, with the northern region near the outlet to Bighorn Lake receiving about three times more precipitation annually than the inlet in the south. April–June are the peak precipitation months in both zones, receiving 40–45% of the annual totals.

2009 Statistics

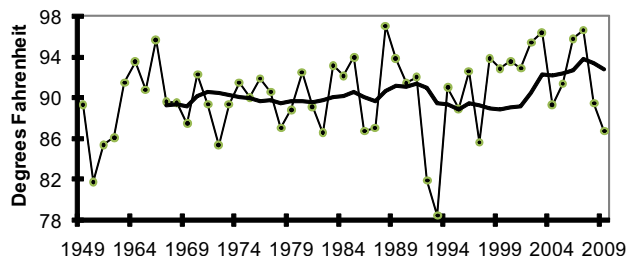
Calendar year 2009 had near normal temperatures and generally below average precipitation. In the lower elevations, total annual precipitation ranged from 67% of average (1971–2000) at Yellowtail Dam to 94% of average at Shell, Wyoming. At higher elevations, Bald Mountain experienced 77% of average annual precipitation and Shell Creek had 91%. Average daily maximum temperatures



Average monthly precipitation in Bighorn Canyon National Recreation Area, 1971–2000. The northern region receives about 18 inches annually; the southern region, about 6.5 inches.



©USA CUPEPER

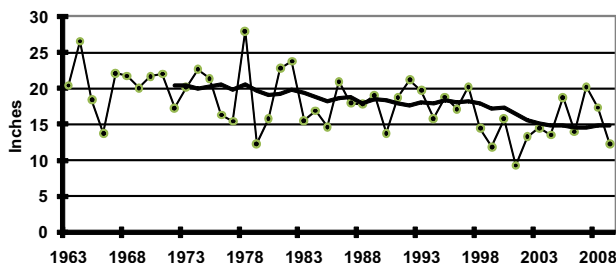


Average July daily maximum temperatures at Yellowtail Dam, the outlet to Bighorn Lake. The unmarked line is the 10-year moving average.

were about 1°F below the annual average at Shell and 4°F below average at Yellowtail Dam. Average daily minimum temperatures were near average at both locations. Total 2009 inflow to Bighorn Canyon and Bighorn Lake, as measured by the gauge on the Bighorn River at the Kane, Wyoming, station was 107% of average.

Trends

July temperatures at the outlet to Bighorn Lake have increased about 3.5°F in the last 40 years. Long-term average precipitation has declined steadily during this period despite the occasional wet year. In recent years, the level of Bighorn Lake has been more than 20% below average.



Annual precipitation at Yellowtail Dam, the outlet to Bighorn Lake, 1967–2009. The unmarked line is the 10-year moving average.