

California's Climate

THE COCORAHS 'STATE CLIMATES' SERIES

California – A Little Bit of Everything

By Michael Anderson, California State Climatologist

In general, California enjoys a Mediterranean climate with precipitation falling from October through April and sunny, warm, and dry periods extending from May through September. Mountains and the Pacific Ocean play significant roles in California's climate modulating precipitation and temperature regimes across the state. The west slopes of the mountains are generally wetter than the eastern slopes with snow falling in winter at higher elevations. Latitude also plays a significant role in California's climate with warmer, dryer conditions in the southern latitudes of the state and cooler, wetter conditions to the north. Elevation and latitude create an interesting dichotomy for the Sierra Nevada Mountains. The higher elevations are in the southern portion of the range leading to annual runoff that is dominated by the melting of the seasonal snowpack that occurs from April through July. However the wetter conditions are found in the northern end of the range where the larger runoff is formed from a mix of rain and snow processes.

The mix of latitude, mountains, and ocean yield an amazing diversity of precipitation patterns in California. The north coast possesses locations that average over 100 inches of precipitation per year while annual totals less than five inches extend across large areas of the southeastern deserts. The entire state can experience winter storms leading to multiple days of precipitation. Colder storms can also yield thunderstorms that follow behind the main front that can yield hail and tornados. In the southeast deserts and Sierra Nevada Mountains, afternoon thunderstorms can build up in the summer. Tropical storm and typhoon remnants can also impact California with heavy rain and high winds. The most recent occurred in October 2009 when remnants of Super-Typhoon Melor brought more than 10 inches of rain and tropical storm force winds to many parts of the state. In terms of extremes, Gasquet Ranger Station on the North Coast recorded of 63 consecutive days of measurable precipitation in 1998 while Ocotillo near the Mexico border went 468 days without any precipitation from August 1955 to January 1957. The highest annual precipitation recorded was 153.54 inches in 1909 in Monumental in the mountains of the North Coast. The largest one-day rain occurred at Hoegees Camp in 1943 in the mountains east of Los Angeles when 26.12 inches of precipitation was recorded in 24 hours. The largest winter snowfall of 884 inches was recorded at Tamarack in the American River watershed east of Sacramento in 1906-1907.

California's temperatures also exhibit an amazing diversity. The coastal regions of California tend to have more moderate temperatures and temperature ranges due to the influence of the Pacific Ocean. Locations in the interior of the state tend to have greater fluctuations leading to record setting extremes. A prime example of California's coastal climate is San Diego whose average maximum temperature ranges from 64.7 degrees Fahrenheit in January to 76.4 degrees Fahrenheit in August. For the interior and extremes, the warmest temperature recorded in the United States occurred in Death Valley (Greenland Ranch) in 1913 with a recorded value of 134 degrees Fahrenheit. Death Valley also hosts the state's longest streak of days above 90 degrees Fahrenheit with 205 days in 1992. The coldest temperature recorded in California was in Boca on the east slopes of the Sierras in 1937 with a reading of -45 degrees Fahrenheit. For annual temperature fluctuations, some locations on the west slope of the Sierra Nevada in the Central Valley can have temperatures cold enough for snow in the winter and can exceed 110 degrees Fahrenheit in the summer. All in all there truly is a little bit of everything when it comes to climate and weather in California.

For more information on California's Climate please visit the California State Climatologists's Office at:
<http://www.water.ca.gov/floodmgmt/hafoo/csc/>