

## 'STATE CLIMATES' SERIES

# *Nevada's Climate*

THE COCORAHS 'STATE CLIMATES' SERIES

### **Nevada's Extremes Reign Supreme**

By Jeff Thompson, Nevada Climate Office

The Silver State is a land of great contrasts, so extreme that most of the state's population lives in two concentrated areas, in Washoe and Clark Counties. Ironically, in a state that only has around 2.5 million people, this makes Nevada one of the most "urban" states in the nation. Nevadans live close to water resources and major roads and railways. The Federal Government owns more land in Nevada than any other state, with most of it inhospitable to human/agricultural use.

Most of Nevada lies within the Great Basin, a high desert plateau between the Rockies and the Sierra Nevada Mountains, where streams and rivers flow into lakes and sinks with no outlet to the ocean. The basin is mostly high desert, and it slopes from eastern Nevada where elevations range from 5,000 to 6,000 feet, to western Nevada where elevations range from 3,800 to 5,000 feet, with low points in the Carson Sink and Pyramid Lake areas. Elevation then rapidly increases to the west up the slopes of the Sierra. Southern Nevada slopes downward to the channel of the Colorado River where elevation drops to less than 1,000 feet above sea level. The highest point in the state is atop Boundary Peak at 13,140 feet in Esmeralda County. Nevada's lowest point of elevation is 479 feet in Clark County in the Colorado River Valley.

The extreme climate of Nevada is dominated by proximity to mountainous terrain. The state lies on the eastern, lee side of the Sierra Nevada Range. Due to this location, a strong rain-shadow effect deprives much of the state of most upwind moisture. Prevailing winds from the west, which bring mild, moist Pacific air to the windward slopes, are forced upward by this granite barrier, where the air rapidly cools and moisture condenses. This results in some of the highest precipitation amounts in the United States west of the Sierra Crest. As the air descends the eastern slope, it is warmed by compression and relative humidity drops. In addition to the Sierra, Nevada also contains a large number of smaller ranges oriented north-to-south, defining long, narrow valleys. This rugged terrain and the resulting rain-shadow effect results in Nevada's widespread desert or steppe climate.

Nevada precipitation averages only 7 inches statewide, making it the nation's driest state. Precipitation is maximized in the Sierra Nevada at Mount Rose Ski Area, where a yearly total of 40 inches of moisture and 300 inches of snowfall have been recorded. The driest average annual precipitation in the state is at Indian Springs in Clark County, where only 2.94 inches mainly results from monsoonal thunderstorms.

Western and south-central Nevada experience a winter precipitation maximum, central and northeastern Nevada experience a spring maximum, and eastern and southern Nevada experience a summer maximum.

Nevada temperatures experience large swings seasonally, geographically, and diurnally. Mean annual temperatures are in the mid 40s in northeast Nevada, where summers are short and hot, and winters are long and cold. Western and central Nevada averages 50 F, with short, hot summers and shorter and milder winters. Southern Nevada has a mean annual temperature in the mid 60s, with long, hot summers, and short, mild winters. The state rarely experiences long periods of extremely cold weather, primarily because the mountains east and north of the state act as a barrier to continental arctic air masses. Cold air that does spill into the Great Basin can persist on occasion, with strong valley inversions developing locally. Diurnal swings of 30 to 35F are common in Nevada due to the dry air, with the greatest daily ranges occurring in summertime. The states coldest temperature on record is -50F, recorded in San Jacinto on January 8, 1937. The hottest temperature was recorded in Laughlin at 125F on June 29, 1994.

For more information on Nevada's Climate please visit the Nevada Climate Office at: <http://www.climate.unr.edu/>