

# The Oregon Weather Book

*A State of Extremes*

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## Hot Weather

Despite Oregon's reputation as a mild, wet state, hot weather is common during long summer days. This is especially true in eastern and southern Oregon, whose valleys are sheltered from the moderating effects of the Pacific Ocean. Much of eastern Oregon lies at high elevations, tempering daytime highs. For every thousand feet of elevation gain, temperatures decrease by 3-5 degrees F. Thus, locations such as Bend, at about 4,000 feet, are 12-20 degrees cooler than they would be if the city were at sea level. Nonetheless, there are low elevation sites in eastern and southern Oregon, and they can get very hot indeed. Even higher locations can get very hot on occasion.

Oregon's hottest weather occurs when strong high pressure over Oregon brings descending, warming air and clear skies. Winds from the east or south are customary during such periods. Sometimes heat waves in Oregon are very short-lived; in other cases, hot weather can persist for many days. In the

following sections, Oregon's hottest days and longest heat waves are described.

### *Record Heat*

The hottest days in the last 100 years in Oregon occurred in 1898. In late July, temperatures began to build slowly, then quickly, and on the 29th Prineville topped out at 119°, an all-time record for Oregon. However, the record was to be short-lived. Following a slight moderation in temperatures (Prineville was down to 101° by August 3rd), things heated up again. Prineville reached 111° on August 7th, but this time it was Pendleton which was hottest, tying the new record of 119° on August 10th. Within a week temperatures were back into the 80's throughout eastern Oregon, and they have never again matched the temperatures recorded on those days.

There have, however, been some near-record days. Many of the highest single-day values were recorded at Umatilla, on the Columbia River, not far from Pendleton. Before the Umatilla closed in 1965 it had reported temperatures of 117°, 115° (three times), and 114° (four times). West of the Cascades, the highest temperature recorded was 115° in Medford on July 20, 1946; Medford reached 114° in 1941.

Although the Oregon coast is associated with generally mild weather, some extreme high temperatures have been reported. Although along the immediate coastline temperatures seldom reach 90°, a short distance inland much readings can occur. Illahe is in Curry County about 25 miles from the coast. Temperatures there have reached 110° on some occasions, and

have been as high as 107° as late as September and 98° in October. Brookings, which is on the extreme southern Oregon coast, is notorious for unusually high temperatures, even during winter. Brookings' temperatures have been the subject of several technical reports discussing "the Brookings effect."

### ***Oregon High Temperature records by Month***

Month	Temp. (°F)	Station	Year
Jan.	82°	Fremont	1934
Feb.	85°	Coquille	1992
Mar.	99°	Merlin	1900
Apr.	102°	Marble Creek	1906
May	108°	Blitzen Pelton Dam	1924 1986
June	113°	Blitzen	1932
July	117°	Umatilla	1939
Aug.	119°	Pendleton	1898
Sept.	111°	Illahe	1955
Oct.	104°	Dora	1980
Nov.	89°	Mitchell	1936
Dec.	81°	Dayville	1897

### ***Runs of Consecutive Extreme Days***

During most summers, Oregon does not experience lengthy periods of extreme high temperatures. Marine air intrusions, although much milder and less frequent than in the cool season, move onshore often enough to prevent heat waves from lasting more than a few days in most cases. This is especially true west of the Cascades, where only coastal mountains separate inland areas from the cool Pacific. However, the Cascades serve as a major climatic barrier between coastal areas and the eastern two-thirds of the state. Much of the marine air is blocked by the Cascades and prevented from

reaching the eastside, and any air which does cross the Cascades is greatly modified, becoming warmer and drier. As a result, eastern Oregon experiences much greater temperature variations than does western Oregon, and its heat waves are likely to last longer and be more intense than those west of the Cascades.

Since air temperatures typically decrease with increasing elevation, highest air temperatures generally occur at low elevations. Most of eastern Oregon is above 4,000 feet, so high temperatures are considerably lower than in the low elevation deserts of the southwestern U.S. (such as the infamous Death Valley which is actually below sea level). In some places, however, deep river valleys in eastern Oregon have much lower elevations, producing Oregon's hottest summer temperatures. Pendleton, Ontario and Hermiston are examples of places which frequently experience hot temperatures in summer.

The title "Oregon's Heat Wave Capital" should probably be reserved for Ontario. Ontario is in the Snake River valley at an elevation of about 2,200 feet. There are several NOAA weather sites in the Ontario area; radio station KSRV is usually the warmest. During clear summer periods, temperatures often exceed 90° and remain that way day after day. In 1967, KSRV's maximum temperature was 90° or more on 74 consecutive days (June 28 through September 10). An even more significant heat wave occurred in 1971, a warm summer throughout Oregon. On July 20, the high temperature reached 102°, and not until August 21 did the high drop below 100° again. That string of 32

consecutive days is believed to be the longest ever recorded in Oregon.

Spray, in the John Day River valley at about 1,800 feet in elevation, has also experienced a number of remarkable heat waves. During that same hot period in 1971, Spray had 26 consecutive days (July 20 through August 15) with temperatures of 100° or more, and in 1961 there were 48 days in a row of 90° or more. The Spray station is no longer in operation, but during the 1937-1978 period when it collected weather data it was frequently the hot spot in Oregon. Its all-time record high (116° on August 4, 1961) was the fourth highest ever recorded in Oregon.

Although most of western Oregon experiences relatively mild summer temperatures, a few inland valley locations can get quite warm. Medford and Grants Pass in the Rogue valley of southwestern Oregon are generally the warmest west side locations. Medford has had as many as 34 consecutive days of 90° or more (July and August, 1961), and Grants Pass as many as 32 (July and August, 1971). Medford has had 10 consecutive days of 100° or more on several occasions, the most recent in 1967.