

## CLIMATOLOGICAL DATA FOR JANUARY, 1911.

## DISTRICT No. 10, GREAT BASIN.

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## GENERAL CLIMATOLOGICAL CONDITIONS.

The weather during January, 1911, was quite warm and in marked contrast to January, 1910, which month was one of the coldest on record for the Great Basin. There was much more precipitation during this month than in January, 1910, but the precipitation was generally in the form of rain, much less snow having been reported than in January last year.

## TEMPERATURE.

The temperature of the district as a whole averaged 30.7°, or about 4° above normal. The highest mean temperatures occurred in the protected valleys of Utah, and in the western and southern portions of Nevada. The monthly means at the various stations ranged from 17.4° at Cokeville, Wyo., to 52.8° at Jean, in southern Nevada.

All but two stations in this district reported monthly mean temperatures above normal. The departures ranged from 1° below normal at Golconda, Nev., to 7.9° above normal at Ely, Nev.

There was a wide variation of temperature departures throughout the district, stations quite near one another reported mean temperatures varying greatly from their normals. The month began very cold, the weather being influenced by an area of high pressure which persisted over the district for several days but with diminishing intensity. In the Idaho and Utah areas the lowest temperatures were usually recorded on the 2d and 3d. After the 3d warmer weather prevailed everywhere until the 15th, when colder weather set in, and temperatures remained low until the 23d. During the remainder of the month warmer weather prevailed, and temperatures were generally much above normal, the highest temperatures generally occurring during this period.

The lowest temperature was -36°, at Woodruff, Utah, on the 23d, the next lowest being -35°, at Border and Cokeville, Wyo., on the same day.

The highest temperature was 86°, at Iosepa on the 10th. Other high temperatures were 74°, at Spanish Fork, Utah, on the 10th, and 70°, at Al Tahoe, Cal., on the 9th, and at Jean, Nev., on the 8th.

## PRECIPITATION.

The precipitation averaged 2.96 inches, which is almost three times the normal amount, and about twice as much as fell during January last year.

The precipitation chart showed the usual irregularities in the distribution of moisture. The total amounts

at the several stations ranged from a trace at Mina, Nev., to 33.33 inches at Deer Park, Cal. The largest amounts fell in the east-central California section, where the lowest monthly amount was 7.75 inches, at Markleeville, and the highest was 33.33 inches at Deer Park.

Very nearly every station reported amounts above normal, the greatest plus departures occurring in west Nevada and on the western slope of the Wasatch Mountains in Utah. The few minus departures occurred in central Nevada and in the Oregon area.

Very little precipitation fell during the first eight days of the month, but during the remainder of the month precipitation was quite uniformly distributed. In the California area where such large amounts fell precipitation occurred during the periods of 9-15th, 19-20th, and 23d-31st.

The largest 24-hour amount was 4.80 inches, at Boca Cal., on the 11th.

Regarding the precipitation in Nevada, the section director at Reno says:

The precipitation was greatest in the eastern Sierra Mountains and least in the desert regions. Traffic on the Southern Pacific Railroad was blocked for a few days by heavy snowfall in the mountains 40 to 50 miles west of Reno. The precipitation, except in a few localities, was very heavy. In most localities the average was the greatest since January, 1890, when the snowfall in the west portion of the State was the heaviest on record, and also the heaviest according to the memory of the old-timers. In the Lake Tahoe district the precipitation ranged from 27.21 inches on the west side of the lake to 15.85 inches on the east side. The depth of snow on the last day of the month was 13 feet in the upper Truckee River Basin, while it was only 3 feet at Glenbrook. The precipitation in the upper drainage areas of the Carson and Walker Rivers averaged about 12 inches in the former and 6 inches in the latter. The snow was drifted to a large extent, and of an icy nature due to rain following the snowfall. In the Humboldt River Basin the snowfall was a little greater than the usual amount.

The section director of Utah says:

The ground was generally frozen in the northern part of the State until about the 25th. Elsewhere the ground was open nearly all the month. In the middle and southern parts of the State plowing was in progress during practically the entire month, and grass and lucern were green. Before the ground thawed in the northern counties a great deal of water flowed to waste. The warm rains of the last decade swept the valleys and lower slopes bare of snow.

## NOTES.

In February, 1907, when considerable snow lay in the mountains of the Great Basin, a few days of warm, southerly winds, with copious rains, caused tremendous floods, particularly in southern Utah and Nevada; and while improvements were comparatively few in those sparsely settled regions, the damage to railroad and other property amounted to several hundred thousand dollars.

During November and December, 1909, unusually cold, stormy weather prevailed, which deposited deep snow over all the Great Basin, even the extreme southern portion, and spread a white blanket over vast regions which had never had snow within the memory of man. Just at the close of December an active barometric depression, entering far down on the Pacific coast, caused a few days of warm winds over this snow-laden region and brought heavy general rains about New Year's eve. That night and the following day, about \$2,000,000 worth of railroad equipment was swept away in one of the worst floods the arid West had ever known, causing a total loss, direct and resultant, of no less than \$5,000,000.

The most recent desert-region floods occurred at the close of January, 1911, at which time weather conditions in the West were quite similar to those shown on the weather maps during the flood times of 1907 and 1909, and but for the fact that the winter of 1910-11 was practically devoid of snow at the lower levels and there was very little at the higher places, the damage due to this flood would not have been confined to a few hundred thousand dollars and to crippling commerce but a few days.

Probably the greatest loser in this flood, as in previous ones, was the San Pedro, Los Angeles & Salt Lake Railroad, whose track was wrecked at various places in the narrower canyons of southeastern Nevada. In this region stand the highest mountains within the rim of the Great Basin, and these were carrying some snow when the warmth and rains came. While the railroad track is now placed far above canyon stream floods, it was broken in various places by hillside washes, which carried away some of the newer embankments. The dearth of snow for feeding the floods kept the high-water line several feet below last year's high-water mark, and the regular train schedule was resumed in a comparatively short time. Elsewhere in the southern portion of the Great Basin no floods of importance occurred, as the ground was unfrozen practically everywhere and absorbed much of the rainfall.

In middle and northern Utah, where mountain snow was more plentiful, this warm, rainy spell produced numerous floods, hindering traffic and other business a day or so and causing several snowslides in the inhabited regions, in one of which four miners lost their lives. Rain fell practically all day January 30, 1911, on the deep snows of the Wasatch Mountains in the neighborhood of Alta and Brighton, Salt Lake County, and snowslides of appalling proportions occurred in several places. The most disastrous slide demolished a bunkhouse belonging to the Coalition Mines Co., in which a number of men were sleeping, at 5.30 a. m., January 31. Several of these men were injured and four were killed.

The Malad Valley Branch of the Oregon Short Line Railroad was under water in one place just above Brigham city for a distance of about 1,000 feet, and while the water receded within an hour, the track was too soft for travel until February 1. Several small streams in that locality overflowed and roads, bridges, and some small buildings were considerably damaged. The Brigham city waterworks line was broken, and the city was without good culinary water for several days.

The numerous electric power transmission lines traversing northern Utah were considerably crippled temporarily but the damage was soon repaired.

The track of the Oregon Short Line Railroad at Kimport, between McCammon and Montpelier, Idaho, was impassable for a few days, necessitating the detour of trains for the Northwest via Ogden, Utah.

January 29, 1911, a landslide in Provo Canyon covered about 500 feet of the railroad tracks of the branch line of the Denver & Rio Grande to Heber, Utah, to a depth of about 50 feet in places, delaying traffic several days.

Practically all the streams out of the Wasatch Mountain to the west were on a rampage for a day or so, but as the water had been low, and very little or no ice had formed, there was little jamming and eroding, and the floods soon subsided. However, the washing along the Ogden Canyon electric railroad was such that it was thought best to suspend traffic on that line until spring.

TABLE 1.—Climatological data for January, 1911. District No. 10, Great Basin.

Table with columns: Stations, Counties, Elevation, Length of record, Temperature (Mean, Departure from normal, Highest, Date, Lowest, Date, Greatest daily range), Precipitation (Total, Departure from normal, Greatest in 24 hours, Total snowfall, Number of rainy days, Number of clear days, Number of partly cloudy days, Number of cloudy days), Sky, Prevailing wind direction, Observers.

TABLE 1.—Climatological data for January, 1911. District No. 10—Continued.

| Stations.                | Counties.      | Elevation, feet. | Length of record, years. | Temperature, in degrees Fahrenheit. |                            |          |       |         |       | Precipitation, in inches. |        |                            |                       | Sky.                      |   |                       |                               | Prevalling wind direction. | Observers. |                            |
|--------------------------|----------------|------------------|--------------------------|-------------------------------------|----------------------------|----------|-------|---------|-------|---------------------------|--------|----------------------------|-----------------------|---------------------------|---|-----------------------|-------------------------------|----------------------------|------------|----------------------------|
|                          |                |                  |                          | Mean                                | Departure from the normal. | Highest. | Date. | Lowest. | Date. | Greatest daily range.     | Total. | Departure from the normal. | Greatest in 24 hours. | Total snowfall, unmelted. | Number of rainy days, .01 inch or more. | Number of clear days. | Number of partly cloudy days. |                            |            | Number of cloudy days.     |
| <i>Nevada—Continued.</i> |                |                  |                          |                                     |                            |          |       |         |       |                           |        |                            |                       |                           |   |                       |                               |                            |            |                            |
| Glenbrook.....           | Douglas.....   | .....            | 2                        | 33.4                                | .....                      | 54       | 4     | 10      | 21†   | 30                        | 15.85  | .....                      | 3.00                  | 129.0                     | 15                                      | 12                    | 8                             | 11                         | sw.        | C. C. Henningsen.          |
| Golconda.....            | Humboldt.....  | 4,697            | 32                       | 26.8                                | - 1.0                      | 49       | 11†   | - 7     | 17†   | 35                        | 2.65   | + 2.01                     | 2.65                  | 14.0                      | 8                                       | 13                    | 1                             | 17                         | sw.        | Southern Pacific Co.       |
| Halleck.....             | Elko.....      | 5,631            | 18                       | 27.8                                | + 6.0                      | 51       | 8     | -16     | 21    | 51                        | .....  | .....                      | .....                 | 4.5                       | 7                                       | 6                     | 16                            | 9                          | nw.        | Do.                        |
| Jean.....                | Clark.....     | 2,074            | 3                        | 52.8 <sup>b</sup>                   | .....                      | 70       | 8     | 37      | 22    | 24 <sup>b</sup>           | 0.44   | .....                      | 0.30                  | 0.0                       | 3                                       | 9                     | 0                             | 23                         | .....      | Salt Lake Route.           |
| Lewers's Ranch.....      | Washoe.....    | 5,500            | 23                       | 33.1                                | + 0.7                      | 59       | 8     | 6       | 17    | 35                        | 13.15  | + 9.19                     | 3.00                  | 47.0                      | 9                                       | 9                     | 9                             | 13                         | .....      | Ross Lewers.               |
| Lovelock.....            | Humboldt.....  | 3,977            | 17                       | 32.0                                | - 0.6                      | 55       | 25    | 4       | 17    | 34                        | 1.95   | + 1.52                     | 0.75                  | 3.3                       | 8                                       | 10                    | 9                             | 12                         | n.         | C. H. Allender.            |
| McAfee's Ranch.....      | Esmeralda..... | 4,835            | 7                        | .....                               | .....                      | .....    | ..... | .....   | ..... | .....                     | .....  | .....                      | .....                 | .....                     | .....                                   | .....                 | .....                         | .....                      | .....      | C. H. Rodenkirch.          |
| Millett.....             | Nye.....       | .....            | 3                        | 32.0                                | .....                      | 52       | 30    | 4       | 6     | 38                        | 1.29   | .....                      | 0.61                  | 0.0                       | 5                                       | 17                    | 1                             | 13                         | s.         | Fred J. Jones.             |
| Mina.....                | Esmeralda..... | 4,600            | 4                        | 38.1                                | .....                      | 56       | 24†   | 11      | 15    | 41                        | T.     | .....                      | T.                    | 0.0                       | 0                                       | 14                    | 8                             | 9                          | s.         | Southern Pacific Co.       |
| Palmetto.....            | do.....        | 6,780            | 21                       | .....                               | .....                      | .....    | ..... | .....   | ..... | .....                     | .....  | .....                      | .....                 | .....                     | .....                                   | .....                 | .....                         | .....                      | .....      | A. J. Akin.                |
| Potts.....               | Nye.....       | 6,990            | 18                       | 27.4                                | + 2.7                      | 48       | 30    | -10     | 16    | 36                        | 0.53   | - 0.07                     | 0.50                  | 2.5                       | 3                                       | 9                     | 6                             | 16                         | s.         | Miss Mammie Potts.         |
| Quinn River Ranch.....   | Humboldt.....  | 4,850            | 9                        | 23.2 <sup>b</sup>                   | .....                      | 52       | 5     | -19     | 22    | 50 <sup>b</sup>           | 3.20   | .....                      | .....                 | 23.0                      | 11                                      | .....                 | .....                         | .....                      | .....      | F. M. Payne.               |
| Reno.....                | Washoe.....    | 4,532            | 40                       | 33.2                                | + 0.7                      | 61       | 8     | 5       | 17    | 42                        | 5.23   | + 3.28                     | 1.41                  | 40.5                      | 15                                      | 13                    | 5                             | 13                         | w.         | U. S. Weather Bureau.      |
| Soda Lake.....           | Churchill..... | 4,534            | 4                        | 34.8                                | .....                      | 56       | 8     | 14      | 2†    | 35                        | 1.37   | .....                      | 0.47                  | T.                        | 8                                       | 9                     | 12                            | 10                         | sw.        | U. S. Reclamation Service. |
| Tecoma.....              | Elko.....      | 4,812            | 33                       | 24.0                                | + 1.6                      | 56       | 14    | -28     | 20    | 70                        | 0.96   | + 0.26                     | 0.60                  | 8.0                       | 5                                       | 8                     | 2                             | 21                         | s.         | Southern Pacific Co.       |
| Tonopah.....             | Nye.....       | 6,090            | 4                        | 24.9                                | .....                      | 50       | 30    | 16      | 2     | 16                        | 0.31   | .....                      | 0.12                  | 0.8                       | 7                                       | 14                    | 9                             | 8                          | se.        | U. S. Weather Bureau.      |
| Wabuska.....             | Lyon.....      | 4,347            | 8                        | 30.6                                | .....                      | 60       | 19    | 2       | 18    | 48                        | 1.13   | .....                      | 0.45                  | .....                     | 7                                       | 22                    | 0                             | 9                          | .....      | Vic Bernard.               |
| Wells.....               | Elko.....      | 5,631            | 39                       | 27.0                                | + 4.0                      | 51       | 7     | -22     | 22    | 49                        | 1.08   | - 0.18                     | 0.30                  | 12.5                      | 8                                       | 9                     | 10                            | 12                         | .....      | Southern Pacific Co.       |
| Winnemucca.....          | Humboldt.....  | 4,432            | 32                       | 29.0                                | + 0.2                      | 53       | 8     | - 5     | 17    | 32                        | 2.37   | + 1.33                     | 0.73                  | 14.2                      | 12                                      | 6                     | 9                             | 16                         | ne.        | U. S. Weather Bureau.      |





TABLE 3.—Maximum and minimum temperatures at selected stations for January, 1911. District No. 10, Great Basin.

Table with columns for Wyoming (Border, Evanston, Weston, Idaho, Corinne, Deseret, Government Creek, Ibapah, Marysville, Meadowville, Modena, Ogden, Parowan, Provo, Salt Lake City) and rows for dates 1-31 and monthly means (Mns.).

Table with columns for Nevada (Burns, Oreg., Elko, Ely, Eureka, Fallon, Jean, Lovelock, Millett, Mina, Quinn River Ranch, Reno, Tecoma, Tonopah, Winnemucca) and rows for dates 1-31 and monthly means (Mns.).