U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
IN COOPERATION WITH PRINEVILLE-CROOK COUNTY CHAMBER OF COMMERCE
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 35

LATITUDE 44° 21' N
LONGITUDE 120° 54' W
ELEV. (GROUND) 2,840 Feet

CLIMATOLOGICAL SUMMARY

STATION PRINEVILLE, OREGON

MEANS AND EXTREMES FOR PERIOD Means: 1942-1971 Extremes: 1897-1971

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	** Mean degree days	Precipitation Totals (Inches): Mean	Greatest daily	Year	Snow, Sleet: Mean	Maximum monthly	Year	Greatest daily	Year	Mean number of days: Precip. .10 inch or more	Temperatures Max.: 90° and above	32° and below	Min.: 32° and below	0° and below	Month
(a)	30	30	30	75		75		30	30	75		30	75		75		30	30	30	30	30	
Jan	41.7	19.3	30.5	76	1901	-35	1930	1070	1.23	1.25	1909	5.5	29.4	1950	11.0	1950	4	0	5	27	2	Jan
Feb	47.9	24.9	36.4	73	1902	-24	1933	801	0.73	1.47	1907	2.0	12.7	1938	5.0	1944+	2	0	1	23	*	Feb
Mar	52.5	24.9	38.7	83	1902	-14	1917	815	0.59	0.96	1940	1.5	9.3	1897	5.0	1960+	2	0	*	26	0	Mar
Apr	60.7	27.9	44.3	92	1910	7	1966+	621	0.55	1.19	1899	0.5	5.5	1967	5.5	1967	2	0	0	21	*	Apr
May	68.5	34.8	51.7	96	1897	12	1964	412	1.23	1.28	1956	T	1.0	1962	1.0	1962	4	*	0	12	0	May
June	74.8	40.3	57.6	101	1970+	16	1965	229	1.24	1.54	1934	T	0.5	1934	0.5	1934	3	3	0	4	0	June
July	85.3	42.0	63.7	106	1922	26	1917	87	0.23	1.18	1916	0.0	0.0		0.0		1	10	0	1	0	July
Aug	83.4	40.3	61.9	107	1898	23	1936	127	0.45	1.05	1941	0.0	0.0		0.0		1	8	0	3	0	Aug
Sep	77.3	34.7	56.0	100	1955	12	1926	270	0.43	1.53	1901	0.0	2.0	1934	2.0	1934	1	3	0	12	0	Sep
Oct	65.2	29.4	47.3	91	1970+	6	1971	549	0.88	1.12	1950	0.2	5.5	1935	3.5	1935	3	*	0	21	0	Oct
Nov	51.5	26.0	38.8	82	1897	-15	1935	786	1.41	1.50	1961	1.2	5.3	1961	5.2	1968	4	0	1	22	*	Nov
Dec	43.6	23.2	33.4	76	1901	-32	1924	980	1.39	1.67	1929	3.5	32.2	1919	18.5	1919	5	0	3	27	1	Dec
Year	62.7	30.6	46.7	107	Aug 1898	-35	Jan 1930	6747	10.36	1.67	Dec 1929	14.4	32.2	Dec 1919	18.5	Dec 1919	32	24	10	199	4	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

+ Also on earlier dates, months, or years.

* Less than one half.

CLIMATE OF PRINEVILLE, OREGON

Prineville is located in the fairly broad, shallow valley of the Crooked River, only a few miles north-northwest of the geographical center of the State. This is in central Oregon's high plateau area on the southwestern border of the Columbia Basin and near the extreme northwestern edge of the Great Basin. Only about 40 miles to the west the Cascade Mountains, extending the full north-south length of Oregon, begin their ascent to a crest ridge of between 5,000 and 6,000 feet above sea level. Occasional peaks tower several thousand feet higher. It is predominately modified marine air masses from the Pacific Ocean that cross this region. Much of their precipitable moisture has been condensed out by their passage over the Coastal and Cascade Ranges. Occasionally, however, in winter an outbreak of polar continental air pushes west of the Rocky Mountains and moves southward across this region. It is on these occasions that the more extreme low temperatures occur.

The dry climate of the Prineville area is characterized by definite seasons with gradual changes usually noted between them. Cool winters provide considerable sunshine on half of the days with 55% of the 10-inch annual precipitation occurring from October through February. The stronger winds of winter continue well into spring with a secondary maximum of light precipitation occurring in May and June. The warm dry summer days are eased by cool nights and occasional thundershowers. Light summer winds continue into October with these afternoon peak winds again becoming general for all hours by November. The number of rainy days doubles in October while average cloudiness has its greatest increase in November.

Annual precipitation in Crook County averages from 10 inches on the westside in the Prineville Valley area to 15-25 inches at the higher elevations across the northeastern and southern mountainous areas. The 10-inch annual moisture at Prineville has ranged from 4.81 inches in 1949 to 15.27 inches in 1953 with annual totals ranging between 6.70 and 12.90 inches in 8 years out of 10. Prineville receives 32% of its moisture in winter, 23% in spring, 19% in summer and 26% in fall. Wet years provide monthly totals of 2 inches or more of moisture in 2 years out of 8 with totals of 3 inches or more in 1 year out of 8. Wettest month was December 1964 with a station record of 6.00 inches. Dry summers with at least one rainless month will occur in 3 years out of 8 while 2 consecutive dry months are noted in 1 year out of 8. Measurable precipitation occurs on 72 days out of the year with 24-hour amounts of 0.10 inch or more occurring on 32 days, 0.25 inch or more on 13 days, 0.50 inch or more on 3 days and 1.00 inch amounts on 1 day per year. Thunderstorms generally occur from April through October and average 15 per year. For a 50-year return period, one could expect a maximum 6-hour total of 1.40 inches or a 24-hour total of 2.20 inches. Snowfall accounts for 14% of the annual moisture and has fallen in all months from September through June. Seasonal snowfall totals 20 inches or more in 1 winter out of 4 with greatest season of 40.4 inches recorded in 1968-69. Numerous snow storms each winter provide maximum snow depth of 6 inches or more in only 1 season out of 4, depths of 12 inches or more in 1 out of 25 seasons while greatest depth of 31 inches occurred in December 1919 when the ground remained covered 16 days. Snow cover lasting a week or longer happens in only 1 year out of 5 but did last up to 31 days in January 1937 when 16 subzero nights produced an extreme low of -25°.

The cool winters and warm summers provide only a 33 degree difference between the mean temperature of January and July. Daily extremes are eased by a 24-hour range of temperature which averages from 20 degrees in December up to a 43-degree range for the months of July through September. Annual temperature extremes (graphed on the reverse side) show that only 1 year out of 5 will be cooler than -17° or warmer than 102°. At least half of the summers provide hot days of 100° or more with an average of 2 such days annually and greatest of 8 such days in 1967. Overnight lows on such days usually cool into the 40's but the mildest night only cooled to 68°. Subzero temperature can only be expected in 7 years out of 10 and average 4 such days annually. Light freezing minimum will occur on each month of summer in 1 year out of 3 but the very short time of occurrence causes little or no crop damage. Latest spring freezes have come as early as May 14 in 1958 while earliest fall freezes have come as late as September 24 in 1963. The 90-day growing season estimated by the Crook County Extension Office relates closely to the 98-day season for Prineville as based on the average date of last 28° or lower in spring and that of the first occurrence in fall.

Statistical Likelihood (In Percent) That Various Temperatures Will Occur In Spring After Dates Indicated

Tempt.	90%	80%	70%	60%	50%	40%	30%	20%	10%
20°	4/6	4/11	4/14	4/17	4/20	4/23	4/26	4/30	5/5
24°	4/20	4/26	5/1	5/5	5/8	5/12	5/16	5/20	5/26
28°	5/12	5/19	5/23	5/27	5/30	6/2	6/6	6/11	6/17

Statistical Likelihood (In Percent) That Various Temperatures Will Occur In Fall Before Dates Indicated

Tempt.	10%	20%	30%	40%	50%	60%	70%	80%	90%
28°	8/9	8/18	8/25	8/31	9/5	9/10	9/16	9/22	10/2
24°	9/7	9/12	9/16	9/19	9/22	9/25	9/28	10/2	10/7
20°	9/19	9/26	10/2	10/6	10/10	10/14	10/18	10/23	10/30

Additional climatological details are provided by these interpolations for the Prineville area. Clear days number 128 per year while 92 days are partly cloudy and 145 days are cloudy. Annual average cloudiness of 5.1 tenths of sky cover ranges from 1.5 tenths in July to 8.0 tenths in January. Surface winds prevail out of the south-southeast from October through February and west-northwesterly for remaining months. Hourly wind speeds average from 5.4 m.p.h. in August to 7.5 m.p.h. in January. (Continued on reverse side)

Stanley G. Holbrook, Climatologist for Oregon
M-10 Multnomah Bldg., Portland, Oregon 97204

March 1972

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1941	35.0	37.5	40.2	44.6	50.2	56.0	65.0	62.3	50.2	46.2	41.7	34.0	46.9
1942	23.9	33.7	38.4	44.7	49.2	53.8	64.1	63.0	55.7	47.9	38.8	35.6	45.7
1943	26.8	36.2	38.0	47.3	47.0	53.6	62.2	58.2	58.0	47.0	38.2	30.4	45.2
1944	29.0	31.8	36.1	41.9	50.0	54.6	62.9	60.4	57.8	52.0	36.8	29.4	45.2
1945	33.4	36.4	37.5	43.3	52.2	55.7	64.8	62.7	53.8	48.5	38.2	33.0	46.6
1946	33.6	35.6	39.0	46.2	52.9	56.6	63.6	62.6	53.8	42.0	36.8	35.4	46.5
1947	28.7	38.8	42.6	46.5	56.8	55.7	62.6	61.0	57.9	50.4	38.8	35.3	47.9
1948	33.6	31.6	37.5	42.4	49.8	61.4	61.8	59.8	53.2	46.7	37.1	27.6	45.2
1949	16.8	32.3	38.0	47.3	55.3	57.0	61.1	60.7	56.1	42.0	42.6	33.3	45.2
1950	21.3	36.3	39.1	43.8	50.2	57.7	63.2	62.7	55.5	49.3	42.4	40.1	46.8
1951	31.7	37.5	36.4	45.7	52.2	58.2	63.9	59.6	56.6	45.4	37.9	28.4	46.1
1952	27.7	34.1	36.9	47.5	52.6	55.3	63.3	62.0	58.7	52.1	31.6	31.4	46.1
1953	40.9	37.1	39.5	44.1	48.3	52.0	62.2	61.5	58.8	47.5	44.6	36.2	47.7
1954	34.1	40.6	36.0	45.1	53.0	54.1	61.7	56.4	53.1	45.2	43.0	32.6	46.2
1955	30.6	33.1	36.1	40.0	48.7	58.5	60.8	60.0	56.0	48.9	37.2	33.7	45.3
1956	34.7	31.8	40.0	45.5	54.1	55.2	64.6	60.4	55.4	45.6	36.9	34.8	46.6
1957	19.4	35.9	41.2	45.4	53.5	58.3	60.5	58.0	57.9	45.5	36.1	37.6	45.8
1958	36.5	48.3	37.7	44.0	57.3	60.5	64.8	65.9	54.6	48.2	38.7	38.1	49.1
1959	34.7	33.8	38.7	44.7	48.2	58.4	64.4	58.6	54.3	48.4	38.4	32.3	46.3
1960	27.6	35.2	41.9	45.8	50.0	58.2	66.7	59.9	55.7	46.4	35.7	33.0	46.4
1961	36.3	40.5	41.5	44.9	50.5	63.6	65.4	66.6	51.7	45.0	35.0	33.3	47.9
1962	29.3	36.4	38.5	49.6	48.7	57.4	62.6	61.0	56.5	47.4	42.7	37.1	47.3
1964	33.0	34.7	36.6	40.5	48.9	57.0	63.6	60.3	53.5	47.5	36.8	32.3	45.4
1965	35.7	38.0	37.6	46.0	49.4	59.1	65.8	63.6	51.9	51.8	41.6	32.1	47.7
1966	34.8	35.5	41.3	45.6	53.9	58.5	63.3	63.7	59.6	47.5	-	35.2	-
1967	36.4	38.8	37.3	39.2	52.0	60.1	65.7	67.7	61.3	48.8	39.3	29.8	48.0
1968	33.3	40.5	42.5	42.2	52.2	59.7	66.6	63.0	57.5	-	39.9	31.4	-
1969	25.4	32.3	38.4	45.7	56.1	61.2	63.0	62.0	57.9	43.9	39.4	34.5	46.7
1970	35.2	38.7	40.0	39.0	52.4	62.9	66.7	64.3	53.0	46.5	39.3	32.9	47.6
1971	34.1	35.8	37.5	43.3	52.3	59.3	66.4	67.8	52.8	45.1	39.1	31.7	47.1

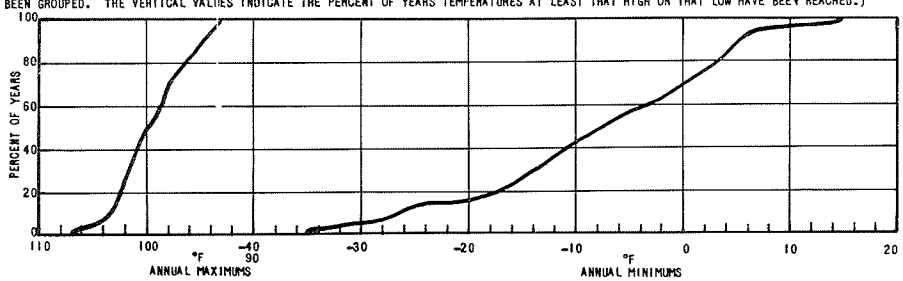
CLIMATE OF PRINEVILLE, OREGON (Continued)

Fastest 1-minute average winds of about 60 m.p.h. have occurred in this area with gusts estimated up to 80 m.p.h. Early morning relative humidity averages 75-80% year around while mid-afternoon values vary from 25-35% in summer and 50-65% in winter. Lake evaporation for the area averages 34 inches annually with 80% of this loss occurring from May through October.

Despite the relatively cool nights and low annual rainfall, extensive agriculture is carried on in the area. This is partially due to large irrigation projects which water more than 55,000 acres of

BELOW IS SHOWN GRAPHICALLY THE PERCENT OF YEARS MAXIMUM AND MINIMUM TEMPERATURES HAVE BEEN REACHED AT PRINEVILLE, OREGON DURING THE PERIOD 1897 - 1971

(FIGURES ACROSS THE BOTTOM OF THE GRAPH INDICATE THE RANGE OF VALUES INTO WHICH THE HIGHEST AND LOWEST ANNUAL TEMPERATURES HAVE BEEN GROUPED. THE VERTICAL VALUES INDICATE THE PERCENT OF YEARS TEMPERATURES AT LEAST THAT HIGH OR THAT LOW HAVE BEEN REACHED.)



Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1942	1.51	0.69	0.24	0.67	2.23	0.97	0.30	0.26	0.28	0.86	2.93	1.95	12.89
1943	1.78	0.19	0.88	0.98	0.23	1.95	T	0.56	0.00	2.25	0.73	0.37	9.92
1944	0.42	1.16	0.13	1.06	0.60	2.07	0.18	0.63	0.71	0.49	1.52	1.04	10.01
1945	1.20	0.76	0.29	0.16	3.07	0.06	T	0.12	0.48	0.91	2.13	1.83	11.01
1946	1.12	0.38	0.70	0.06	0.74	0.83	0.09	0.83	0.28	1.25	0.81	0.09	7.18
1947	0.37	0.60	0.88	0.73	0.94	1.60	1.10	0.67	0.30	1.28	1.32	0.70	10.49
1948	0.99	0.81	0.35	0.92	2.42	2.03	0.41	0.41	0.91	0.27	0.85	1.80	12.17
1949	0.17	0.34	0.77	0.22	0.73	0.60	0.00	0.01	0.15	0.12	1.44	0.26	4.81
1950	1.97	0.37	0.35	0.67	0.13	2.68	0.00	0.06	0.10	2.62	1.18	1.95	12.08
1951	0.81	0.90	0.68	0.65	1.50	0.05	0.30	0.10	0.34	1.76	1.84	1.49	10.42
1952	0.48	1.42	0.28	0.53	0.61	2.97	T	0.11	0.51	T	0.07	1.66	8.64
1953	1.30	2.10	0.42	0.62	1.88	1.70	0.00	1.87	0.27	0.95	2.27	1.89	15.27
1954	1.32	0.20	0.52	0.18	1.37	1.47	T	0.41	0.62	0.44	0.46	0.43	7.42
1955	0.70	0.27	0.32	0.70	0.63	0.24	0.51	0.00	0.38	0.73	1.25	3.05	8.78
1956	2.66	0.73	0.20	0.19	3.67	1.19	0.31	0.09	0.09	1.29	0.36	0.52	11.30
1957	0.81	0.60	2.85	0.82	2.20	0.05	0.02	0.17	1.68	1.65	0.42	2.57	13.84
1958	1.92	2.22	0.40	0.86	2.07	2.95	0.70	0.15	0.37	0.04	1.50	1.17	14.35
1959	1.22	0.85	0.47	0.16	1.02	0.56	0.15	0.07	0.90	0.72	0.29	0.26	6.67
1960	1.50	0.75	2.00	0.78	1.06	0.02	0.12	0.12	0.10	0.26	1.79	0.52	9.02
1961	0.46	1.86	0.55	0.25	1.37	0.99	0.05	0.70	0.02	0.65	3.05	1.48	11.43
1962	0.48	0.68	0.61	0.24	2.39	0.19	0.00	1.31	0.76	2.29	1.75	1.78	12.48
1963	0.82	1.25	0.43	1.49	1.67	1.00	0.03	0.25	0.97	0.50	2.22	1.11	11.74
1964	1.23	0.01	0.15	0.08	0.02	1.48	0.45	0.36	0.08	0.41	1.94	6.00	12.21
1965	1.29	0.07	0.04	0.95	0.37	1.35	0.47	1.71	0.08	0.38	1.75	0.09	8.55
1966	1.51	0.27	0.56	0.04	0.15	0.66	1.05	0.03	0.58	0.53	2.83	2.21	10.42
1967	2.24	0.07	0.48	1.99	0.13	2.35	0.00	T	0.13	0.71	0.30	0.30	8.70
1968	0.57	1.00	0.06	0.17	1.11	0.54	0.15	1.74	0.25	0.68	2.58	1.53	10.38
1969	1.10	0.48	0.39	0.52	0.98	2.93	0.17	0.00	0.58	1.13	0.31	1.64	10.23
1970	2.85	0.62	0.67	0.31	0.20	1.18	0.04	0.06	0.38	0.38	2.09	0.50	9.28
1971	2.21	0.47	0.92	0.22	1.34	1.87	0.24	0.11	0.51	0.73	1.61	1.49	11.72

farm land in Crook County. The principal crops include hay, grain, potatoes, and mint with livestock production as the major resource. Much heavier rain and snow falls on the Cascades to the west, and the Ochoco Mountains to the northeast, to support many hundreds of miles of excellent trout fishing streams. These mountainous areas with their dense forests, heavy winter snows, and very dry summers, afford ideal conditions for almost every type of winter sports and for summer hiking, picnicking and camping out. The forests are the natural habitat for great numbers of deer and other game animals. They are also the source of timber for the extensive lumber industries that contribute substantially to the local economy of Prineville.

STATION HISTORY

THE PRINEVILLE COOPERATIVE WEATHER STATION WAS ESTABLISHED JANUARY 1, 1897, WITH MR. GEORGE SUMMERS AS THE OBSERVER. THIS FIRST INSTALLATION WAS LOCATED 3 BLOCKS WEST OF THE POST OFFICE, AND IT APPEARS TO HAVE CONTINUED IN DOWNTOWN PRINEVILLE UNTIL IT WAS MOVED TO MRS HATTIE GOODKNIGHT'S RESIDENCE, 2 MILES NORTH OF THE POST OFFICE IN 1927. HERE IT REMAINED UNTIL AUGUST 25, 1960. AT THAT TIME IT WAS MOVED TO RADIO STATION KRCO, 4 MILES NORTHWEST OF THE CITY, WHERE IT HAS REMAINED EVER SINCE. THROUGHOUT ITS ENTIRE HISTORY IT HAS BEEN EQUIPPED TO MEASURE BOTH TEMPERATURES AND PRECIPITATION. MOST OF THE TIME OBSERVATIONS HAVE BEEN VERY GOOD. THIS WAS PARTICULARLY TRUE DURING THE VERY LONG PERIOD OF MRS. GOODKNIGHT'S SERVICE AND THE CURRENT OBSERVING STAFF OF RADIO STATION KRCO, MANAGED BY MR. BOB MATHENY. THE NUMBER OF MISSING TEMPERATURE RECORDS IN 1963 MADE IT INADVISABLE TO INCLUDE THAT YEAR IN TEMPERATURE COMPUTATIONS. OBSERVERS AND THEIR PERIOD OF SERVICE ARE SHOWN BELOW:

MR. GEORGE SUMMERS	JAN. 1897-FEB. 1903; MAY 1911-JUNE 1912
MR. C. I. WINNECK	JUNE 1903-MAY 1911
MR. GEORGE WHITESON	APRIL 1910-APRIL 1911
MRS. THOMAS M. BALDWIN	JUNE 1913-OCT. 1915
MRS. WILLIAM PANCAKE	OCT. 1915-OCT. 1918
MR. O. P. ANDERSON	NOV. 1918-APRIL 1920
MR. GUY LA FOLLETT	MAY 1920-JULY 1920
MR. Z. E. HENDRICKSON	AUG. 1921-AUG. 1922
MR. R. PUTNAM	SEPT. 1922-MAY 1925
MR. GEORGE F. HILLIARD	JULY 1925-OCT. 1927
MRS. HATTIE GOODKNIGHT	OCT. 1927-AUG. 1960
RADIO STATION KRCO	AUG. 1960 - PRESENT