U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH FOREST GROVE CHAMBER OF COMMERCE

LATITUDE 45° 32' N
LONGITUDE 123° 6' W
ELEV. (GROUND) 175 feet

CLIMATOLOGICAL SUMMARY

MEANS AND EXTREMES FOR PERIOD OF RECORD 1925 - 1954

CLIMATOGRAPHY OF THE U. S.
STATION FOREST GROVE
STATION NO. 35-29971

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, Hail: Mean	Maximum monthly	Year	Greatest daily	Year	Mean number of days: Precip. .10 inch or more	Temperatures: Max. 90° and above	Max. 32° and below	Min. 32° and below	Min. 0° and below	Month
(a)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
J	43.2	30.7	37.0	62	1931	-18	1950	871	7.28	3.10	1936	9.8	58.8	1950	14.8	1930	14	0	3	19	*	J
F	49.1	33.4	41.3	66	1932	-15	1950	670	6.03	2.80	1954	2.1	12.8	1937	9.0	1937	11	0	*	12	*	F
M	55.6	36.1	45.9	82	1930	21	1951	596	3.72	2.30	1928	1.0	21.0	1951	4.8	1951	10	0	0	9	0	M
A	63.3	39.2	51.3	92	1926	26	1927+	307	2.36	1.80	1929	0.1	1.6	1936	1.6	1936	6	*	0	4	0	A
M	70.3	43.4	56.9	94	1928	28	1954	245	1.88	1.38	1949	T	T	1950+	T	1950+	5	1	0	*	0	M
J	75.1	47.9	61.5	101	1925	35	1929	133	1.31	0.96	1933	0.0	0.0		0.0		4	3	0	0	0	J
J	82.4	48.8	65.6	108	1935+	38	1935+	40	0.37	1.30	1944	0.0	0.0		0.0		1	6	0	0	0	J
A	79.4	50.4	64.9	103	1933+	38	1937+	26	0.53	0.85	1943+	0.0	0.0		0.0		2	6	0	0	0	A
S	76.2	47.2	61.7	104	1953	14	1951	91	1.56	2.02	1945	0.0	0.0		0.0		4	3	0	*	0	S
O	66.9	42.3	54.6	91	1952	24	1935+	322	3.51	2.55	1943	T	T	1935	T	1950	8	*	0	3	0	O
N	51.4	36.8	44.1	75	1949	14	1935	612	6.77	2.84	1945	0.1	1.0	1942+	1.0	1942+	12	0	0	9	0	N
D	45.7	34.1	39.9	63	1950	5	1932	778	8.37	3.58	1937	0.8	6.7	1942	5.2	1942	15	0	*	12	0	D
Year	63.2	40.8	52.0	108	JULY 1935+	-18	JAN 1950	4691	44.45	3.58	DEC 1937	13.9	58.8	1950	19.4	JAN 1930	92	19	3	68	*	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

\+ Also on later dates, months or years.

* Less than one half.

CLIMATE OF FOREST GROVE, OREGON

Forest Grove lies near the extreme northwest corner of the Willamette Valley, actually in the upper basin of one of its larger river tributaries, the Tualatin. The Coast Range, which extends the full north-south length of Oregon, begins its rise three miles west of the city; one of its projecting branches making up the canyon wall of the Columbia River is some ten miles to the north. The main Coastal Range in this area reaches an elevation of slightly more than 2,000 feet with occasional peaks near 3,000 feet; the crest of the branch to the north is largely between 1,800 and 2,100 feet. The valley of the Willamette River, varying from thirty to sixty miles in width, stretches eastward to the Cascade Mountain Range and southward some 160 miles to an area where the Cascade and Coastal Ranges tend to merge. This valley is largely level or rolling land broken here and there by gently sloping hills some of which rise 1,000 to 1,200 feet above the valley floor. Numerous groves of native fir, oak, ash and cedar are scattered throughout its length. The Willamette Valley as a whole is the richest agricultural region in Oregon. Its climate and soil are suitable to a highly diversified and intensified farm program. In the Forest Grove area, berries, walnuts, filberts, vegetable crops for processing plants, hay, poultry, dairy products, and grass seed crops are all produced on a large scale commercial basis.

Forest Grove is only about 37 airline miles from the Pacific Ocean, but shielding afforded by the Coast Range protects it from a maritime climate while to the east the Cascades serve equally well as a buffer to strong continental effects. Airflows across this area are predominately from the west, and the Pacific Ocean does greatly moderate both the colder temperatures of winter and heat of summer. The more extreme temperatures that do occasionally occur are linked with the invasion of an easterly airflow through east-west passes in the Cascade Mountains. During the period for which full years of temperature records are available, 1917-1954, these temperature extremes have ranged from a record high of 108° to a low of -18°. However, in 50% of those years maximums have not exceeded 100° or minimums gone lower than 13°. The graph on the reverse presents a comprehensive picture of the frequency of annual highest and lowest temperatures.

Forest Grove has an average growing season of 175 days between the last average date in spring to the first average date in fall with temperatures of 32° or lower. The table shows average and extreme dates for certain below-freezing temperatures:

	DATE OF LAST SPRING MINIMUM OF: 16°	20°	24°	28°	32°	DATE OF FIRST FALL MINIMUM OF: 32°	28°	24°	20°	16°
Average	Jan. 15	Jan. 18	Jan. 31	Mar. 23	Apr. 25	Oct. 17	Nov. 12	Dec. 6	Dec. 19	Dec. 24
Earliest	**	**	**	Jan. 25	Mar. 10	Sep. 13	Oct. 16	Oct.20	Nov. 2	Nov. 2
Latest	Feb. 17	Feb. 18	Mar. 10	May 8	May 25	Nov. 29	Dec. 23	**	**	**

(**Years when this temperature never occurred after January 1 in spring or before December 31 in fall)

Seasonal snowfalls have varied from a high of 60.8 inches in the 1949-1950 season to years with none at all. The average annual total is 13.9 inches but yearly totals of from two to four inches are not uncommon. During most years there is a period, generally lasting from one to two weeks, with continuous snow cover and occurring sometime between January 10th and February 20th. The maximum depth recorded in the past thirty years has been 17 inches; for a majority of those years it has not exceeded 5 inches.

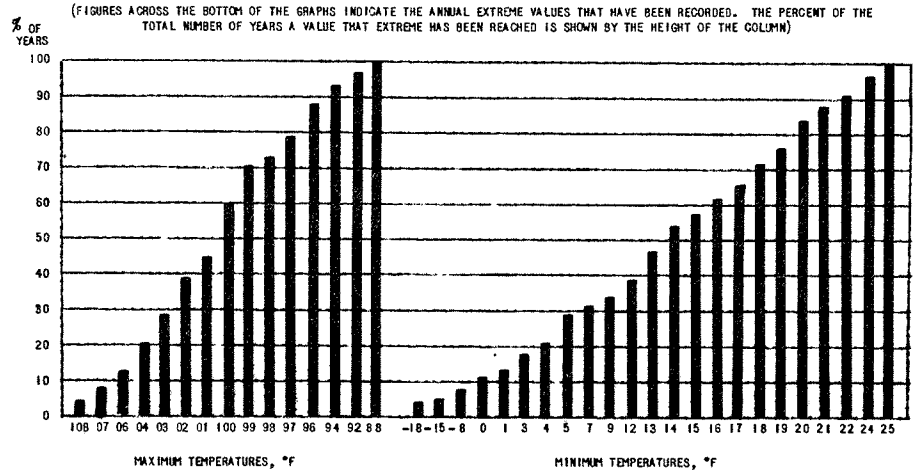
The Tualatin Valley, in common with all the Willamette Valley, has a very definite winter rainfall climate. Of the annual precipitation, 64% falls within the period November through February, and less than 6% within the period June through August. Annual totals during the years for which full years of precipitation records are available have varied from a high of 65.88 inches in 1904 to a low of 26.11 inches in 1929. The greatest recorded 24-hour fall was 3.98 inches in November, 1896. Thunderstorms occur on an average of only 6 to 8 days a year. Heavy falls, such as the one in 1896, are the result of a relatively steady rain throughout most if not all of a 24-hour period. Rains of cloudburst proportions, common in some eastern sections of the United States, here are practically unknown.

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1925	41.5	44.2	45.8	52.5	60.0	61.4	67.8	64.4	60.9	53.0	43.2	42.4	53.1
1926	38.8	45.4	50.0	57.3	56.1	64.2	67.5	65.9	58.4	54.8	46.8	38.3	53.6
1927	37.2	42.2	44.2	49.6	53.2	62.6	66.2	67.1	59.3	52.2	46.8	35.6	51.4
1928	36.4	41.4	48.2	48.8	59.8	60.0	66.4	65.4	59.4	51.6	43.4	36.4	51.4
1929	32.9	32.5	45.1	46.8	55.7	60.5	65.4	66.4	60.8	54.5	40.3	41.8	50.2
1930	24.6	43.2	47.8	52.6	52.6	59.6	64.6	67.8	61.6	50.4	42.6	37.4	50.4
1931	41.5	41.8	46.8	52.6	60.2	61.2	67.5	66.9	59.9	52.4	40.6	37.3	52.4
1932	36.7	39.5	46.0	50.8	55.2	63.9	63.1	67.0	63.6	53.8	45.6	34.4	51.6
1933	36.8	36.2	44.2	49.8	51.5	60.0	66.0	68.0	57.3	54.4	43.4	44.2	51.0
1934	44.4	46.0	51.8	57.2	58.6	61.2	65.8	68.4	61.4	54.7	47.0	41.1	54.8
1935	37.2	42.7	42.0	49.4	56.2	63.6	66.4	67.6	64.2	50.0	39.8	38.2	51.4
1936	41.3	33.1	44.3	53.0	59.4	62.4	65.2	66.6	61.0	53.8	40.6	40.7	51.8
1937	27.7	39.0	47.2	47.8	56.6	63.6	67.2	65.2	64.4	55.6	47.5	41.5	51.8
1938	38.8	41.0	44.2	51.8	57.2	63.8	70.0	64.4	65.8	53.4	41.4	40.2	52.7
1939	41.0	38.2	47.2	52.6	57.6	59.7	67.9	68.2	63.0	53.5	45.4	43.9	53.2
1940	39.8	44.8	49.2	52.0	60.0	64.9	66.4	68.8	63.5	55.2	41.6	41.4	54.0
1941	41.3	45.2	51.2	52.8	56.4	60.8	70.5	67.0	58.6	52.2	46.2	41.2	53.6
1942	34.0	41.8	45.1	51.6	55.4	59.8	68.0	68.3	62.9	53.6	43.2	41.8	51.7
1943	33.2	42.7	44.2	53.2	54.8	60.0	66.9	64.0	64.9	53.4	44.6	38.4	51.7
1944	37.8	41.6	45.1	50.2	56.8	61.0	66.8	66.0	63.8	55.6	43.6	37.2	52.1
1945	41.2	43.4	43.8	48.8	58.2	60.8	68.0	67.8	59.4	52.2	44.0	39.4	52.2
1946	38.8	41.4	45.5	50.2	58.9	59.7	66.4	67.1	60.2	49.2	42.1	41.0	51.7
1947	35.2	44.9	49.3	54.0	61.0	59.8	64.8	64.2	62.8	52.8	44.8	40.8	52.9
1948	38.2	39.1	43.4	47.2	55.6	66.2	64.8	64.0	60.5	51.1	43.1	36.0	50.8
1949	26.8	38.9	45.6	52.5	58.9	62.0	65.1	66.1	63.5	48.1	48.8	40.0	51.3
1950	27.5	39.1	44.7	48.6	54.9	62.0	66.9	68.5	62.8	51.5	45.8	46.2	51.6
1951	38.3	42.0	41.3	53.9	57.3	64.3	67.7	65.9	64.0	53.0	45.0	37.4	52.5
1952	35.9	40.6	44.4	52.2	57.1	60.3	68.1	65.9	63.5	58.6	39.2	39.9	52.1
1953	45.7	42.9	44.5	48.3	53.5	56.2	64.0	64.5	61.7	53.5	48.4	42.2	52.1
1954	37.5	42.4	43.1	49.3	57.1	58.4	62.4	62.5	59.6	51.3	48.4	40.3	51.0
AVERAGE TEMP.	36.9	41.3	45.8	51.2	56.9	61.4	66.5	66.3	61.7	53.0	44.1	39.9	52.1

BELOW IS SHOWN GRAPHICALLY THE PERCENT OF YEARS MAXIMUM AND MINIMUM TEMPERATURES OF VARIOUS EXTREMES HAVE BEEN REACHED DURING THE PERIOD 1917-1954

(FIGURES ACROSS THE BOTTOM OF THE GRAPHS INDICATE THE ANNUAL EXTREME VALUES THAT HAVE BEEN RECORDED. THE PERCENT OF THE TOTAL NUMBER OF YEARS A VALUE THAT EXTREME HAS BEEN REACHED IS SHOWN BY THE HEIGHT OF THE COLUMN)



Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1925	7.96	9.68	1.34	1.81	1.18	0.78	T	0.58	1.88	T	6.28	5.08	36.57
1926	4.01	8.54	0.75	0.25	3.21	0.75	T	1.96	1.58	5.98	11.38	6.65	45.06
1927	11.19	10.00	2.50	1.51	3.00	1.90	0.49	0.22	3.85	3.09	9.66	3.71	51.12
1928	7.51	1.88	10.04	6.04	0.47	0.78	0.22	T	0.99	2.18	6.17	8.64	44.92
1929	3.51	0.80	2.40	4.02	0.87	2.05	0.09	0.24	0.19	0.86	0.53	10.55	26.11
1930	4.23	6.93	1.65	2.93	2.77	0.84	0.02	0.03	2.02	1.28	3.46	3.07	29.23
1931	7.43	3.79	8.05	2.04	0.67	3.98	T	T	2.63	5.71	7.60	11.86	53.76
1932	7.22	3.47	6.86	3.41	1.40	0.25	0.48	0.21	0.10	2.68	10.46	8.92	45.46
1933	8.94	3.99	6.42	0.44	3.55	1.97	0.02	0.63	2.55	3.10	1.69	18.73	52.03
1934	7.00	1.85	3.40	2.25	1.41	0.39	0.02	0.24	1.41	7.38	14.44	10.64	50.43
1935	6.36	3.84	7.09	2.04	0.23	0.22	0.71	0.14	1.65	2.76	2.88	6.82	34.74
1936	12.02	7.80	3.62	1.24	3.80	2.58	0.57	0.15	0.75	0.35	0.40	9.46	42.74
1937	5.27	8.18	4.48	6.99	1.63	3.41	0.08	0.89	1.68	1.62	12.00	15.26	61.49
1938	5.96	8.20	10.49	1.78	0.50	0.06	0.29	0.28	1.42	4.08	4.91	5.20	43.17
1939	6.15	6.52	2.64	0.38	0.89	0.99	0.27	0.98	0.51	2.26	1.99	12.41	35.99
1940	4.72	13.45	5.37	2.75	2.28	0.05	1.05	0.08	3.36	4.79	4.98	6.59	49.47
1941	8.21	2.08	2.17	2.27	3.82	1.19	0.05	1.79	2.63	2.42	5.75	11.82	44.20
1942	5.08	4.81	2.26	1.97	2.59	1.51	0.97	0.33	0.01	2.63	14.18	11.17	47.56
1943	5.90	4.82	7.28	2.85	1.43	2.19	0.32	1.36	0.06	6.28	3.10	4.37	39.96
1944	4.30	3.68	3.21	3.74	0.85	0.67	1.54	0.28	2.56	1.50	5.31	2.60	30.14
1945	4.68	7.20	7.50	2.48	3.69	0.15	0.17	0.14	3.41	1.69	13.27	8.27	52.65
1946	7.99	7.35	5.68	1.41	1.55	1.78	0.95	0.11	0.96	4.60	9.48	7.27	49.13
1947	5.55	3.82	5.31	1.59	0.11	2.77	0.80	0.95	0.98	10.91	4.09	4.36	41.24
1948	7.54	7.48	4.51	4.28	4.86	0.80	0.41	0.78	2.61	2.30	8.39	10.38	54.34
1949	1.54	10.78	3.34	0.40	3.17	0.25	0.64	0.07	0.63	2.22	7.61	6.44	37.09
1950	10.19	6.83	6.28	1.31	0.42	1.52	0.49	0.83	1.01	9.37	9.48	8.46	56.69
1951	10.83	5.29	4.58	0.96	1.58	0.04	0.20	0.43	2.47	5.50	8.50	8.37	48.75
1952	6.64	5.53	4.62	1.39	0.57	2.26	0.00	0.18	0.36	0.70	2.09	10.08	34.42
1953	15.68	4.63	5.05	2.48	2.90	1.23	0.06	1.43	0.92	3.58	6.33	7.15	51.44
1954	14.78	7.65	2.83	3.28	1.02	2.00	0.26	0.94	1.69	3.36	6.62	6.90	51.33
30 YEAR AVERAGE	7.28	6.03	3.72	2.36	1.88	1.31	0.37	0.53	1.56	3.51	6.77	8.37	44.45

STATION HISTORY

WEATHER RECORDS WERE FIRST TAKEN AT FOREST GROVE ON DECEMBER 16, 1889. BEGINNING THEN AND FOR THE NEXT TWENTY-FIVE YEARS THEY WERE CARRIED ON UNDER DIRECTION OF VARIOUS FACULTY MEMBERS OF PACIFIC UNIVERSITY WITH SOME STUDENT GENERALLY DOING THE ACTUAL OBSERVING FOR ALL OR A PART OF HIS TUITION. FROM THE RATHER MEAGER INFORMATION AVAILABLE IT APPEARS THROUGHOUT THAT TIME THE STATION WAS LOCATED ON OR IMMEDIATELY ADJACENT TO THE UNIVERSITY'S CAMPUS. SINCE THE OBSERVING WAS GENERALLY ASSIGNED TO SOME STUDENT, RECORDS FOR THE VACATION MONTHS OF JULY AND AUGUST ARE MISSING FOR PRACTICALLY ALL YEARS DURING THAT PERIOD. FROM TIME TO TIME OTHER MONTHS AND EVEN THE ENTIRE YEAR OF 1915 ARE ALSO MISSING. RECORDS OBTAINED APPEAR RELATIVELY FREE OF ERROR AND REASONABLY COMPLETE.

THE FIRST OBSERVER WAS G. W. SHAW WHO CARRIED ON THE OBSERVING PROGRAM UNTIL THE END OF MAY, 1891. SUCCEEDING OBSERVERS, AS SHOWN BY THE RECORDS PREPARED THERE, ARE LISTED BELOW TOGETHER WITH THEIR PERIOD OF SERVICE:

W. P. MARSH -- JUNE, 1891-JULY, 1892; D. H. THOMAS -- AUG. 1892-JUNE, 1893; W. S. SHIACH -- SEPT., 1893-MAY, 1895; JOHN MILLER -- SEPT., 1895-MAY, 1898; EMERSON BAKER -- OCT., 1902-MAY, 1904; C. E. BRADLY -- JUNE, 1904-AUG., 1904; CHARLES DIXON -- SEPT., 1904-DEC., 1904; D. J. TAYLOR -- JAN., 1905-APRIL, 1912; A. M. BEAN -- JAN., 1913-MARCH, 1914.

BEGINNING IN MAY, 1911 THE STATION WAS INOPERATIVE MUCH OF THE TIME AND WAS OFFICIALLY DISCONTINUED AFTER MARCH, 1914. IT WAS REOPENED ON JUNE 1, 1916 WHEN C. W. CREEL, ENTOMOLOGIST IN CHARGE OF THE U. S. ENTOMOLOGICAL FIELD STATION, FOREST GROVE, TOOK OVER THE OBSERVING PROGRAM. EQUIPMENT WAS INSTALLED AT THE CORNER OF C STREET AND 3RD AVENUE (NOW KNOWN AS 23RD AVENUE), APPROXIMATELY FIVE BLOCKS WEST AND TWO BLOCKS NORTH OF THE FORMER LOCATION. THE STATION REMAINED AT THIS SAME LOCATION UNTIL NOVEMBER 3, 1948.

UNDER MR. CREEL'S DIRECTION AND LATER THAT OF HIS SUCCESSORS IN THE POSITION OF ENTOMOLOGIST A MOST COMMENDABLE RECORD WAS OBTAINED. MR. CREEL LEFT FOREST GROVE IN JUNE, 1919 TO ACCEPT A POSITION ELSEWHERE. MR. L. P. ROCKWOOD, WHO SUCCEEDED HIM, CONTINUED THE RECORD WITHOUT INTERRUPTION AND AT THAT SAME LOCATION UNTIL OCTOBER 31, 1948, THUS SETTING A RECORD OF ALMOST THIRTY YEARS OF CONTINUOUS VOLUNTARY WEATHER OBSERVING. THEREAFTER THE BUREAU OF ENTOMOLOGY CONTINUED TO KEEP THE RECORDS, BUT ON NOVEMBER 4, 1948 THE EQUIPMENT WAS MOVED ABOUT A MILE EAST TO THE BUREAU'S OFFICE ON ELM NEAR 23RD STREET. THE BUREAU ITSELF WAS DESIGNATED THE OBSERVER AND WHATEVER EMPLOYEE THAT WAS ON DUTY AT THE TIME TOOK THE OBSERVATIONS.

ON NOVEMBER 30, 1953, THE BUREAU OF ENTOMOLOGY FOUND IT NECESSARY TO GIVE UP THE OBSERVATIONAL PROGRAM AND IT WAS AGAIN MOVED, THIS TIME 0.4 MILE NORTHWEST TO RADIO STATION KRWC WITH EMPLOYEES OF THE STATION TAKING THE OBSERVATIONS. IT HAS REMAINED AT THAT POINT EVER SINCE.

THE LATITUDE AND LONGITUDE OF THE STATION HAVE CHANGED LESS THAN A MINUTE EACH WITH THESE VARIOUS MOVES. ELEVATIONS WERE GIVEN AS 211 FEET MSL FOR THE PERIOD 1889-1914 WHILE AT PACIFIC UNIVERSITY CAMPUS, 220 FEET FROM 1916 TO 1948 WHILE LOCATED AT C AND 23RD AVENUE, 180 FEET FROM 1948 TO 1953 AT BUREAU OF ENTOMOLOGY OFFICE AND SHOP AND 175 FEET AT ITS PRESENT LOCATION. THUS ITS RECORDS, WHICH HAVE ALWAYS BEEN TAKEN WITHIN A RADIUS OF A MILE AND HAVE VARIED LESS THAN FIFTY FEET IN ELEVATION SHOULD AS A RESULT BE CLIMATOLOGICALLY VERY HOMOGENOUS. AFTER JUNE 1, 1916 THEY ARE VERY COMPLETE, WELL PREPARED, AND FOR ALMOST THIRTY YEARS KEPT BY THE SAME OBSERVER, ALL OF WHICH GIVES THEM AN EXCEPTIONALLY HIGH DEGREE OF DEPENDABILITY.