U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
IN COOPERATION WITH LA GRANDE CHAMBER OF COMMERCE
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 — 35

LATITUDE 45° 20' N
LONGITUDE 118° 06' W
ELEV. (GROUND) 2,782 Ft.

CLIMATOLOGICAL SUMMARY

STATION LA GRANDE, OREGON

MEANS AND EXTREMES FOR PERIOD ✱ 1925 - 1955

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Record lowest	Mean degree days **	Precipitation Totals (Inches): Mean	Greatest daily	Snow, Sleet: Mean	Maximum monthly	Greatest daily	Mean number of days: Precipitation .10 inch or more	Temperatures: Max. 90° and above	Max. 32° and below	Min. 32° and below	Min. 0° and below	Averages (La Grande Airport for 5 years 12/1/48 - 11/30/53): Relative Humidity 4:30 A.M.	Relative Humidity 4:30 P.M.	#Daily Cloudiness (Tenths of Sky Covered - Sunrise to Sunset)	# Wind Velocity (Miles Per Hour)	#Prevailing Wind Direction	Month
(a)	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	5	5	5	5	5	
Jan.	37.8	21.9	29.9	60	-20	1088	2.06	2.43	12.3	52.0	14.0	7	0	7	26	1	75	69	8.1	13.9	S	Jan.
Feb.	43.0	25.1	34.1	65	-7	865	2.01	1.10	9.4	37.3	12.0	7	0	3	22	1	76	66	7.9	12.7	S	Feb.
Mar.	50.6	29.5	40.1	76	-6	872	2.09	1.33	3.6	13.5	7.0	7	0	*	21	*	76	54	8.0	10.8	S	Mar.
Apr.	60.9	35.4	48.2	95	11	504	1.86	1.15	0.7	5.0	3.0	6	*	0	10	0	73	38	6.4	9.6	NW	Apr.
May	69.1	41.6	55.4	95	22	316	1.67	1.58	T	T	T	5	1	0	2	0	76	41	6.2	8.6	NW	May
June	75.5	47.7	61.6	105	30	138	2.00	1.21	T	T	T	6	3	0	*	0	76	45	5.8	7.9	NW	June
July	87.1	54.0	70.6	108	37	6	0.51	0.90	0.0	0.0	0.0	2	13	0	0	0	71	28	2.0	7.2	NW	July
Aug.	85.7	51.7	68.7	105	36	25	0.54	2.04	0.0	0.0	0.0	2	12	0	0	0	66	29	3.6	7.0	NW	Aug.
Sep.	76.5	44.1	60.3	101	22	189	0.98	0.84	T	T	T	3	4	0	2	0	73	29	4.0	6.5	NW	Sep.
Oct.	64.1	36.8	50.5	91	15	450	1.56	1.50	0.1	2.0	2.0	5	*	*	9	0	78	46	5.8	7.7	NW	Oct.
Nov.	49.3	30.1	39.7	72	-8	759	2.24	0.98	2.8	13.5	8.0	7	0	1	19	*	73	59	7.1	10.9	S	Nov.
Dec.	41.3	25.8	33.6	64	-12	973	2.23	2.00	7.3	21.5	6.5	7	0	4	24	1	76	73	8.5	13.3	S	Dec.
Year	61.7	37.0	49.4	108	-20	6185	19.75	2.43	36.2	52.0	14.0	64	33	15	135	3	74	48	6.1	9.7	NW	Year

✱ Temperature data for 1947 not used in computing means.
(a) Average length of record, years.
T Trace, an amount too small to measure.
** Base 65°F
# Based on hourly observations.
+ Also on later dates, months or years.
* Less than one half.

CLIMATE OF LA GRANDE, OREGON

La Grande lies at the westernmost apex of the diamond shaped Grande Ronde Valley. Foothills begin within the western city limits and rise rapidly to the crest ridge of the Blue Mountains whose elevation ranges between 4,000 and 6,000 feet. This crest at its closest point is 18 miles northwest of the city. The valley is quite level with its longest axis about 20 miles lying in a south southeast-north northwest direction. It is about 12 miles in its greatest east-west width. The mountains or hills that make up the east and west walls rise some 2,500 to 3,500 feet above the valley floor, and are dominated by 7,000-foot Mount Emily to the northwest and Mount Fanny of the same height to the northeast. The valley is bordered to the east by the Wallowa Mountains with major peaks reaching 10,000 feet above sea level. Both the Wallowas and the Blue Mountains are heavily timbered, but the range of hills bordering it to southeast are nearly barren, covered only sparsely with sagebrush and dry land grasses. The valley is terminated at its north and south extremes by only slight rises or low rolling hills as the valley of the Grande Ronde gives way to those of other streams, all tributaries to the Snake River.

In the entire period of over sixty years for which temperatures are available for La Grande, these have ranged between the extremes of 22° below zero to 108° above. In about two thirds of those years a temperature at least as high as a 100° has been recorded, and in 60% of them one as low as 0°. The annual extremes that have been observed there over this period are shown graphically on the reverse side. Marine air moving in from the Pacific Ocean prevails over this area most of the time greatly moderating both the high temperatures of summer and lows of winter. As a result neither extreme persists for a very long period. Nights the year around are cool, usually dropping down to between 50° and 60° even in the warmest weather. During the periods of highest temperatures, relative humidity reaches its lowest point, often reaching only 10-15%, thus materially reducing the discomfort otherwise associated with the warmer temperatures. An average growing season of approximately 143 days permits the growing of a fair variety of crops on a commercial scale. Practically all temperate climate fruits and vegetables can be grown. The probability for occurrence of temperatures of 32°, 28° and 24° after specific dates in spring and before specific dates in fall is shown in the table below:

STATISTICAL LIKELIHOOD (IN PER CENT) THAT TEMPERATURES OF 32°, 28° AND 24° WILL OCCUR IN SPRING AFTER DATES INDICATED

Tempt.	90%	80%	70%	60%	50%	40%	30%	20%	10%
32°	4/11	4/21	4/28	5/4	5/9	5/15	5/21	5/28	6/7
28°	3/24	4/1	4/6	4/10	4/15	4/19	4/23	4/29	5/6
24°	2/27	3/8	3/15	3/21	3/27	4/1	4/7	4/14	4/24

STATISTICAL LIKELIHOOD (IN PER CENT) THAT TEMPERATURES OF 32°, 28° AND 24° WILL OCCUR IN FALL BEFORE DATES INDICATED

10%	20%	30%	40%	50%	60%	70%	80%	90%
9/11	9/17	9/22	9/26	9/29	10/3	10/7	10/11	10/17
10/1	10/10	10/13	10/18	10/22	10/26	10/30	11/4	11/11
10/13	10/18	10/25	10/31	11/6	11/11	11/17	11/24	11/29

The marine air masses that predominate this region have had much of their moisture removed in crossing three mountain ranges--the Coastal, Cascade, and Blue Mountains--before reaching La Grande. However, due in a large part to its proximity to the mountains, La Grande has an average of from one to over two inches of rainfall every month in the year except July and August, and even in those months thundershowers may occasionally produce substantial amounts. Approximately 54% of the annual total occurs in the five months of November to March, with from a third to half of it falling in the form of snow. Storms producing from 6 to 15 inches of snow over a 48 to 72 hour period can usually be expected two or three times during the winter with depths on the ground of 8 to 12 inches. Chinook effects of the prevailing westerly winds moving across the Blue Mountains and down into the valley, however, are quite capable of melting off depths of these amounts in a very few hours; seldom does snow of more than a few inches persist on the ground for any extended period. During the sixty-two years for which complete yearly precipitation totals are available they have varied from a high of 29.11 inches in 1953 to a low of 12.09 inches in 1895. Seasonal snowfall totals have varied between 6.5 inches and 121.5 inches.

he climate of this area permits a very diversified agriculture, though it is predominately related to such field crops as hay and small grains ith livestock second in importance. Production of seed crops, particularly garden, field and Australian peas, and various grasses is another important source of farm revenue. Several varieties of fruit including apples, cherries and prunes are grown on a minor commercial scale. The fairly heavy precipitation in the Blue Mountains, a considerable portion of which is the winter snow pack, permits extensive irrigation. The Blue Mountains also serve as an important grazing area for the beef cattle produced in great numbers here. They are the source of timber for La Grande's important lumber industry. They are coursed by hundreds of miles of trout fishing streams, and are one of the most popular deer and elk hunting areas of the northwest as well as one of the major winter sports areas of the State.

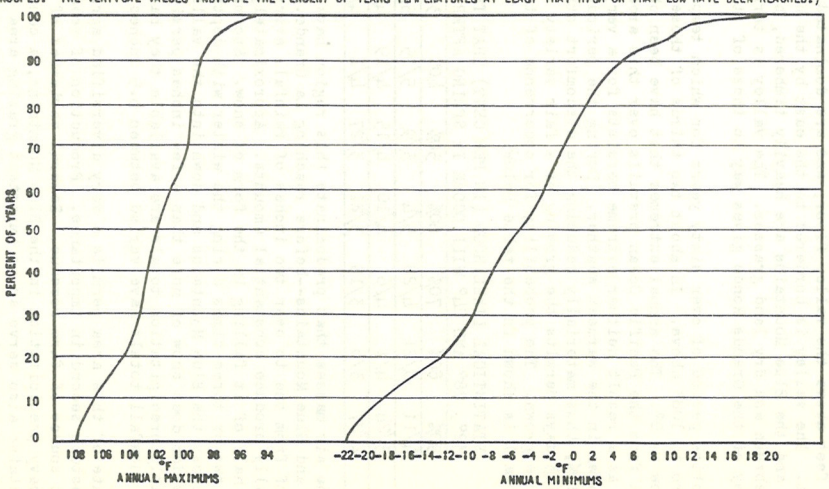
Gilbert L. Sternes, State Climatologist
Weather Bureau Office, Portland, Oregon

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1925	34.6	39.4	42.0	49.4	57.2	63.4	71.8	67.8	59.8	50.0	41.4	36.9	51.1
1926	31.0	41.6	46.8	54.8	55.4	66.3	73.4	68.7	54.8	50.6	44.2	30.2	51.5
1927	31.0	36.6	39.4	45.8	51.3	62.8	70.9	69.3	59.0	51.0	43.0	28.4	49.0
1928	33.0	33.2	42.6	44.0	60.5	61.4	71.0	66.6	61.0	50.4	40.7	31.2	49.6
1929	22.2	26.0	41.4	43.6	55.1	61.0	71.0	71.8	57.0	51.6	38.5	40.3	18.3
1930	18.1	39.0	42.9	53.6	53.6	60.0	71.6	68.4	60.5	47.1	38.4	28.2	48.4
1931	33.1	34.8	40.6	48.4	59.0	62.2	72.6	71.2	60.0	48.8	34.0	30.3	49.6
1932	28.0	27.8	39.0	48.2	55.2	65.5	68.6	68.0	61.2	50.5	44.1	26.4	48.5
1933	29.8	23.8	39.2	46.8	51.2	65.4	72.6	70.6	57.8	54.6	42.8	40.8	49.6
1934	39.4	43.0	49.0	56.5	61.2	62.8	71.0	71.6	59.4	51.8	45.1	33.8	53.7
1935	32.8	37.0	38.0	45.8	54.6	62.8	70.2	68.8	64.8	49.2	35.4	33.5	49.4
1936	31.4	24.0	38.0	51.2	60.4	63.8	72.6	70.2	59.5	53.6	36.6	35.6	49.7
1937	14.6	30.0	41.4	44.4	56.8	61.4	71.8	67.1	63.1	52.7	43.4	37.8	48.7
1938	35.8	37.0	39.6	49.2	55.6	64.7	72.6	68.1	66.0	50.2	35.0	34.2	50.7
1939	35.6	29.4	41.6	50.5	57.6	58.6	71.4	71.8	61.6	49.4	42.6	39.6	50.8
1940	34.2	37.6	44.0	48.2	59.5	67.3	71.6	71.5	62.0	51.6	34.4	37.1	51.6
1941	37.0	39.3	45.2	50.0	56.2	60.4	72.7	69.4	55.9	48.3	43.0	36.6	51.2
1942	31.8	36.4	37.2	49.0	52.0	58.5	71.8	71.6	61.6	52.1	40.1	34.0	49.7
1943	26.4	36.8	38.0	50.2	51.4	56.6	69.0	65.0	61.8	48.8	39.4	31.7	47.9
1944	28.8	32.2	35.4	45.1	53.8	58.0	67.2	64.9	60.6	55.0	37.1	31.8	47.5
1945	33.0	36.4	37.9	45.2	55.5	59.6	71.6	69.0	56.0	54.2	39.3	33.0	49.2
1946	33.2	33.7	42.1	50.3	56.4	60.2	69.4	70.2	58.6	45.1	35.6	35.0	49.2
1948	30.8	31.5	36.7	44.3	52.7	64.6	66.7	65.9	59.6	48.8	35.8	25.4	46.9
1949	13.1	30.0	40.5	50.8	58.5	61.3	68.3	70.1	62.9	44.3	44.2	32.5	48.0
1950	20.5	34.3	38.0	43.4	50.4	58.8	65.9	65.6	56.8	50.4	41.0	39.4	47.1
1951	29.3	35.3	35.8	50.5	56.0	61.6	71.9	68.2	61.4	47.0	38.5	29.5	48.8
1952	28.5	32.5	36.7	50.7	55.5	60.1	69.7	68.7	62.1	54.3	34.8	32.9	48.8
1953	39.9	34.2	40.0	45.0	51.0	56.8	70.1	67.5	62.6	50.8	44.0	35.0	49.7
1954	34.0	40.2	40.7	49.0	58.2	58.5	69.5	64.2	59.0	49.3	43.5	31.6	49.8
1955	27.9	28.8	32.3	40.7	50.9	63.1	66.9	69.8	61.9	52.3	35.4	34.4	47.1

BELOW IS SHOWN GRAPHICALLY THE PERCENT OF YEARS MAXIMUM AND MINIMUM TEMPERATURES WITHIN RANGES OF TWO DEGREES HAVE BEEN REACHED DURING THE PERIOD 1889-1955

(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
1926	1.35	3.23	1.39	2.09	1.04	1.12	0.27	1.70	1.32	1.10	3.13	2.18	19.92
1927	3.46	1.98	1.34	0.45	1.57	2.83	0.15	0.77	4.61	2.29	5.67	1.57	26.69
1928	2.24	0.76	3.48	2.53	0.20	0.56	1.28	0.20	1.19	1.61	1.03	0.84	15.92
1929	3.79	0.85	2.03	1.37	1.33	2.31	0.05	0.46	0.20	0.80	0.59	3.18	16.96
1930	2.06	2.77	2.06	1.46	2.50	0.94	0.03	1.43	0.80	2.14	0.77	1.65	18.61
1931	2.06	1.09	3.75	1.30	0.57	2.32	0.00	0.07	0.92	2.65	2.59	0.91	18.23
1932	3.07	2.04	6.08	1.84	1.50	0.03	0.55	0.16	0.20	1.61	3.54	2.06	22.68
1933	2.00	3.31	2.06	2.05	2.29	1.04	0.54	0.75	2.41	0.95	1.81	3.54	22.75
1934	2.40	0.94	2.89	0.87	0.40	3.88	0.12	T	0.22	2.40	2.25	2.85	19.22
1935	0.83	0.82	1.84	2.80	0.66	1.24	0.92	0.23	0.14	1.34	1.55	1.31	13.68
1936	3.29	2.02	2.06	1.44	1.35	2.58	0.91	0.08	0.36	0.22	0.12	2.50	16.93
1937	2.38	1.86	1.78	3.28	0.68	2.65	0.42	0.07	0.82	1.38	2.71	2.11	20.14
1938	2.06	2.08	1.62	1.89	1.42	1.44	0.10	0.06	0.28	1.88	3.39	1.49	17.71
1939	1.12	3.87	1.70	0.36	1.19	0.61	0.75	0.10	0.49	1.51	0.29	1.95	13.94
1940	2.13	3.92	2.42	2.17	0.52	0.54	0.57	0.00	3.53	2.82	3.08	0.55	22.25
1941	0.87	1.22	0.41	1.31	3.28	4.66	1.30	1.33	2.27	1.62	1.95	2.76	22.98
1942	1.14	1.24	1.21	2.72	2.94	3.62	0.48	0.51	0.08	1.82	3.62	3.74	23.12
1943	2.43	1.79	2.25	1.63	1.50	2.78	0.69	1.37	0.00	1.88	0.97	1.33	18.62
1944	0.35	1.66	2.04	1.75	0.60	3.58	0.50	T	2.04	0.74	1.70	0.40	15.36
1945	2.55	2.41	1.85	1.91	3.15	1.16	0.01	0.61	1.31	0.31	2.95	2.92	21.64
1946	2.06	1.88	2.48	2.33	2.13	2.68	1.04	0.08	0.93	2.80	2.77	4.70	25.88
1947	2.38	0.80	2.30	2.55	1.22	3.83	0.13	0.13	1.11	2.72	4.39	2.87	24.43
1948	1.62	2.73	1.86	2.78	3.70	3.28	0.55	0.75	0.32	1.05	2.69	4.44	25.77
1949	1.18	3.23	1.03	1.59	1.46	0.62	0.27	0.09	0.77	2.48	3.21	2.47	18.40
1950	1.61	1.10	1.54	1.34	0.39	1.71	1.00	0.53	0.22	0.98	1.42	1.64	13.48
1951	2.43	1.77	1.20	1.20	2.54	0.67	0.43	0.32	0.52	2.28	1.91	1.64	16.91
1952	0.98	1.53	1.64	2.12	2.52	2.88	0.02	0.41	0.47	0.02	0.49	1.97	15.05
1953	5.73	3.67	2.67	3.19	4.52	1.40	0.00	1.39	0.12	1.09	1.87	3.46	29.11
1954	1.41	1.70	1.68	2.36	2.61	2.53	0.68	2.48	0.38	0.54	1.91	1.23	19.51
1955	0.70	2.05	2.13	1.24	0.45	0.60	1.66	0.00	1.27	1.39	2.96	2.76	17.21

STATION HISTORY

LITTLE IS KNOWN ABOUT THE EARLIEST HISTORY OF THE LA GRANDE WEATHER STATION EXCEPT THAT IT WAS BEGUN IN MAY 1886 WITH MR. J. K. ROMIG THE FIRST OBSERVER. THERE IS NOTHING TO INDICATE WHERE THIS STATION WAS LOCATED DURING MR. ROMIG'S PERIOD OF SERVICE—MAY 1886 TO MARCH 31, 1896—NOR DURING THE TIME OF HIS NEXT TWO SUCCESSORS: MR. J. H. ROBBINS, NOVEMBER 25, 1897 TO MARCH 31, 1900 AND TURNER OLIVER DURING APRIL AND MAY OF 1900. FROM THE BRIEF NOTES THAT ARE AVAILABLE IT SEEMS LIKELY THAT THESE LOCATIONS WERE ALL SOMEWHERE WITHIN OR VERY NEAR THE CITY OF LA GRANDE.

MR. W. A. WORSTEL TOOK OVER THE STATION'S OPERATION AUGUST 1, 1900 AND CONTINUED TO MAINTAIN IT UNTIL JUNE 30, 1913, WITH THE EQUIPMENT LOCATED AT HIS HOME AT THE CORNER OF SECOND AND I STREET. WHILE THERE ARE A NUMBER OF SKIPS IN THE RECORD PRIOR TO THIS TIME, IT IS VERY COMPLETE THROUGHOUT MR. WORSTEL'S PERIOD OF OBSERVING. THE STATION WAS INACTIVE AFTER HE GAVE IT UP UNTIL IT WAS MOVED TO THE ROOF OF THE LA GRANDE FIRE STATION ON SEPTEMBER 1, 1913. THE FIREMEN CONTINUED TO KEEP THE RECORD UNTIL FEBRUARY 27, 1954, THOUGH IT WAS MOVED FROM THE ROOF TO A GROUND EXPOSURE ON APRIL 12, 1950. THROUGHOUT THIS TIME THE RECORD APPEARS EXCEPTIONALLY COMPLETE AND ACCURATE WITH FEW SKIPS EXCEPT FOR SOME MISSING TEMPERATURE DATA IN 1947. THE REQUIREMENT THAT A YEAR WITH ONE OR MISSING MONTHS OF RECORD BE NOT USED IN THE PREPARATION OF THESE SUMMARIES MADE IT NECESSARY TO DROP THAT YEAR.

LOSS OF SPACE AT THE FIRE DEPARTMENT LOCATION MADE IT NECESSARY TO MOVE THE STATION OUT TO THE CITY WATER DEPARTMENT WAREHOUSE IN 1954. THIS IS APPROXIMATELY 0.5 MILE NORTH OF THE LA GRANDE POST OFFICE. IT HAS REMAINED THERE SINCE THAT TIME WITH MR. WILLIAM M. WILSON THE OBSERVER.

IN ADDITION TO THE CITY STATION AN AIRWAYS STATION WAS ESTABLISHED AT THE LA GRANDE AIRPORT SOME FOUR TO FIVE MILES SOUTHEAST OF THE CITY ON MAY 1, 1929 WITH DEPARTMENT OF COMMERCE AIRWAY PERSONNEL TAKING HOURLY OBSERVATIONS. TO THIS WAS ADDED FULL CLIMATOLOGICAL EQUIPMENT IN FEBRUARY 1940, AND A WEIGHING TYPE RECORDING RAIN GAGE IN NOVEMBER OF THAT YEAR. WITH THE EXCEPTION OF A SHORT TIME BETWEEN FEBRUARY 1944 AND OCTOBER 1945, WHEN WEATHER BUREAU PERSONNEL WERE ASSIGNED TO THE AIRPORT, THE CAA CONTINUED TO OPERATE THE STATION UNTIL THEIR OFFICE THERE WAS CLOSED ON NOVEMBER 30, 1953. AT THAT TIME ALL CLIMATOLOGICAL OBSERVING EXCEPT THE MAINTENANCE OF THE WEIGHING RAIN GAGE WAS DISCONTINUED. THIS LAST HAS BEEN CONTINUED UNDER SUPERVISION OF VARIOUS AIRLINE'S EMPLOYEES. DATA FROM THE RECORDING RAIN GAGE HAVE BEEN REGULARLY PUBLISHED SINCE THEIR BEGINNING, BUT THE USE OF RECORDS FROM THIS LOCATION IN THE OREGON CLIMATOLOGICAL DATA ONLY BEGAN IN DECEMBER 1949. IT WAS ON THE BASIS OF FIVE YEARS OF THESE HOURLY RECORDS THAT THE SUMMARIZED INFORMATION, IN THE CLIMATOLOGICAL SUMMARY TABLE ON THE REVERSE, DEALING WITH WIND DIRECTION AND VELOCITY, RELATIVE HUMIDITY AND SKY CONDITION WAS DETERMINED.