U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
IN COOPERATION WITH DRAIN CHAMBER OF COMMERCE
CLIMATOGRAPHY OF THE UNITED STATES NO. 20 - 35

LATITUDE 43° 41' N
LONGITUDE 123° 18' W
ELEV. (GROUND) 372 Feet

CLIMATOLOGICAL SUMMARY

STATION DRAIN, OREGON

MEANS AND EXTREMES FOR PERIOD # 1933 - 1968

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	60		60		30	30	60		19	46		46		30	30	30	30	30	
Jan.	47.6	33.8	40.7	70	1920	0	1962	753	7.61	4.54	1907	3.2	21.9	1950	6.0	1950+	13	0	*	13	*	Jan.
Feb.	53.6	34.5	44.1	79	1932	8	1950	585	5.68	3.25	1927	0.6	6.3	1932	3.0	1904	11	0	*	9	0	Feb.
Mar.	57.4	36.7	47.1	85	1923	20	1955+	555	5.42	2.68	1945	0.4	3.5	1906	3.0	1956	13	0	0	8	0	Mar.
Apr.	64.2	38.9	51.6	95	1957+	22	1918	402	2.92	2.38	1907	0.1	1.0	1911	0.5	1929+	9	*	0	4	0	Apr.
May	67.9	42.7	55.3	98	1947	25	1954	301	2.46	1.90	1949	*	0.5	1921	0.5	1921	7	1	0	1	0	May
June	76.4	47.0	61.7	105	1925	31	1916	123	1.45	1.40	1942	0.0	0.0		0.0		4	3	0	*	0	June
July	84.2	49.0	66.6	108	1946	34	1918	31	0.33	1.88	1916	0.0	0.0		0.0		1	8	0	0	0	July
Aug.	83.7	49.0	66.4	104	1935	36	1957+	34	0.50	0.91	1943	0.0	0.0		0.0		2	8	0	0	0	Aug.
Sep.	79.1	45.7	62.4	106	1944	26	1926	111	1.31	1.55	1963	0.0	0.0		0.0		3	4	0	*	0	Sep.
Oct.	66.7	43.5	55.1	91	1958	21	1917	307	4.43	3.20	1924	0.0	0.0		0.0		8	*	0	1	0	Oct.
Nov.	54.4	39.0	46.7	75	1934	12	1955+	549	7.25	4.44	1961	0.2	2.8	1911	2.8	1911	12	0	0	5	0	Nov.
Dec.	48.6	36.3	42.5	68	1958	-1	1924	698	8.48	4.19	1945	0.6	6.0	1924	6.0	1924	13	0	*	8	0	Dec.
Year	65.3	41.3	53.3	108	July 1946	-1	Dec. 1924	4449	47.84	4.54	Jan. 1907	5.1	21.9	Jan. 1950	6.0	Jan. 1950+	96	24	1	49	*	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

@ Snowfall record incomplete after 1956.

\+ Also on earlier dates, months, or years.

* Less than one half.

\# Several years missing. See Station History.

CLIMATE OF DRAIN, OREGON

Drain lies near the center of a semi-mountainous area, separating the Umpqua and Willamette Valleys, formed by the merging of the foothills of the Coast Range with a spur of the Cascade Mountains. The town is in the Elk Creek Valley, a tributary to the Umpqua. Foothill ridges of the Cascades and Coast Range, rising to elevations generally between 1,200 and 1,600 feet above sea level, surround the town. The coast line of the Pacific Ocean is about 40 miles to the west and the crest of the Cascades some 60 miles to the east. Both the ocean and the mountains share in shaping Drain's climate.

Temperatures are mild throughout the year. At this latitude most large scale air masses are moving from the west, thus have recently completed several days' travel over the Pacific Ocean before arriving here. The fairly constant temperature of the ocean (only about 15° F difference between summer and winter) does much to moderate both the colder winter and warmer summer temperatures. In the 61 years for which records are available the extremes have ranged between 108° and 1° below zero. Only 4 times in that period, however, have they gone above 105° and only twice as low as zero. In slightly more than half of those years temperatures have reached as high as 100° and gone as low as 17° above zero. For the most part the Cascade Mountains block out continental air masses from the east. Under certain conditions, however, continental air will push through some of the lower masses across this mountain range to bring in hot, dry air in summer and cold, dry air in winter. The extreme temperatures of both seasons are associated with these invasions of continental air. Such occurrences are infrequent and seldom last more than two or three days before the normal movement of marine air from the west again dominates. Even on the warmest days, nights are pleasantly cool.

The growing season is relatively long, 186 days, based on the average date of the last 32° or lower temperature in spring and that of its first occurrence in fall. In Table 1A below are shown the dates of selected probabilities for the last occurrence in spring for temperatures of 32°- (32° or less), 28°- and 24°-. Similar information is shown in Table 1B for the first occurrence in fall.

Table 1A. Statistical Likelihood (in Percent) that Temperatures of 24°-, 28°- and 32°- Will Occur in Spring After Dates Indicated.

Tempt.	90%	80%	70%	60%	50%	40%	30%	20%	10%
24°	#	#	1/10	1/25	2/24	2/13	3/22	3/4	3/26
28°	2/11	2/23	3/4	3/11	3/17	3/24	3/31	4/8	4/19
32°	3/26	4/3	4/11	4/16	4/21	4/26	5/3	5/9	5/19

Table 1B. Statistical Likelihood (in Percent) that Temperatures of 24°-, 28°- and 32° Will Occur in Fall Before Dates Indicated.

Tempt.	10%	20%	30%	40%	50%	60%	70%	80%	90%
24°	11/5	11/16	11/24	12/4	12/12	12/25	#	#	#
28°	10/23	11/3	11/10	11/17	11/23	11/30	12/8	12/21	#
32°	9/29	10/9	10/17	10/23	10/29	11/4	11/10	11/17	11/28

\# A temperature this low does not occur with this great a frequency.

Using Table 1A we can say that 40% of the years, or 4 years in 10, a temperature of 32°- will occur at least as late as April 26; and 1 year in 10 it will occur on May 19 or later. Similarly, in the fall we know that temperatures of 32° or less will occur 3 years in 10 on or before October 17; and by November 28 it will have occurred 9 years out of 10.

Drain has a very definite winter rainfall climate. More than 70% of its annual total falls in the 5 months, November through March; less than 5% in the 3-month period, June through August. Most of this precipitation falls as rain. Snowfall records, particularly in recent years, are incomplete, but on the basis of information available from earlier years only about 2-3% of the annual total precipitation on the average results from the water content of the snow. Seldom does more than 2 or 3 inches of snow fall in a single storm, and this is usually gone in a few hours or at most a few days. The fall, winter and early spring rains are largely the result of storm fronts that move in from the Pacific Ocean several times each season. Late spring and summer precipitation almost all occurs in brief showers, sometimes associated with thunderstorms. While these only last from a few minutes to a few hours, the most intense short-period rainfall can occur at these times. In Table 2 are presented statistical estimates of short-period, maximum rainfall intensities for selected return periods.

Table 2. Statistical Estimates for Maximum Short-Period Rainfall Intensities (in Inches) for 2-, 5-, 10-, 25-, 50- and 100-Year Return Periods.

RETURN PERIOD	LENGTH OF TIME FOR MAXIMUM INTENSITIES: 30 Min.	1 Hr.	2 Hrs.	3 Hrs.	6 Hrs.	12 Hrs.	24 Hrs.
2	0.5	0.6	0.9	1.3	1.9	2.8	3.0
5	0.6	0.8	1.1	1.5	2.5	3.1	3.6
10	0.7	0.9	1.3	1.8	2.8	3.8	4.4
25	0.8	1.1	1.5	2.0	3.0	4.0	4.7
50	0.9	1.3	1.7	2.1	3.4	4.4	5.2
100	1.0	1.4	1.8	2.3	3.8	4.8	5.6

During the late fall, winter and early spring months it is cloudy much of the time. This is due to the frequency of winter storms that move across this area, and the fact that the incoming marine air is nearly saturated as it arrives at the Oregon coast line. In moving over the Cascades, prior to reaching Drain, it is cooled to a point where the water vapor begins condensing to form clouds. During January the sun shines between 25% and 30% of the time possible, but in July this increases to approximately 70%. There are rather frequent periods of bright sunny weather, even in winter months, despite the normal cloudiness.

(Continued on reverse)

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1933	40.2	40.4	47.6	50.8	52.3	61.0	66.6	67.2	58.3	56.8	45.6	47.7	52.9
1934	47.4	48.7	55.6	58.5	59.8	62.3	65.8	67.6	61.0	57.8	50.9	44.6	56.7
1935	40.2	47.0	44.2	51.6	56.4	62.2	-	-	-	-	-	-	-
1941	-	-	-	-	-	-	71.3	67.4	60.6	55.0	49.7	43.8	-
1942	40.4	44.6	47.5	53.2	56.8	60.7	69.4	69.2	63.0	56.2	47.4	44.7	54.4
1943	38.2	47.6	48.0	54.8	56.3	61.0	67.0	66.0	65.7	56.8	48.5	41.0	54.2
1944	41.8	44.1	47.3	51.4	56.6	61.4	68.8	67.0	65.8	59.0	45.6	40.4	54.1
1945	44.0	46.0	46.2	50.7	58.4	62.0	68.0	66.9	61.8	54.8	46.7	44.2	64.9
1946	42.4	44.3	47.8	51.6	58.8	60.3	67.6	66.8	60.2	50.2	44.8	42.6	53.1
1947	38.8	47.8	51.0	54.6	60.4	61.0	65.4	64.6	62.8	56.7	48.3	38.2	54.6
1948	40.6	42.4	46.2	48.4	56.2	65.2	65.4	65.5	61.6	55.0	45.3	41.7	52.5
1949	31.9	43.4	48.5	54.0	59.4	62.1	65.8	65.8	63.0	50.8	-	49.2	-
1950	34.5	43.9	46.8	50.6	56.6	62.7	68.1	69.3	63.4	55.1	49.4	40.2	54.1
1951	42.2	46.1	43.8	54.7	57.6	65.0	67.9	66.1	64.3	54.3	47.5	40.2	54.1
1952	40.6	44.7	45.4	52.9	57.4	59.9	68.4	66.7	64.5	58.3	41.0	43.2	53.6
1953	47.5	44.7	46.3	51.0	54.4	58.2	65.9	66.2	63.6	55.0	49.8	43.2	53.8
1954	41.9	45.9	44.1	51.1	56.3	57.7	63.5	63.0	60.3	52.4	48.9	40.3	52.1
1955	39.9	40.4	42.8	45.3	53.4	60.3	63.1	64.6	60.2	53.9	45.0	43.2	51.0
1956	41.3	38.5	45.6	51.8	57.6	58.8	67.0	65.9	63.0	53.3	44.5	42.4	52.5
1957	34.1	45.1	47.5	53.1	59.8	63.5	65.5	64.3	64.8	51.9	43.1	42.6	52.9
1958	43.8	48.7	45.8	51.5	61.2	63.7	70.3	69.3	62.6	56.8	48.4	47.3	55.8
1959	44.3	43.6	47.4	52.9	55.4	62.4	68.3	65.6	59.4	55.6	46.1	42.2	53.6
1960	40.0	43.9	49.2	51.8	54.8	63.0	68.5	64.2	62.3	55.5	45.7	40.9	53.3
1961	44.4	47.0	46.9	51.2	55.6	64.8	66.4	67.8	57.4	54.5	42.6	41.6	53.4
1962	37.2	42.5	44.6	53.2	52.6	60.7	64.9	64.9	62.6	53.9	48.3	43.2	52.4
1963	35.5	50.4	46.2	48.3	57.1	61.0	63.4	66.0	65.0	55.8	47.1	41.7	53.1
1964	41.4	42.2	45.3	48.3	53.8	60.8	66.1	65.3	61.4	56.5	43.7	41.5	52.2
1965	41.8	44.8	47.7	52.2	54.2	61.2	67.0	67.2	60.3	57.2	49.1	39.7	53.5
1966	41.7	42.1	47.2	53.2	56.6	62.3	65.6	66.4	64.6	54.0	46.8	43.5	53.7
1967	43.0	44.6	44.5	45.7	56.0	64.1	67.2	69.7	64.3	53.8	47.8	40.5	53.4
1968	40.7	47.8	48.5	48.3	55.5	61.1	66.4	65.3	63.1	53.7	47.5	40.4	53.2

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1933	12.54	5.71	4.42	1.33	4.73	1.85	0.00	0.30	2.37	1.85	1.57	8.47	45.14
1934	6.03	1.57	3.87	1.74	1.37	0.47	0.10	0.33	0.41	5.64	10.89	7.57	39.99
1935	6.34	3.35	5.33	3.59	0.36	-	-	-	-	-	-	-	-
1941	-	-	-	-	-	2.13	0.25	1.03	2.62	2.81	7.51	12.35	-
1942	3.92	3.75	1.57	4.00	4.04	1.95	0.26	T	0.25	2.64	14.53	18.26	55.17
1943	9.30	2.75	5.76	3.77	1.56	3.08	0.19	1.42	T	6.80	3.99	2.33	40.95
1944	3.26	4.92	3.59	4.77	1.70	0.60	0.01	T	1.31	1.94	5.75	2.57	30.42
1945	5.05	8.04	8.65	4.24	3.39	0.64	0.49	0.30	1.25	2.04	14.19	10.89	59.17
1946	7.69	5.66	7.11	0.95	1.45	1.85	0.59	0.10	2.19	5.02	10.45	5.23	48.29
1947	4.89	5.03	7.55	3.47	0.48	4.09	3.07	0.83	0.88	10.43	5.08	4.69	50.49
1948	9.14	8.90	5.15	4.25	3.25	0.19	0.40	0.26	1.91	1.31	6.45	10.36	51.57
1949	1.29	10.84	4.33	0.93	3.81	0.82	T	0.00	3.20	2.86	6.95	5.21	40.24
1950	12.83	5.39	7.04	1.88	1.46	2.16	0.02	0.38	0.76	15.77	9.20	6.74	63.63
1951	11.21	7.06	5.29	0.94	2.53	0.00	T	0.24	1.22	8.17	9.82	10.89	57.37
1952	10.09	6.16	4.47	2.07	0.66	3.90	0.00	0.08	1.24	0.46	1.89	13.13	44.15
1953	14.07	6.87	5.55	4.06	4.55	2.08	0.00	1.31	1.35	2.99	9.16	9.45	61.44
1954	13.29	4.46	4.17	3.43	1.16	2.26	0.23	1.53	1.19	2.63	3.79	8.18	46.32
1955	4·59	2.96	6.46	6.34	1.23	1.22	0.48	0.00	1.52	6.06	7.83	21.93	60.62
1956	10.40	8.24	4.55	1.48	3.54	2.38	0.02	0.08	0.43	8.82	1.65	6.35	47.94
1957	3.42	6.72	9.44	2.44	3.48	0.50	0.33	0.32	1.59	3.17	4.14	14.97	50.52
1958	8.44	11.14	3.17	3.40	1.16	3.30	0.56	0.02	0.41	2.80	8.53	4.34	47.27
1959	11.71	6.70	4.30	0.93	2.94	1.31	0.14	T	1.67	3.51	1.63	3.50	38.34
1960	4.40	7.91	9.90	4.20	6.73	0.02	T	0.61	0.92	3.40	13.23	3.64	54.96
1961	4.42	11.30	8.39	1.88	3.70	0.44	0.45	0.04	1.74	4.93	10.03	7.57	54.89
1962	1.94	4.09	7.86	2.20	2.26	0.80	0.00	0.99	1.34	6.50	4.91	3.67	36.56
1963	0.21	6.05	6.42	6.99	4.50	1.96	0.33	T	2.91	3.17	8.00	2.25	42.79
1964	13.04	1.76	4.16	1.70	1.18	1.31	0.36	0.24	0.68	0.96	9.85	17.82	53.06
1965	9.37	2.19	0.71	4.48	1.45	0.75	0.05	0.92	0.00	1.92	5.45	8.16	35.45
1966	9.93	2.56	6.10	0.97	0.69	0.13	1.37	0.00	0.99	2.78	8.94	7.31	41.77
1967	8.35	1.71	3.71	3.11	1.77	0.59	0.00	0.00	1.42	5.89	4.15	4.73	35.43
1968	7.20	6.65	3.59	2.07	2.55	0.58	0.21	3.70	1.38	5.69	7.91	11.94	53.47

CLIMATE OF DRAIN, OREGON (Continued)

Relative humidities in the early morning hours range between 85% and 95% the year around. These decrease sharply during the warmer part of the day in all but the winter months. No humidity records are available for Drain, but in Table 3 are shown monthly averages for four times during the day obtained at Roseburg, approximately 35 miles to the south. These should be very comparable with humidities at Drain.

Table 3. Monthly and Annual Average Relative Humidity at 4:00 and 10:00 A.M. and P.M.

TIME	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
4 A.M.	91	91	90	89	89	87	85	85	89	93	92	92	89
10 A.M.	86	81	72	63	58	57	54	56	61	77	85	86	70
4 P.M.	78	68	59	52	49	46	38	39	45	61	76	82	58
10 P.M.	90	86	80	77	72	69	62	64	72	86	91	91	78

The abundance of moisture and the mild temperatures make the surrounding mountain slopes one of the fastest tree growing areas in North America. Millions of board feet of lumber are cut annually from the Douglas fir forest grown here. Much of the town's economy is related to the timber industry. The nearly ideal summer climate and the natural beauty of the surrounding mountains with their lush forests and numerous streams all combine to provide a recreational area of ever increasing popularity.

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5-29-69

STATION HISTORY

A weather observing station was first established at Drain in December 1902 with Mr. A. N. Orcutt the observer. In July 1903 Mr. Ira Wimberly took over the weather station and continued as the observer for the next 32 years, until it was temporarily discontinued in 1935. Both men were careful, thorough observers. The station was located on the outskirts of the town during their period of service. In June 1941 the station was reopened with Mr. Phillip Varley the observer; and the station was located in an open area near his drugstore in downtown Drain. In May 1948 Mr. George Jackson became the observer and the weather station was moved to his home about a mile northeast of the town. Mr. Roy E. Haldeman took over the Jackson property in July 1956 and continued the weather station at the same location. Mr. Haldeman had been the observer ever since that time. The weather records have been generally very good throughout the station's entire history. The one exception is the more recent snow records. Snow occurs infrequently in Drain. It does appear, however, that record of some occurrences are incomplete. The snow data contained in the "Means and Extremes" table on the reverse is believed to be a good estimate, but less reliable than the other information.