U.S. DEPARTMENT OF COMMERCE, WEATHER BUREAU IN COOPERATION WITH
THE WASHINGTON STATE DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT
CLIMATOGRAPHY OF THE UNITED STATES 20-45

LATITUDE 48° 28'
LONGITUDE 120° 11'
ELEV. (GROUND) 1755 ft.

CLIMATOLOGICAL SUMMARY

STATION WINTHROP, WASH.

MEANS AND EXTREMES FOR PERIOD 1931-1960

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	30		30			30	30		30	30		30		30	30	30	30	30	
JAN	27.9	8.9	18.4	47	1959+	-32	1950	1142	2.04	4.16	1935	23.8	61.0	1935	52.0	1935	6	0	21	31	8	JAN
FEB	35.8	13.0	24.4	56	1947	-28	1950	1137	1.59	1.51	1949	15.1	39.8	1949	14.2	1949	5	0	8	28	5	FEB
MAR	47.9	22.8	35.3	71	1947	-10	1955	918	.89	.75	1932	4.8	25.1	1951	11.0	1932	3	0	1	28	*	MAR
APR	62.5	32.0	47.2	89	1934	13	1936	531	.67	.91	1942	.3	4.5	1955	4.3	1955	2	0	0	16	0	APR
MAY	71.2	39.2	55.2	95	1934	20	1954	322	1.01	1.45	1948						3	1	0	5	0	MAY
JUN	77.0	45.6	61.3	100	1958	28	1952	126	1.23	1.98	1936						3	2	0	*	0	JUN
JUL	86.4	50.0	68.2	106	1939	35	1955	25	.52	.98	1957						1	11	0	0	0	JUL
AUG	84.6	48.0	66.3	102	1949	33	1959	28	.48	1.03	1951						1	9	0	0	0	AUG
SEP	76.2	41.0	58.6	97	1938	24	1958+	198	.66	1.00	1937						2	2	0	3	0	SEP
OCT	61.7	32.7	47.2	87	1958	5	1936	546	1.02	1.59	1934	1.0	7.5	1933	4.5	1933	3	0	0	16	0	OCT
NOV	42.1	23.2	32.6	66	1949	-17	1958	954	1.94	1.64	1949	12.3	38.7	1955	14.2	1950	6	0	4	27	1	NOV
DEC	31.0	14.8	22.9	52	1932	-22	1955	1305	2.50	1.82	1933	24.4	67.0	1933	25.0	1933	7	0	17	31	4	DEC
Year	58.7	30.9	44.8	106	JUL 1939	-32	JAN 1950	7532	14.55	4.16	JAN 1935	81.7	67.0	DEC 1933	52.0	JAN 1935	42	25	51	185	18	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.

Estimated.

NARRATIVE CLIMATOLOGICAL SUMMARY

Winthrop is located in a narrow valley along the eastern slope of the Cascades at the confluence of the Methow and Chewack Rivers in western Okanogan County. Mountains rise to elevations of 4,000 to 6,000 feet within a few miles, and some of the highest peaks and most remote areas in the northern Cascades lie within 15 to 30 miles west and north of the city. The city may be reached from a southeasterly direction by a well-paved highway through the Methow Valley. Beyond the city, one road follows the Methow River about 25 miles in a northwesterly direction, and another road follows the Chewack River about the same distance north toward the Canadian border. Beyond these points, logging roads and trails lead into remote timber areas near the border and across the Cascades. This area of the State offers many recreational opportunities for persons interested in camping, fishing, hunting, hiking, pack trips and other outdoor activities. Wild game animals include mule deer, white-tailed deer, black bear and mountain goats.

The valleys and lower slopes, where timber is rather thin, are devoted to grazing, hay and the raising of livestock. There are a few fruit trees in the valley; however, the winters are generally too severe in this area for the successful production of most fruit. There are numerous apple orchards in the lower Methow Valley near the Columbia River. Melting snow and ice in the higher elevations of the northern Cascades provide a continuous flow of water in the rivers throughout the summer. A salmon hatchery is located near the city. Some mineral deposits have been found in this section of the State and in the past, mines have operated for brief periods of time.

Some of the factors influencing the climate are terrain, distance and direction from the ocean and the prevailing westerly wind above the summit of the Cascades. The winters are rather cold with considerable cloudiness and rather heavy snowfall, while in the summer, the days are warm and sunny, nights cool, precipitation is light, the air is rather dry, and the growing season is comparatively short.

On a typical summer day, the afternoon temperature is in the middle or upper 80's and the nighttime temperature drops to near 50° very quickly after sunset. A cool breeze usually blows down the mountain valleys in the late afternoon. The maximum temperature exceeds 90° on about one-third of the days in mid-summer and occasionally reaches 100°.

In the winter season, the average afternoon temperature rises to near freezing and the nighttime temperature ranges from 8 to 15 degrees above zero. Minimum temperatures drop to zero or below on 5 to 10 days in each of the colder months. In one of the coldest winters in recent years, 1949-50, the average January maximum and minimum temperatures were 13.6 and -11.7 degrees. During the winter season, minimum temperatures dropped to -30° on 2 days, -20° on 12 days and -10° on 20 days. In one of the warmer winters, 1952-53, the average January maximum and minimum temperatures were 36.1 and 20.0 degrees. During the winter season, minimum temperatures only dropped to 10 degrees above zero on 16 days and zero on one day.

Moist air moving eastward from over the ocean cools as it rises along the western slope of the Cascades. This produces heavy precipitation along the windward side and near the summit, and light precipitation along the leeward slope. Precipitation in this area is light in the summer, increasing in the fall, reaching a peak in mid-winter, then decreasing in the spring with an increase in May and June and a sharp drop in July. Summer precipitation is frequently associated with thunderstorms which develop over the mountains. A large number of forest and range fires are started by electrical storms, accompanied by light rainfall. Most of the winter precipitation falls as snow, which begins to accumulate on the higher peaks after the middle of September. Snow usually reaches the floor of the valley about the last of October or first of November and remains on the ground from the latter half of November until after the middle of March. During an average winter, snow in the valley accumulates to a depth of 20 to 30 inches in January and February, increasing to 30 or 40 inches in the heavier snowfall winters. The greatest depth of snow on the ground was 72 inches following a snowfall of 52 inches in 24 hours on January 21, 1935. In one of the more recent winters, 1955-56, snow reached a depth of 53 inches in February and remained on the ground from mid-November to mid-April. Snowfall and the depth of snow on the ground increases rapidly with elevation along the slopes of the mountains.

The number of hours of sunshine possible on a clear day ranges from about 8 in mid-winter to 16 in mid-summer. The number of clear days each month can be expected to increase from less than 10 in the winter to 25 or more in the summer.

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no. 20-45
Wash. - Winthrop

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	2.35	.33	.57	.10	.47	1.17	.12	.00	.73	.83	1.02	3.58	11.27
1932	1.91	.64	1.62	.49	.54	.02	.24	.04	.14	.51	3.11	1.70	10.96
1933	1.72	.49	1.33	.06	1.33	.39	.21	.20	1.33	1.85	1.41	8.18	18.50
1934	1.95	.24	1.06	.29	.48	.24	.17	.30	.73	2.82	3.15	2.78	14.21
1935	5.15	.61	.92	T	.24	.18	.59	.17	.18	.39	.59	1.26	10.28
1936	2.34	1.54	.22	.52	1.03	4.23	.56	.17	.60	.21	.01	1.66	13.09
1937	.95	1.99	1.85	1.65	.26	3.16	T	.31	2.15	.34	3.10	2.20	17.96
1938	.85	2.40	1.44	.25	T	.58	.91	.26	1.31	1.09	.83	1.31	11.23
1939	.67	.82	.33	.05	.50	.54	.00	.35	.45	.50	.34	3.43	7.98
1940	1.32	2.32	1.15	.81	.91	.02	.23	.05	1.30	1.37	2.02	3.08	15.08
1941	1.36	.42	.96	2.78	1.61	2.22	.32	2.16	1.19	.35	1.90	3.38	18.65
1942	1.55	.95	.00	1.33	3.40	.72	1.04	.36	T	.75	2.77	2.53	15.40
1943	1.38	1.49	.81	.89	.83	1.38	.52	.58	.00	1.82	.94	.68	11.32
1944	.56	1.48	.40	1.68	.43	2.22	.01	.02	.48	.14	2.40	.57	10.39
1945	1.56	2.74	.25	.20	1.70	.80	.07	.03	.32	.81	2.14	3.31	13.93
1946	2.92	1.59	.90	.02	1.12	2.08	.11	.49	.99	.87	2.93	1.69	15.71
1947	1.35	1.32	.40	.15	T	2.25	.80	-	.32	2.15	.53	3.95	-
1948	1.38	3.03	.23	2.06	4.26	3.14	1.86	.92	.98	.35	2.71	3.19	24.11
1949	.41	3.56	.64	.19	.57	.25	.24	.19	.29	.52	3.51	2.03	12.40
1950	1.85	1.74	1.46	.99	1.03	1.40	.66	.36	.12	2.52	4.16	2.09	18.38
1951	3.63	2.10	1.80	.12	1.76	1.25	.64	2.29	.22	2.36	2.19	2.10	20.46
1952	3.24	1.20	.05	.54	.65	1.10	.18	.01	.72	.06	.15	2.45	10.35
1953	4.87	1.20	.34	.79	1.77	2.29	T	.96	.20	.16	1.49	1.28	15.35
1954	3.57	1.42	.55	.13	.74	.49	.92	1.05	1.16	.29	1.61	2.17	14.10
1955	.76	2.88	1.23	.66	.36	.53	.99	.01	.22	1.22	2.96	4.78	16.60
1956	2.79	1.20	.93	.29	.75	2.04	.40	1.82	.51	1.84	.96	1.67	15.20
1957	1.40	1.33	1.82	.74	1.39	.44	1.01	.44	.03	1.27	.37	2.94	13.18
1958	2.40	2.25	2.09	1.37	.31	.81	2.68	.05	.26	.84	4.55	2.39	20.00
1959	3.94	1.93	.64	.09	.33	.72	.18	.11	2.73	1.61	2.20	1.49	15.97
1960	.96	2.61	.80	.85	1.53	.26	T	.39	.15	.23	2.26	1.02	11.06

STATION HISTORY

The first weather records in the Winthrop area were kept between 1904 and 1920 by the Methow Trading Company located two blocks south of the Post Office. The station was located back of the newspaper office from 1921 to 1936 and weather records were kept by W.B. Brinkerhoff. Records were kept by Ernest Cotton in 1937. The station was moved to the residence of F.M. Haase located about 100 yards west of the Post Office in 1938. The station remained at this location and records were kept by Mr. Haase until 1947. The weather equipment was moved to the Fish and Wild Life Service office, located one mile WSW of the Post Office in 1947. Weather records have been kept by personnel at that office since 1947.

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	25.4	25.4	37.9	47.5	57.2	62.5	70.3	68.6	57.5	47.4	30.0	22.5	46.0
1932	16.4	22.0	35.6	49.4	54.9	65.6	65.6	67.7	58.7	46.9	35.1	21.0	44.9
1933	21.2	18.2	35.6	47.6	50.8	60.2	68.4	68.2	54.1	46.3	36.8	27.7	44.6
1934	24.1	29.5	40.4	54.2	56.8	63.6	67.9	68.8	56.0	47.7	38.4	23.2	47.6
1935	19.8	26.0	32.4	44.6	54.2	61.6	67.4	65.0	60.0	45.4	28.2	22.8	44.0
1936	19.0	6.2	32.6	49.2	59.0	61.8	68.6	68.6	56.4	49.4	29.2	23.4	43.6
1937	3.9	17.4	35.4	43.0	53.4	61.4	70.6	63.7	60.2	49.2	35.8	24.2	43.2
1938	-	-	-	-	54.6	64.6	71.5	65.1	63.4	48.6	32.9	20.6	-
1939	25.6	22.6	36.6	49.9	55.8	59.9	69.2	69.0	59.6	47.8	35.9	29.4	46.8
1940	23.0	28.6	40.4	49.8	56.8	65.0	69.1	67.6	62.8	50.1	30.3	25.9	47.4
1941	23.9	29.8	42.8	51.8	54.4	61.9	70.7	65.7	54.0	46.9	37.4	25.2	47.0
1942	18.7	28.0	36.4	49.5	52.8	58.8	68.0	69.1	61.0	49.0	29.4	21.0	45.1
1943	12.0	25.6	30.9	49.4	51.4	58.4	68.0	65.1	60.8	48.4	35.7	25.2	44.2
1944	19.9	27.0	35.4	48.2	54.8	62.3	68.2	65.3	60.6	52.0	35.2	19.6	45.7
1945	23.4	30.6	36.1	44.2	55.4	60.2	68.9	68.0	56.9	49.3	29.4	22.0	45.4
1946	22.4	24.6	36.1	47.6	57.2	57.8	66.4	66.4	57.0	43.4	27.9	21.4	45.3
1947	16.8	25.7	39.8	49.4	58.7	60.8	67.0	-	58.6	48.2	35.3	26.6	-
1948	18.0	23.5	32.0	43.2	52.6	65.0	64.6	63.0	57.2	44.8	32.3	12.6	42.4
1949	5.4	19.3	36.3	49.0	58.6	60.8	67.4	66.1	59.6	43.8	39.4	22.0	44.0
1950	.9	25.1	35.0	43.5	53.4	61.5	68.3	67.9	60.1	45.0	32.6	29.1	43.6
1951	20.1	23.5	29.9	47.0	55.3	61.4	68.9	67.0	59.6	46.4	32.4	15.3	43.9
1952	14.7	24.1	34.9	49.3	55.6	60.7	68.1	67.5	61.7	51.8	31.7	28.4	45.7
1953	28.1	29.1	39.3	46.1	53.6	57.4	66.6	66.1	59.1	49.0	36.0	27.1	46.5
1954	16.6	29.5	32.8	42.9	54.7	56.1	64.4	63.3	56.4	44.0	39.9	21.9	43.5
1955	19.6	23.0	27.0	41.3	50.8	61.5	65.5	65.7	58.4	44.6	23.0	14.8	41.3
1956	20.9	14.3	29.1	46.7	57.3	58.4	69.3	67.2	57.8	45.0	28.1	21.9	43.0
1957	8.0	21.1	-	48.3	60.1	62.5	65.7	62.1	61.6	45.7	33.9	26.0	-
1958	25.1	35.0	38.3	46.3	60.8	66.4	71.6	71.1	56.7	47.3	27.0	24.2	47.5
1959	19.5	23.8	35.0	46.8	53.2	60.5	67.9	62.7	55.3	46.0	30.0	24.3	43.8
1960	18.0	27.0	34.1	46.1	51.9	60.6	71.3	64.6	57.2	47.7	29.9	17.6	43.8

PROBABILITY OF 32°, 28°, 24°, 20° AND 16° OCCURRING AS LATE IN THE SPRING OR AS EARLY IN THE FALL AS THE DATES LISTED IN THE FOLLOWING TABLE

	PROBABILITY - SPRING				PROBABILITY - FALL			
	75%	50%	25%	10%	10%	25%	50%	75%
32°	May 5	May 18	Jun 1	Jun 12	Aug 31	Sep 11	Sep 23	Oct 5
28°	Apr 17	May 1	May 15	May 27	Sep 11	Sep 22	Oct 4	Oct 16
24°	Mar 22	Apr 5	Apr 18	Apr 30	Sep 27	Oct 8	Oct 20	Nov 1
20°	Mar 10	Mar 24	Apr 7	Apr 19	Oct 8	Oct 19	Oct 31	Nov 12
16°	Feb 26	Mar 12	Mar 25	Apr 6	Oct 28	Nov 8	Nov 20	Dec 2

In the above table, the 50% point is the same as the average for each freeze category.

From a statistical viewpoint based on past data, the probabilities could be considered as follows when converted into the number of occurrences to expect in a 40-year period:

75% - 30 years in 40

50% - 20 years in 40

25% - 10 years in 40

10% - 4 years in 40