

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 46° 52'
LONGITUDE 121° 18'
ELEV. (GROUND) 3440'

CLIMATOLOGICAL SUMMARY

STATION BUMPING LAKE, WASH.

MEANS AND EXTREMES FOR PERIOD 1931-60

Month	Temperature (°F)								** Mean degree days	Precipitation Totals (Inches)						Mean number of days						Month			
	Means				Extremes					Mean	Greatest daily	Year	Snow, Sleet			Precip. .10 inch or more	Temperatures								
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest	Year	Mean					Maximum monthly	Year	Greatest daily		Year	90° and above	32° and below	32° and below	0° and below				
																							Max.	Min.	
(a)	30	30	30	30		30		30	30	30															
JAN	33.8	12.3	23.1	55	1933	-38	1950	1299	7.85	3.39	1954	61.9	182.5	1954	26.0	1954	14	0	13	30	6	JAN			
FEB	38.3	14.6	26.5	60	1943	-35	1950	1078	6.03	3.33	1952	42.7	90.0	1949	23.0	1951	11	0	6	28	3	FEB			
MAR	42.6	19.1	30.9	73	1939	-18	1955	1057	4.82	2.11	1931	34.2	76.0	1956	30.5	1936	11	0	2	30	1	MAR			
APR	50.7	25.4	38.1	80	1934	-3	1935	807	2.29	1.76	1940	9.6	45.5	1955	18.0	1945	5	0	*	27	*	APR			
MAY	59.0	32.2	45.6	88	1941	13	1950	601	1.77	1.64	1951	1.0	5.5	1950	2.0	1936+	5	0	0	17	0	MAY			
JUN	64.4	37.4	50.9	93	1940	22	1950	423	1.59	1.46	1933	T	.5	1952	.5	1952	5	*	0	5	0	JUN			
JUL	74.3	42.0	58.2	101	1939	27	1952+	214	.53	1.10	1958						2	2	0	1	0	JUL			
AUG	74.7	40.7	57.7	97	1946+	24	1950	226	.64	1.60	1952						2	2	0	1	0	AUG			
SEP	68.5	35.2	51.9	94	1955	18	1950	393	1.52	1.68	1945	.1	1.0	1955+	1.0	1955+	4	1	0	9	0	SEP			
OCT	56.9	29.1	43.0	85	1958+	-5	1935	682	4.28	3.45	1934	3.1	15.0	1951	13.0	1957	9	0	*	21	*	OCT			
NOV	42.0	22.5	32.3	65	1959+	-12	1955	981	7.25	2.44	1942	26.6	99.5	1955	19.0	1951+	12	0	2	28	*	NOV			
DEC	33.8	19.3	26.6	61	1939	-16	1951	1090	9.25	3.92	1933	46.9	107.0	1955	24.0	1937+	14	0	10	30	2	DEC			
Year	53.3	27.5	40.4	101	JUL 1939	-38	JAN 1950	8951	47.82	3.92	1933	226.1	182.5	1954	30.5	1936	94	5	33	227	12	Year			

(a) Average length of record, years.

+ Also on earlier dates, months, or years.

T Trace, an amount too small to measure.

* Less than one half.

** Base 65°F

NARRATIVE CLIMATOLOGICAL SUMMARY

Bumping Lake, located in the Snoqualmie National Forest and on the eastern slope of the Cascade Mountains, is east of Mt. Rainier and southeast of Chinook Pass. The lake is one of the irrigation reservoirs providing water for the Yakima Valley. This area can be reached by following U.S. Highway 410 eastward across Chinook Pass or westward from Yakima to American Falls, 23 miles below Chinook Pass, then southwest 15 miles on a hard surface road along Bumping River. Chinook Pass is blocked by snow from the last of November until June and the road from American Falls to Bumping Lake is usually closed during the heavy snowfall season. Winter ski areas are located along Highway 410. The summit of the Cascade Range, elevation 5000 to 8000 feet, and snowcapped Mt. Rainier, elevation 14,410 feet, are approximately 20 miles west of the Lake. The timberline is between 5000 and 6000 feet above sea level. Deer, bear, elk, mountain goat and other game are found in this section of the State. This is one of the numerous areas in the higher elevations of the Cascades offering many opportunities for camping, hiking, fishing and other out-of-door recreational activities.

The climate in this area is typical of conditions found in the higher elevations along the eastern slope of the Cascade Range. Winters are moderately cold with considerable cloudiness and rather heavy snowfall; while in the summer, days are warm and sunny, nights are cool and precipitation is light. Some of the factors influencing the climate are: terrain, prevailing westerly wind above the summit of the Cascades, and the distance and direction from the ocean.

A prevailing westerly and northwesterly flow of comparatively dry and stable air into Washington in the late spring and summer results in a dry season beginning in May and reaching a peak in midsummer. During July and August, it is not unusual for three to six weeks to pass with only a few showers. Cumulus clouds frequently develop over the mountains in the afternoon and disappear after sunset. Thunderstorms occur on 10 to 15 days each summer.

Afternoon temperatures in the warmest summer months are in the 70's and nighttime readings are in the 40's. Minimum temperatures drop to near or slightly below freezing on a few nights almost every summer. Maximum temperatures reach the upper 80's and lower 90's on a few afternoons. A cool mountain breeze in the late afternoon results in rapid cooling after sunset. The

average relative humidity ranges from about 30% in the afternoon to 70% or higher at night. Temperatures can be expected to decrease approximately three degrees with each 1000 feet increase in elevation.

On the higher ridges, snow has fallen during each of the summer months, however, it melts very quickly. In elevations ranging from 3000 to 4500 feet above sea level, snowfall can be expected in October, however, it generally does not accumulate on the ground until after the first of November. The depth of snow on the ground increases until after the first of March. At Bumping Lake, the maximum depth on the ground, 158 inches, was recorded on March 10, 1956. Winter season snowfall near the summit of the Cascades ranges from 300 to 500 inches and snow depths from 10 to 25 feet. In the vicinity of Bumping Lake, snow remains on the ground until after the first of May and in the higher elevations, until the last of June. Mt. Rainier, Mt. Adams and other high peaks are snowcapped throughout the summer.

In the fall and winter, the prevailing flow of air into Washington is from the southwest and west. This air from over the ocean is moist and warmer than the surface of the land. The wet season in the higher elevations begins about the first of October, reaches a peak in winter, then gradually decreases in the spring, with the heaviest precipitation occurring along the western slope and near the summit of the Cascade Range. Along the eastern slope, annual precipitation decreases from approximately 100 inches at the summit to 48 inches at Bumping Lake and to 26 inches at Rimrock Dam, elevation 2700 feet and 20 miles southeast of Bumping Lake.

In the winter season, afternoon temperatures range from 25° to 35° and nighttime readings from 10° to 20°. Minimum temperatures drop to zero or lower on a few nights almost every winter, to -10° in one out of two winters, and occasionally to -20° or lower.

The number of clear or only partly cloudy days each month ranges from 5 to 10 in winter, 10 to 15 in spring and fall, and 20 or more in summer.

Sunrise on the longest summer days is between 4 and 5 AM and sunset is between 7 and 8 PM. On the shortest winter days, sunrise is between 7 and 8 AM, and sunset is between 4 and 5 PM. The number of hours of sunshine on a clear day ranges from approximately 8 in winter to 16 in summer.

Earl L. Phillips
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U.S. Weather Bureau
Seattle, Washington

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	27.8	28.6	32.6	40.2	48.2	51.5	60.2	58.7	49.8	42.0	28.6	22.8	40.9
1932	22.1	26.0	31.2	38.0	44.0	52.4	53.0	56.6	51.6	42.4	34.6	21.8	39.5
1933	24.0	19.8	29.2	35.4	40.1	48.2	55.6	57.8	46.4	45.4	37.0	32.0	39.3
1934	31.6	34.2	39.8	46.4	47.8	52.4	58.0	60.1	49.8	43.6	35.9	28.6	44.0
1935	25.4	28.0	24.6	34.8	44.8	49.8	57.1	54.8	54.7	40.4	29.3	25.8	39.1
1936	24.9	14.5	27.6	38.3	46.8	51.9	56.8	58.4	51.2	47.3	34.4	29.0	40.1
1937	10.4	24.0	33.3	33.6	45.0	51.5	59.0	54.6	52.6	45.4	34.4	28.8	39.4
1938	23.9	26.2	29.2	37.6	45.0	53.5	61.6	56.0	56.9	45.2	29.0	28.4	40.9
1939	29.2	23.8	33.2	42.0	47.0	49.0	59.4	61.3	52.8	44.4	38.1	32.0	42.7
1940	25.8	29.8	36.2	40.4	49.2	56.7	59.5	60.0	55.2	45.2	29.5	29.2	43.1
1941	27.4	30.5	37.9	43.2	45.7	52.5	63.1	58.4	47.6	43.0	37.1	28.7	42.9
1942	20.9	27.4	31.0	39.8	44.2	48.8	60.0	61.5	54.5	44.3	28.9	28.4	40.8
1943	16.6	29.8	28.6	39.2	41.6	48.3	57.4	54.7	56.0	43.2	34.4	27.2	39.8
1944	22.2	25.8	28.8	37.3	43.9	50.2	58.4	55.8	48.4	47.4	31.4	21.2	39.7
1945	27.6	27.9	28.5	33.8	45.5	48.8	59.2	59.2	53.6	44.0	29.1	23.7	39.7
1946	24.3	25.4	30.4	36.0	45.6	47.1	56.2	58.8	49.8	38.5	29.6	28.8	39.2
1947	23.3	32.0	36.7	40.0	49.9	50.2	58.1	57.0	52.8	41.6	34.5	30.8	42.2
1948	23.8	23.6	29.6	33.7	43.2	53.1	52.2	56.1	50.6	42.6	31.4	-	-
1949	8.8	22.6	31.0	39.4	47.1	50.5	55.4	57.2	51.5	38.3	35.8	22.1	38.3
1950	-	-	-	-	-	-	-	-	-	-	-	-	-
1951	25.0	27.4	30.8	41.5	44.9	53.6	60.6	58.0	52.4	39.0	28.3	20.8	40.2
1952	20.3	22.6	29.3	40.9	46.5	50.2	60.4	59.2	56.3	50.8	31.1	27.6	41.3
1953	32.8	30.3	33.3	36.6	44.5	47.1	58.5	59.6	55.0	45.5	35.8	31.2	42.5
1954	23.6	30.4	28.6	36.2	44.7	48.0	55.0	55.1	52.2	41.3	38.7	26.0	40.0
1955	26.9	25.6	24.8	32.2	40.6	51.2	55.2	58.3	52.2	42.3	25.9	20.5	38.0
1956	23.9	22.8	29.4	40.2	45.8	47.9	59.8	58.4	52.5	41.2	31.6	30.8	40.4
1957	15.1	26.1	33.0	39.8	50.1	54.2	56.6	55.4	56.5	40.7	33.2	31.2	41.0
1958	28.3	35.9	30.7	37.2	52.1	57.0	63.9	62.9	49.9	45.2	31.2	31.9	43.7
1959	26.7	27.7	32.7	39.4	43.4	51.2	59.6	56.6	49.3	43.8	32.8	27.2	40.9
1960	22.9	26.3	29.2	38.2	43.3	52.8	62.6	56.2	52.2	44.3	32.1	-	-

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	8.57	4.25	7.60	1.52	1.98	3.16	.14	.04	1.45	2.90	5.22	9.09	-
1932	6.62	8.03	6.51	2.68	1.14	1.18	.81	.36	.11	3.95	11.65	7.52	-
1933	8.07	4.77	7.50	1.09	2.37	2.74	.14	.75	3.03	5.56	2.90	27.69	-
1934	13.55	1.56	5.54	1.34	1.84	1.14	.20	.23	1.55	10.03	10.82	9.00	56.80
1935	11.83	2.96	6.61	.61	.82	1.26	.76	.26	1.69	1.70	2.63	5.64	35.77
1936	11.66	6.94	6.35	.68	1.18	2.27	.29	1.17	.18	.21	.40	7.60	38.93
1937	4.35	8.54	5.68	4.82	1.06	4.41	.27	.74	1.09	2.25	12.83	14.10	58.14
1938	6.19	3.97	5.81	2.11	.54	.43	.16	.25	.47	3.33	3.19	7.61	34.06
1939	5.57	5.98	2.83	.33	1.31	.61	.19	.17	.58	1.67	1.76	12.57	35.37
1940	2.81	9.22	4.42	3.90	.82	.19	1.46	.46	2.06	4.63	5.11	4.50	39.63
1941	5.66	2.56	1.36	2.15	4.31	.50	.26	1.69	1.99	2.30	6.29	10.17	39.24
1942	2.83	3.35	2.33	1.38	2.12	2.13	.67	.27	1.49	3.92	12.33	8.49	41.31
1943	5.31	5.37	5.96	2.61	.98	1.95	.12	.16	.24	3.82	4.12	3.40	34.04
1944	4.88	3.58	2.41	1.76	.92	1.36	.40	.25	2.09	1.36	5.06	2.28	26.35
1945	5.84	7.37	5.86	2.76	2.75	.54	.08	.65	2.98	2.28	10.16	10.66	51.93
1946	11.29	6.64	3.48	2.63	1.04	2.43	.58	.35	1.58	4.74	7.36	10.83	52.95
1947	7.44	5.12	.98	1.20	.38	2.03	1.14	.33	1.81	10.71	3.19	4.73	39.06
1948	8.21	10.02	2.92	2.39	4.62	2.17	1.13	1.38	1.57	2.49	10.07	14.17	61.14
1949	1.99	12.76	3.48	.77	1.76	.34	.23	.62	1.37	3.60	10.59	10.30	47.81
1950	12.21	9.51	9.49	3.86	.68	1.15	1.04	.60	1.41	8.62	11.15	8.98	68.70
1951	7.53	10.89	8.23	.70	2.76	.44	.12	.97	2.18	7.40	7.45	7.36	56.03
1952	6.22	5.48	2.42	1.47	1.55	1.92	1.14	1.88	.15	.23	1.41	6.75	29.62
1953	16.56	2.87	1.62	2.59	2.91	2.45	.23	.79	1.08	2.90	6.71	12.25	52.96
1954	15.44	6.58	2.85	4.96	1.41	2.36	1.26	1.29	1.01	3.12	7.16	9.95	57.84
1955	2.51	6.60	4.80	4.26	1.46	.74	1.31	T	2.82	10.14	14.52	13.55	62.71
1956	13.63	4.37	8.88	.21	.67	1.48	.71	.97	1.98	6.00	2.37	8.34	49.61
1957	3.22	9.03	8.49	1.98	2.00	1.67	.33	.71	.35	4.85	5.91	10.79	47.33
1958	8.89	4.86	2.19	5.96	.63	2.05	1.15	.30	2.07	4.09	15.85	8.25	56.20
1959	12.92	2.93	3.53	2.82	1.15	1.59	.29	.27	5.31	6.05	8.13	5.37	50.36
1960	3.79	4.70	6.55	5.03	4.05	1.07	1.17	1.38	.84	3.59	13.29	5.60	48.06

MONTHLY AND SEASONAL SNOWFALL

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1931-32			8.5	43.2	73.5	50.0	56.5	21.0	15.0				267.7
1932-33			7.5	20.0	85.5	81.5	65.0	52.0	10.0		5.0		324.5
1933-34		1.0	T	T	59.0	26.0	5.2	2.0	T				91.2
1934-35		.5	28.8	75.0	77.5	25.5	48.0	7.0	T				262.8
1935-36		8.2	17.5	28.0	84.0	59.5	59.5	4.5	T				261.2
1936-37		T	0	21.5	66.5	86.0	23.0	17.0	.5				214.5
1937-38			21.5	83.0	45.0	47.5	53.5	1.5	1.0				253.0
1938-39			20.0	44.0	37.5	47.0	44.5	T	2.0				195.0
1939-40		.8	T	21.0	19.5	54.5	4.0	5.0	T				104.8
1940-41		T	19.0	16.5	41.0	7.2	4.0	2.5	.2				90.4
1941-42			2.0	34.5	27.5	38.2	12.7	7.5	2.0				124.4
1942-43		.5	65.4	73.1	64.0	34.0	29.0	4.5	1.0				271.5
1943-44		7.5	7.0	3.5	38.0	24.8	17.5	6.5	.5				105.3
1944-45			25.6	17.8	9.0	41.0	38.5	29.5					161.4
1945-46		4.0	84.5	39.5	79.3	54.0	24.7	9.0					295.0

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
1946-47				1.0	38.5	7.0	45.0	12.5	6.5	7.5			118.0
1947-48				1.0	14.3	19.5	69.7	59.7	25.5	9.0	2.5		201.2
1948-49			1.0	.8	69.0	40.0	23.0	90.0	21.0	1.5	3.0		249.3
1949-50					3.5	83.5	146.3	41.5	54.0	11.5	5.5		345.8
1950-51			8.0	52.0	46.0	100.0	51.0	60.0	T				317.0
1951-52			15.0	52.5	71.5	68.0	27.0	23.5	3.0		.1		260.6
1952-53				1.5	85.5	62.8	26.5	27.0	24.6	2.0			229.9
1953-54				T	22.0	50.0	182.5	49.5					312.3
1954-55					67.3	21.5	37.0	61.0	45.5				235.3
1955-56			1.0	5.5	99.5	107.0	156.5	66.0	76.0	.5	.3		512.3
1956-57				10.0	8.0	3.0	46.0	56.5	64.0	6.5			194.0
1957-58				13.5	10.5	70.5	57.0	18.0	19.5	7.0			196.0
1958-59				T	38.5	17.5	45.0	41.0	29.5	.5			172.0
1959-60					8.1	17.5	22.5	39.5	68.5	22.0	T		178.1

SNOW DEPTH

ON GROUND 1st MONTH

Season	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
1931						23	43	44	39	27		
1931-32					2	0	54	58	68	56	33	
1932-33						0	11	11	6			
1933-34					1	10	38	50	37	45	21	
1934-35					T	6	18	55	66	82	22	
1935-36					0	7	46	48	27		8	
1936-37					2	28	46	47	53			
1937-38					2	6	25	39	20			
1938-39					0	11	22	37	13			</