

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 47° 37'N
LONGITUDE 117° 31'W
ELEV. (GROUND) 2357 ft.

CLIMATOLOGICAL SUMMARY

STATION SPOKANE, WASH.
Spokane International Airport

NORMALS, MEANS, AND EXTREMES

Month	Temperature							Normal degree days	Precipitation							Relative humidity				Wind				Mean number of days																					
	Normal			Extremes					Normal total	Maximum monthly	Year	Minimum monthly	Year	Maximum in 24 hrs.	Year	Snow, Sleet				4:00 A. PST	10:00 A. PST	4:00 P. PST	10:00 P. PST	Mean hourly speed	Prevailing direction	Fastest mile			Pct of poss. sunshine	Average sky cover sunrise to sunset	Sunrise to sunset				Precipitation 0.1 inch or more	Snow, Sleet, 1.0 or more	Thunderstorms	Heavy fog	Max. temp. 90°	Min. temp. 32°	Min. temp. 32°	Zero			
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest	Year									Mean total	Maximum monthly	Year	Maximum in 24 hrs.							Year	Speed	Direction			Year	Clear	Partly cloudy	Cloudy									Clear	Partly cloudy	Cloudy
	(a)	(b)	(b)	15	15	15	15									15	15	15	15							15	15	15			15	15	15	15									15	15	15
J	31.4	19.2	25.3	52	1959	-24	1950	1231	2.44	4.96	1959	.50	1949	1.48	1954	20.2	56.9	1950	13.0	1950	84	81	79	84	7.9	NE	50	SW	1951	26	8.1	4	4	23	16	6	0	9	0	15	28	5			
F	37.4	22.5	30.0	61	1958	-12	1956	980	1.86	3.94	1961	1.07	1953	.96	1961	10.1	20.6	1959	8.0	1951	84	77	71	81	8.9	SSW	54	SW	1949	36	8.1	3	5	20	13	4	0	6	0	6	25	1	0		
M	47.0	29.1	38.1	71	1960	-3	1955	834	1.50	3.75	1960	.45	1948	.91	1950	5.3	12.4	1951	5.1	1950	80	65	56	75	9.3	SSW	54	SW	1955	52	7.5	4	8	19	12	2	*	3	0	2	24	*			
A	58.6	35.9	47.3	84	1952	21	1951	531	.91	3.08	1948	.08	1956	.89	1962+	.2	1.4	1957	1.4	1957	75	53	41	63	9.3	SSW	50	SW	1962	62	7.0	5	8	17	8	*	1	1	0	0	10	0			
M	68.3	43.1	55.7	92	1958	24	1954	298	1.21	5.71	1948	.59	1956	1.67	1948	T	.2	1950	.2	1950	77	51	41	64	8.2	SSW	49	W	1957	62	6.6	6	10	15	10	0	1	1	*	0	1	0			
J	73.5	49.3	61.4	96	1958+	35	1954	147	1.49	2.84	1950	.16	1960	1.52	1957	T	T	1954	T	1954	74	48	38	59	8.4	SSW	39	SW	1949	67	6.0	7	11	12	8	0	3	1	1	0	0				
A	81.0	53.0	67.5	98	1958+	40	1962	34	.41	1.41	1956	T	1955	1.09	1955						64	38	26	43	7.7	SW	37	W	1959	82	3.2	19	8	4	4	0	2	*	9	0	0				
S	72.7	47.0	59.9	96	1950	30	1958+	189	.75	2.05	1959	.06	1950	.92	1948						63	42	28	46	7.6	SW	38	SW	1950	78	4.2	16	8	7	5	0	2	*	5	0	0				
O	59.1	38.0	48.6	80	1958+	20	1949	508	1.57	4.05	1950	.11	1952	.98	1955	.6	6.1	1957	6.1	1957	82	67	55	74	7.5	SSW	56	SW	1950	51	6.6	7	8	16	9	*	*	5	0	0	7				
N	41.9	28.5	35.2	61	1953	-11	1955	894	2.24	4.64	1960	.34	1956	1.41	1960	6.0	24.7	1955	6.6	1955	86	78	74	83	7.6	NE	54	SW	1949	33	7.5	4	6	20	12	2	*	8	0	3	20	*			
D	34.9	24.2	29.6	54	1957	-9	1951	1097	2.43	4.35	1951	1.21	1959	1.60	1951	15.6	39.4	1951	12.1	1951	88	84	83	87	8.4	NE	51	SW	1956	22	8.6	2	4	25	16	5	0	12	0	12	27	1			
Yr	57.5	37.2	47.3	102	1960	-24	1950	6762	17.19	5.71	1948	T	1960+	1.67	1948	58.0	56.9	1950	13.0	1950	77	61	52	68	8.2	SSW	56	SW	1950	57	6.5	89	89	187	118	19	11	46	16	39	142	7			

(a) Length of record, years.

(b) Normal values are based on the period 1931-60 and are means adjusted to represent observations taken at the present standard location. Means and extremes in the above table are from the existing location. Annual extremes have been exceeded at prior locations as follows: highest temperature 108 in July 1928; lowest temperature -30 in January 1888; maximum monthly precipitation 5.85 in November 1897; minimum monthly precipitation 0.00 in July 1883; maximum precipitation in 24 hours 2.22 in June 1888.

NARRATIVE CLIMATOLOGICAL SUMMARY

Spokane lies on the eastern edge of the broad Columbia Basin area of Washington which is bounded by the Cascade Range on the west and the Rocky Mountains on the east. The elevations in eastern Washington vary from less than 400 feet above sea level near Pasco where the Columbia River flows out of Washington to over 5000 feet in the mountain areas of the extreme eastern edge of the State. Spokane is located on the upper plateau area where the long gradual slope from the Columbia River meets the sharp rise of the Rocky Mountain Ranges.

Much of the urban area of Spokane lies along both sides of the Spokane River at an elevation of approximately 2000 feet, but the residential areas have spread to the crests of the plateaus on either side of the river with elevations up to 2500 feet above sea level. Spokane International Airport is situated on the plateau area six miles west-southwest and some 400 feet higher than the downtown business district.

Spokane's climate combines some of the characteristics of damp coastal type weather and arid interior conditions. Most of the air masses which reach Spokane are brought in by the prevailing westerly and southwesterly circulations. Frequently much of the moisture in the storms that move eastward and southeastward from the Gulf of Alaska and the eastern Pacific Ocean is precipitated out as the storms are lifted across the Coast and Cascade Ranges. Annual precipitation totals in the Spokane area are generally less than twenty inches and less than 50 percent of the amounts received west of the Cascades. However, the precipitation and total cloudiness in the Spokane vicinity is greater than that of the desert areas of south-central Washington. The lifting action

on the air masses as they move up the east slope of the Columbia Basin frequently produces the cooling and condensation necessary for formation of clouds and precipitation.

Frequently the Spokane area comes under the influence of dry continental air masses from the north or east. On occasions when these air masses penetrate into eastern Washington, the result is high temperatures and very low humidity in the summer and subzero temperatures in the winter. In the winter, most of the severe arctic outbursts of cold air move southward on the east side of the Continental Divide and do not affect Spokane.

In general, Spokane weather has the characteristics of a mild, arid climate during the summer months and a cold, coastal type in the winter. Approximately 70 percent of the total annual precipitation falls between the first of October and the end of March and about half of that falls as snow. The growing season usually extends over nearly six months from mid-April to mid-October. Irrigation is required for all crops except dryland type grains. The summer weather is ideal for full enjoyment of the many mountain and lake recreational areas in the immediate vicinity. Winter weather includes many cloudy or foggy days and below freezing temperatures with occasional snowfall of several inches in depth. Subzero temperatures and traffic-stopping snowfalls are infrequent. The nearby winter sports areas have a season of four to five months with plenty of facilities for skiing and other winter outdoor activities.

Earl L. Phillips
State Climatologist
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	34.4	34.6	41.6	49.3	60.0	63.9	72.8	71.2	60.6	49.4	33.3	29.2	50.0
1932	26.1	29.7	38.2	50.0	55.7	66.4	69.1	69.6	61.2	49.2	42.0	26.9	48.7
1933	31.8	23.3	40.2	48.4	52.5	64.0	71.8	70.3	56.8	51.7	39.1	37.8	49.0
1934	37.4	39.4	47.2	56.5	61.2	65.4	71.3	71.0	57.6	51.4	43.6	32.9	52.9
1935	31.3	35.6	38.3	45.2	55.8	62.4	70.2	67.4	63.8	47.0	33.1	31.3	48.4
1936	31.8	17.4	38.7	52.2	62.0	65.5	72.8	71.0	59.1	52.2	32.3	33.0	49.0
1937	9.9	28.6	42.2	46.6	57.3	63.3	72.4	66.2	62.6	52.6	40.4	34.2	48.0
1938	31.5	33.6	41.1	49.8	56.8	66.8	75.0	67.8	67.8	51.2	35.1	32.8	50.8
1939	34.6	28.1	41.2	51.6	58.9	60.8	72.4	72.6	62.1	49.5	39.6	37.0	50.7
1940	30.0	35.9	45.3	50.6	60.5	68.3	72.8	70.6	64.6	53.0	32.2	33.9	51.5
1941	32.0	38.4	45.6	51.8	55.7	62.6	73.8	68.5	55.6	47.5	40.2	33.7	50.5
1942	22.6	31.0	39.6	49.8	53.0	59.6	71.2	70.4	61.8	50.4	35.0	32.4	48.1
1943	21.8	33.2	35.8	50.4	52.4	58.6	69.3	66.8	62.6	50.2	37.6	29.2	47.3
1944	30.2	32.5	37.0	47.9	56.8	62.6	69.7	66.8	61.6	54.2	36.8	28.4	48.7
1945	32.6	35.1	37.8	44.7	56.9	60.5	70.9	69.4	56.6	50.8	36.8	29.8	48.5
1946	30.9	35.2	41.1	48.0	57.0	60.5	69.4	68.6	58.8	44.2	34.6	32.6	48.4
1947	24.4	36.1	42.6	48.2	59.6	61.5	70.1	66.7	59.0	50.8	34.8	31.2	48.8
1948	27.5	29.0	36.2	43.5	52.8	65.4	65.1	65.2	58.1	47.3	34.8	21.5	45.5
1949	8.5	26.4	38.0	49.2	59.1	61.8	68.6	68.6	61.6	44.2	41.2	27.8	46.2
1950	9.0	29.8	35.7	43.9	52.2	61.0	69.1	70.2	62.0	46.7	36.2	33.6	45.8
1951	27.1	32.2	34.3	48.3	54.5	61.3	71.0	68.3	60.2	45.7	35.7	22.2	46.8
1952	23.5	30.2	36.7	49.8	56.5	61.0	70.1	68.4	63.8	54.5	32.7	30.3	48.1
1953	37.9	35.1	40.0	45.6	52.4	57.2	69.3	68.0	61.7	51.6	40.3	33.2	49.4
1954	26.9	33.1	36.3	43.5	55.4	57.2	67.5	64.5	57.5	46.2	41.5	30.2	46.6
1955	26.9	27.9	31.2	40.6	49.4	62.7	66.4	68.4	59.4	47.1	28.1	26.8	44.6
1956	28.9	22.6	36.1	49.9	58.1	58.9	71.6	67.6	60.7	49.3	32.7	30.7	47.0
1957	15.0	28.7	37.6	48.0	59.3	62.1	67.5	65.6	62.8	45.0	35.6	35.1	46.9
1958	32.0	39.8	38.9	44.9	62.7	65.6	73.0	73.7	58.7	50.2	35.7	32.4	50.7
1959	29.0	30.5	39.2	47.4	50.6	61.7	70.6	64.4	55.1	46.1	31.5	28.8	46.3
1960	20.5	30.6	38.2	45.9	51.2	62.2	75.1	65.1	60.3	48.6	35.2	26.6	46.6
1961	30.3	37.0	39.9	45.1	53.0	66.6	71.9	74.0	55.9	45.2	30.7	26.6	48.0
1962	22.6	32.4	34.6	49.8	50.9	61.1	68.2	65.4	60.7	47.6	37.9	33.1	47.0

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	1.50	.76	1.52	.53	.26	.87	T	.01	1.05	.82	2.41	3.88	13.61
1932	1.99	.82	2.69	.93	2.74	.28	.21	.27	.06	1.14	2.59	2.13	15.85
1933	1.16	.60	1.19	.28	.59	1.16	.17	.64	1.25	2.72	.80	4.35	14.91
1934	2.57	.27	1.53	.34	.25	.84	T	.19	.98	3.45	2.01	1.50	13.93
1935	2.06	.59	.78	.92	.06	.77	.68	.96	.05	.96	.90	1.78	10.51
1936	2.78	1.57	.58	.18	.57	2.33	.07	.23	1.64	.28	.08	2.39	12.70
1937	1.94	1.49	1.11	2.53	.23	3.13	.56	.61	.62	.87	3.05	2.76	18.90
1938	1.44	1.90	2.09	.35	.47	.83	.26	.29	.09	.83	.89	1.63	11.07
1939	1.55	2.37	1.20	.61	.30	.71	.40	.04	.23	.95	.28	2.83	11.47
1940	1.09	5.62	2.91	1.86	.64	.36	1.46	.01	2.12	2.47	2.37	2.59	23.50
1941	1.61	.83	.69	.32	3.18	2.55	.09	1.85	1.36	.85	1.63	2.78	17.74
1942	1.24	1.30	.48	.98	3.19	.93	.34	.08	.22	1.12	2.69	1.70	14.27
1943	1.25	1.15	1.60	1.33	1.19	1.42	.35	.98	.12	3.13	.60	.54	13.66
1944	.53	1.08	.57	1.40	.94	1.11	.21	1.02	.56	.45	1.64	1.14	10.65
1945	1.27	.95	2.46	1.12	2.20	1.37	T	.55	2.24	.79	2.41	2.00	17.36
1946	1.51	1.43	1.69	.98	1.43	1.08	.03	.07	1.76	1.38	3.16	.90	15.42
1947	1.24	.26	1.60	1.17	.31	1.98	.72	.83	1.57	5.41	1.67	1.80	18.56
1948	2.72	2.75	.45	3.08	5.71	2.17	1.29	.27	1.46	.66	2.38	3.13	26.07
1949	.50	3.08	2.17	.42	.90	.22	.07	.19	1.06	1.52	2.28	1.50	13.91
1950	4.13	1.93	3.75	.43	.72	2.84	.56	.41	.06	4.05	1.96	2.16	23.00
1951	3.16	1.61	1.72	.38	.66	1.04	.37	.40	.47	3.26	1.88	4.35	19.30
1952	2.41	1.33	1.14	.28	.63	2.44	.06	.18	.52	1.11	.80	3.10	13.00
1953	4.56	1.07	1.77	1.48	1.59	.81	T	1.36	.50	.19	2.00	1.90	17.23
1954	4.90	1.19	.83	.53	.78	.75	.85	1.25	1.55	.77	1.42	1.44	16.26
1955	1.38	1.32	.79	1.83	.67	.80	1.28	T	1.13	2.84	3.92	5.82	19.78
1956	2.87	1.44	1.29	.08	.59	1.18	.50	1.41	.09	1.87	.34	1.22	12.88
1957	1.34	1.54	1.82	.81	3.74	2.74	.04	.30	.68	2.33	.82	1.93	18.09
1958	3.55	3.27	.84	1.72	.71	1.63	1.15	.13	.47	.79	3.72	2.93	20.91
1959	4.96	2.01	1.21	.57	2.26	.39	.05	1.24	2.05	1.32	2.30	1.21	19.57
1960	1.05	1.64	2.36	1.51	2.73	.16	T	.56	.72	.95	4.64	1.37	17.69
1961	1.61	3.94	1.75	.96	1.77	1.64	.37	.30	.17	1.05	1.83	3.91	19.30
1962	1.39	1.72	2.56	1.02	1.65	.78	.29	.63	.90	1.62	3.02	1.44	17.02

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°	APR 7	APR 20	MAY 3	MAY 15	SEP 19	SEP 30	OCT 12	OCT 24
28°	Mar 24	Apr 6	Apr 19	May 1	Oct 3	Oct 14	Oct 26	Nov 7
24°	Feb 28	Mar 14	Mar 27	Apr 8	Oct 18	Oct 29	Nov 10	Nov 22
20°	Feb 7	Feb 21	Mar 7	Mar 19	Oct 31	Nov 11	Nov 23	Dec 6
16°	Jan 26	Feb 11	Feb 26	Mar 10	Nov 13	Nov 24	Dec 8	Dec 26

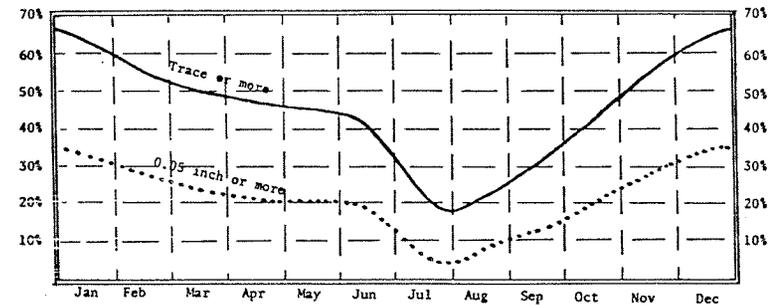
In the above table, the 50% point is the same as the average for each freeze category.

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	25% - 10 years in 40
50% - 20 years in 40	10% - 4 years in 40

(More detailed local monthly and annual climatological data summaries are available from the U.S. Weather Bureau Office, Spokane, Wash.)

PROBABILITY OF PRECIPITATION OCCURRING ON ANY GIVEN DAY AT SPOKANE (Based on 77 years of data ending with 1957)



Note: The probability of a trace or more of precipitation occurring on any day is indicated by the solid line. The probability of 0.05 of an inch is indicated by the dotted line