

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION  
ENVIRONMENTAL DATA SERVICE  
IN COOPERATION WITH EMPLOYMENT DEVELOPMENT DIVISION,  
UTAH DEPARTMENT OF EMPLOYMENT SECURITY  
CLIMATOGRAPHY OF THE UNITED STATES NO. 20-42  
**CLIMATOLOGICAL SUMMARY**

LATITUDE 41° 44'N  
LONGITUDE 111° 49'W  
ELEV. (GROUND) 4,775 Feet

STATION  
**Logan, USU, Utah**

MEANS AND EXTREMES FOR PERIOD 1941-1970

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 90° and above	Temperatures					
	Daily maximum	Daily minimum	Monthly	Record highest	Year	Record lowest	Year	Mean					Maximum monthly	Year	Greatest daily	Year		Max.		Min.			
																		32° and below	32° and below	0° and below	0° and below		
(a)	Jan.	32.5	15.7	24.1	57	1969	-18	1949	1229	1.60	.92	1954	15.8	15.0	1954	15.0	1954	5	0	14	29	4	Jan.
	Feb.	37.2	20.2	28.6	63	1963	-13	1942	994	1.48	.86	1963	11.1	9.5	1952	9.5	1952	5	0	7	25	1	Feb.
	Mar.	46.5	27.0	36.7	74	1956	-4	1960	919	1.85	1.13	1946	9.6	19.1	1967	19.1	1967	5	0	2	24	*	Mar.
	Apr.	58.5	36.0	47.3	86	1962	14	1945	589	1.95	1.73	1957	4.1	8.0	1944	8.0	1944	6	0	*	9	0	Apr.
	May	68.0	43.7	55.9	87	1967	22	1967	276	1.92	1.34	1948	.3	7.2	1950	7.2	1950	5	*	0	2	0	May
	June	76.4	50.8	64.1	95	1954	33	1962	147	1.18	2.02	1964	T	0	--	0	--	4	2	0	0	0	June
	July	87.1	58.7	72.9	100	1960	38	1968	5	.50	.65	1962	0	T	1948	T	1948	1	12	0	0	0	July
	Aug.	85.4	57.6	71.5	97	1962	38	1965	24	.72	1.19	1951	0	0	--	0	--	2	9	0	0	0	Aug.
	Sept.	75.4	48.5	62.0	94	1950	26	1965	142	1.11	1.23	1949	T	T	1940	T	1940	3	1	0	*	0	Sept.
	Oct.	62.0	38.7	50.3	84	1957	18	1970	448	1.52	1.24	1968	1.4	6.5	1943	6.5	1943	4	0	0	6	0	Oct.
	Nov.	45.5	27.9	30.3	69	1958	9	1945	784	1.42	1.35	1958	5.1	10.5	1945	10.5	1945	4	0	2	22	*	Nov.
	Dec.	34.3	18.8	26.6	59	1969	-7	1956	911	1.41	1.46	1955	12.6	9.5	1955	9.5	1955	5	0	10	29	1	Dec.
	Year	59.1	37.0	47.5	100	1960	-18	1949	539	16.66	2.02	1964	5.0	15.0	1954	19.1	1967	4	2	3	12	.5	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

\*\* Base 65°F

CLIMATE OF LOGAN, UTAH

The city of Logan is located on benchland on the east side of Cache Valley in northern Utah. The valley is quite level, about 30 miles long and 10 to 15 miles wide. It is open to the north and is blessed with bountiful water resources including streams from the rugged Wasatch Mountains on the east and south. Bear River, which enters from the north, leaves the valley on its way to Great Salt Lake about midway on the west side between additional high ranges.

Irrigation water to supplement natural precipitation is usually in abundance and plays a prominent role in placing Cache Valley among the leading dairy districts in the United States. Alfalfa is the chief crop supplemented by grains and other feeds. Sugar beets, canning peas, potatoes and many other items also play a vital role in the welfare of the valley.

The Logan River skirts the southern edge of the city of Logan and, although the mountains rise abruptly to the east, flood hazards are not serious. Logan Peak, less than six miles away, towers 5,000 feet above the city.

Winters are usually cold but not severe. The valley is sheltered somewhat from cold Canadian air masses by the blocking effect of the Continental Divide and other mountain ranges. Winter sports and outdoor activities are pursued avidly throughout the season.

Spring is the wettest season of the year. Nearly 40% of annual total precipitation falls in March, April and May. Due to its low variability, a large degree of dependence can be placed on the season's moisture supply. Only one year in ten receives less than two-thirds of the normal amount.

Summer arrives rather abruptly the first part of June with warmer and drier weather. Extremes of heat or prolonged hot spells are virtually unknown. Mountains to the south and southwest and Great Salt Lake about 30 miles distant, help to deflect or moderate warm air currents from this quadrant. Nights are cool and humidity relatively low in the daytime. Maximum temperatures of 100° or higher have been recorded only five times in the history of the station, the last time in July 1934.

Crisp, cool weather ushers in the Fall season and frosts can be expected rather early, usually before mid-October. The earliest occurrence of freezing temperature or lower is September 15. Spring frosts, likewise, tend to linger on, which shortens the growing season. There is a 50% probability of freezing temperatures after the first week in May, and a minimum of 32° or lower has been recorded as late as June 12.

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+ Also on earlier dates, months, or years.

\* Less than one half.

Following are tables of miscellaneous phenomena not included in the climatological summary table.

Average Dates of Occurrence of Various Temperature Values:

Temperature Equal to or Lower Than:	Average Dates of Occurrence: Last in Spring	First in Fall	Length of Period:
40°	June 6	Sept. 17	103
36°	May 10	Oct. 1	135
32°	May 3	Oct. 14	164
28°	April 12	Oct. 30	201
24°	Mar. 29	Nov. 10	226
20°	Mar. 18	Nov. 16	243
16°	Mar. 7	Nov. 20	258

Maximum Temperature:	Greatest Daily Precipitation:
57° Jan. 1969	1.42 inches in January 1911
92° May 1910	2.00 inches in February 1917
99° June 1926	1.09 inches in July 1926
102° July 1931	1.39 inches in August 1906
99° August 1940	1.93 inches in September 1915
70° November 1931	1.80 inches in October 1908

Minimum Temperature:	Extremes from auto-graphic records:
-21° January 1937	1 hour - 0.69 inch in August 1941
-6° March 1917	2 hours - 0.69 inch in August 1943+
9° April 1936	3 hours - 0.83 inch in August 1943
16° May 1916	6 hours - 1.40 inch in August 1951
28° June 1916	12 hours - 1.42 inch in August 1951
35° July 1921	24 hours - 2.17 inch in March 1946
35° August 1899	
24° September 1926	
16° October 1917	
-11° November 1896	
-25° December 1924	

Greatest and least monthly precipitation totals for the full period of record are as follows:

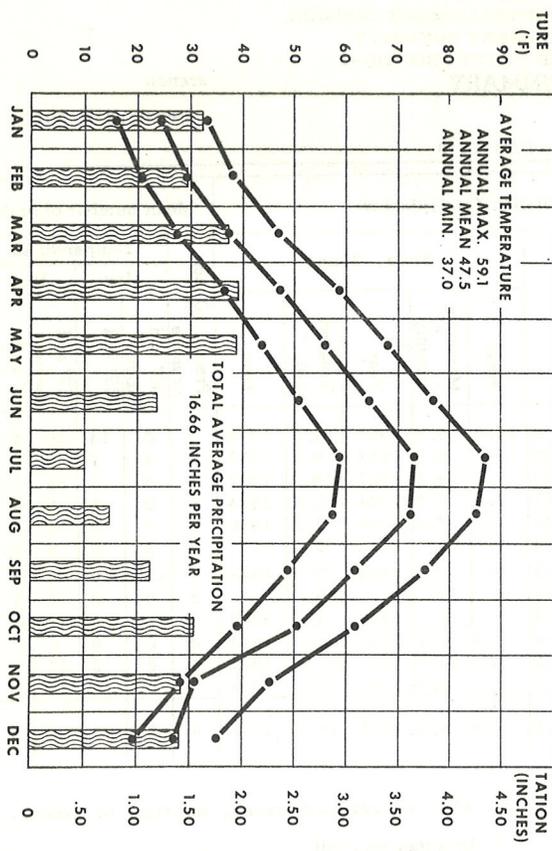
Month	Greatest	Year	Least	Year
January	5.76	1911	0.02	1919
February	4.51	1917	0.33	1903
March	4.40	1938	0.10	1956
April	4.82	1944	0.20	1910
May	5.05	1906	0.08	1934
June	4.47	1964	0.00	1919
July	1.98	1914	0.00	1935
August	4.55	1906	0.00	1944+
September	3.44	1915	Trace	1932
October	4.85	1946	0.00	1952
November	4.45	1965	0.00	1914
December	4.63	1921	0.13	1908
Annual	26.40	1906	10.81	1928

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1941	0.95	1.71	1.90	2.09	1.74	1.13	0.78	1.72	1.07	2.75	1.47	2.31	19.62
1942	2.05	1.80	1.33	2.73	2.40	0.98	0.11	0.74	0.92	0.70	3.17	1.04	17.97
1943	2.01	1.36	1.37	2.01	1.48	2.94	0.42	1.76	0.11	3.07	0.99	0.60	18.12
1944	1.12	1.24	2.59	4.82	0.94	3.57	0.14	0.00	0.44	0.59	2.28	1.15	18.88
1945	0.32	2.13	2.08	1.18	3.51	4.04	0.21	2.31	1.89	1.80	3.59	1.51	24.57
1946	0.65	0.60	3.38	1.61	2.70	0.36	0.82	0.50	1.42	4.85	1.49	2.11	20.49
1947	1.07	0.43	1.13	3.01	1.86	3.40	T	2.00	1.85	1.93	1.17	0.92	18.77
1948	0.76	0.92	1.47	3.85	2.12	2.31	0.10	0.11	0.84	1.03	2.12	1.67	17.30
1949	2.26	1.45	1.74	1.04	3.22	1.84	0.61	0.26	0.59	2.97	1.23	2.36	19.77
1950	3.30	0.76	2.01	1.63	3.18	0.77	0.89	0.46	1.72	1.22	2.38	1.76	19.88
1951	1.77	1.80	1.33	2.72	2.26	0.21	0.21	2.25	0.46	1.28	2.34	2.29	18.92
1952	2.54	1.70	1.89	1.62	1.46	1.50	0.07	0.41	0.12	0.00	0.98	0.53	12.82
1953	2.93	0.84	1.36	2.66	2.73	1.31	0.13	0.08	0.02	0.24	0.50	1.20	14.00
1954	2.10	0.66	2.35	0.59	0.80	1.34	0.16	0.04	0.88	0.52	1.74	1.28	12.46
1955	1.93	2.05	1.08	2.10	1.34	1.63	0.16	1.20	1.28	0.85	2.11	4.44	20.17
1956	2.74	0.89	0.10*	0.96	1.93	0.86	0.39	0.06	0.07	1.12	1.17	1.39	11.68
1957	1.65	1.76	2.00	3.41	3.02	1.29	0.08	0.50	0.50	0.88	1.27	1.44	17.80
1958	1.07	1.40	2.61	0.77	0.85	0.41	0.53	0.69	0.43	0.02	2.97	1.60	13.35
1959	1.59	1.73	1.30	2.48	1.70	1.28	0.08	2.38	2.10	0.28	0.11	1.35	16.38
1960	1.55	1.71	2.00	1.67	0.82	0.14	0.04	0.77	0.56	1.56	2.69	0.57	14.18
1961	0.04	1.46	2.47	0.73	0.68	0.59	0.31	0.80	2.06	2.78	1.25	1.58	14.75
1962	1.14	3.04	2.16	1.86	2.48	0.88	1.15	0.40	0.27	0.81	0.44	0.46	15.09
1963	1.18	1.44	1.65	3.88	1.17	2.07	0.03	0.14	2.18	2.57	2.31	1.10	19.72
1964	1.47	0.61	1.83	1.65	2.60	4.47	T	1.47	0.19	0.60	4.45	3.68	19.07
1965	1.97	1.54	0.13	1.39	1.77	1.95	0.64	1.47	2.87	0.05	4.76	1.56	19.79
1966	0.43	1.15	1.26	1.41	1.11	0.40	0.02	0.42	0.93	0.43	1.31	1.71	10.58
1967	1.63	0.74	3.30	4.46	1.95	3.56	0.37	0.11	0.12	1.90	0.62	2.36	21.12
1968	1.34	2.66	2.77	2.00	1.37	3.22	0.11	0.44	0.32	2.03	1.88	1.32	22.46
1969	3.31	2.99	0.29	1.80	0.15	3.51	0.54	0.63	0.60	1.46	0.32	1.25	16.85
1970	1.92	0.94	1.25	1.55	2.31	1.31	1.02	0.38	1.32	2.61	3.53	2.78	20.92

### LOGAN USU CLIMATOLOGICAL SUMMARY

Monthly Averages 1941 - 1970



Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1941	25.5	30.6	40.8	46.2	59.0	63.4	73.0	70.4	57.6	47.3	37.0	29.8	48.4
1942	18.2	20.4	30.5	49.4	51.7	62.6	76.0	72.2	63.2	50.5	36.4	29.4	46.7
1943	26.8	27.8	37.4	54.4	54.2	61.8	72.7	72.2	66.4	52.8	38.4	29.5	49.5
1944	18.0	28.4	33.6	45.7	57.1	60.0	71.8	70.8	67.2	55.1	32.6	25.0	46.7
1945	24.0	32.3	35.8	43.8	56.9	58.1	62.8	70.8	57.7	53.2	32.9	25.7	47.2
1946	26.0	27.2	39.8	52.4	54.1	65.4	74.2	72.8	61.2	44.0	35.6	33.8	48.7
1947	19.0	34.1	41.6	46.6	60.2	60.0	74.2	70.6	63.2	52.6	31.6	24.4	48.2
1948	25.7	27.8	32.2	45.4	55.8	64.0	71.1	71.5	63.7	52.8	33.4	23.2	47.2
1949	09.5	23.6	38.6	52.3	61.6	61.6	71.2	72.6	64.6	44.9	43.4	26.6	47.2
1950	24.1	30.3	36.5	46.1	51.3	61.9	70.1	69.6	60.6	54.4	40.1	32.5	48.1
1951	24.8	31.5	32.5	49.2	55.9	64.1	72.4	69.5	61.7	48.1	33.6	24.9	47.0
1952	22.8	22.3	28.7	47.6	57.7	60.7	71.2	72.7	65.9	56.2	32.1	28.9	47.6
1953	36.8	32.1	41.0	44.5	50.0	62.7	74.6	72.2	65.4	52.2	42.7	27.3	50.1
1954	29.7	30.8	36.6	52.5	59.2	61.1	74.1	69.6	62.5	--	--	26.7	--
1955	17.5	20.6	30.4	42.2	56.5	62.1	71.6	73.5	62.0	51.2	31.8	31.8	46.0
1956	30.9	20.8	37.4	48.7	58.2	66.0	73.0	69.4	64.5	50.3	30.8	25.7	48.0
1957	20.2	33.6	40.3	45.2	55.7	64.2	72.6	72.4	61.6	49.6	31.6	31.5	48.2
1958	22.4	36.4	35.7	44.3	62.3	67.1	71.3	74.4	62.3	53.2	35.3	34.3	49.9
1959	30.2	30.9	38.1	48.5	53.2	67.4	72.7	70.2	58.9	49.4	37.5	28.0	48.8
1960	20.7	24.0	38.1	49.0	56.0	66.4	76.4	69.0	65.6	50.9	37.9	25.2	48.3
1961	28.0	34.7	40.0	47.4	57.7	70.2	75.3	73.8	57.4	48.1	35.0	28.1	49.6
1962	18.6	30.2	35.3	52.5	56.1	64.8	70.8	70.2	63.6	54.0	40.4	29.2	48.8
1963	20.4	39.0	39.3	43.8	59.5	61.5	73.4	73.5	65.5	56.1	36.3	22.5	49.2
1964	18.5	19.4	44.1	55.8	60.6	64.1	69.7	61.0	52.5	36.5	30.8	46.1	46.1
1965	29.0	30.4	33.7	47.8	52.9	62.0	70.5	68.2	54.4	41.9	22.5	47.3	47.3
1966	25.8	23.5	35.6	46.0	58.8	63.8	75.5	70.9	62.3	48.3	40.7	22.8	47.8
1967	28.6	31.9	38.5	42.2	53.7	60.7	73.1	73.9	63.9	49.9	39.6	21.5	48.1
1968	19.7	29.4	40.3	41.7	54.3	62.7	72.9	66.1	59.0	43.1	35.1	27.3	46.5
1969	30.1	26.3	29.6	47.7	61.2	60.9	72.0	74.5	49.2	38.2	30.9	48.3	48.3
1970	29.6	36.6	36.4	40.3	54.6	65.6	72.2	74.6	56.9	45.5	39.1	26.5	48.2

### HISTORY - LOGAN USU'S UTAH

Climatological records for Logan date back to 1891. For a few years the record is rather broken and information on instrumentation, location and observers is lacking. The first evidence of a maximum and minimum thermometer appears in May 1893; however, only a few scattered months of record are on file prior to October 1895. Observations since then are quite complete and were taken with standard equipment located on the Utah State University campus, 1.2 miles ENE of the post office. The observational program has been capably supervised for the most part by the Physics Department until 1964 when Dr. Gaylen Ashcroft of the Soil Science and Biometeorology Department took over supervision of the station. Frequently observing duties have been delegated to students, so the number of individual observers is too great to include in this summary. There was also frequent change in time of observation; however, since 1930 the readings were made generally at a morning hour.

A recording rain gage was installed on the campus in July 1941 with a windshield added in February 1942. From time to time minor moves of the instruments have been made, primarily for the convenience of the observers, but none that would have significant effect on the records. Ground exposures have always been used and the college grounds are nearly level, being on benchland on the east side of a broad, flat valley. The station was known as Logan prior to July 1948 and Logan USU since then.

Other climatological records available from this area and published in the Utah Climatological Data Bulletin include Logan Sugar Factory, 2.8 miles SSE of Logan, from August 1924 through April 1941, and the Class A evaporation records taken at the USU Experiment Farm, 1.7 miles north of the college or 2.8 miles NE of the post office, from September 1950 to the present.

Numerous other meteorological records have been taken in the vicinity sponsored by various college agencies, including precipitation (1920-1933), and evaporation (non-standard) readings (1924-1933), from GreenVich Farm near the site of the present USU Experiment Station. A rather dense network of about 35 eight inch precipitation gages was in operation around 1923 covering the entire valley. The college purchased and installed a quadruple register with wind vane, anemometer, sunshine recorder and tipping bucket in 1918.

A new benchmark station was established on October 26, 1967 at the USU Bridgeland farm. This station will be one of some 20 stations scattered over the U. S. to study long range climatic changes.