

U. S. DEPARTMENT OF COMMERCE, WEATHER BUREAU
In Cooperation with the UNM Bureau of Business Research

LATITUDE: 35° 59' N
LONGITUDE: 106° 05' W
ELEV. (GROUND): 5595 Ft.

CLIMATOLOGICAL SUMMARY

STATION: ESPANOLA
NEW MEXICO

MEANS AND EXTREMES FOR PERIOD OF RECORD: 1913 - 1960

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	
(a)	30	30	30	30	--	30	--	30	30	30	--	30	30	--	30	--	30	30	30	30	30	(a)
Jan.	44.6	13.3	29.1	87	1956	-23	1913	1110	0.54	1.45	1916	3.4	18.5	1939	7.5	1944φ	2	0	3	31	2	Jan.
Feb.	51.7	19.2	35.4	71	1921	-14	1939	830	0.41	0.68	1948	2.3	9.5	1929φ	8.0	1940	2	0	1	27	*	Feb.
Mar.	59.0	24.8	42.0	80	1927φ	-1	1922	710	0.50	1.42	1940	3.1	18.0	1940	18.0	1950	2	0	*	26	*	Mar.
Apr.	68.1	33.5	50.8	87	1925	12	1920	430	0.77	1.36	1942	0.7	9.7	1949	6.2	1928φ	2	0	0	13	0	Apr.
May	76.9	40.9	59.1	97	1951	20	1920	210	0.93	1.50	1947	T	T	1949+	T	1949+	2	1	0	2	0	May
June	87.5	49.0	68.3	105	1950	33	1954+	20	0.69	1.82	1921	0	0	--	0	--	2	12	0	0	0	June
July	90.0	54.9	72.5	106	1925	36	1951	0	1.43	2.50	1950	0	0	--	0	--	4	16	0	0	0	July
Aug.	88.0	53.5	70.8	103	1956	37	1926	0	1.58	1.45	1925	0	0	--	0	--	4	13	0	0	0	Aug.
Sept.	83.4	45.0	64.0	100	1926	26	1927φ	80	0.75	1.33	1941	0	0	--	0	--	3	6	0	1	0	Sept.
Oct.	71.5	33.0	52.4	89	1954+	11	1955	390	1.03	1.63	1957	T	T	1948	T	1948	2	0	0	15	0	Oct.
Nov.	58.5	20.8	39.7	84	1950	-11	1938φ	760	0.41	1.32	1938φ	1.1	11.5	1938φ	11.5	1938φ	1	0	*	28	*	Nov.
Dec.	47.4	14.6	31.0	72	1951	-20	1918	1050	0.47	1.00	1943	3.3	17.4	1943	7.0	1914	1	0	2	31	1	Dec.
Year	68.9	33.5	51.2	106	July 1925	-23	Jan. 1913	5590	9.51	2.50	July 1950	13.9	18.5	Jan. 1939	18.0	Mar. 1940	28	48	6	174	3	Year

* Less than one half.

** Base 65° F (estimated).

(a) Average length of record, years.

T Trace, an amount too small to measure.

+ Also on earlier dates, months, or years.

φ Partial year's record considered.

CLIMATE OF ESPANOLA, NEW MEXICO

Located in the southwestern corner of Rio Arriba county in the north-central section of the State, Espanola is situated on the banks of the Rio Grande a short distance downstream from the confluence of the Rio Chama and the Rio Grande. The valley runs in a general north-south direction and is approximately a mile wide in this area. To the west the terrain rises rapidly to the Jemez mountains. On the eastern side of the valley a broken mesa extends several miles to the foothills of the high Sangre de Cristo range. Some 15 miles to the north and about eight miles south the river valley narrows to a canyon. Some fruit, truck, and feed crops are grown in the valley under irrigation, and nearby mesas and foothills are grazing land.

While weather observations began in Espanola as early as 1895, the record is rather broken with no data from 1927 to 1938. A full 30 years of record was obtained for this summary by considering all available data for the period from 1913 through 1960, with years of missing or partial data deleted. The partial years of record between 1913 and 1960 were considered in obtaining extreme values.

The city has an arid continental climate. Summers are moderately warm, with about half the days from June through August experiencing daytime temperatures of 90° or higher and an occasional reading of 100° or higher. However, the location in the river valley favors considerable nighttime cooling, as clear skies and dry air lead to rapid dissipation of the daytime heat. Even in July, the warmest month, minimum night temperatures normally drop to the low 50s. Winter days are generally clear and mild. In midwinter, daytime shade temperatures are usually in the mid-40s, and on only about six days a year will the temperature fail to rise above the freezing mark. Winter nights are rather cold, with the temperature falling below the freezing mark on most nights from November through March. However, there are on an average only three nights each winter when the mercury drops below the zero mark for even a short time.

Espanola has less than 10 inches of precipitation in the average year; so the climate is classified as "arid" with insufficient mois-

ture for dry-land crops. However, since more than two thirds of this yearly moisture usually falls in the summer, good forage is produced on nearby range lands. Most of the summer rainfall occurs during brief afternoon and evening thundershowers, and occasionally heavy rains cause some local flooding. Much of the winter precipitation is snow, with an average winter fall of around 14 inches. Mild temperatures are usually experienced during the winter months; and snow seldom lies on the ground in the valley for more than a few hours, although nearby mountains are snow covered much of the winter.

Sunshine, humidity, and wind records are not made in Espanola. But the following information, obtained from records in the area, is considered representative:

Humidities are low, with an annual average of slightly less than 49 per cent. The humidity ranges from near 60 per cent in the cool early-morning hours to about 30 per cent during the warmer part of the day. Humidities are generally lowest in late winter and spring, when readings of around 20 per cent are common. The sun can be expected to shine about 75 per cent of the possible hours, with sunshine especially abundant during the winter. Winds are relatively light most of the time, probably averaging less than 10 miles per hour for the year. Late winter and spring are the windiest months; occasionally, moderately strong winds during these months cause some blowing dust. About a five-month growing season can be expected in the valley, beginning with May 9, the average date of the last freezing temperature in the spring, and ending with October 7, the average date of the first freezing temperature in the fall.

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Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1913	21.0	31.0	38.9	49.4	61.1	66.3	72.4	72.0	61.2	51.4	44.4	26.6	49.6
1914	33.4	34.0	42.2	52.7	60.8	70.0	71.5	70.8	64.8	52.2	41.2	27.0	51.7
1915	19.0	34.0	40.6	52.2	55.2	66.5	71.0	69.5	62.5	52.8	38.4	31.2	49.4
1916	33.0	38.6	46.5	51.0	58.4	66.2	71.6	70.8	63.0	52.8	38.9	27.2	51.5
1917	28.2	35.0	38.1	49.4	53.3	63.8	75.3	71.2	65.8	52.5	41.0	34.6	51.2
1918	26.4	37.9	47.0	51.0	58.0	71.5	73.0	69.4	63.6	53.6	37.8	24.6	51.2
1920	34.3	40.8	41.1	43.2	54.1	62.0	67.8	69.6	62.6	50.2	40.0	27.4	49.4
1921	32.9	37.2	45.8	48.4	58.6	66.5	72.0	71.6	64.5	53.8	40.6	34.7	52.2
1922	28.9	33.9	39.8	48.8	60.2	69.0	73.2	73.0	65.0	51.4	37.8	34.3	51.3
1924	29.0	37.6	39.1	49.6	60.6	70.1	71.8	70.6	66.6	52.8	41.2	26.2	51.3
1925	21.3	38.6	47.8	56.6	64.7	70.0	75.2	70.5	64.4	52.4	39.0	30.7	52.6
1926	26.8	37.8	42.5	52.2	59.8	68.0	72.4	72.2	66.3	57.3	41.6	31.2	52.3
1939	31.9	29.0	45.7	53.2	61.8	69.2	73.6	70.2	65.4	51.4	41.0	35.9	52.4
1940	31.9	35.7	45.0	49.9	62.4	68.0	72.1	70.0	65.0	54.6	39.8	36.3	52.6
1941	32.0	40.0	42.5	48.1	60.7	66.0	70.4	71.2	64.1	51.2	40.5	34.8	51.8
1942	32.6	32.1	39.6	52.6	56.8	66.6	72.4	68.7	62.3	48.2	41.5	34.5	50.6
1943	30.0	32.4	40.0	52.4	55.1	70.4	72.3	73.0	63.2	50.0	38.7	23.8	50.1
1947	30.0	38.8	43.7	51.8	62.6	66.8	72.5	70.2	65.4	54.3	36.2	32.0	52.0
1948	26.2	33.4	39.0	53.8	60.4	65.7	70.8	69.0	63.5	50.2	33.1	32.2	49.8
1949	26.7	32.1	41.9	58.9	65.5	72.0	69.7	69.7	64.1	49.5	41.5	28.5	50.1
1950	29.7	38.4	39.9	53.9	57.7	70.6	70.9	71.0	63.8	60.3	44.1	36.9	53.1
1951	32.9	37.6	42.8	50.7	63.0	69.0	75.0	70.0	64.7	53.5	40.9	32.5	52.7
1953	34.8	33.3	43.8	51.0	56.0	70.3	74.4	70.1	63.4	51.7	40.3	27.3	51.4
1954	30.1	39.4	39.7	53.7	60.3	67.8	74.0	69.5	64.1	52.6	39.8	27.8	51.9
1955	24.7	27.5	39.0	48.2	55.0	65.7	70.7	72.2	63.4	51.7	40.0	34.3	49.4
1956	34.8	32.3	42.6	50.0	62.2	72.4	72.8	70.6	60.6	53.9	34.6	30.2	51.4
1957	31.6	40.4	42.8	48.0	55.5	67.6	73.7	70.4	63.3	51.4	37.0	33.2	51.3
1958	27.5	38.4	38.7	48.9	62.1	71.0	73.1	72.2	65.7	52.3	41.3	35.0	52.2
1959	29.4	34.1	40.5	51.0	60.0	70.7	74.2	71.9	63.2	51.1	38.6	32.1	51.4
1960	22.3	31.2	42.0	51.9	58.2	69.5	72.2	71.6	65.1	50.1	40.2	27.9	50.2

Total Precipitation (Inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1913	.37	.38	.02	.87	.02	1.58	.38	.61	1.64	1.17	1.08	.54	7.66
1914	T	T	.13	.54	1.67	.32	3.88	1.50	.26	1.67	0	1.13	11.10
1915	.66	.60	.72	3.57	.73	.42	2.24	.88	1.03	0	.16	.43	11.44
1916	2.84	.04	1.27	2.04	0	.45	2.73	.87	.31	2.77	T	.12	13.44
1917	1.02	.62	.38	1.10	1.20	0	.70	.41	1.34	0	.08	0	5.85
1918	.64	.60	1.15	1.03	1.14	.79	.79	1.62	.71	1.96	.34	1.28	11.05
1920	.40	.86	.65	.58	1.96	.81	.91	4.15	.32	2.00	.06	.53	13.23
1921	.10	.33	.05	.45	1.22	2.87	2.37	1.70	.30	.80	0	.67	10.86
1922	.03	.95	.30	1.38	.09	.47	.38	0	.38	0	2.45	.25	6.68
1924	.04	1.2	.40	.32	.78	.35	1.35	1.67	1.10	T	.10	.12	5.35
1925	.33	.01	.15	.25	.15	.15	.33	2.30	.60	.80	.40	.12	5.59
1926	.30	T	.31	.70	2.17	1.71	1.76	1.29	.72	.40	0	.56	9.92
1939	.67	.51	T	.78	.11	T	1.49	.31	1.19	.94	.45	.08	6.53
1940	.05	.66	1.46	.34	1.28	.16	.79	.73	1.57	.61	1.59	1.21	10.45
1941	.51	.85	1.48	1.01	1.94	.73	1.69	1.73	2.53	2.29	.53	.03	15.32
1942	.04	.03	.40	3.03	.38	.63	.56	1.46	1.27	.86	0	.23	8.89
1943	.33	.40	.17	0	.85	1.54	.93	1.88	.86	.63	.40	2.22	10.21
1947	.07	.16	.65	0	2.15	.22	1.51	2.35	1.17	.59	.79	.78	10.44
1948	.22	1.88	.71	.20	.78	1.21	1.19	2.28	.45	1.58	.13	T	10.63
1949	1.64	.34	.48	.88	.82	1.41	3.14	.87	.70	.30	0	.27	10.85
1950	.37	.26	T	.39	.07	.61	3.75	.21	.62	.01	0	T	6.29
1951	.30	.05	.02	.56	.40	T	.62	5.81	.24	.47	.04	.02	9.53
1953	.09	.38	.44	.66	.92	.65	1.75	.79	0	1.20	1.56	.17	8.51
1954	.42	1.10	.52	1.12	1.66	.19	1.00	1.14	1.04	.29	1.16	.18	6.82
1955	.40	.25	0	.56	1.70	.22	1.93	2.29	.16	.04	.07	.25	7.87
1956	.75	.42	0	T	.34	.25	1.03	.70	.02	.18	0	.07	3.76
1957	.65	.45	1.04	.35	2.00	.60	1.10	3.12	.01	4.80	.90	.05	14.55
1958	1.90	.35	1.34	1.62	.64	.68	.58	.59	2.16	.53	.22	.32	10.85
1959	.09	.16	.59	.45	1.39	1.34	.57	3.77	.08	2.58	.40	.92	12.34
1960	.87	.50	.27	.25	.21	1.01	1.54	.25	.80	2.36	.43	1.40	9.89

STATION HISTORY

A climatological weather station was established in Espanola in April 1895 with the location indicated near the Post Office. Jim Curry (who has operated the Wolf Canyon station for many years) was the first observer and served until December 1902. The station was closed until April 1905, when Mrs. E. F. McBride was appointed observer, serving until August 1919. From February 1920 to July 1929 several observers maintained records at various sites in town. The station was then closed until April 1938, when it was reactivated about two blocks south of the Post Office. The Inland Utilities Company kept records until March 1942 and again from October 1946 to March 1952. From April 1942 until November 1945 Robert W. Drace made the observations. In April 1952 the station was moved to a site about one-fourth mile southwest of the Post Office, where the Southern Union Gas Company has continued the records. There were no significant differences in elevation or exposure at the various sites.