U. S. DEPARTMENT OF COMMERCE, ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
IN COOPERATION WITH
UTAH COMMITTEE ON INDUSTRIAL AND EMPLOYMENT PLANNING AND
UNIVERSITY OF UTAH BUREAU OF ECONOMIC AND BUSINESS RESEARCH
CLIMATOLOGICAL OF THE UNITED STATES 20 – 42

LATITUDE 39° 16'
LONGITUDE 111° 39'
ELEV. (GROUND) 5,515

# CLIMATOLOGICAL SUMMARY

STATION MANTI, Utah

MEANS AND EXTREMES FOR PERIOD 1936-1965

| 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 | Max. 32° and below | Min. 32° and below | Min. 0° and below | Month |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (a) | 30 | 30 | 30 | 30 | | 30 | | # | 30 | 30 | | 30 | 30 | | 30 | | 30 | 30 | 30 | 30 | 30 | |
| Jan. | 36.9 | 13.6 | 25.3 | 59 | 1948 | -27 | 1937 | 1228 | 1.09 | 1.02 | 1953 | 36.45 | 24.3 | 1957 | 10.0 | 1953 | 3 | 0 | 9 | 30 | 4 | Jan. |
| Feb. | 41.3 | 17.8 | 29.6 | 68 | 1963 | -17 | 1951 | 997 | 1.30 | .84 | 1953 | 34.38 | 32.3 | 1960 | 11.0 | 1959+ | 4 | 0 | 5 | 27 | 2 | Feb. |
| Mar. | 50.3 | 23.9 | 37.1 | 78 | 1956 | - 5 | 1964 | 843 | 1.44 | 1.02 | 1957+ | 32.35 | 35.7 | 1961 | 10.0 | 1945 | 5 | 0 | * | 27 | * | Mar. |
| Apr. | 61.3 | 32.2 | 46.8 | 83 | 1962 | 11 | 1945 | 540 | 1.26 | .78 | 1963+ | 9.83 | 17.0 | 1957 | 8.0 | 1957 | 4 | 0 | 0 | 16 | 0 | Apr. |
| May | 70.5 | 39.0 | 54.8 | 89 | 1951 | 20 | 1946 | 332 | 1.11 | 1.52 | 1937 | 3.98 | 11.0 | 1964 | 10.0 | 1941 | 3 | 0 | 0 | 5 | 0 | May |
| June | 79.4 | 39.1 | 59.3 | 99 | 1954 | 28 | 1939 | 138 | .93 | 1.75 | 1943 | 0 | T | | T | 1964+ | 2 | 2 | 0 | 1 | 0 | June |
| July | 86.8 | 52.9 | 69.9 | 103 | 1960 | 38 | 1959 | 19 | .81 | 1.20 | 1953 | T | T | | 0 | | 3 | 9 | 0 | 0 | 0 | July |
| Aug. | 85.0 | 52.1 | 68.5 | 99 | 1960 | 34 | 1943 | 12 | .93 | 1.28 | 1946 | 0 | 0 | | 0 | | 3 | 6 | 0 | 0 | 0 | Aug. |
| Sept. | 77.5 | 43.8 | 60.7 | 97 | 1950 | 22 | 1958 | 144 | .92 | 1.23 | 1965 | .10 | 10.0 | 1965 | 8.0 | 1965 | 3 | 1 | 0 | 2 | 0 | Sept. |
| Oct. | 66.2 | 34.6 | 50.4 | 87 | 1950 | 15 | 1945 | 462 | 1.10 | 1.05 | 1946 | 2.10 | 7.0 | 1949 | 7.0 | 1949 | 3 | 0 | 0 | 11 | 0 | Oct. |
| Nov. | 49.9 | 23.5 | 36.7 | 70 | 1965+ | - 4 | 1952 | 852 | .97 | .72 | 1942 | 17.13 | 25.0 | 1951 | 10.0 | 1942 | 3 | 0 | 2 | 26 | * | Nov. |
| Dec. | 40.4 | 17.3 | 28.9 | 62 | 1940+ | -14 | 1962+ | 1116 | 1.13 | 1.12 | 1951 | 27.27 | 23.5 | 1949 | 9.0 | 1962+ | 4 | 0 | 6 | 30 | 1 | Dec. |
| Year | 62.13 | 32.48 | 47.33 | 103 | July 1960 | -27 | Jan. 1937 | 6683 | 12.99 | 1.75 | June 1943 | 163.5 | 35.7 | March 1961 | 11.0 | Feb. 1959 | 36 | 18 | 22 | 175 | 7 | Year |

# Totals estimated from monthly mean temperature using Weather Bureau formula.

(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.

## CLIMATE OF MANTI, UTAH

Manti, in Sanpete County, is located in the northeastern portion of the Sevier River Basin of Central Utah. At an elevation of 5,575 feet, the city is at the southern edge of a relatively broad gently sloping valley which drains to the southwest. The Wasatch Plateau, with several peaks above 11,000 feet, lies ten miles to the east; and a low north-south ridge rising to over 7500 feet is six miles to the west. Highest mountain in the area, South Tent, (12,300 feet) is 23 miles to the northeast. The San Pitch River, a small and ordinarily dry stream, lies two miles to the west.

Manti's semi-arid continental climate is naturally affected by the distant Sierra-Nevada Range to the west and the Rockies to the east and northeast. Pacific storms, before reaching Manti, must cross the Sierras. As the moist air associated with these storms is forced to rise over this high mountain range, a large portion of the original moisture falls as precipitation. Thus, the Pacific air currents reaching the Intermountain Region are comparatively dry, and as a result, most of the valley stations in Utah, including Manti, receive less than 15 inches of precipitation during an average year. The Rocky Mountains are usually effective in preventing prolonged periods with extremely low temperatures at Manti since this range acts as a barrier to continental arctic air masses approaching the area.

Due to the elevation of Manti, summers are delightfully cool. Maximum temperatures have reached 100 degrees or more only three times since 1900. The daily temperature range is rather large during the summer season, averaging 33°. In July and August, the warmest months, most high readings are in the 80's and lows in the 50's.

Winters are moderately cold but usually not severe. The average daily temperature range during this season is 23° with maximum readings generally in the high 30's and night-time lows about 15°. In one of every three years the temperature can be expected to drop to 15° below zero or lower.

Precipitation is rather uniformly distributed during the period October through May, averaging about an inch in most of those months. The average annual snowfall is nearly 50 inches, but as much as 105 inches has been reported during a single winter season. The average growing season, or freeze-free period, extends from mid-May to late September. Important crops in the area are wheat, sugar beets and hay.

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

Average Dates of Occurrences of Various Temperature Values:

| Temperature Equal to or lower Than: | Average Dates of Occurrence: Last in Spring | First in Fall | Length of Period, Days |
|---|---|---|---|
| 40° | June 19 | September 8 | 81 |
| 36° | June 10 | September 19 | 102 |
| 32° | May 21 | September 28 | 130 |
| 28° | May 7 | October 12 | 158 |
| 24° | April 17 | October 26 | 192 |
| 20° | April 4 | November 5 | 215 |
| 16° | March 20 | November 13 | 238 |

Extremes of Temperature and Precipitation which have occurred prior to 1936 and which exceed those appearing in the table include:

Maximum Temperatures:
70° in February 1906
77° in March 1913

Minimum Temperature:
18° in May 1915
27° in June 1915
32° in July 1921+
27° in August 1908
11° in October 1917+
- 8° in November 1931
-21° in December 1932

Greatest Daily Precipitation:
1.55 inches in April 1906
1.38 inches in August 1921
1.20 inches in Sept. 1908
1.62 inches in November 1905

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

| Month | Greatest | Year | Least | Year |
|---|---|---|---|---|
| January | 2.69 | 1911 | 0.02 | 1901 |
| February | 3.72 | 1962 | 0.09 | 1946 |
| March | 4.00 | 1961 | 0.29 | 1955 |
| April | 3.67 | 1914 | 0.12 | 1949 |
| May | 4.07 | 1917 | T | 1948 |
| June | 2.97 | 1947 | 0 | 1935+ |
| July | 3.51 | 1914 | T | 1938+ |
| August | 2.63 | 1921 | T | 1902 |
| September | 4.60 | 1961 | 0 | 1944 |
| October | 4.08 | 1946 | 0 | 1952 |
| November | 2.99 | 1905 | 0 | 1904 |
| December | 2.82 | 1951 | 0 | 1900 |
| Annual | 18.52 | 1906 | 7.08 | 1934 |

## Average Temperature (°F)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1936 | 26.8 | 30.7 | 38.3 | 49.2 | 57.5 | 65.2 | 68.0 | 67.4 | 58.2 | 48.8 | 37.0 | 30.1 | 48.1 |
| 1937 | 11.2 | 27.6 | 38.4 | 45.3 | 57.4 | 62.0 | 69.2 | 69.2 | 61.4 | 51.2 | 39.6 | 31.5 | 47.0 |
| 1938 | 30.2 | 31.6 | 38.1 | 47.6 | 52.4 | 64.0 | 68.0 | 68.0 | 61.8 | 50.0 | 30.4 | 29.7 | 47.6 |
| 1939 | 26.7 | 19.2 | 38.7 | 50.4 | 56.2 | 62.8 | 72.0 | 70.1 | 61.2 | 48.1 | 41.7 | 34.2 | 48.4 |
| 1940 | 26.8 | 31.9 | 40.3 | 47.6 | 59.1 | 66.5 | 71.4 | 70.2 | 60.6 | 51.4 | 35.5 | 30.3 | 49.3 |
| 1941 | 28.0 | 35.0 | 39.8 | 42.5 | 55.6 | 61.2 | 68.2 | 66.5 | 57.2 | 46.5 | 38.2 | 30.8 | 47.5 |
| 1942 | 26.2 | 24.7 | 34.2 | 47.1 | 52.4 | 63.1 | 71.0 | 69.0 | 59.8 | 50.1 | 38.0 | 33.0 | 47.4 |
| 1943 | 28.7 | 34.0 | 38.2 | 52.3 | 53.2 | 60.3 | 69.2 | 68.3 | 61.0 | 49.7 | 38.2 | 29.4 | 48.5 |
| 1944 | 20.1 | 23.9 | 32.8 | 41.4 | 54.1 | 58.8 | 67.4 | 67.6 | 61.0 | 52.2 | 36.4 | 29.2 | 45.4 |
| 1945 | 28.1 | 32.4 | 36.1 | 41.4 | 55.3 | 57.2 | 68.8 | 67.2 | 57.0 | 49.9 | 36.0 | 26.4 | 46.3 |
| 1946 | 21.6 | 27.8 | 40.2 | 50.6 | 52.2 | 64.6 | 69.8 | 68.4 | 61.1 | 46.0 | 36.0 | 34.8 | 47.8 |
| 1947 | 22.2 | 33.8 | 41.0 | 45.6 | 57.7 | 60.3 | 68.8 | 67.2 | 62.2 | 52.4 | 31.2 | 29.2 | 47.6 |
| 1948 | 27.8 | 28.8 | 31.2 | 47.0 | 55.6 | 61.8 | 70.3 | 68.8 | 62.8 | 50.4 | 31.5 | 25.6 | 46.8 |
| 1949 | 12.5 | 22.5 | 38.5 | 50.4 | 53.6 | 61.4 | 68.7 | 67.5 | 62.2 | 46.4 | 44.4 | 26.5 | 46.2 |
| 1950 | 23.8 | 30.5 | 39.0 | 48.3 | 52.3 | 62.1 | 67.5 | 67.5 | 60.2 | 54.9 | 40.3 | 33.1 | 48.3 |
| 1951 | 27.7 | 32.9 | 36.9 | 47.9 | 54.5 | 59.7 | 70.9 | 67.1 | 60.5 | 47.9 | 32.2 | 21.9 | 46.7 |
| 1952 | 23.8 | 24.2 | 30.5 | 46.2 | 56.4 | 62.3 | 68.7 | 70.4 | 62.7 | 53.3 | 32.4 | 25.4 | 46.4 |
| 1953 | 33.1 | 29.6 | 40.9 | 43.9 | 48.7 | 62.8 | 70.6 | 67.3 | 62.1 | 49.2 | 39.7 | 22.2 | 47.5 |
| 1954 | 29.2 | 33.3 | 36.8 | 51.2 | 57.6 | 61.8 | 71.7 | 67.8 | 61.9 | 51.0 | 40.2 | --- | --- |
| 1955 | 21.2 | 20.5 | 34.4 | 44.6 | 54.5 | 61.4 | 69.5 | 70.2 | 61.5 | 51.4 | 34.5 | 33.4 | 46.5 |
| 1956 | 34.4 | 24.3 | 40.0 | 47.1 | 56.4 | 65.6 | 69.0 | 66.2 | 62.7 | 50.1 | 32.4 | 28.8 | 48.1 |
| 1957 | 24.9 | 35.5 | 39.7 | 44.4 | 50.9 | 61.9 | 69.4 | 68.8 | 59.3 | 48.3 | 31.3 | 31.7 | 47.2 |
| 1958 | 26.5 | 35.6 | 35.5 | 43.5 | 58.5 | 64.9 | 68.5 | 71.3 | 61.7 | 51.3 | 37.8 | 33.8 | 49.1 |
| 1959 | 29.5 | 31.9 | 39.6 | 48.8 | 52.8 | 66.5 | 71.7 | 68.8 | 58.5 | 49.6 | 37.5 | 28.2 | 48.6 |
| 1960 | 24.0 | 25.2 | 40.1 | 49.0 | 55.7 | 66.5 | 73.3 | 70.9 | 64.3 | 50.5 | 38.7 | 28.0 | 48.8 |
| 1961 | 28.8 | 35.4 | 37.4 | 45.7 | 55.7 | 68.7 | 72.6 | 70.7 | 55.7 | 48.5 | 32.2 | 25.2 | 48.0 |
| 1962 | 21.7 | 31.8 | 32.9 | 49.5 | 53.4 | 63.0 | 69.3 | 69.1 | 63.5 | 52.6 | 41.6 | 29.3 | 48.1 |
| 1963 | 21.3 | 38.6 | 37.3 | 43.5 | 58.8 | 61.6 | 72.0 | 70.1 | 64.3 | 55.5 | 39.7 | 23.6 | 48.8 |
| 1964 | 21.3 | 23.4 | 29.2 | 44.6 | 53.6 | 61.5 | 72.5 | 68.3 | 59.2 | 53.1 | 33.2 | 30.4 | 45.8 |
| 1965 | 30.6 | 30.3 | 36.1 | 46.3 | 51.1 | 60.0 | 68.5 | 66.4 | 54.3 | 52.9 | 42.3 | 30.3 | 47.4 |

## Total Precipitation (Inches)

| Year | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1936 | 1.10 | 2.99 | 1.59 | 0.87 | 0.30 | 2.42 | 3.50 | 0.88 | 0.24 | 1.28 | 0.34 | 1.80 | 17.31 |
| 1937 | 1.36 | 0.52 | 1.64 | 0.74 | 1.70 | 0.26 | 2.38 | 0.64 | 1.18 | 0.66 | 0.30 | 2.36 | 13.74 |
| 1938 | 0.78 | 1.45 | 2.26 | 0.65 | 1.24 | 0.78 | T | 0.36 | 0.74 | 1.38 | 1.00 | 0.83 | 11.47 |
| 1939 | 0.98 | 1.64 | 0.76 | 0.53 | 0.96 | 0.46 | 0.44 | 0.52 | 2.45 | 1.35 | 0.11 | 0.18 | 10.38 |
| 1940 | 2.39 | 2.06 | 1.58 | 1.58 | 0.17 | 0.11 | 0.30 | 0.06 | 2.22 | 0.77 | 1.20 | 1.06 | 13.50 |
| 1941 | 1.09 | 1.02 | 2.28 | 1.60 | 1.94 | 1.72 | 0.72 | 0.65 | 1.48 | 3.43 | 0.90 | 1.06 | 17.89 |
| 1942 | 0.21 | 1.17 | 0.99 | 1.09 | 0.39 | 0.08 | 0.68 | 0.54 | 0.33 | 1.19 | 1.27 | 0.16 | 08.10 |
| 1943 | 0.54 | 1.06 | 1.20 | 0.85 | 0.84 | 2.66 | 0.94 | 1.17 | 0.18 | 2.20 | 0.32 | 0.90 | 12.86 |
| 1944 | 1.98 | 1.23 | 1.98 | 2.14 | 1.40 | 2.12 | 0.70 | 0.17 | 0 | 0.32 | 0.96 | 0.73 | 13.73 |
| 1945 | 0.92 | 2.02 | 2.30 | 2.07 | 1.32 | 1.62 | 0.61 | 2.49 | 0.31 | 0.91 | 1.05 | 1.44 | 17.06 |
| 1946 | 0.79 | 0.09 | 1.51 | 0.84 | 2.11 | 0.04 | 0.42 | 1.85 | 0.09 | 4.08 | 2.49 | 1.78 | 16.09 |
| 1947 | 0.92 | 0.63 | 0.79 | 1.36 | 1.00 | 2.97 | 0.89 | 2.46 | 0.09 | 2.47 | 1.31 | 0.72 | 15.61 |
| 1948 | 0.33 | 1.47 | 1.83 | 0.73 | T | 1.38 | 0.25 | 0.82 | 0.14 | 1.33 | 0.26 | 1.70 | 10.24 |
| 1949 | 1.50 | 0.34 | 1.53 | 0.12 | 1.64 | 0.74 | 0.64 | 0.17 | 0.56 | 1.38 | 0.22 | 1.91 | 10.75 |
| 1950 | 1.31 | 0.78 | 1.14 | 0.76 | 0.59 | T | 1.06 | 0.35 | 0.42 | 0.20 | 1.23 | 1.53 | 09.37 |
| 1951 | 0.92 | 0.61 | 0.31 | 2.42 | 0.82 | 0.57 | 0.28 | 1.46 | 0.27 | 0.84 | 2.37 | 2.82 | 13.69 |
| 1952 | 1.62 | 0.78 | 2.69 | 0.82 | 0.58 | 1.94 | 0.30 | 0.69 | 0.10 | 0 | 0.73 | 1.19 | 11.44 |
| 1953 | 1.34 | 1.20 | 0.79 | 1.86 | 1.65 | 0.10 | 2.32 | 1.01 | 0.09 | 0.84 | 1.37 | 0.91 | 13.48 |
| 1954 | 1.54 | 0.17 | 1.52 | 0.51 | 1.27 | 0.88 | 0.49 | 0.98 | 1.59 | 0.65 | 0.98 | 0.96 | 11.54 |
| 1955 | 1.08 | 1.95 | 0.29 | 0.33 | 0.86 | 0.67 | 0.52 | 0.62 | 1.01 | 0.25 | 0.99 | 0.88 | 09.45 |
| 1956 | 2.09 | 0.92 | 0.24 | 2.01 | 1.01 | 0.07 | 0.94 | 0.77 | 0.30 | 0.68 | 0.02 | 0.61 | 09.66 |
| 1957 | 1.99 | 0.91 | 2.18 | 3.00 | 2.71 | 1.35 | 0.89 | 0.96 | 0 | 2.46 | 1.39 | 1.10 | 18.94 |
| 1958 | 0.64 | 2.42 | 1.57 | 0.61 | 0.64 | 0.10 | T | 0.39 | 0.73 | 0.09 | 0.38 | 0.24 | 07.81 |
| 1959 | 0.42 | 2.67 | 0.91 | 1.48 | 0.57 | 0.13 | 0.89 | 1.13 | 1.19 | 0.45 | 0.28 | 0.98 | 11.10 |
| 1960 | 0.74 | 2.25 | 0.80 | 0.74 | 1.05 | 0.34 | 0.50 | 0.39 | 0.99 | 1.14 | 1.58 | 0.12 | 10.64 |
| 1961 | 0.22 | 0.55 | 4.00 | 1.74 | 0.65 | 0.12 | 0.33 | 1.74 | 4.60 | 1.13 | 1.50 | 0.84 | 17.42 |
| 1962 | 1.31 | 3.72 | 1.10 | 0.65 | 1.13 | 0.12 | 0.66 | 0.15 | 0.46 | 0.45 | 0.40 | 0.88 | 11.03 |
| 1963 | 1.35 | 0.82 | 0.90 | 2.57 | 0.16 | 1.35 | 0.16 | 1.20 | 2.46 | 0.64 | 1.04 | 0.52 | 13.17 |
| 1964 | 0.31 | 0.45 | 1.52 | 1.94 | 2.23 | 0.91 | 0.62 | 1.31 | 1.01 | 0.04 | 1.69 | 2.41 | 14.44 |
| 1965 | 0.92 | 1.13 | 0.97 | 1.23 | 2.34 | 1.04 | 2.05 | 1.98 | 2.35 | 0.41 | 1.46 | 1.15 | 17.03 |

## STATION HISTORY - MANTI, UTAH

Earliest weather observations at Manti date back to March 1893. The exact locations of the weather instruments are not known for some of the early periods; but since 1908 the equipment has been situated 0.3 mile southeast of the Post Office, Latitude 39° 16' North, Longitude 111° 39' West. The station elevation at this location is 5,575 feet above mean sea level. The rain guage was moved a short distance in August 1925, and the instrument shelter was relocated in June 1950; but neither move has had a significant effect on the weather records.

Maximum and minimum temperatures and precipitation amounts have been reported from the beginning of record; but, due to a poor exposure of the thermometers prior to October 1900, the temperatures before that date are considered unreliable.

Observers from the beginning of record to June 1908 were D. J. Lindsey, Frank Fouts, Ernest V. Hardy, A. W. Bessey and Willis M. Harmon, in that order. There were several breaks in the early record, but the following periods are covered: March 1893 to July 1894; October 1894 to September 1897; December 1898 to July 1900; October 1900 to February 1902; March 1902 to July 1907.

In June 1908, Mr. J. M. Anderson took over the observational duties, and the weather station has been located at his residence, 202 East 4th South Street ever since. For a number of years his son, Mr. Leslie J. Anderson assisted in recording the weather data. Following the death of his father Leslie took over as official observer. A deserving tribute is due Mr. Anderson and Leslie for their excellent contribution to the weather records of the Manti community.

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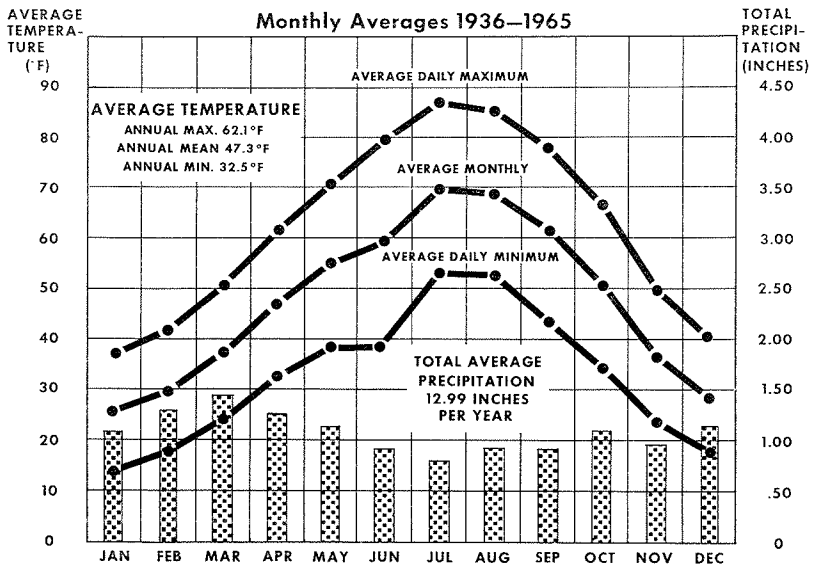
## MANTI CLIMATOLOGICAL SUMMARY

### Monthly Averages 1936–1965