

U. S. DEPARTMENT OF COMMERCE  
 ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
 IN COOPERATION WITH MR. GILMAN W. FORD  
 CLIMATOGRAPHY OF THE UNITED STATES NO. 20 43

LATITUDE 44° 39' N  
 LONGITUDE 71° 59' W  
 ELEV. (GROUND) 900 ft.

CLIMATOLOGICAL SUMMARY

STATION WEST BURKE, VERMONT

MEANS AND EXTREMES FOR PERIOD 1936-1966

| Month | Temperature (°F) |               |         |                |           |               |          |      | **<br>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 | Max.          |               |       | Min.         |              |
|       |                  |               |         |                |           |               |          |      |                        |                               |                |      |                 |          |                |                          |              |               | 32° and below | 32° and below |       | 0° and below | 0° and below |
| (a)   | 18               | 18            | 18      | 18             |           | 18            |          | 18   | 31                     | 31                            |                | 25   | 25              |          | 25             |                          | 31           | 18            | 18            | 18            | 18    |              |              |
| JAN   | 25.0             | -0.8          | 12.1    | 60             | 1950      | -40           | 1957     | 1635 | 2.59                   | 1.38                          | 1945           | 20.0 | 37.5            | 1954     | 13.0           | 1954                     | 8            | 0             | 23            | 31            | 17    | JAN          |              |
| FEB   | 28.1             | -0.5          | 13.8    | 58             | 1957      | -41           | 1962     | 1440 | 2.48                   | 1.37                          | 1955           | 19.8 | 33.5            | 1963     | 14.0           | 1955                     | 7            | 0             | 18            | 28            | 14    | FEB          |              |
| MAR   | 36.9             | 11.0          | 24.0    | 68             | 1962      | -34           | 1950     | 1265 | 2.67                   | 1.82                          | 1936           | 13.5 | 34.5            | 1956     | 12.0           | 1954                     | 8            | 0             | 10            | 30            | 8     | MAR          |              |
| APR   | 50.4             | 25.6          | 38.0    | 86             | 1962      | -11           | 1962+    | 805  | 2.91                   | 1.64                          | 1950           | 2.7  | 9.2             | 1943     | 6.0            | 1961                     | 8            | 0             | 1             | 24            | 1     | APR          |              |
| MAY   | 65.2             | 35.3          | 50.3    | 90             | 1962      | 15            | 1966     | 450  | 3.60                   | 2.11                          | 1960           | 0.4  | 5.0             | 1945     | 5.0            | 1945                     | 9            | *             | 0             | 14            | 0     | MAY          |              |
| JUN   | 75.2             | 44.9          | 60.1    | 92             | 1957+     | 27            | 1966+    | 175  | 3.88                   | 4.15                          | 1942           | 0    | 0               |          | 0              |                          | 8            | 1             | 0             | 3             | 0     | JUN          |              |
| JUL   | 78.8             | 49.4          | 64.1    | 98             | 1953      | 29            | 1962     | 90   | 3.90                   | 2.24                          | 1947           | 0    | 0               |          | 0              |                          | 9            | 2             | 0             | *             | 0     | JUL          |              |
| AUG   | 76.3             | 46.9          | 61.6    | 94             | 1955      | 26            | 1965     | 150  | 3.72                   | 2.32                          | 1946           | 0    | 0               |          | 0              |                          | 7            | 1             | 0             | 1             | 0     | AUG          |              |
| SEP   | 67.9             | 39.3          | 48.6    | 91             | 1960      | 19            | 1963     | 485  | 3.48                   | 2.83                          | 1953           | T    | T               | 1947     | T              | 1947                     | 7            | *             | 0             | 9             | 0     | SEP          |              |
| OCT   | 57.4             | 30.2          | 43.8    | 83             | 1963+     | 9             | 1966     | 645  | 3.50                   | 2.80                          | 1962           | 0.5  | 5.5             | 1952     | 5.5            | 1952                     | 8            | 0             | *             | 20            | 0     | OCT          |              |
| NOV   | 42.3             | 22.2          | 32.3    | 70             | 1956+     | -12           | 1951     | 975  | 3.45                   | 2.11                          | 1943           | 7.7  | 20.0            | 1965     | 9.0            | 1947                     | 9            | 0             | 5             | 25            | 1     | NOV          |              |
| DEC   | 28.5             | 6.4           | 17.5    | 60             | 1951+     | -34           | 1958     | 1465 | 3.03                   | 1.90                          | 1950           | 17.9 | 29.5            | 1956     | 13.5           | 1952                     | 8            | 0             | 19            | 30            | 12    | DEC          |              |
| Year  | 52.7             | 25.8          | 39.2    | 98             | July 1953 | -41           | Feb 1962 | 9580 | 39.21                  | 4.15                          | June 1942      | 82.5 | 37.5            | Jan 1954 | 14.0           | Feb 1955                 | 96           | 4             | 76            | 215           | 53    | 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

CLIMATE OF WEST BURKE

Delightfully cool summers, fairly cold winters, and ample but not excessively frequent rainfall are characteristic. This climate is continental, though occasionally the maritime influence of the Atlantic is felt. The ocean lies about 110 miles to the southeast. West Burke is set in fairly hilly to mountainous terrain, well wooded. It lies a bit west of midway between the main ridges of the Green and the White Mts. Numerous hills and peaks rise to 2000 ft. or more above sea level within 10 miles, while Burke Mt., about 7 miles southeast, rises to 3267 ft. West Burke is located on the Passumpsic River, which drains southward into the Connecticut.

General climatic features include changeable weather, a large range of temperature, both daily and annual, noticeable differences among the same seasons in different years, and fairly even distribution of the annual precipitation. Frequent weather changes are common to all of New England, a favored path of weather-making cyclonic systems.

Summers are very comfortable. Afternoon temperatures are usually only in the 70's with morning lows usually 50° or less. A day with a temperature of 95° or higher is quite rare. Even the 90° mark is not an every year occurrence, though it was attained 13 times in 1955. The June-August summer mean temperature is 61.9°. The warmest summer was in 1949, at 67.2°. The coolest was in 1965, at 59.1°. The average annual extreme high is 92°.

Winters (December-February) average 14.5°. That of 1958-59 averaged only 5.7° while the mildest winter, 1952-53, averaged 19.5°. Days with zero or lower have ranged from only 33 in 1950-51 to 79 in 1958-59. Days with -20° have ranged from only 1 to as many as 11. Days with -30° come in about one winter in two, and average 2 per season. Readings of -40 were seen in two winters. The average winter minimum is -31°.

The annual precipitation exceeds 80% of average nearly every year and has ranged up to 130%. The regularity of ample precipitation is of great economic importance, providing a quite dependable water supply. There are no "rainy" or "dry" seasons. However, the warmer part of the year generally has more precipitation than the colder part. Much of the summer rain is from showers and thunderstorms. Precipitation in the colder season is sometimes augmented by "northeasters," which may occasionally bring strong winds and heavy rain or snow or, less often, freezing rain or sleet inland as far as West Burke. However, the effects of these coastal storms are usually moderated at West

Burke by the inland distance and intervening mountains. Short, dry spells are common but severe droughts are rare. Irrigation of garden, truck, fruit, and other high value crops may be needed to cope with dry spells occurring in summer. Days with 0.01 inch or more precipitation average 161 a year and have ranged from 114 to 211. Days with 1.0 inch or more average 6, and have varied from only 1 to 9.

Seasonal snowfall varies widely from average. Extremes were 125 in. in 1962-63 and 46 in. in 1950-51, or about 150 to 50% of average. The frequency of daily snowfalls of 1 inch or more averages 30 per season with 8 in January and 6 to 7 each in December and February. Amounts of 2 inches or more in a day average 18 cases a season. Falls of 4 inches or more average 7, with about 2 each in December, January, and February, and 1 in March. At the 6 inch level, the average is 3. A 10 inch snowfall comes in about 1 year in 4, but may occur more than once the same season. The frequency of daily falls of 1 inch or more has varied from 21 to 45. At the 4 inch level, the range has been from 2 to 12. Measurable depths of snow cover the ground much of each winter. The average length of a continuous cover is 116 days but the duration has varied from 54 to 153 days. The average date of the beginning of a continuous cover is December 11. The average ending is April 5. The average seasonal maximum depth of snowcover is 28 inches with maxima ranging from about 1 foot to 4 feet deep. The average date of the greatest depth is February 19, but the greatest depth has come as early as mid-January and as late as mid-March.

The "growing season," or period free of the 32° temperature level to which tender vegetation is susceptible, averages 100 days, from June 3 to September 11. Though dates vary from year to year, about two-thirds of the last spring dates fall within about two weeks of the average, while the same number of fall dates come within 10 days of the average. The earliest and latest dates of record for the last spring freeze is May 5 and July 7. The fall extremes are August 25 and October 3. The freeze-free season length varies with topography, soil types, and other influences. Low, marsh locations will ordinarily be more frost prone, while some favored slopes or rises may be less susceptible than the West Burke weather observatory. Local variations can amount to several weeks in the season length. For a more severe freeze, with 28° readings at the observatory, the season averages 128 days, from May 16 to September 21. The average date of the first zero is December 4 and the last is March 21. Zero has occurred as early as November 13 and as late as April 5. The first zero has come as late as December 21 and the last as early as February 23.

Average Temperature (°F)

| Year | Jan. | Feb. | Mar. | Apr. | May  | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|------|------|------|------|------|------|------|------|------|-------|------|------|------|-------|
| 1949 | 19.3 | 20.0 | 27.1 | 40.4 | 54.0 | 67.6 | 70.5 | 63.5 | 53.5  | 48.2 | 29.0 | 21.8 | 39.2  |
| 1950 | 15.8 | 10.6 | 15.8 | 33.1 | 50.5 | 61.3 | 63.3 | 64.4 | 49.3  | 45.5 | 35.5 | 21.2 | 40.5  |
| 1951 | 15.8 | 17.5 | 26.0 | 41.0 | 50.4 | 58.7 | 65.6 | 64.8 | 55.7  | 45.1 | 26.9 | 18.0 | 40.5  |
| 1952 | 15.0 | 16.5 | 21.3 | 41.0 | 46.1 | 60.3 | 66.1 | 62.4 | 56.0  | 40.9 | 33.5 | 21.9 | 40.5  |
| 1953 | 17.8 | 18.7 | 26.2 | 40.2 | 53.0 | 60.0 | 65.5 | 60.8 | 55.2  | 45.4 | 37.8 | 25.6 | 42.2  |
| 1954 | 7.9  | 21.3 | 24.3 | 36.6 | 50.9 | 61.9 | 61.3 | 59.3 | 52.6  | 46.6 | 33.3 | 18.0 | 39.5  |
| 1955 | 11.7 | 17.5 | 24.7 | 41.3 | 55.3 | 62.1 | 68.1 | 66.8 | 53.1  | 44.3 | 30.6 | 9.8  | 40.4  |
| 1956 | 17.2 | 16.6 | 17.4 | 34.6 | 44.0 | 60.1 | 62.3 | 61.0 | 50.6  | 43.0 | 32.9 | 21.7 | 38.5  |
| 1957 | 3.2  | 16.3 | 25.5 | 39.5 | 50.0 | 63.9 | 62.9 | 57.9 | 54.6  | 42.9 | 34.5 | 22.4 | 39.5  |
| 1958 | 15.8 | 8.3  | 31.0 | 40.6 | 45.9 | 53.7 | 63.8 | 61.3 | 53.9  | 42.0 | 32.5 | 3.2  | 37.7  |
| 1959 | 10.8 | 3.2  | 21.3 | 39.2 | 52.3 | 60.7 | 67.1 | 66.1 | 57.6  | 45.0 | 31.9 | 20.7 | 39.7  |
| 1960 | 13.6 | 22.6 | 19.7 | 39.4 | 56.7 | 59.9 | 61.5 | 61.5 | 54.7  | 41.6 | 34.9 | 12.5 | 39.9  |
| 1961 | 4.0  | 14.8 | 24.7 | 38.3 | 48.0 | 58.6 | 64.1 | 62.2 | 61.8  | 45.9 | 32.2 | 20.0 | 39.6  |
| 1962 | 8.8  | 6.0  | 25.8 | 37.8 | 49.0 | 59.2 | 58.6 | 62.1 | 53.2  | 43.6 | 29.5 | 15.2 | 37.4  |
| 1963 | 13.0 | 8.1  | 24.1 | 36.1 | 48.3 | 60.7 | 66.0 | 58.4 | 50.1  | 46.4 | 35.9 | 7.9  | 37.9  |
| 1964 | 13.9 | 11.1 | 25.6 | 35.5 | 53.3 | 56.7 | 66.7 | 56.9 | 50.1  | 40.4 | 29.1 | 17.2 | 38.0  |
| 1965 | 7.4  | 10.1 | 21.8 | 33.5 | 51.1 | 56.9 | 58.4 | 61.9 | 53.4  | 41.2 | 28.5 | 20.1 | 37.0  |
| 1966 | 11.0 | 13.5 | 24.6 | 35.4 | 46.0 | 58.8 | 62.5 | 61.2 | 50.3  | 41.0 |      |      |       |

CLIMATE OF WEST BURKE (Continued)

In summary, summers are nearly free of extreme or very uncomfortable heat. Winters are cold but prolonged periods of severe cold are rare. The average daily variability of temperature from minimum to maximum may be seen from the Means and Extremes Table. This is only about 20° in November but ranges up about 30° for the summer months. One cause of this seasonal difference is the change in seasonal cloudiness, with clouds much more prevalent in the winter season. The range for any particular day at any time of year is greatly dependent upon cloud cover. Many cloudy days may have temperature changes of 10° or less, while 40° is not too unusual for a clear summer day. Day to day temperature changes are also sometimes large. The frequent variation in weather conditions is considered stimulating to mental and physical activities.

Total Precipitation (Inches)

| Year | Jan. | Feb. | Mar. | Apr. | May  | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Ann'l |
|------|------|------|------|------|------|------|------|------|-------|------|------|------|-------|
| 1936 | 4.76 | 2.21 | 5.44 | 5.05 | 4.66 | 1.30 | 2.88 | 3.86 | 3.96  | 6.04 | 2.71 | 3.33 | 46.20 |
| 1937 | 2.88 | 3.15 | 2.62 | 2.00 | 5.38 | 3.90 | 2.37 | 4.84 | 1.55  | 5.27 | 2.54 | 3.14 | 39.64 |
| 1938 | 2.59 | 2.56 | 2.23 | 2.50 | 2.46 | 3.38 | 4.22 | 6.74 | 1.74  | 1.58 | 2.76 | 4.74 | 38.65 |
| 1939 | 2.39 | 2.91 | 2.95 | 4.38 | 2.28 | 4.97 | 2.29 | 2.47 | 3.17  | 4.73 | .81  | 2.21 | 35.56 |
| 1940 | 1.17 | 1.56 | 2.59 | 3.32 | 5.65 | 1.80 | 3.42 | 2.98 | 5.49  | 1.19 | 5.16 | 3.71 | 38.04 |
| 1941 | 1.55 | .83  | 2.25 | .86  | 2.65 | 2.07 | 3.94 | 2.75 | 2.01  | 4.00 | 3.27 | 2.26 | 28.44 |
| 1942 | 1.48 | 2.49 | 4.41 | 2.57 | 3.28 | 5.74 | 1.80 | 2.70 | 4.53  | 3.65 | 3.49 | 3.63 | 39.77 |
| 1943 | 1.12 | 2.04 | 1.95 | 2.40 | 4.23 | 6.55 | 3.93 | 5.58 | 2.92  | 3.85 | 4.39 | 1.48 | 40.44 |
| 1944 | 1.63 | 2.74 | 2.29 | 2.57 | 1.75 | 3.68 | 4.15 | 3.31 | 4.93  | 3.92 | 2.00 | 3.20 | 36.54 |
| 1945 | 4.29 | 2.47 | 1.57 | 4.29 | 5.45 | 3.62 | 4.47 | 1.59 | 9.07  | 5.73 | 4.18 | 2.35 | 49.08 |
| 1946 | 2.54 | 2.57 | 1.42 | 2.50 | 4.02 | 3.64 | 3.60 | 5.61 | 2.99  | 4.87 | 3.19 | 4.07 | 41.42 |
| 1947 | 3.63 | 2.53 | 2.46 | 2.00 | 6.45 | 4.05 | 7.88 | 1.42 | 2.36  | 1.11 | 3.31 | 1.63 | 38.83 |
| 1948 | 2.30 | 2.03 | 2.17 | 2.06 | 4.78 | 4.76 | 3.43 | 4.28 | 1.42  | 3.34 | 5.91 | 2.69 | 39.17 |
| 1949 | 2.95 | 2.72 | 1.92 | 2.67 | 3.34 | 3.61 | 3.58 | 3.18 | 3.52  | 2.66 | 3.59 | 2.94 | 36.68 |
| 1950 | 4.24 | 2.68 | 3.13 | 3.02 | 1.02 | 5.03 | 3.37 | 4.13 | 2.28  | 2.78 | 3.98 | 3.08 | 38.74 |
| 1951 | 2.44 | 4.12 | 3.38 | 4.50 | 3.48 | 2.70 | 4.74 | 2.92 | 2.52  | 1.90 | 4.62 | 3.89 | 41.21 |
| 1952 | 2.83 | 2.68 | 2.28 | 3.17 | 3.71 | 6.12 | 2.27 | 1.94 | 2.74  | 3.62 | 1.81 | 5.14 | 38.31 |
| 1953 | 4.01 | 2.21 | 1.87 | 3.29 | 3.32 | 2.05 | 2.71 | 3.64 | 4.54  | 2.19 | 1.90 | 3.60 | 36.57 |
| 1954 | 2.73 | 4.08 | 3.74 | 4.90 | 5.36 | 4.32 | 3.68 | 2.65 | 6.99  | 4.41 | 4.02 | 4.60 | 50.90 |
| 1955 | 1.49 | 3.69 | 3.92 | 2.52 | 2.31 | 3.95 | .89  | 8.25 | 1.81  | 2.89 | 3.15 | 2.16 | 37.03 |
| 1956 | 2.27 | 1.90 | 3.63 | 2.90 | 4.94 | 2.34 | 3.79 | 2.93 | 3.78  | 2.19 | 2.87 | 2.54 | 36.08 |
| 1957 | 2.96 | 1.59 | 1.32 | 1.94 | 3.61 | 3.87 | 5.96 | 1.21 | 3.26  | 2.40 | 3.59 | 4.67 | 36.38 |
| 1958 | 4.01 | 2.21 | 1.87 | 1.86 | 3.26 | 4.32 | 6.48 | 2.96 | 3.61  | 4.52 | 3.10 | 1.84 | 40.04 |
| 1959 | 4.56 | 2.72 | 2.14 | 1.03 | 3.07 | 4.26 | 1.92 | 6.17 | 2.20  | 7.19 | 4.46 | 3.41 | 43.13 |
| 1960 | 2.49 | 2.56 | .95  | 3.02 | 3.33 | 5.40 | 4.12 | 1.42 | 3.39  | 5.19 | 2.34 | 2.12 | 36.33 |
| 1961 | 1.04 | 2.44 | 2.15 | 4.02 | 3.00 | 5.88 | 6.41 | 2.91 | .84   | 2.05 | 3.25 | 3.04 | 37.03 |
| 1962 | 2.27 | 2.50 | 1.22 | 4.41 | 3.58 | 2.93 | 4.95 | 6.04 | 3.90  | 5.75 | 3.57 | 2.13 | 43.25 |
| 1963 | 2.23 | 2.63 | 2.61 | 3.24 | 2.77 | 3.09 | 4.61 | 5.87 | 2.02  | .63  | 5.11 | 1.92 | 36.73 |
| 1964 | 2.84 | 1.33 | 4.54 | 3.15 | 4.14 | 2.22 | 4.68 | 4.41 | 1.46  | 2.41 | 3.40 | 3.37 | 37.95 |
| 1965 | 1.82 | 2.75 | .94  | 2.23 | .56  | 4.95 | 4.05 | 5.65 | 4.81  | 4.15 | 4.90 | 2.59 | 39.50 |
| 1966 | 1.86 | 1.89 | 4.16 | 1.07 | 3.77 | 3.67 | 4.30 | 4.63 | 3.00  | 2.37 |      |      |       |

HISTORY OF WEATHER OBSERVATIONS AT WEST BURKE, VERMONT

Daily observations of precipitation and temperature were begun in West Burke July 1930 by Mr. Gilman W. Ford. Mr. Ford has continued this series to the present time. The station at first was not furnished with official thermometers. These were installed February 1949. Temperature data in the Means and Extremes Tables include only the period of official record. In recognition of his enviably long record of excellent service, Mr. Ford was presented in 1965 with the John Campanius Holm Award. This award, presented by the Environmental Science Services Administration, Weather Bureau, was named for the first person known to have made systematic weather observations in what is now the United States. This was at Swedes Fort, near the present Wilmington, Del., in 1644-45.

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