

Summary of Monthly Normals  
1991-2020

Generated on 04/28/2024

Current Location: Elev: 1296 ft. Lat: 47.3847° N Lon: 94.6147° W

Station: CASS LAKE, MN US USC00211374

| Temperature (°F) |           |           |      |                       |                       |                       |                     |       |       |       |      |      |                     |        |        |        |                     |           |           |           |           |          |
|------------------|-----------|-----------|------|-----------------------|-----------------------|-----------------------|---------------------|-------|-------|-------|------|------|---------------------|--------|--------|--------|---------------------|-----------|-----------|-----------|-----------|----------|
| Mean             |           |           |      |                       |                       |                       | Cooling Degree Days |       |       |       |      |      | Heating Degree Days |        |        |        | Mean Number of Days |           |           |           |           |          |
|                  |           |           |      |                       |                       |                       | Base (above)        |       |       |       |      |      | Base (above)        |        |        |        |                     |           |           |           |           |          |
| Month            | Daily Max | Daily Min | Mean | Long Term Max Std Dev | Long Term Min Std Dev | Long Term Avg Std Dev | 55                  | 57    | 60    | 65    | 70   | 72   | 55                  | 57     | 60     | 65     | Max >= 100          | Max >= 90 | Max >= 50 | Max <= 32 | Min <= 32 | Min <= 0 |
| 01               | 17.8      | -3.6      | 7.1  | 5.3                   | 7.7                   | 6.5                   | 0.0                 | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 1484.6              | 1546.7 | 1639.7 | 1794.7 | 0.0                 | 0.0       | 0.0       | 26.9      | 30.9      | 18.0     |
| 02               | 23.6      | -0.4      | 11.6 | 6.0                   | 7.7                   | 6.7                   | 0.0                 | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 1215.0              | 1271.1 | 1355.1 | 1495.1 | 0.0                 | 0.0       | 0.6       | 21.1      | 27.7      | 14.7     |
| 03               | 37.0      | 14.5      | 25.8 | 4.9                   | 5.7                   | 5.2                   | 0.8                 | 0.5   | 0.2   | 0.0   | 0.0  | 0.0  | 907.6               | 969.3  | 1062.0 | 1216.8 | 0.0                 | 0.0       | 5.2       | 10.5      | 28.6      | 5.8      |
| 04               | 51.0      | 28.9      | 40.0 | 4.8                   | 3.5                   | 4.0                   | 8.4                 | 4.7   | 1.6   | 0.2   | 0.0  | 0.0  | 459.9               | 516.2  | 603.1  | 751.7  | 0.0                 | 0.0       | 16.3      | 1.8       | 19.8      | 0.1      |
| 05               | 65.0      | 42.3      | 53.6 | 3.8                   | 3.0                   | 3.2                   | 99.7                | 74.7  | 45.8  | 15.9  | 4.0  | 1.9  | 141.7               | 178.6  | 242.7  | 367.8  | 0.0                 | 0.2       | 28.0      | 0.0       | 5.0       | 0.0      |
| 06               | 74.5      | 53.4      | 63.9 | 2.9                   | 2.5                   | 2.5                   | 282.2               | 230.8 | 161.8 | 72.7  | 23.2 | 13.5 | 13.9                | 22.3   | 43.4   | 104.3  | 0.0                 | 0.6       | 29.9      | 0.0       | 0.2       | 0.0      |
| 07               | 79.1      | 58.0      | 68.5 | 3.5                   | 2.7                   | 3.0                   | 421.2               | 361.3 | 274.5 | 146.8 | 57.5 | 34.7 | 1.2                 | 3.3    | 9.5    | 36.8   | 0.0                 | 1.8       | 31.0      | 0.0       | 0.0       | 0.0      |
| 08               | 77.3      | 55.9      | 66.6 | 2.7                   | 2.1                   | 2.2                   | 363.3               | 305.0 | 222.6 | 109.1 | 38.1 | 22.1 | 3.8                 | 7.5    | 18.1   | 59.6   | 0.0                 | 1.2       | 31.0      | 0.0       | 0.0       | 0.0      |
| 09               | 68.0      | 46.9      | 57.4 | 3.3                   | 3.1                   | 3.0                   | 149.2               | 115.3 | 74.2  | 28.8  | 7.2  | 3.6  | 75.8                | 101.8  | 150.8  | 255.4  | 0.0                 | 0.2       | 29.1      | 0.0       | 2.6       | 0.0      |
| 10               | 52.3      | 33.7      | 43.0 | 4.3                   | 3.2                   | 3.5                   | 18.7                | 12.4  | 6.1   | 1.4   | 0.1  | 0.0  | 390.7               | 446.4  | 533.1  | 683.3  | 0.0                 | 0.0       | 18.2      | 1.0       | 14.9      | 0.0      |
| 11               | 35.9      | 19.6      | 27.7 | 6.6                   | 5.6                   | 6.0                   | 0.2                 | 0.1   | 0.0   | 0.0   | 0.0  | 0.0  | 817.7               | 877.6  | 967.5  | 1117.5 | 0.0                 | 0.0       | 4.3       | 12.4      | 26.6      | 2.2      |
| 12               | 22.9      | 5.6       | 14.2 | 6.1                   | 6.9                   | 6.4                   | 0.0                 | 0.0   | 0.0   | 0.0   | 0.0  | 0.0  | 1263.1              | 1325.1 | 1418.1 | 1573.1 | 0.0                 | 0.0       | 0.1       | 23.9      | 30.9      | 11.4     |
| Summary          | 50.4      | 29.6      | 39.9 | 4.5                   | 4.5                   | 4.3                   | 1344                | 1105  | 787   | 375   | 130  | 76   | 6775                | 7266   | 8043   | 9456   | 0.0                 | 4.0       | 193.7     | 97.6      | 187.2     | 52.2     |

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| Precipitation (in.) |        |                     |         |         |         |                                                                                                                        |       |       |  |
|---------------------|--------|---------------------|---------|---------|---------|------------------------------------------------------------------------------------------------------------------------|-------|-------|--|
|                     | Totals | Mean Number of Days |         |         |         | Precipitation Probabilities<br>Probability that precipitation will be<br>equal to or less than<br>the indicated amount |       |       |  |
|                     | Means  | Daily Precipitation |         |         |         | Monthly Precipitation<br>vs. Probability Levels                                                                        |       |       |  |
| Month               | Mean   | >= 0.01             | >= 0.10 | >= 0.50 | >= 1.00 | 0.25                                                                                                                   | 0.50  | 0.75  |  |
| 01                  | 0.76   | 7.9                 | 2.6     | 0.1     | 0.0     | 0.49                                                                                                                   | 0.63  | 0.98  |  |
| 02                  | 0.74   | 6.8                 | 2.6     | 0.1     | 0.0     | 0.41                                                                                                                   | 0.74  | 0.97  |  |
| 03                  | 1.24   | 7.3                 | 3.0     | 0.5     | 0.1     | 0.77                                                                                                                   | 0.98  | 1.50  |  |
| 04                  | 1.98   | 8.5                 | 4.7     | 1.1     | 0.3     | 1.16                                                                                                                   | 1.85  | 2.69  |  |
| 05                  | 2.93   | 11.7                | 6.7     | 1.7     | 0.4     | 1.89                                                                                                                   | 2.69  | 3.64  |  |
| 06                  | 4.07   | 12.7                | 7.6     | 2.6     | 0.9     | 2.85                                                                                                                   | 3.97  | 4.94  |  |
| 07                  | 3.74   | 10.8                | 7.2     | 2.3     | 0.9     | 2.32                                                                                                                   | 3.67  | 4.80  |  |
| 08                  | 3.06   | 9.3                 | 6.0     | 2.3     | 0.7     | 1.80                                                                                                                   | 2.63  | 4.45  |  |
| 09                  | 2.91   | 10.4                | 5.8     | 1.9     | 0.6     | 1.74                                                                                                                   | 2.63  | 3.96  |  |
| 10                  | 2.76   | 10.3                | 5.8     | 1.9     | 0.7     | 1.34                                                                                                                   | 2.63  | 3.95  |  |
| 11                  | 1.29   | 7.1                 | 3.5     | 0.7     | 0.1     | 0.62                                                                                                                   | 1.15  | 1.69  |  |
| 12                  | 1.01   | 8.5                 | 2.9     | 0.4     | 0.0     | 0.72                                                                                                                   | 1.00  | 1.39  |  |
| Summary             | 26.49  | 111.3               | 58.4    | 15.6    | 4.7     | 16.11                                                                                                                  | 24.57 | 34.96 |  |

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| Snow (in.) |                  |                        |      |     |      |       |                          |     |     |     |                                                                                                   |       |       |
|------------|------------------|------------------------|------|-----|------|-------|--------------------------|-----|-----|-----|---------------------------------------------------------------------------------------------------|-------|-------|
|            | Totals           | Mean Number of Days    |      |     |      |       |                          |     |     |     | Snow Probabilities<br>Probability that snow will be equal to<br>or less than the indicated amount |       |       |
|            | Means            | Snowfall >= Thresholds |      |     |      |       | Snow Depth >= Thresholds |     |     |     | Monthly Snow vs. Probability Levels<br>Values derived from the<br>incomplete gamma distribution.  |       |       |
| Month      | Snowfall<br>Mean | 0.01                   | 1.0  | 3.0 | 5.00 | 10.00 | 1                        | 3   | 5   | 10  | .25                                                                                               | .50   | .75   |
| 01         | 9.10             | 7.7                    | 3.1  | 0.7 | 0.2  | 0.0   |                          |     |     |     | 5.00                                                                                              | 8.50  | 11.70 |
| 02         | 9.30             | 6.2                    | 3.0  | 0.8 | 0.4  | 0.0   |                          |     |     |     | 4.60                                                                                              | 7.10  | 12.40 |
| 03         | 6.20             | 5.0                    | 2.4  | 0.8 | 0.4  | 0.0   |                          |     |     |     | 3.00                                                                                              | 5.30  | 8.40  |
| 04         | 5.60             | 2.6                    | 1.7  | 0.6 | 0.4  | 0.1   |                          |     |     |     | 2.10                                                                                              | 4.80  | 5.70  |
| 05         | 0.00             | 0.1                    | 0.0  | 0.0 | 0.0  | 0.0   |                          |     |     |     | 0.00                                                                                              | 0.00  | 0.00  |
| 06         | 0.00             | 0.0                    | 0.0  | 0.0 | 0.0  | 0.0   |                          |     |     |     | 0.00                                                                                              | 0.00  | 0.00  |
| 07         | 0.00             | 0.0                    | 0.0  | 0.0 | 0.0  | 0.0   |                          |     |     |     | 0.00                                                                                              | 0.00  | 0.00  |
| 08         | 0.00             | 0.0                    | 0.0  | 0.0 | 0.0  | 0.0   |                          |     |     |     | 0.00                                                                                              | 0.00  | 0.00  |
| 09         | 0.00             | 0.0                    | 0.0  | 0.0 | 0.0  | 0.0   |                          |     |     |     | 0.00                                                                                              | 0.00  | 0.00  |
| 10         | 1.40             | 1.1                    | 0.5  | 0.1 | 0.0  | 0.0   |                          |     |     |     | 0.00                                                                                              | 0.30  | 2.30  |
| 11         | 5.80             | 4.8                    | 2.6  | 0.8 | 0.3  | 0.0   |                          |     |     |     | 0.70                                                                                              | 4.10  | 9.90  |
| 12         | 11.50            | 7.9                    | 4.0  | 1.2 | 0.4  | 0.0   |                          |     |     |     | 8.00                                                                                              | 10.10 | 13.40 |
| Summary    | 48.9             | 35.4                   | 17.3 | 5.0 | 2.1  | 0.1   | 0.0                      | 0.0 | 0.0 | 0.0 | 23.4                                                                                              | 40.2  | 63.8  |

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| Growing Degree Units (Monthly)          |     |     |      |       |       |       |       |       |       |       |      |     |
|-----------------------------------------|-----|-----|------|-------|-------|-------|-------|-------|-------|-------|------|-----|
| Base                                    | Jan | Feb | Mar  | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov  | Dec |
| Growing Degree Units (Monthly)          |     |     |      |       |       |       |       |       |       |       |      |     |
| Base                                    | Jan | Feb | Mar  | Apr   | May   | Jun   | Jul   | Aug   | Sep   | Oct   | Nov  | Dec |
| 40                                      | 0.0 | 0.8 | 18.2 | 123.3 | 432.1 | 718.2 | 884.8 | 824.3 | 525.4 | 173.0 | 24.2 | 0.0 |
| 45                                      | 0.0 | 0.0 | 6.4  | 63.6  | 297.3 | 568.6 | 729.8 | 669.3 | 382.9 | 93.8  | 8.3  | 0.0 |
| 50                                      | 0.0 | 0.0 | 2.3  | 27.0  | 184.1 | 421.6 | 575.0 | 514.9 | 254.8 | 45.6  | 1.9  | 0.0 |
| 55                                      | 0.0 | 0.0 | 0.8  | 8.4   | 99.7  | 282.2 | 421.2 | 363.3 | 149.2 | 18.7  | 0.2  | 0.0 |
| 60                                      | 0.0 | 0.0 | 0.2  | 1.6   | 45.8  | 161.8 | 274.5 | 222.6 | 74.2  | 6.1   | 0.0  | 0.0 |
| Growing Degree Units for Corn (Monthly) |     |     |      |       |       |       |       |       |       |       |      |     |
| 50/86                                   | 0.1 | 1.0 | 16.2 | 86.2  | 257.4 | 442.3 | 575.1 | 523.4 | 307.5 | 95.7  | 15.0 | 0.1 |

| Growing Degree Units (Accumulated Monthly)          |   |   |    |     |     |      |      |      |      |      |      |      |
|-----------------------------------------------------|---|---|----|-----|-----|------|------|------|------|------|------|------|
| 40                                                  | 0 | 1 | 19 | 142 | 574 | 1293 | 2177 | 3002 | 3527 | 3700 | 3724 | 3724 |
| 45                                                  | 0 | 0 | 6  | 70  | 367 | 936  | 1666 | 2335 | 2718 | 2812 | 2820 | 2820 |
| 50                                                  | 0 | 0 | 2  | 29  | 213 | 635  | 1210 | 1725 | 1980 | 2025 | 2027 | 2027 |
| 55                                                  | 0 | 0 | 1  | 9   | 109 | 391  | 812  | 1176 | 1325 | 1344 | 1344 | 1344 |
| 60                                                  | 0 | 0 | 0  | 2   | 48  | 209  | 484  | 706  | 781  | 787  | 787  | 787  |
| Growing Degree Units for Corn (Monthly Accumulated) |   |   |    |     |     |      |      |      |      |      |      |      |
| 50/86                                               | 0 | 1 | 17 | 104 | 361 | 803  | 1378 | 1902 | 2209 | 2305 | 2320 | 2320 |

Note: For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86.  
Empty or blank cells indicate data is missing or insufficient occurrences to compute value.