

## FIRST AND LAST AVERAGE FROST DATE FOR SONOMA COUNTY

While the past is not an absolute predictor of the future, past climate data is analyzed to determine the *average* first and last frost dates. The averages are derived from a 30-year NOAA dataset that includes frost-freeze date probabilities for locations throughout the United States. The datasets are updated every ten years. The 1971-2000 dataset<sup>i</sup> is archived for historical reference in state-wide formats. The 1981-2010 freeze data (published in 2016) uses an interactive map to locate freeze data for individual weather stations.<sup>ii</sup>

The 1981-2010 NOAA climate data below lists seven weather stations in Sonoma County: Cloverdale, Graton, Healdsburg, Petaluma, Santa Rosa (both Sonoma Airport and near Doyle Park) and Sonoma. Note that the data below predicts 10-, 50- and 90-percent probabilities of frost occurring before or after a particular date for a particular location. The threshold temperatures are significant: 36 degrees F suggests the potential for light frost; 32 F is the freezing point; 28 F is considered a hard freeze. Many seed company catalogs and online gardening sources only cite the 50-percent probability for 32 degrees F. When seeding and planting, consider the full array of frost/freeze information in NOAA's dataset. Remember that these are 30-year averages for past weather. Microclimates have their own characteristics that impact the occurrence of frost. Apply the following information as a guideline.

**FALL—FIRST FROST DATE** (probability of earlier date in fall than indicated):

| LOCATION                  | Thresholds (degrees F) | 10% Probability | 50% Probability | 90% Probability |
|---------------------------|------------------------|-----------------|-----------------|-----------------|
| Cloverdale                | 36                     | Nov 5           | Nov 22          | Dec 8           |
|                           | 32                     | Nov 20          | Dec 7           | Jan 4           |
|                           | 28                     | Dec 1           | Dec 22          | Jan 27          |
| Graton                    | 36                     | Oct 1           | Oct 20          | Nov 7           |
|                           | 32                     | Oct 22          | Nov 9           | Dec 3           |
|                           | 28                     | Nov 9           | Dec 1           | Jan 4           |
| Healdsburg                | 36                     | Nov 3           | Nov 20          | Dec 6           |
|                           | 32                     | Nov 15          | Dec 5           | Jan 4           |
|                           | 28                     | Nov 29          | Dec 23          | Jan 23          |
| Petaluma Airport          | 36                     | Oct 28          | Nov 11          | Dec 1           |
|                           | 32                     | Nov 9           | Nov 29          | Dec 28          |
|                           | 28                     | Nov 23          | Dec 14          | Jan 22          |
| Santa Rosa Sonoma Airport | 36                     | Oct 21          | Nov 5           | Nov 22          |
|                           | 32                     | Nov 6           | Nov 24          | Dec 15          |
|                           | 28                     | Nov 22          | Dec 10          | Jan 13          |
| Santa Rosa City           | 36                     | Nov 3           | Nov 17          | Dec 4           |
|                           | 32                     | Nov 15          | Dec 3           | Jan 2           |
|                           | 28                     | Dec 1           | Dec 23          | Jan 24          |
| Sonoma                    | 36                     | Oct 19          | Nov 6           | Nov 26          |
|                           | 32                     | Nov 4           | Nov 27          | Dec 19          |
|                           | 28                     | Nov 20          | Dec 13          | Jan 18          |

**SPRING—LAST FROST DATE** (probability of later date in spring than indicated):

| <b>LOCATION</b>              | <b>Thresholds<br/>(degrees F)</b> | <b>90%<br/>Probability</b> | <b>50%<br/>Probability</b> | <b>10%<br/>Probability</b> |
|------------------------------|-----------------------------------|----------------------------|----------------------------|----------------------------|
| Cloverdale                   | 36                                | Feb 23                     | Apr 1                      | Apr 30                     |
|                              | 32                                | Jan 7                      | Feb 11                     | Mar 28                     |
|                              | 28                                | Dec 17                     | Jan 10                     | Feb 13                     |
| Graton                       | 36                                | Apr 11                     | May 2                      | May 29                     |
|                              | 32                                | Feb 25                     | Mar 31                     | Apr 28                     |
|                              | 28                                | Jan 4                      | Feb 14                     | Mar 19                     |
| Healdsburg                   | 36                                | Feb 23                     | Mar 26                     | Apr 17                     |
|                              | 32                                | Jan 5                      | Feb 9                      | Mar 11                     |
|                              | 28                                | Dec 16                     | Jan 10                     | Feb 8                      |
| Petaluma<br>Airport          | 36                                | Mar 9                      | Apr 10                     | May 6                      |
|                              | 32                                | Jan 20                     | Feb 25                     | Apr 9                      |
|                              | 28                                | Dec 18                     | Jan 20                     | Feb 19                     |
| Santa Rosa<br>Sonoma Airport | 36                                | Mar 22                     | Apr 15                     | May 2                      |
|                              | 32                                | Jan 31                     | Mar 2                      | Apr 8                      |
|                              | 28                                | Dec 26                     | Jan 30                     | Feb 24                     |
| Santa Rosa<br>City           | 36                                | Feb 27                     | Mar 27                     | Apr 19                     |
|                              | 32                                | Jan 16                     | Feb 13                     | Mar 16                     |
|                              | 28                                | Dec 21                     | Jan 16                     | Feb 12                     |
| Sonoma                       | 36                                | Mar 18                     | Apr 16                     | May 5                      |
|                              | 32                                | Jan 31                     | Mar 6                      | Apr 12                     |
|                              | 28                                | Dec 25                     | Jan 29                     | Feb 25                     |

<sup>i</sup> U.S. Climate Normals: Freeze/Frost Data - CLIM20 supp no.1 (1971-2000), National Environmental Satellite, Data and Information Service, NOAA; for the state of California:

<https://www.ncdc.noaa.gov/climatenormals/clim20supp1/states/CA.pdf>

<sup>ii</sup> U.S. Normals Data (1981-2010) Map, National Climatic Data Center, NOAA,

<https://gis.ncdc.noaa.gov/maps/ncei/normals>