



Department
of Energy &
Climate Change

Thermal growing season in central England

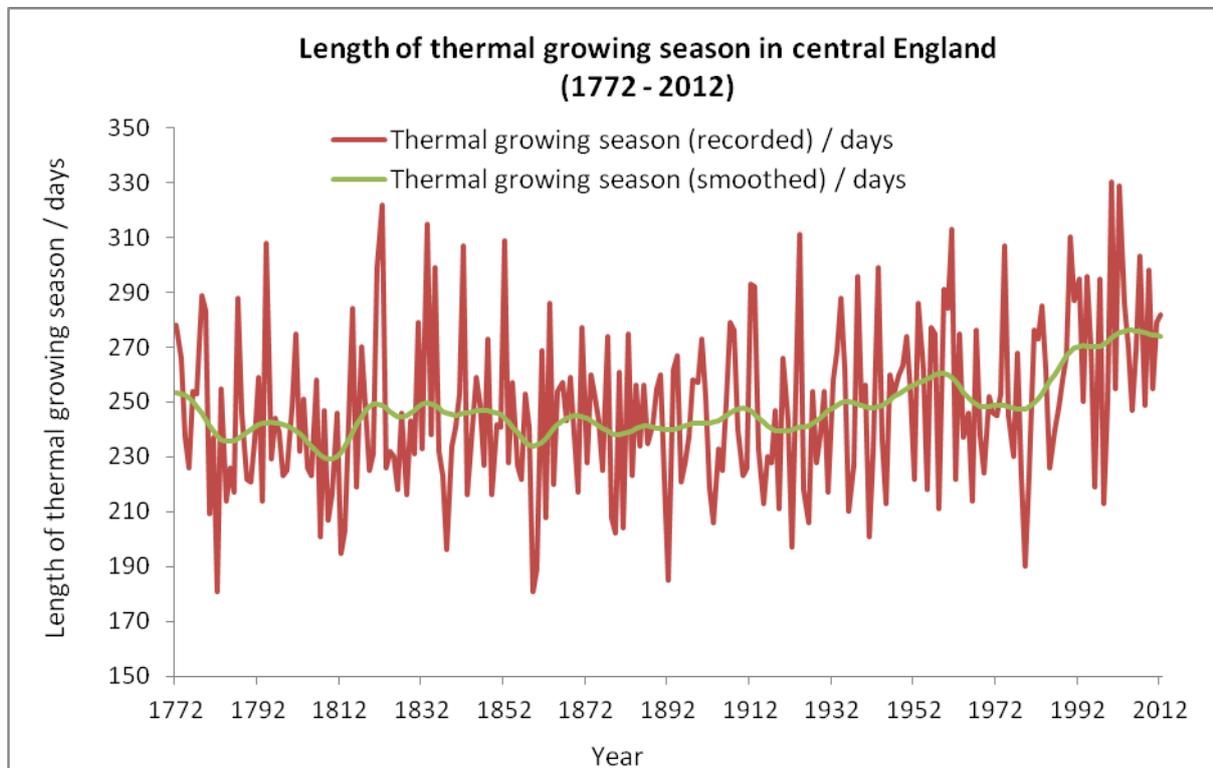
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Data summary

The growing season is the period of time each year during which plants can grow. The length of a thermal growing season is the longest period within a year that meets the following requirements:

- begins at the start of a period of five successive days where the daily-average temperature is greater than 5.0°C
- ends on the day before of a period of five successive days when the daily-average temperature is less than 5.0°C



Year	Recorded length / days	Smoothed length / days
1961-1990 average	252	253
2000	330	273
2005	247	276
2006	269	276
2007	303	276
2008	249	275
2009	298	275
2010	255	275
2011	279	274
2012	282	274

The increase in growing season length since 1980 is largely due to the earlier onset of spring. The earliest start of the thermal growing season was in 2002 when it began on 13 January. The longest growing season in the 240-year series was 330 days, in 2000. The shortest growing season was 181 days in 1782 and 1859. In 2012 the thermal growing season was 282 days, up from 279 days in 2011 and above the 1961-1990 average of 252 days.

The smoothed line gives an indication of the trend but there is greater uncertainty for the first and last decade of the series.

Data sources

The length of thermal growing season is calculated using the mean daily temperature data from the Central England Temperature (CET) dataset.

CET dataset is the longest instrumental record of temperature in the world. The mean monthly series begins in 1659, and the mean daily series in 1772. Both series are kept up to date by the Climate Data Monitoring section of the Hadley Centre, Met Office. The Met Office has also been compiling Maximum, Minimum and Mean Daily Central England Temperatures data files since January 1878.

CET datasets are available on the Met Office website at the link below:

<http://www.metoffice.gov.uk/hadobs/hadcet/>

Background information on data collection and processing



The CET daily, monthly and seasonal temperatures are representative of a roughly triangular area of the United Kingdom enclosed by Lancashire, London and Bristol. Manley (1953, 1974) compiled most of the monthly series, covering 1659 to 1973. These data were updated to 1991 by Parker et al (1992), when they calculated the daily series. Both series are now kept up to date by the Climate Data Monitoring section of the Hadley Centre, Met Office. Since 1974 the data have been adjusted by 0.1-0.3 degree C to allow for urban warming.

The Met Office have also been compiling Maximum, Minimum and Mean Daily Central England Temperatures data files since January 1878. The following stations are used by the Met Office to compile the CET data: Rothamsted, Malvern, Squires Gate and Ringway. In November 2004, the weather station Stonyhurst replaced Ringway and revised urban warming and bias adjustments have now been applied to the Stonyhurst data after a period of reduced reliability from the station in the summer months.

The calculated thermal growing season length data are smoothed to remove short-term variability in the records and to show the long-term trend. This is made by applying a 31-point Gaussian filter. The filter is a weighted moving average of the data, with weights centred on the year of interest.

References

- [Parker, D.E., T.P. Legg, and C.K. Folland. 1992. A new daily Central England Temperature Series, 1772-1991. *Int. J. Clim.*, Vol 12, pp 317-342](#)

Further information

Please email climatechange.statistics@decc.gsi.gov.uk if you have any questions or comments about the information on this page.

