

The English Wine Growing Season, 2019



Tony Eva

**Bringing in the Bacchus
4th October 2019
Earsham, Norfolk**



@EnglishWinesInf

Image © Flint Vineyard

Table of Contents

3	2019 Overview
5	March 2019
8	April 2019
11	May 2019
14	June 2019
17	July 2019
20	August 2019
23	September 2019
26	October 2019
29	2019: Growing Degree Day Development
30	Acknowledgements

Introduction

Winegrowing is very sensitive to weather conditions. Both quality and yield are affected by the timing and amounts of rainfall, heat and sunlight that the vines receive over the course of a growing season.

There is a very large amount of data potentially available to those interested in better understanding how the 2019 vintage of English wine was affected by the weather. This document presents maps and charts in a standard format which aims to be both comprehensible and informative.

Data Sources

All maps are taken from the UK Met Office website (www.metoffice.gov.uk) and are Crown Copyright. The charts of daily temperatures and rainfall have been compiled using two datasets. Temperature data has been taken from the Hadley Centre Central England Temperature (HadCET) dataset which is made available under Open Government License. Daily rainfall data is for South-east England and has been taken from Hadley Centre UK Precipitation (HadUKP) dataset, also made available under Open Government License.

2019 Overview

The setup for the 2019 English winegrowing season began back in February. Average maximum temperatures for February were the hottest on record (dating back to 1910) for SE and South Central England (11.0°C) and for East Anglia (11.5°C). The UK had its first winter day with an official temperature above 20°C on 26 February 2019 when the previous record (Greenwich, 13th February 1998) was beaten by 1.5°C.

Additional warm weather in March promoted an earlier than usual budburst. NIAB-EMR in Kent recorded Chardonnay budburst on 22nd March (“several weeks earlier than usual”) and Fox & Fox (East Sussex) reported Chardonnay budburst on 28th March. Other reports of budburst in March included Camel Valley (Cornwall), Double Hedges (Bedfordshire), Off the Line (East Sussex) and Westwell Wines (Kent).

Widespread frost events occurred on 2nd April and on 11-14th April with more localised events happening as late as 12th May. Frost fans and bougies were brought into action and were very successful, since none of these frosts were as severe as those in 2017. Only small amounts of frost damage were reported by Camel Valley (Cornwall, 29 March), Oatley (Somerset, mid-April) and Whitecastle (Monmouthshire, 4 May).

Good growing conditions with dry weather and near-average temperatures persisted from mid-May until early June. Then two weeks of rain raised the risks of mildew and concern for the imminent flowering season. As flowering kicked off from 20th June onwards, the rain stayed away and temperatures under clearer skies began to rise. The arrival of a late June heatwave (which had given rise to a record-breaking 45.9°C in the south of France) resulted in widespread high temperatures and a maximum temperature of 34°C at Heathrow. The warm

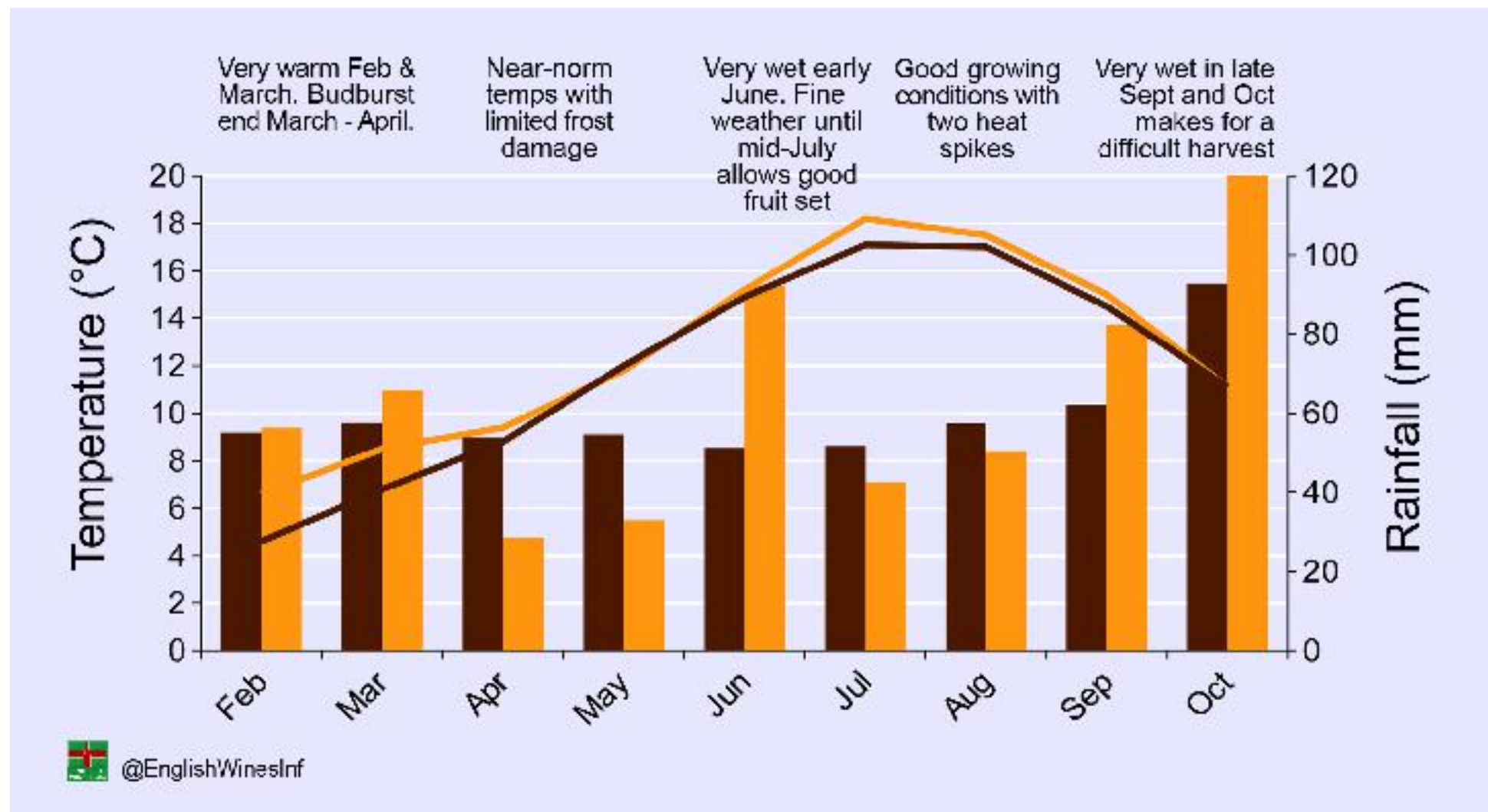
dry weather persisted through much of July, so there was generally good fruit set and vigorous vine growth. Rainfall in late July was often associated with local thunderstorms during spells of hot weather. A widespread heat event lasting from 22-26 July culminated in a new UK record temperature of 38.7°C being recorded at Cambridge Botanic Gardens.

Scattered showers in early August again raised the risk of disease, which did not abate with the arrival of about ten days of more widespread wet and windy weather with below average temperatures. Veraison was now underway and was pushed along by a particularly warm spell beginning on 22nd August. Some vineyards reported heat-stressed bunches, with a 25% loss of Bacchus grapes at Wildwood Vineyard (East Sussex) being an extreme example.

Conditions for ripening were generally good for the first three weeks of September, during which time some producers were able to bring in early varieties. Then the rains started and they continued off and on throughout October. In such conditions winegrowers fret about water uptake diluting grape components and potentially causing the grapes to split and lead to issues with rot. There was nothing particularly unusual about October weather, but it did mean that vineyard managers had to quickly adapt their schedules in order to bring in their harvest and not send sopping or rotten grapes to press.

Winegrowers narrowly dodged a couple of bullets - only minor frost damage after an early budburst and a welcome spell of warm dry weather happily coinciding with flowering. So they ought not to feel too badly about having had to endure disease pressure and a damp harvest season. Yields will be well down on 2018, but maybe not far off a long term average.

2019: Temperature & Rainfall Overview



— Monthly Mean Temp 2019
 — Monthly Mean Temp 1981-2010

■ MM Rainfall 2019
 ■ MM Rainfall 1981-2010

Sources: Southeast & South Central England temperature and precipitation data (Met Office)

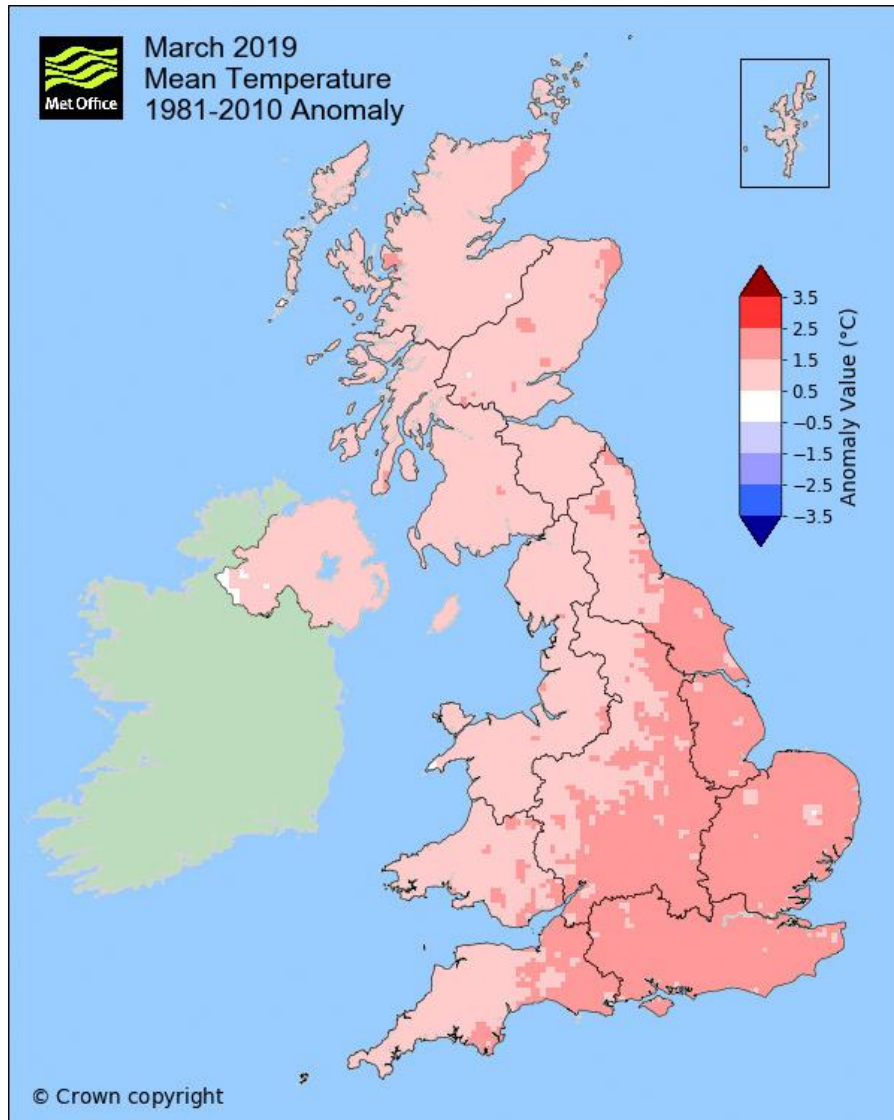
March 2019



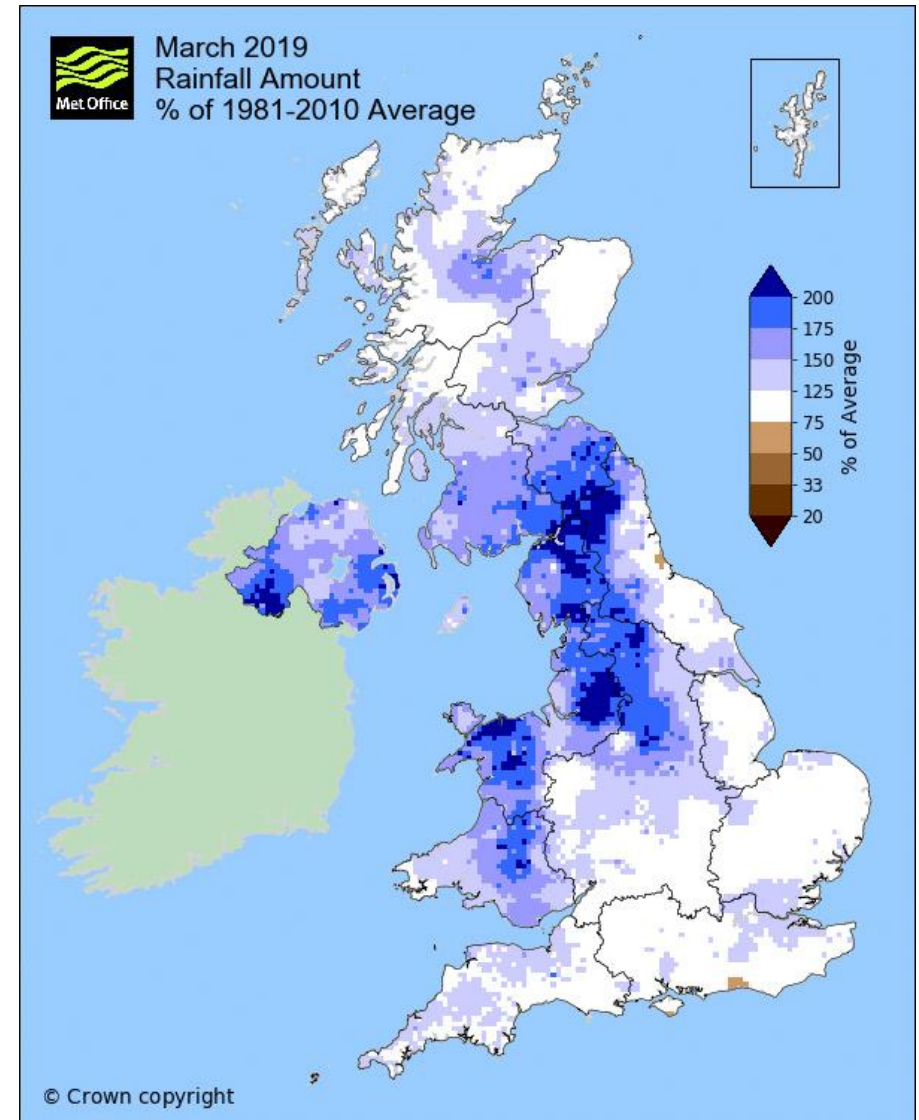
**Ladybird on vine trunk
27 March 2019
Woodchurch, Kent**

Image © Woodchurch Wine

March 2019: Temperature & Rainfall Anomalies

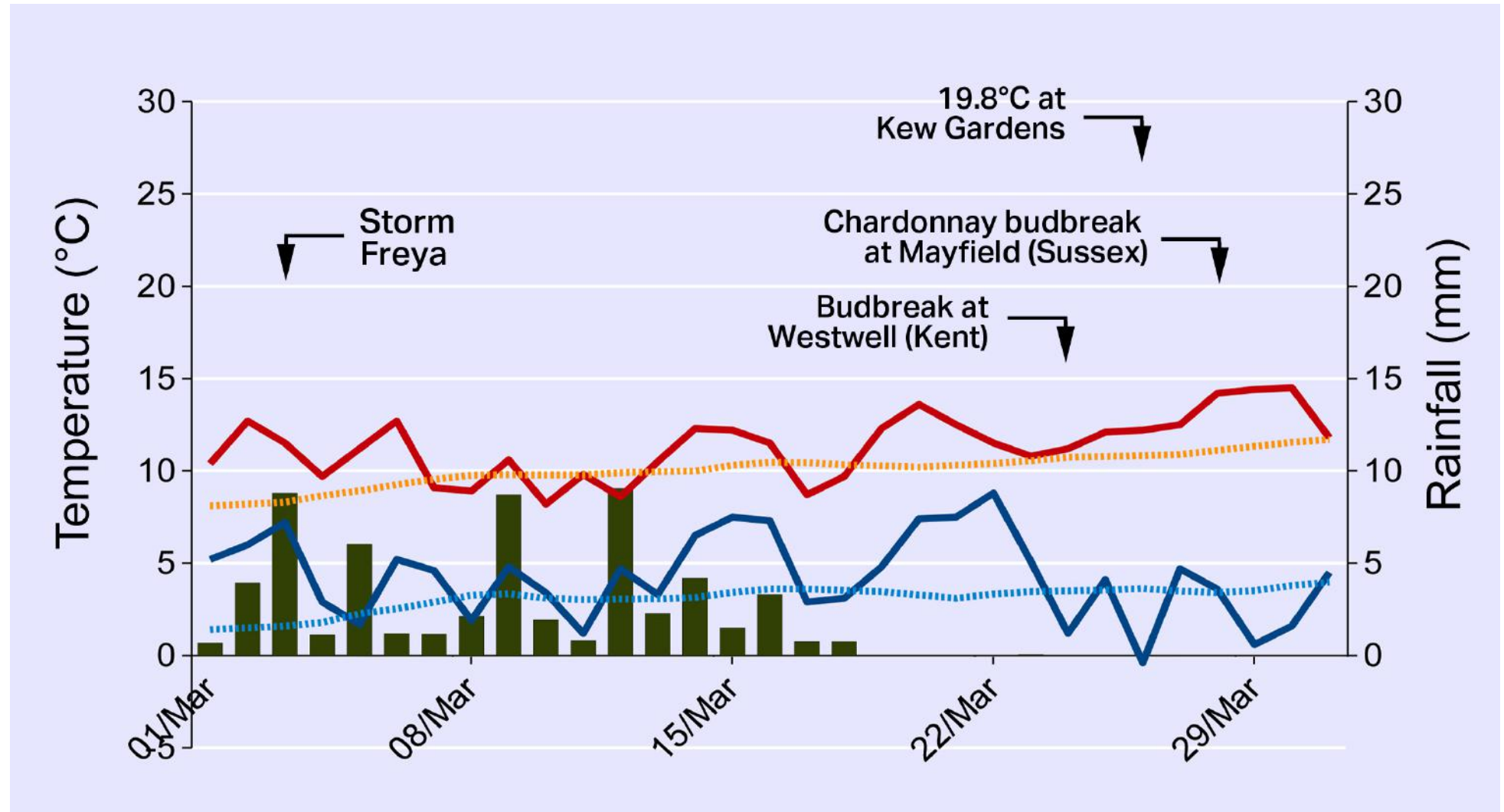


Unusually warm weather in February was followed by more warm weather in March. England as a whole was 1.5°C above the 1981-2010 Long Term Average (LTA) and was the 9th warmest March on record. The mean temperature for SE & S Central England was 8.5°C which is 1.7°C above the LTA.



March was a month of two halves. The first half was mainly wet as fronts came in off the Atlantic, including storm Freya. More settled, drier weather typified the second half. For SE & S Central England there was 65.8mm of rain - 14% above the LTA.

March 2019: Daily Temperatures & Rainfall



2019
 — Max Temp
 — Min Temp

1981-2010
 Av. Max Temp
 Av. Min Temp

■ 2019
 Rainfall

Sources: Central England Temperature and
 Southeast England Precipitation data
 (Met Office, Hadley Centre)

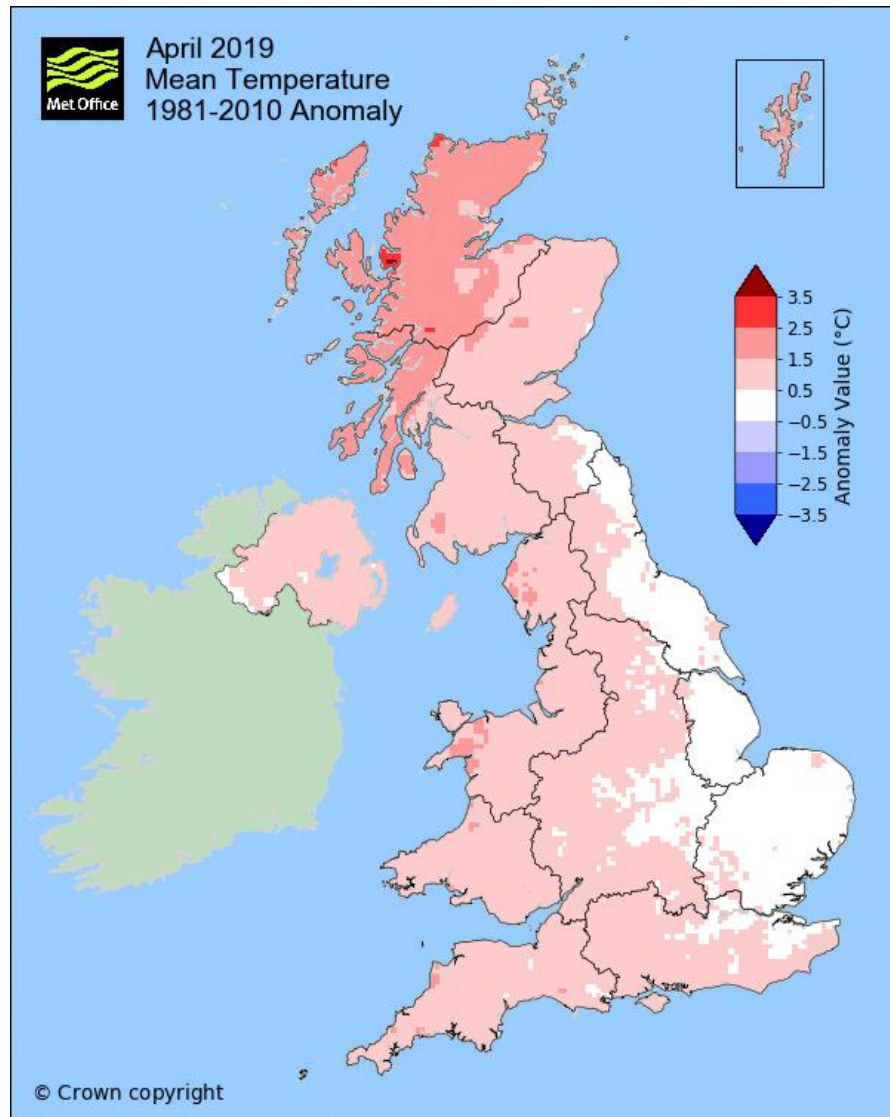
April 2019

**Chardonnay budburst
22 April 2019
Woodchurch, Kent**

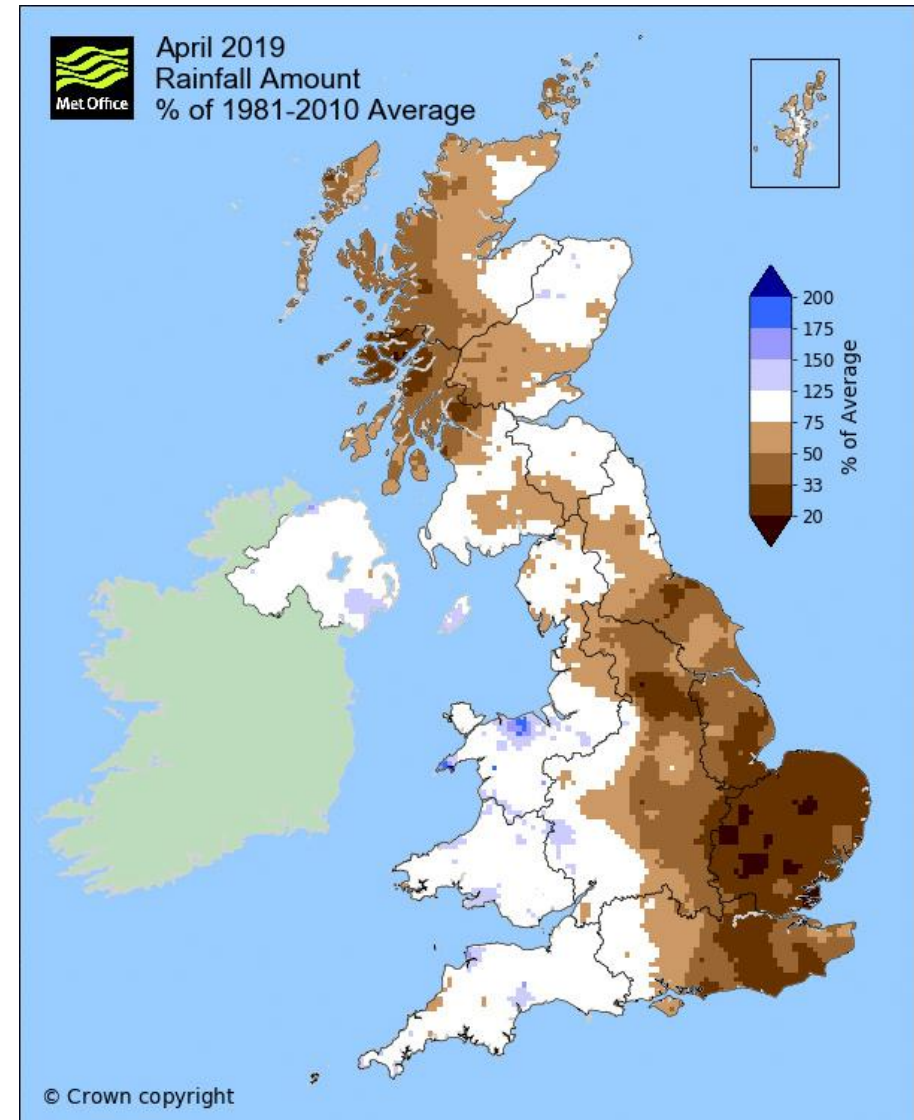
Image © Woodchurch Wine



April 2019: Temperature & Rainfall Anomalies

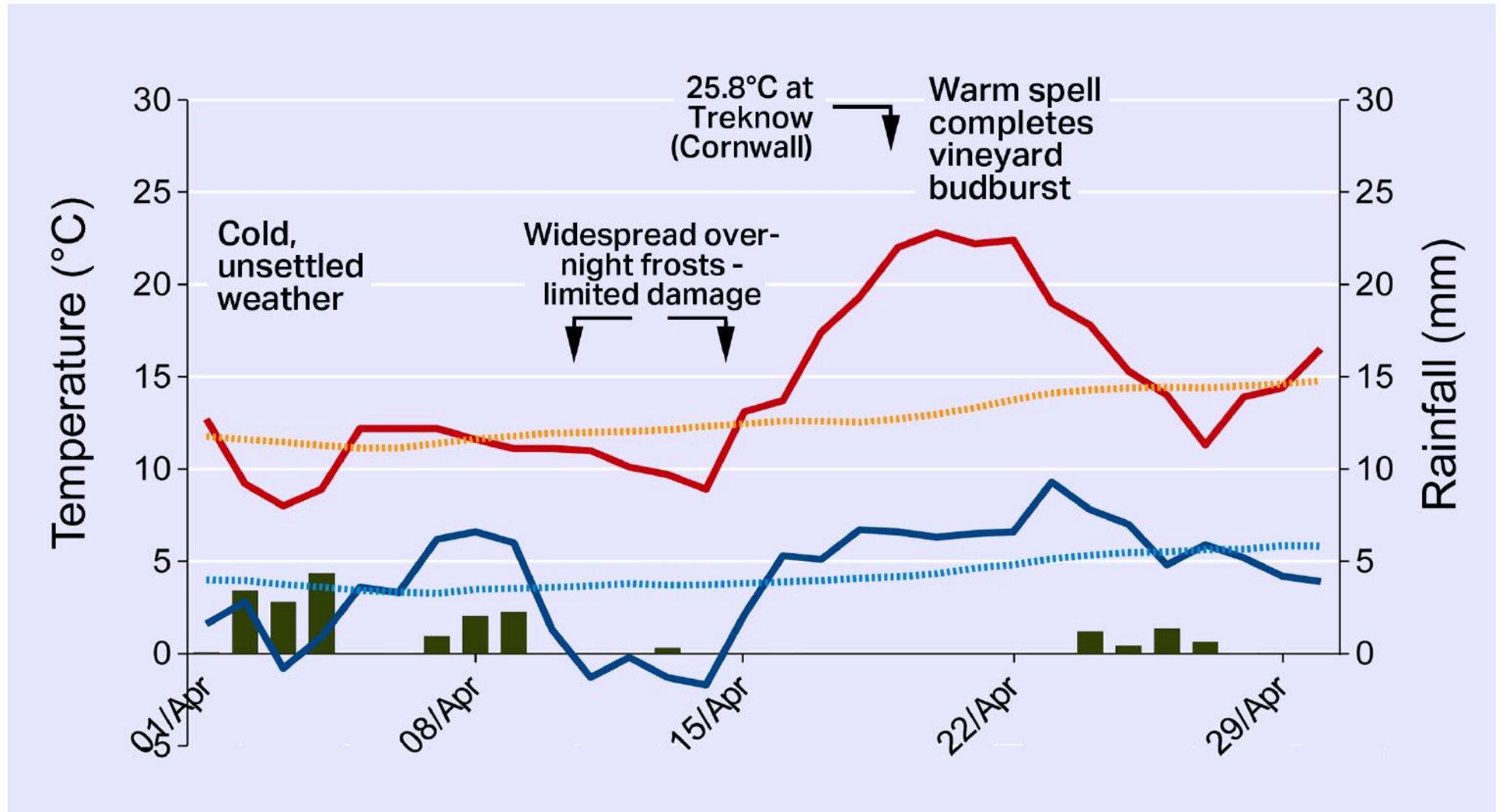


Across England, April was 0.7°C above the 1981-2010 long-term average (LTA), but included within that was considerable temporal variation. Cold easterly air caused local frost damage between 11th-14th, while a warm spell later in the month triggered the completion of vine budburst.



There was a strong east-west variation in the rainfall pattern across England and Wales during April. For SE & S Central England there was 28.4mm of rain, which is little more than half of the LTA. East Anglia was particularly dry and received only 11.3mm rainfall.

April 2019: Daily Temperatures & Rainfall



2019
 — Max Temp
 — Min Temp

1981-2010
 Av. Max Temp
 Av. Min Temp

■ 2019
 Rainfall

Sources: Central England Temperature and
 Southeast England Precipitation data
 (Met Office, Hadley Centre)

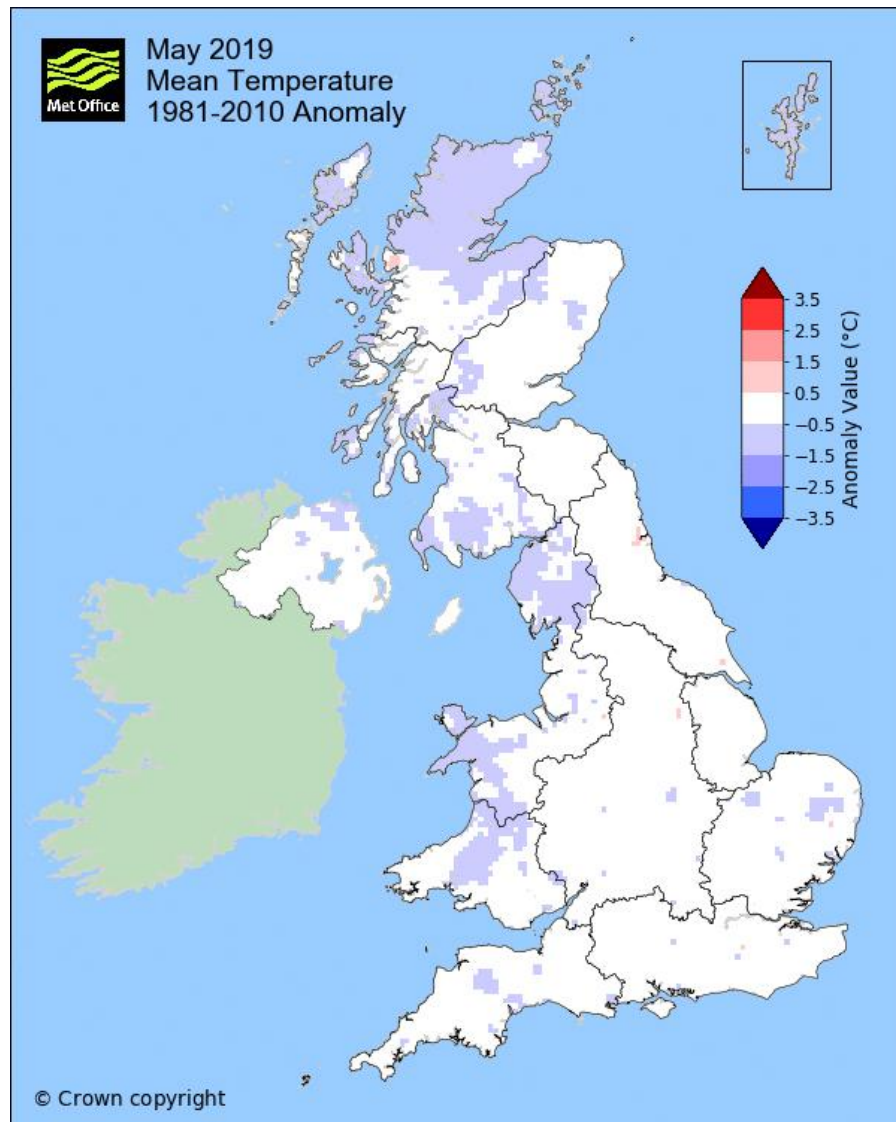
May 2019



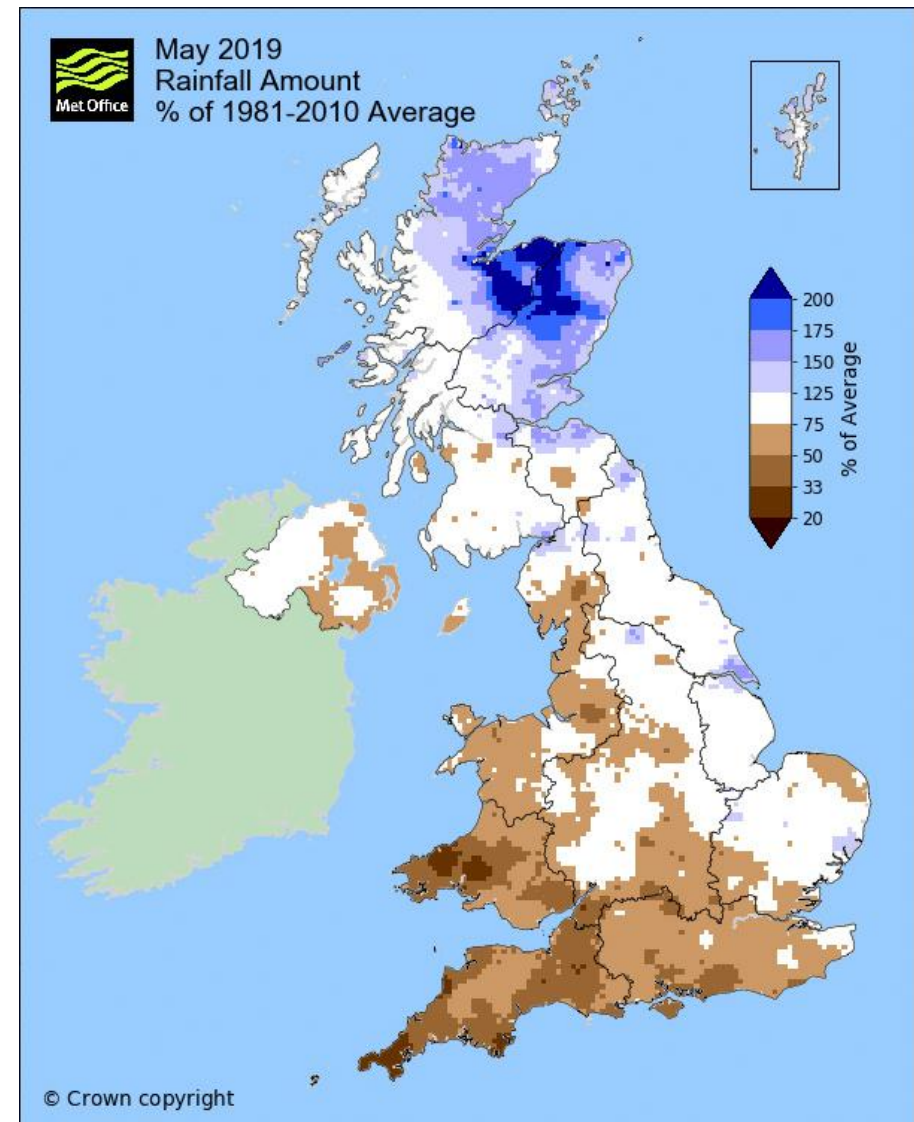
**Bougies in Raimes vineyard
5 May 2019
Hampshire**

Image © SJ Newman

May 2019: Temperature & Rainfall Anomalies

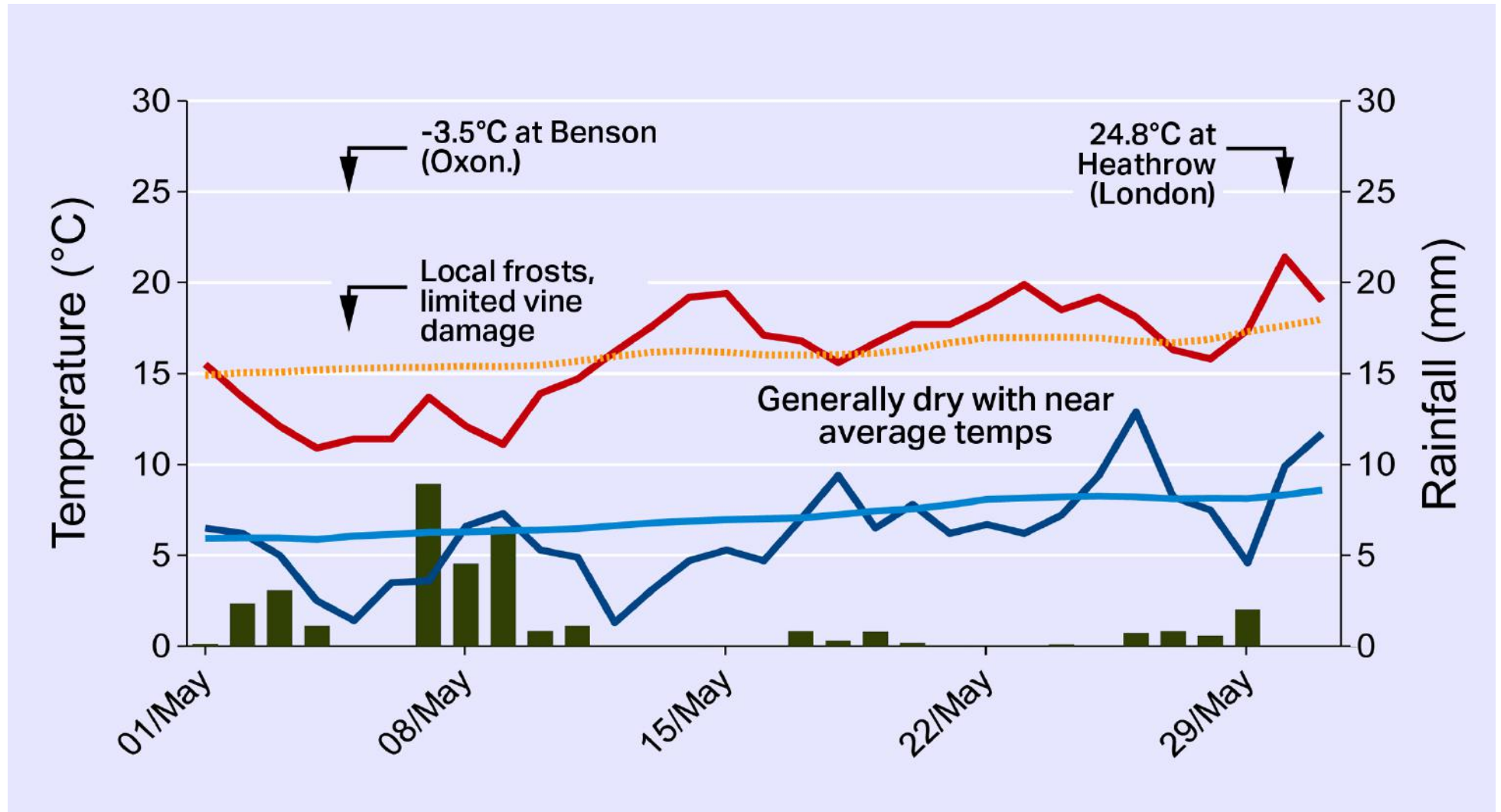


May 2019 saw near-normal temperatures across much of England & Wales. The average temperature for SE & S central England was 11.8°C (+0.2°C compared to the LTA). In East Anglia the average temperature was as 11.6°C (+0.25°C compared to the LTA). Frosts on 5th May caused only localised damage in unprotected vineyards.



SE & S Central England remained drier than normal with 33.0mm of rain, compared to the LTA of 54.6mm rainfall. East Anglia received 43.0mm rain, which is close to their LTA of 48.8mm rainfall.

May 2019: Daily Temperatures & Rainfall



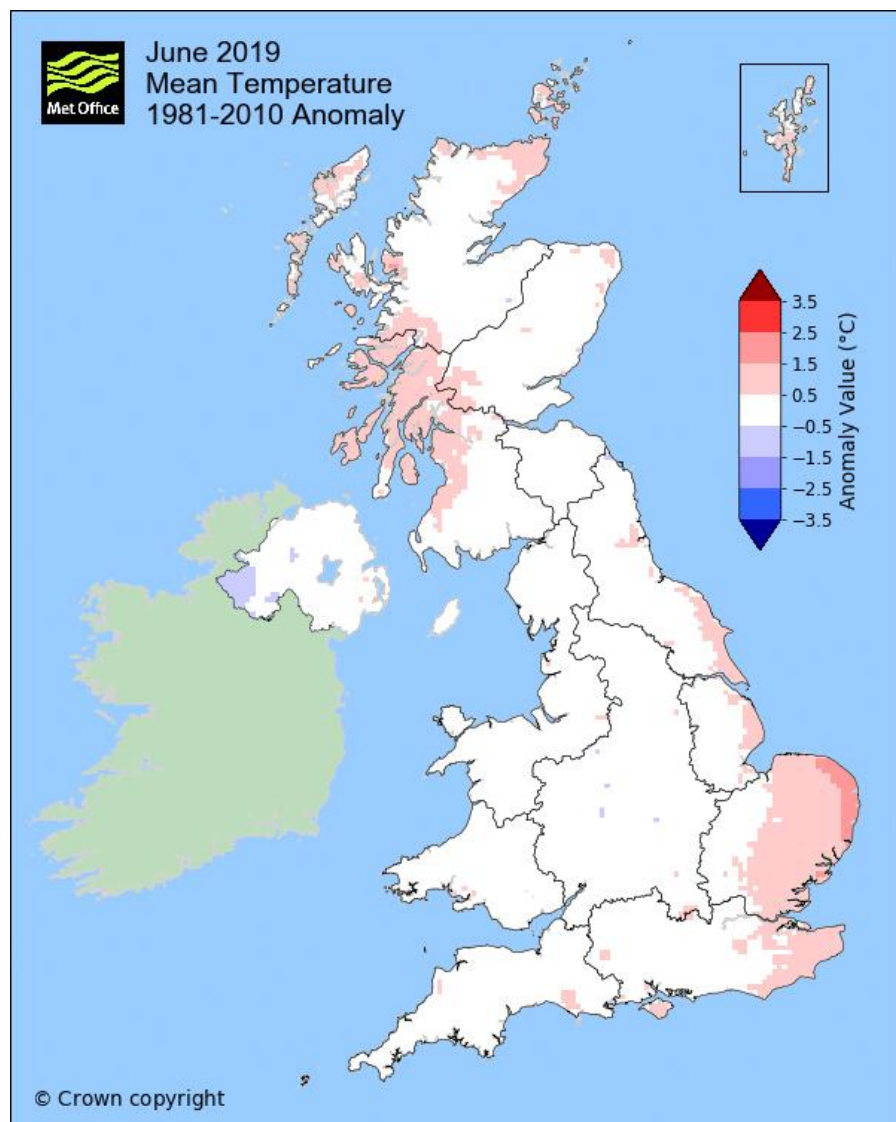
June 2019



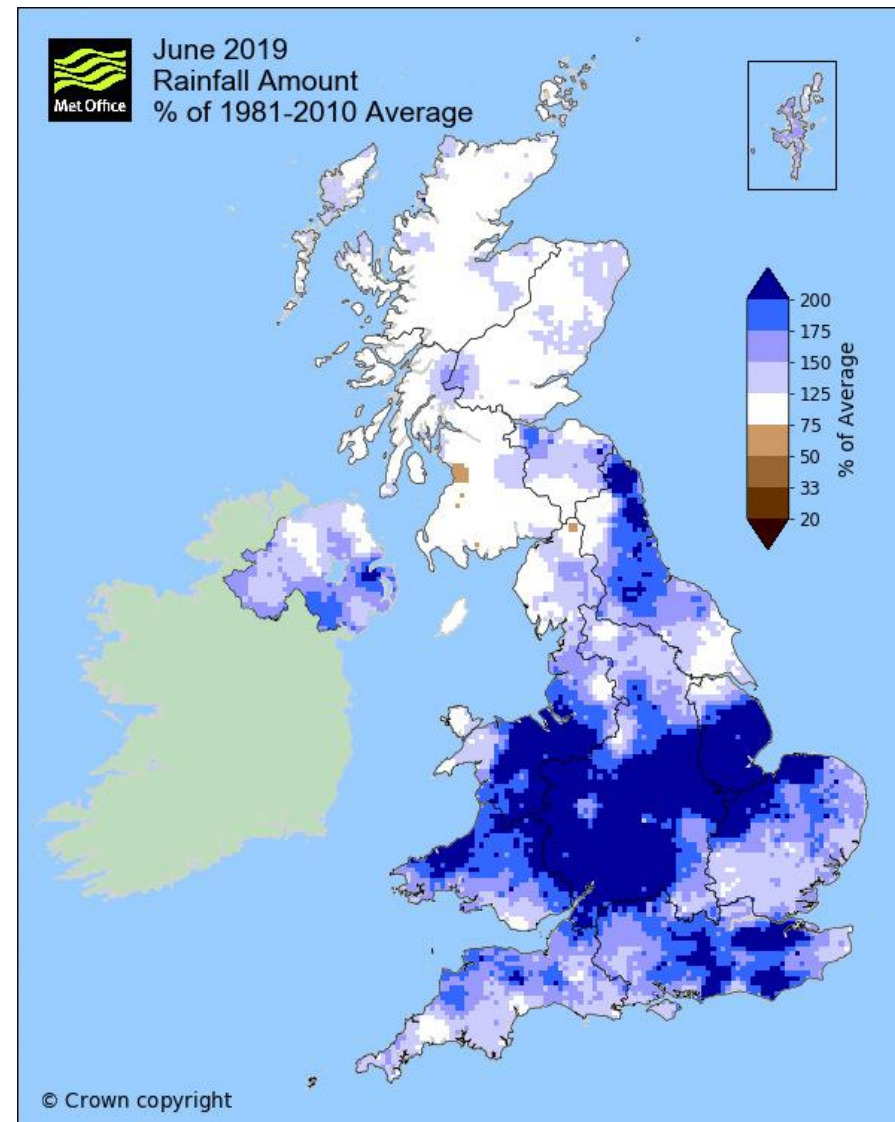
**Rain in the vineyard
10 June 2019
East Sussex**

Image © Off The Line

June 2019: Temperature & Rainfall Anomalies

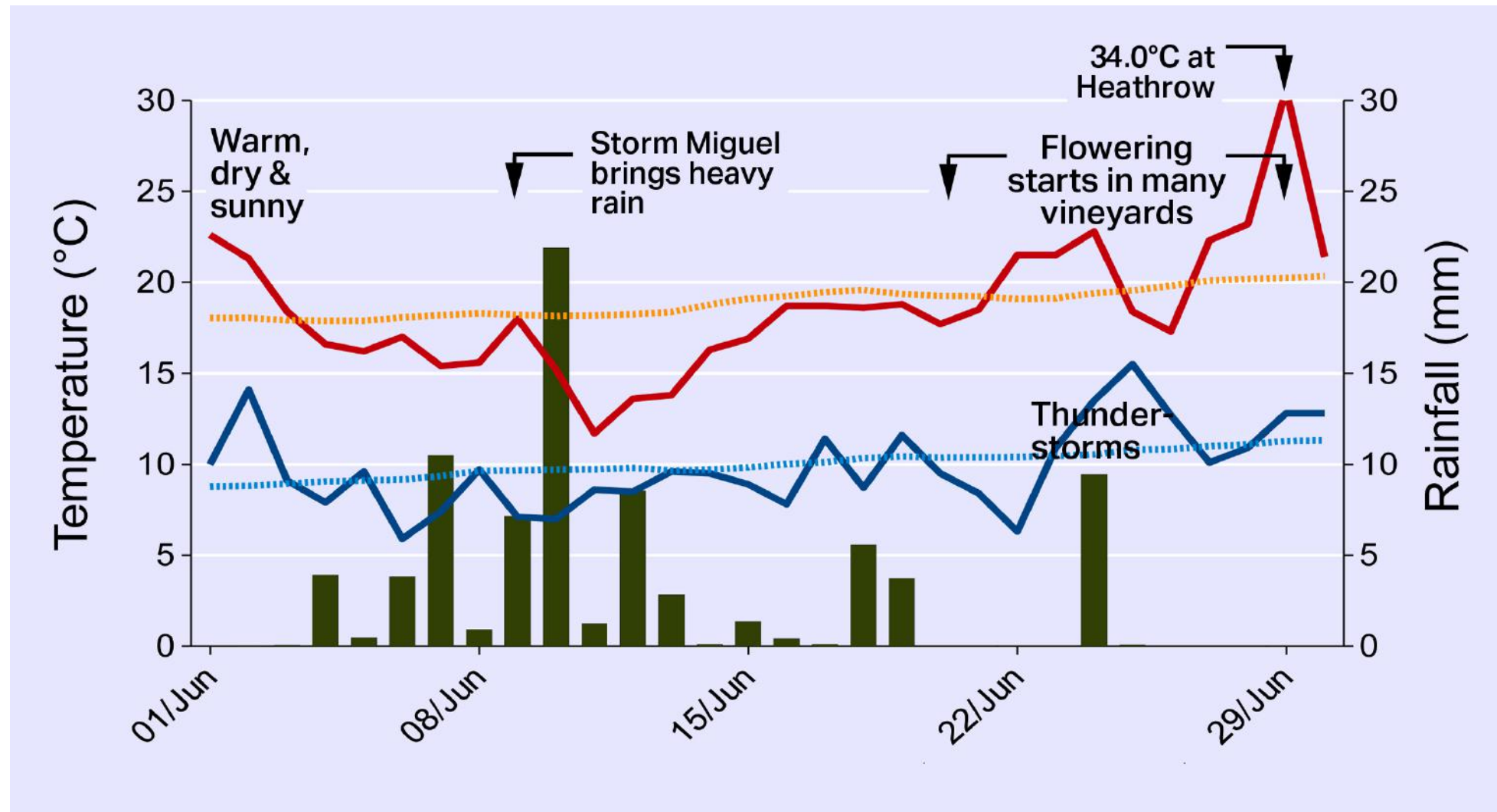


Temperatures across much of England & Wales were near the 1981-2010 Long Term Average (LTA). Temperature anomalies were greatest in eastern England with East Anglia having an average temperatures of 15.5°C (+0.7°C compared to the LTA).



Following two drier than normal months in most vineyards, the rains returned in force, especially in the first half of June. SE & S Central England received 92.3mm rain (compared to the LTA of 51.2mm) while East Anglia received 89.5mm rainfall (LTA of 52.9mm rain).

June 2019: Daily Temperatures & Rainfall



2019
 — Max Temp
 — Min Temp

1981-2010
 Av. Max Temp
 Av. Min Temp

■ 2019
 Rainfall

Sources: Central England Temperature and
 Southeast England Precipitation data
 (Met Office, Hadley Centre)

July 2019

Daily Weather Recording

Date:	25/7/19	9.00 GMT
Maximum Temp	Minimum Temp	Ground Temp
38.7°C	19.4°C	17.6°C
Daily Rainfall	Monthly Rainfall	Yearly Rainfall
0 mm	17.9 mm	291.5 mm

Weather Recording

Monitoring the weather is particularly important for horticulture. Knowledge about climate trends helps us to cultivate our plant collection and make decisions about future plans for the Garden.

Recording the weather since 1904
We started systematically recording weather data here in 1904. First thing each morning our staff record rainfall, air and ground temperature, relative humidity, wind speed and cloud cover - using the weather station in our Research plots. The data we record is then sent on to the Meteorological Office to support national weather records.

Highest and lowest of Cambridge weather
Our driest year, since we started recording, was in 1996, when just under 400mm of rain fell. Our wettest year was 2012, when 812.5 mm rain fell. Summer temperature maximums are usually reached in July, with a 30-year average of 22°C. The hottest day ever recorded at the Garden was 35.7°C, in August 2003. The coldest was -17.2°C, recorded in the Winter of 1947.

Driest Botanic Garden in the UK
Cambridge is in the driest region of the UK with a 30-year average annual rainfall of 1150mm. This makes us the driest Botanic Garden in the UK - the annual average received by RBG Kew was 629mm, Oxford Botanic Garden 646mm, and RBG Edinburgh 698mm.

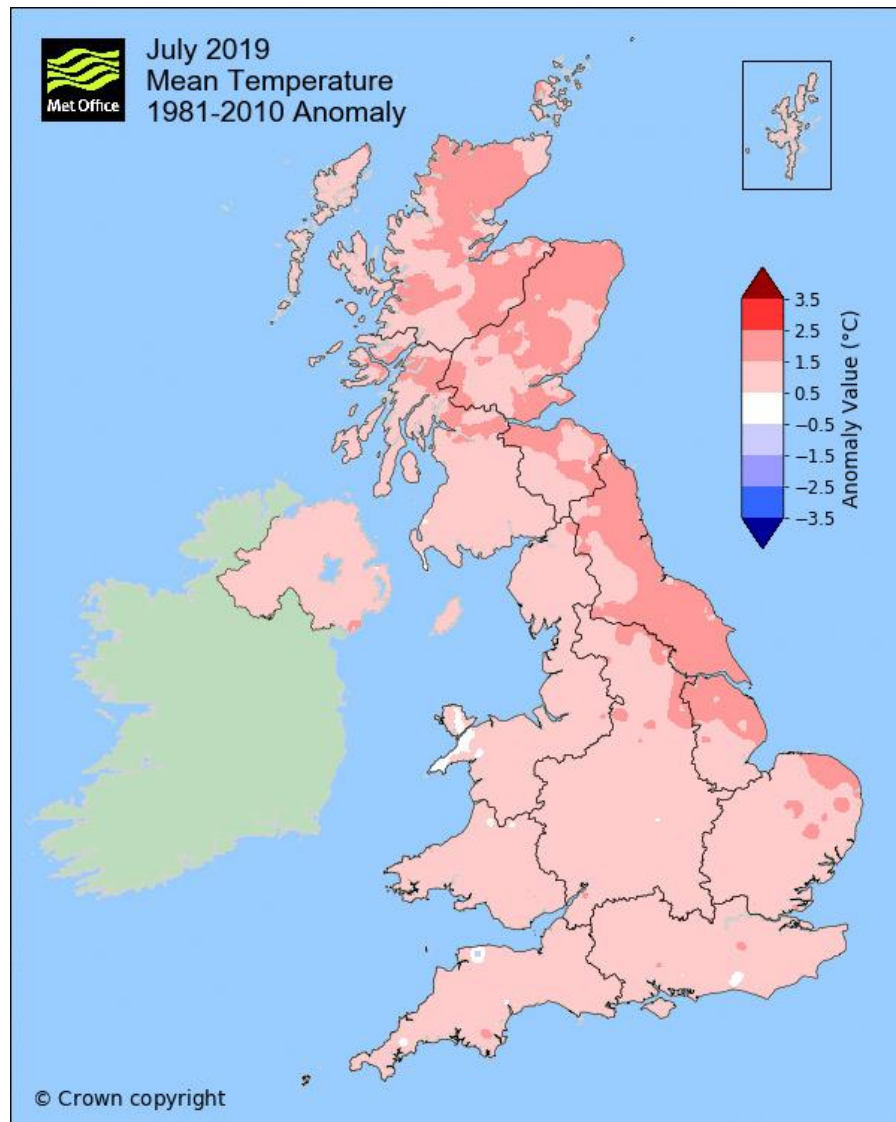
Our weather station is located in the Research plots.

Finding enough snow to build a snowman in the Garden

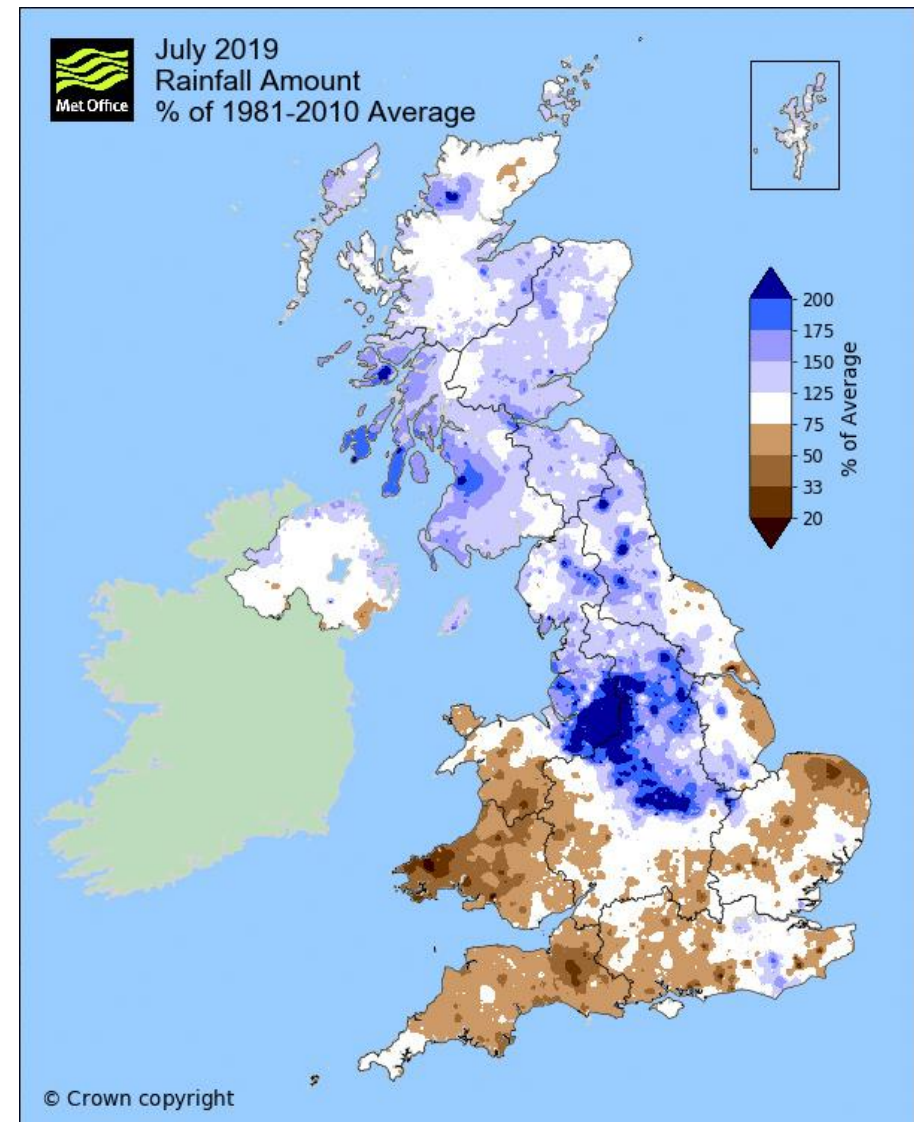
New UK temperature record 25 July 2019 Cambridge

Image © Cambridge Botanic Gardens

July 2019: Temperature & Rainfall Anomalies

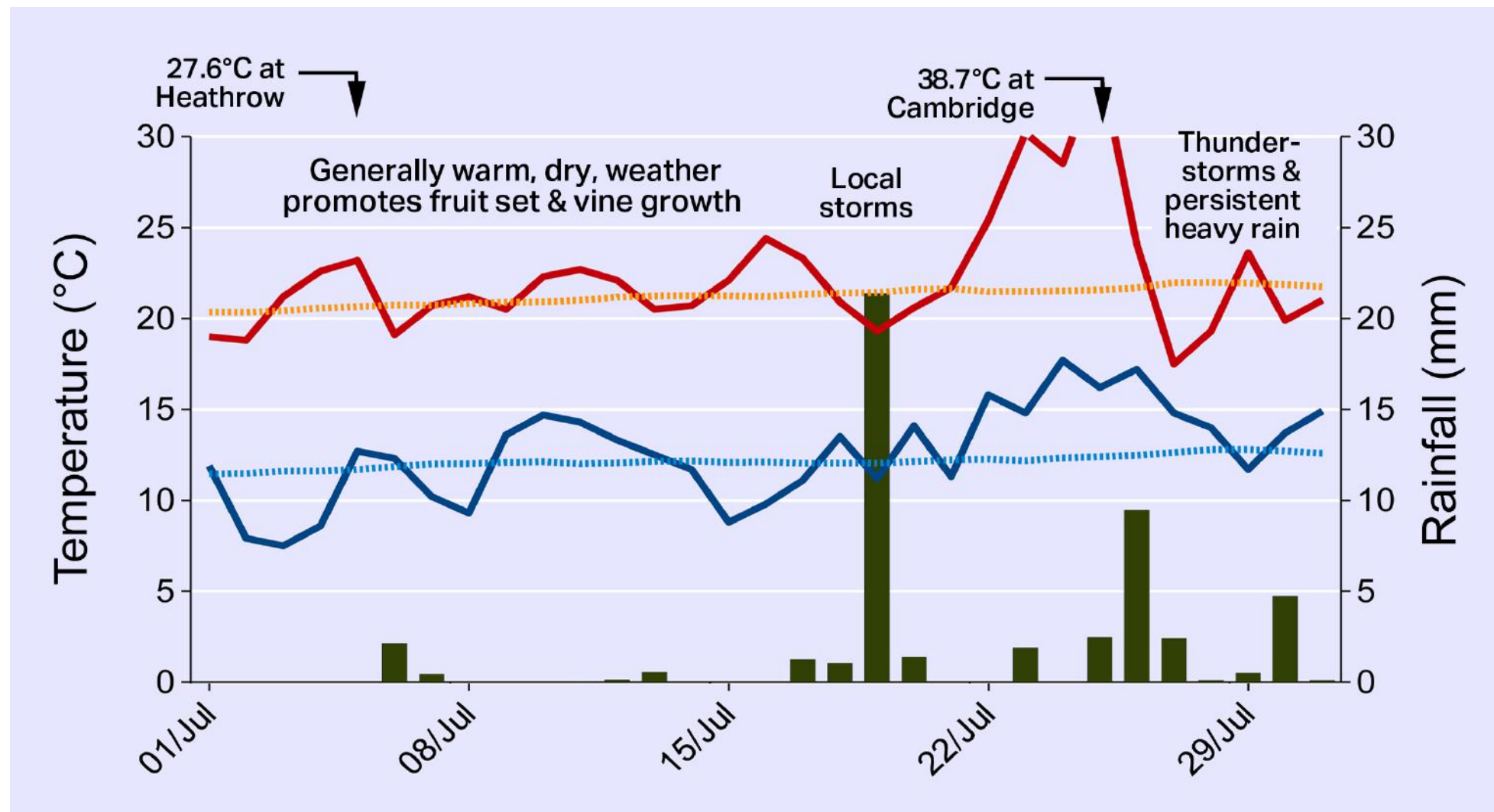


The first half of July, throughout much of southern England and Wales, had near-normal temperatures and was generally dry. An exceptionally warm spell from 22-25 July culminated in a new UK record temperature of 38.7°C being set at Cambridge Botanic gardens on 25th July.



Most of the July rainfall in southern England and Wales was associated with local thunderstorms in the second half of the month. While these areas were generally drier than normal, parts of northwest and central England received double the amount of rainfall than the LTA.

July 2019: Daily Temperatures & Rainfall



2019
 — Max Temp
 — Min Temp

1981-2010
 Av. Max Temp
 Av. Min Temp

■ 2019
 Rainfall

Sources: Central England Temperature and
 Southeast England Precipitation data
 (Met Office, Hadley Centre)

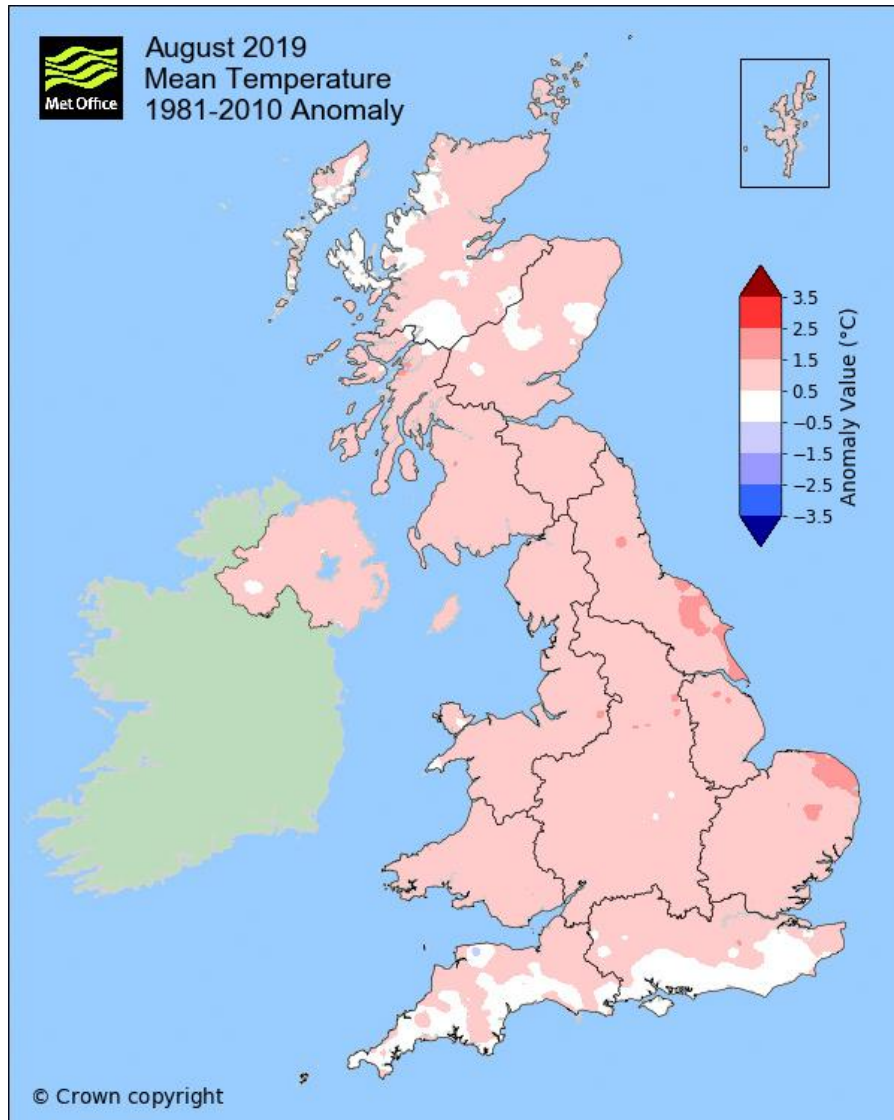
A close-up photograph of Pinot Noir grape clusters on a vine. The grapes are in various stages of ripeness, with some being green and others a deep purple. Large, green, serrated leaves are visible in the background and foreground. The lighting is bright, suggesting a sunny day.

August 2019

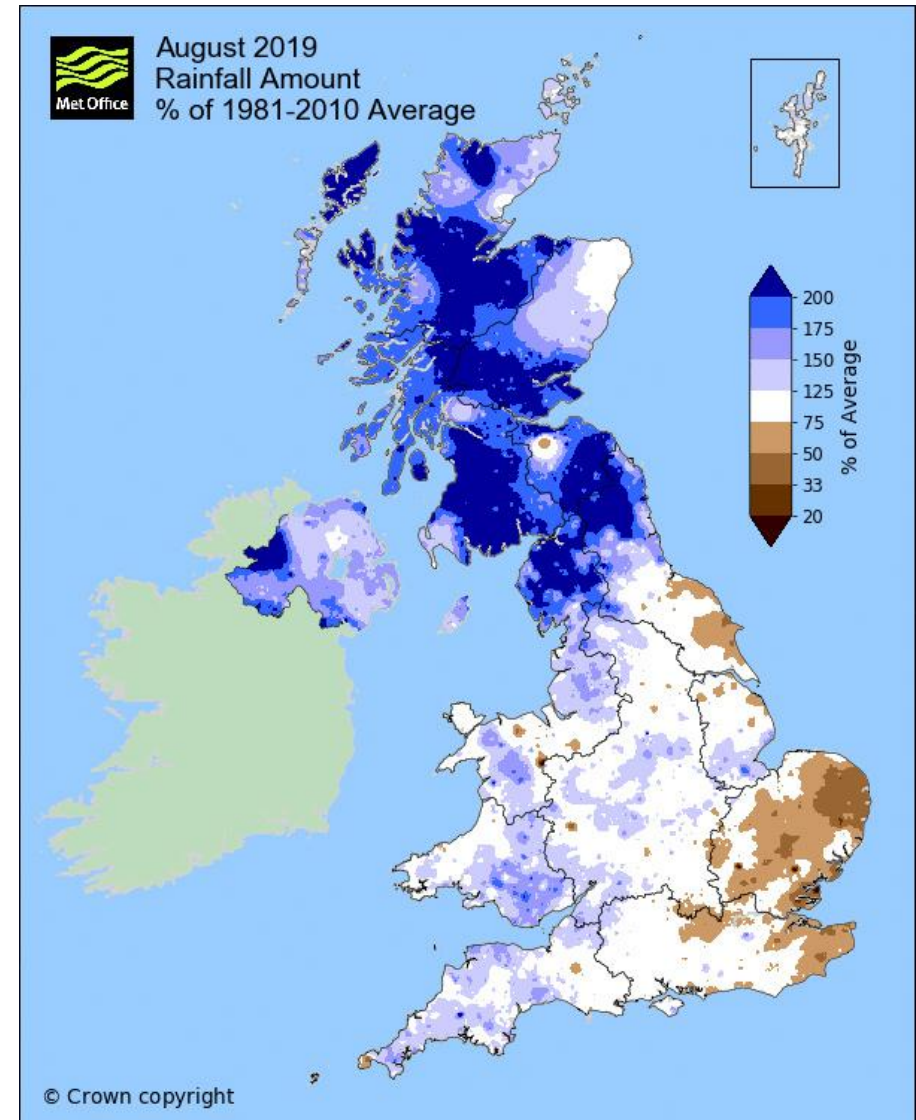
**Pinot Noir Précoce veraison
13 August 2019
Sandhurst, Kent**

Image © Sandhurst Vineyard

August 2019: Temperature & Rainfall Anomalies

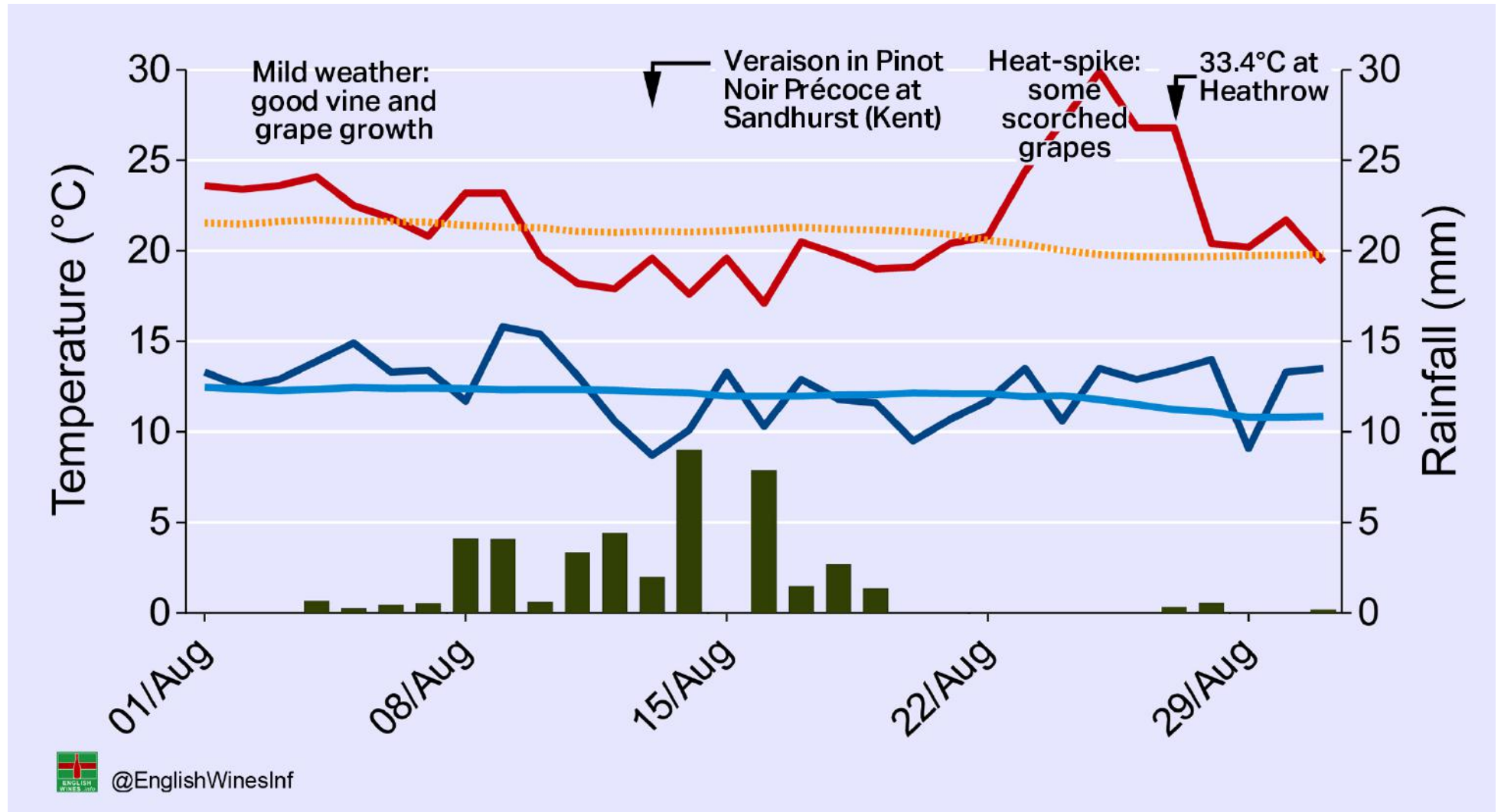


Southern and central England had near-normal temperatures for the first three weeks of August, with cooler spells when depressions brought in wet windy weather. A hot spell from 21-27 August set a new high temperature record for the Bank holiday weekend (33.4°C) and raised the monthly average temperature above the LTA.



Rainfall in England and Wales resulted mainly from weather fronts moving from west to east. As a result, southwest England and Wales had slightly higher rainfall than normal, whereas East Anglia and southeast England were drier and sunnier than the LTA.

August 2019: Daily Temperatures & Rainfall



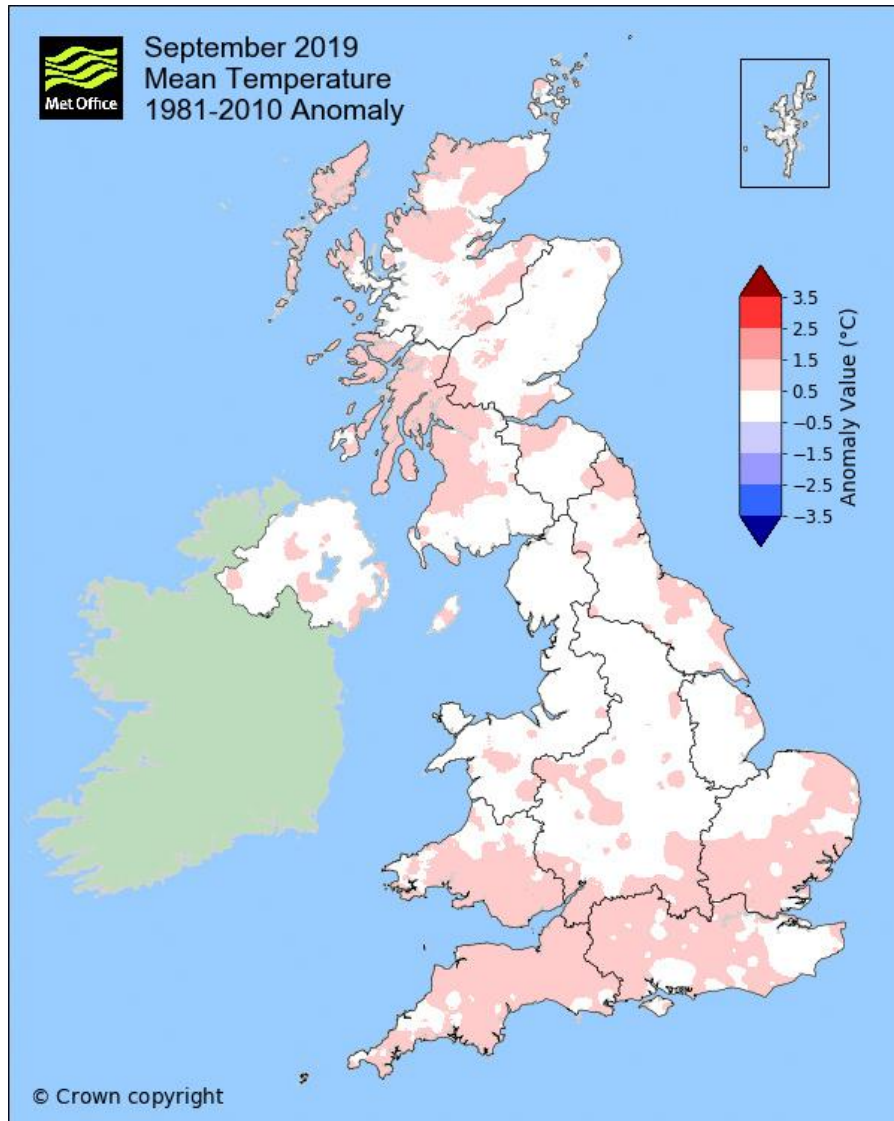
A close-up photograph of a Pinot Noir grapevine. Several large, dense clusters of dark purple grapes are hanging from the branches, surrounded by vibrant green, serrated leaves. The background is a soft-focus view of a vineyard with more trees and foliage.

September 2019

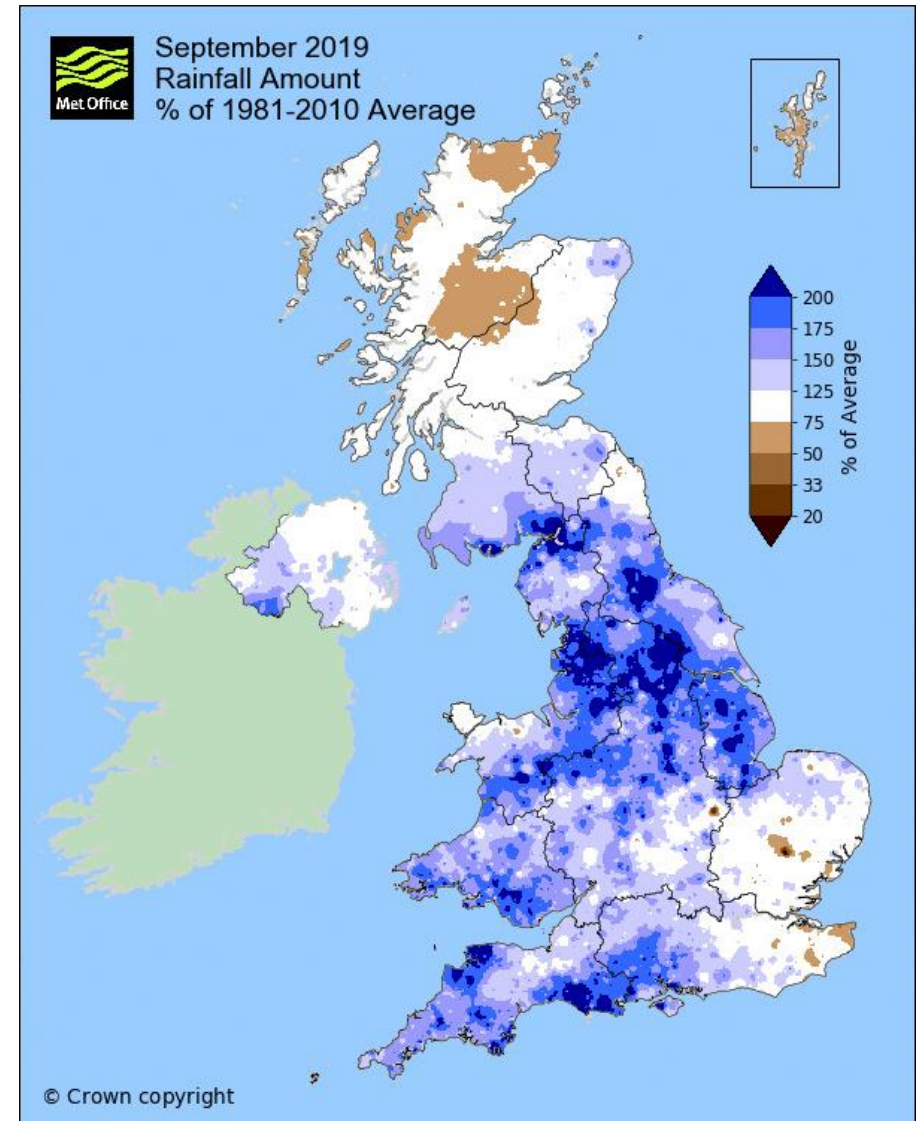
Image © Woodchurch Wine

**Pinot Noir ripening
11 September 2019
Woodchurch, Kent**

Sept 2019: Temperature & Rainfall Anomalies

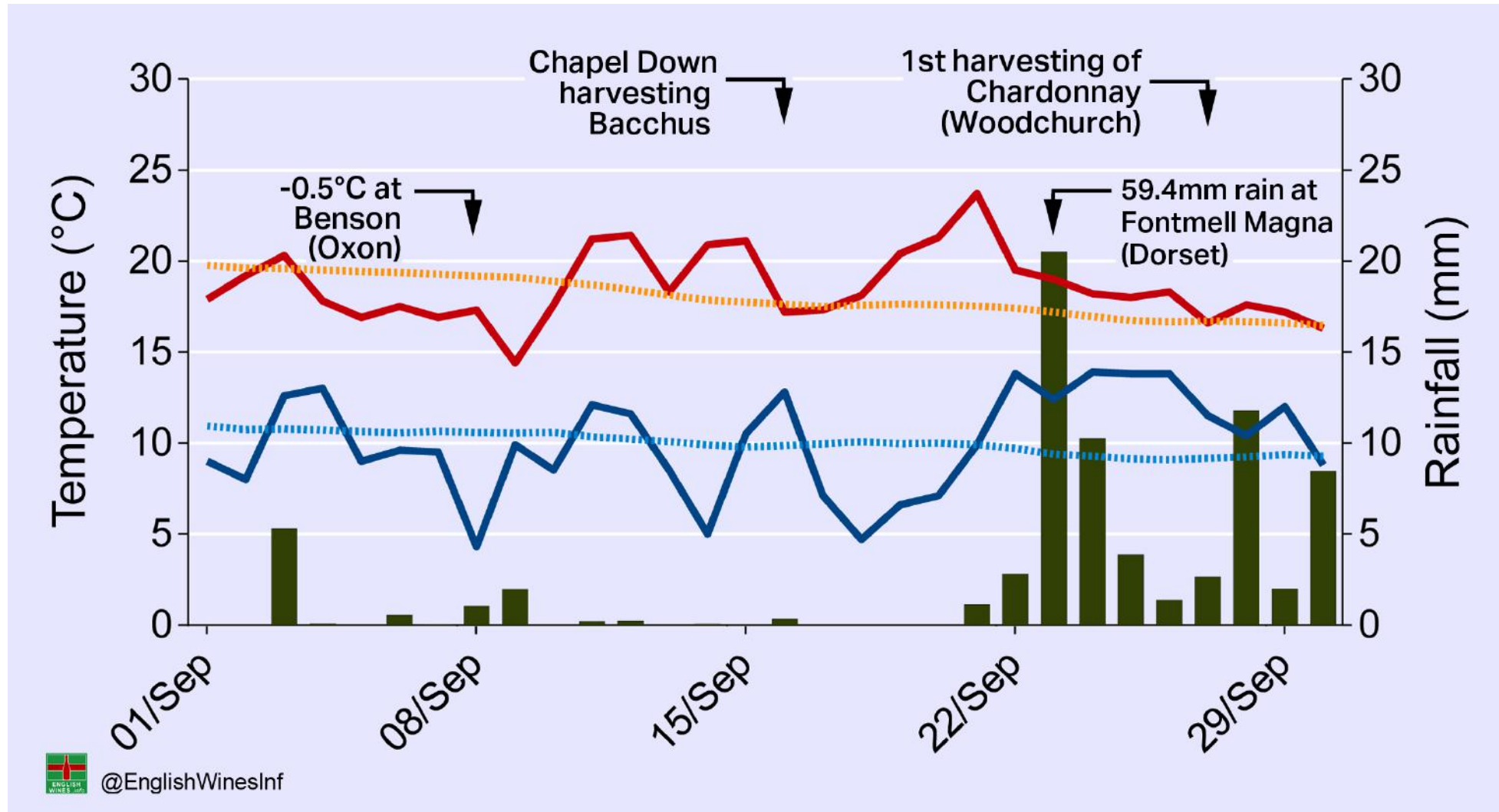


The average temperature for SE & S Central England was 15.0°C, or 0.5°C above the 1981-2010 LTA. The first three weeks of September often had clear skies which gave rise to warm days and cold nights. The first localised frosts were recorded on 8th September.



The first two thirds of September had below average rainfall. This was followed by more unsettled weather with heavy spells of rain. Of the main winegrowing regions, SW England received the most rainfall (162mm; 167% of LTA) and East Anglia the least (58mm; 110% of LTA).

September 2019: Daily Temperatures & Rainfall



2019
 — Max Temp
 — Min Temp

1981-2010
 Av. Max Temp
 Av. Min Temp

■ 2019 Rainfall

Sources: Central England Temperature and Southeast England Precipitation data (Met Office, Hadley Centre)

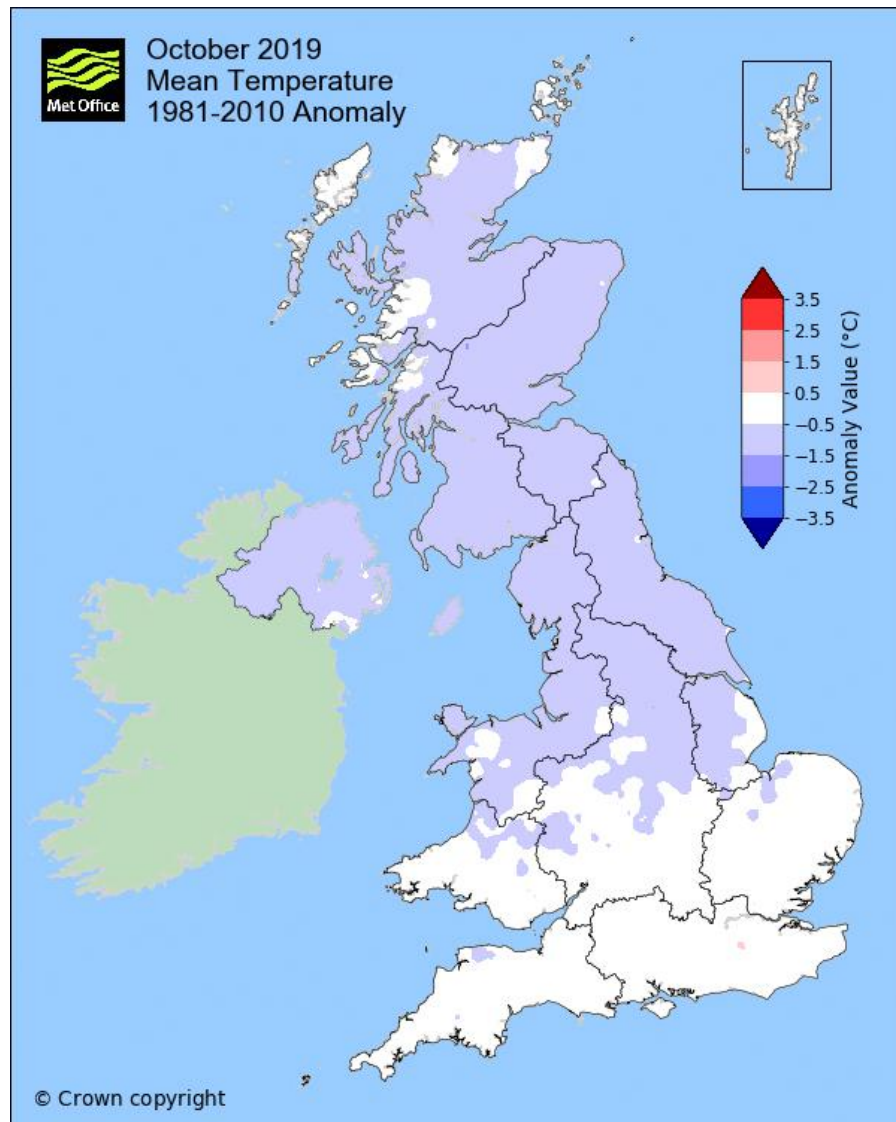


October 2019

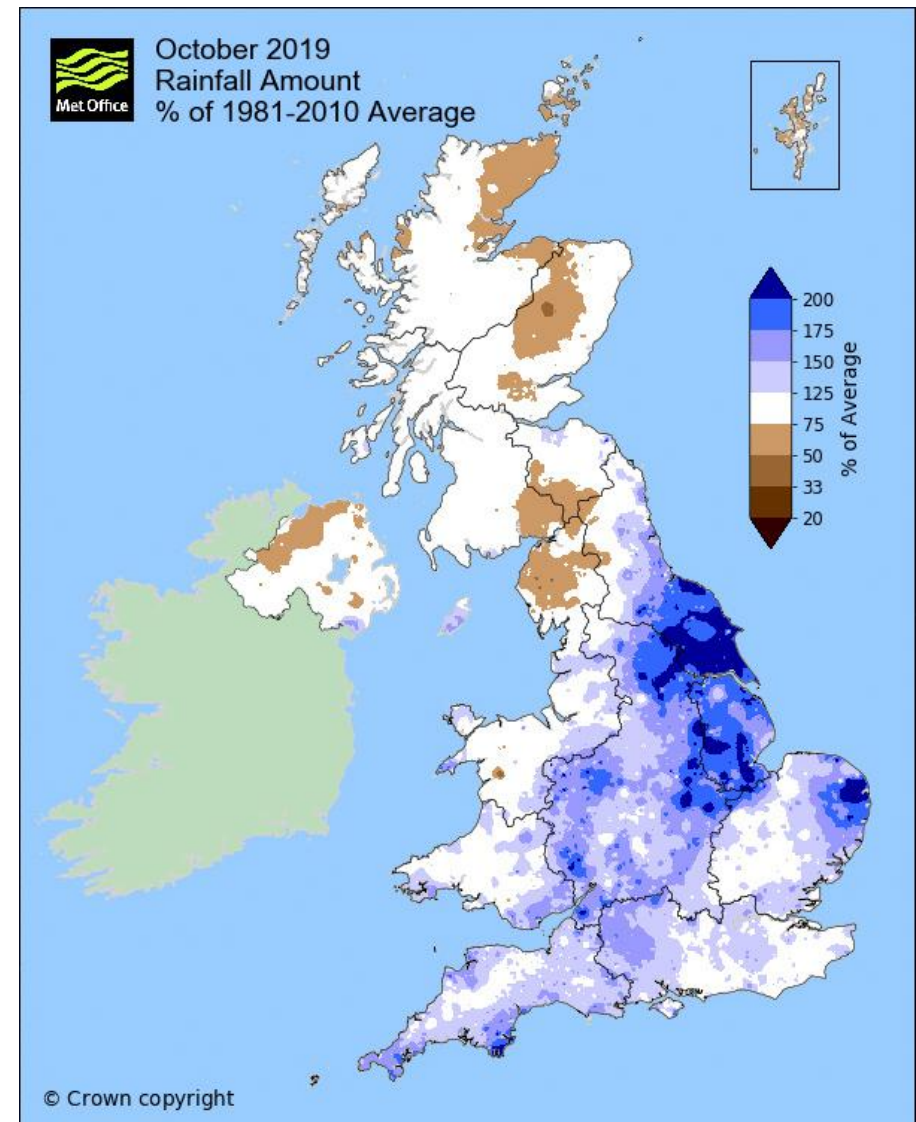
Image © Sharon Honey

**Rathfinny Estate
25 October 2019
Alfriston, East Sussex**

October 2019: Temperature & Rainfall Anomalies

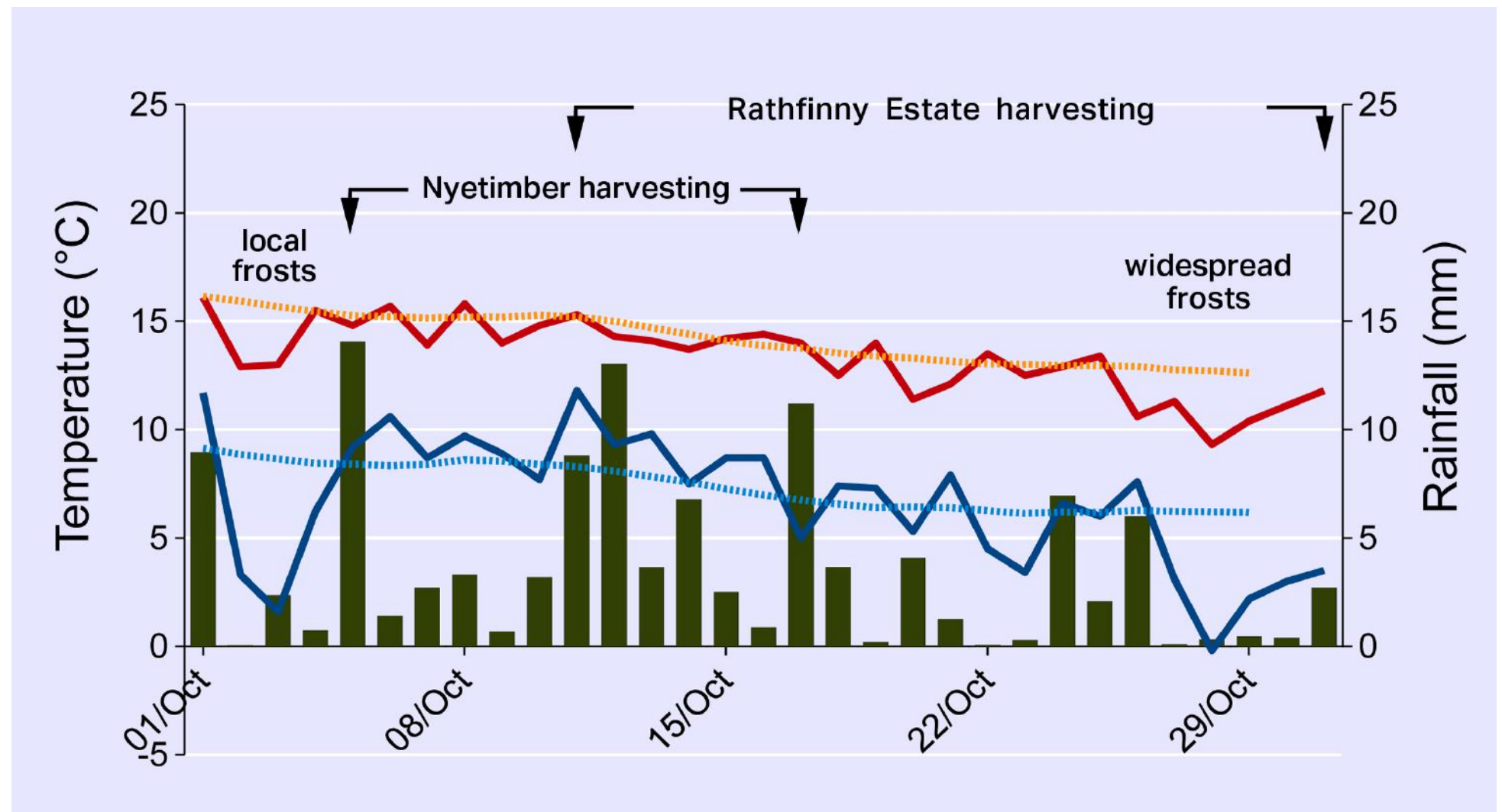


Mean October temperatures for England & Wales were about 0.4°C below the 1981-2010 Long Term Average (LTA). With predominately cloudy skies, there were fewer occurrences of ground frost and only very occasional air frosts.



Low pressure systems tracked across England & Wales through most of October, bringing with it wet and cloudy weather. For much of southern England and Wales the total rainfall wasn't terribly far away from the LTA, but the number of raindays >1mm was about 6 more than average..

October 2019: Daily Temperatures & Rainfall



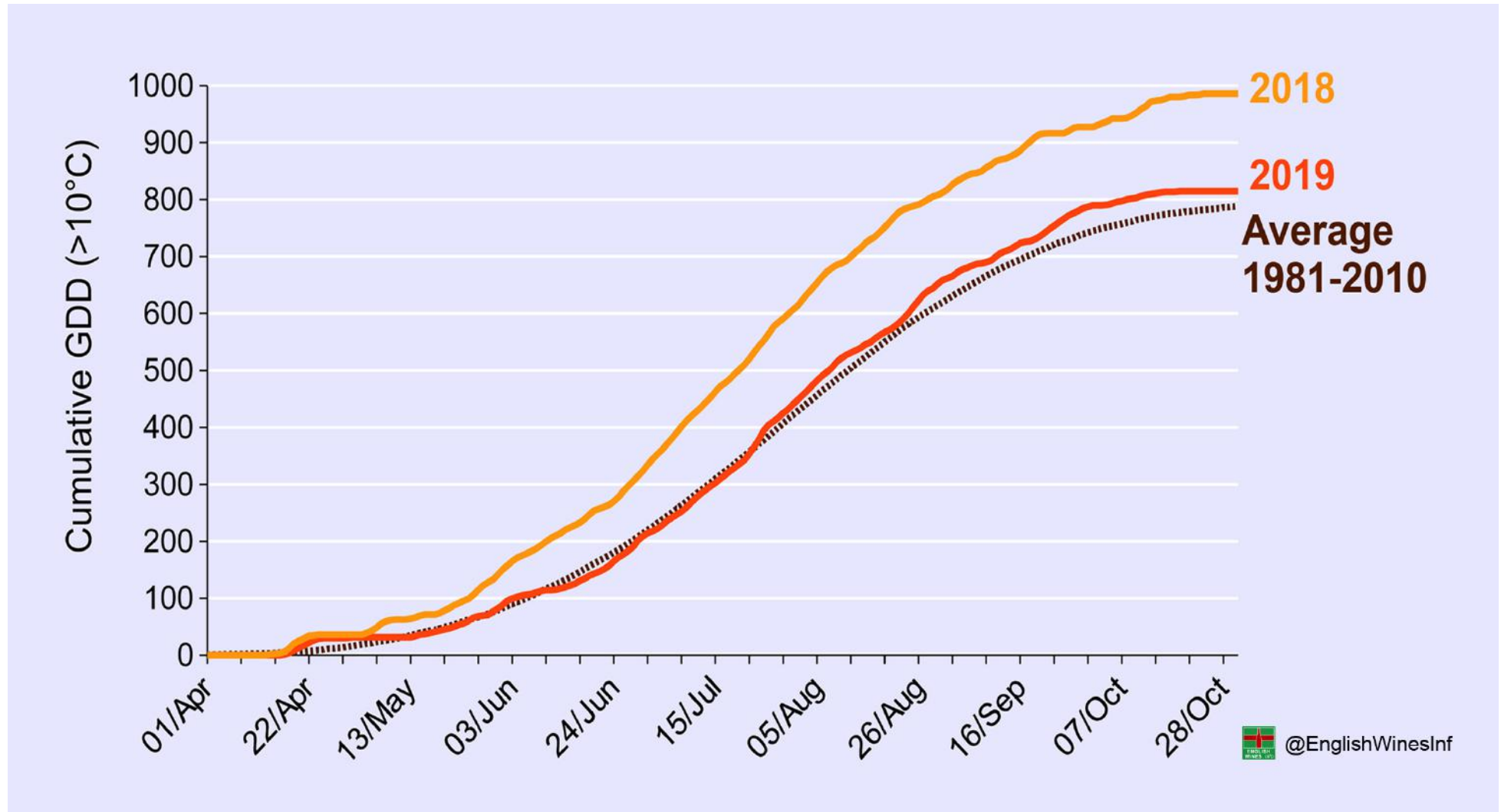
2019
 — Max Temp
 — Min Temp

1981-2010
 Av. Max Temp
 Av. Min Temp

■ 2019
 Rainfall

Sources: Central England Temperature and
 Southeast England Precipitation data
 (Met Office, Hadley Centre)

2019: Growing Degree Day (GDD) Development



Cumulative Growing Degree Days (GDD) for central England in 2019 tracked significantly lower than 2018 after the first week of May. The end-October value (814) was much lower than 2018 (986) but slightly higher than the 1981-2010 LTA (788). Although there was a smaller amount of fruit to ripen than in 2018, some growers will have

struggled to achieve full ripeness across their entire crop. Volumes of high quality still red wine will be much reduced compared to 2018.

Data source: HadCET daily temperature dataset

Acknowledgements

Thanks to the following whose images of the 2019 vintage have been included:

Cambridge Botanic Gardens
Donna Barbour, Woodchurch Wine Estate
Sharon Honey
SJ Newman
Flint Vineyard
Off the Line Vineyard
Sandhurst Vineyard

Tony Eva
@EnglishWinesInf
@WineStats
@CambsClimate

22 March 2020