

Exceptionally warm and dry Spring 2011

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Introduction

Spring 2011 (March, April and May) was remarkable for the unusual warmth during April and the persistent lack of rainfall during March and April, particularly over England and Wales. The dry conditions persisted into May across eastern England, with growing concerns for water management, wildlife and agriculture.

While there was significant rainfall at times across north-western parts of the UK, this rain consistently failed to reach parts of southern and eastern England. The variation in Spring rainfall was remarkable: while parts of Highland Scotland received more than 750 mm (and a few locations received around 1000 mm), some places in East Anglia and Kent received less than 20 mm.

It was the warmest Spring across the UK in the last 100 years, just warmer than Spring 2007, and the second driest Spring across England and Wales, with 1990 marginally drier. April was an exceptionally warm, dry and sunny month - the warmest and third sunniest April on record for the UK.

Impacts

The lack of rainfall meant that flows in many rivers across England and Wales became very low. The dry conditions had an adverse effect on wildlife and caused concerns for water companies, farmers and growers. Eastern counties of England were the worst affected, with the yield from arable crops threatened and livestock farmers facing the prospect of increased costs of animal feed.

In early May, the continuing dry weather, parched ground, and some strong winds resulted in forest and moorland fires across many parts of the country. Areas affected included the Scottish Highlands, the Mourne mountains in Northern Ireland, mid-Wales, Lancashire and Berkshire. Fortunately rainfall at the end of the first week of May helped the fire services bring these under control.

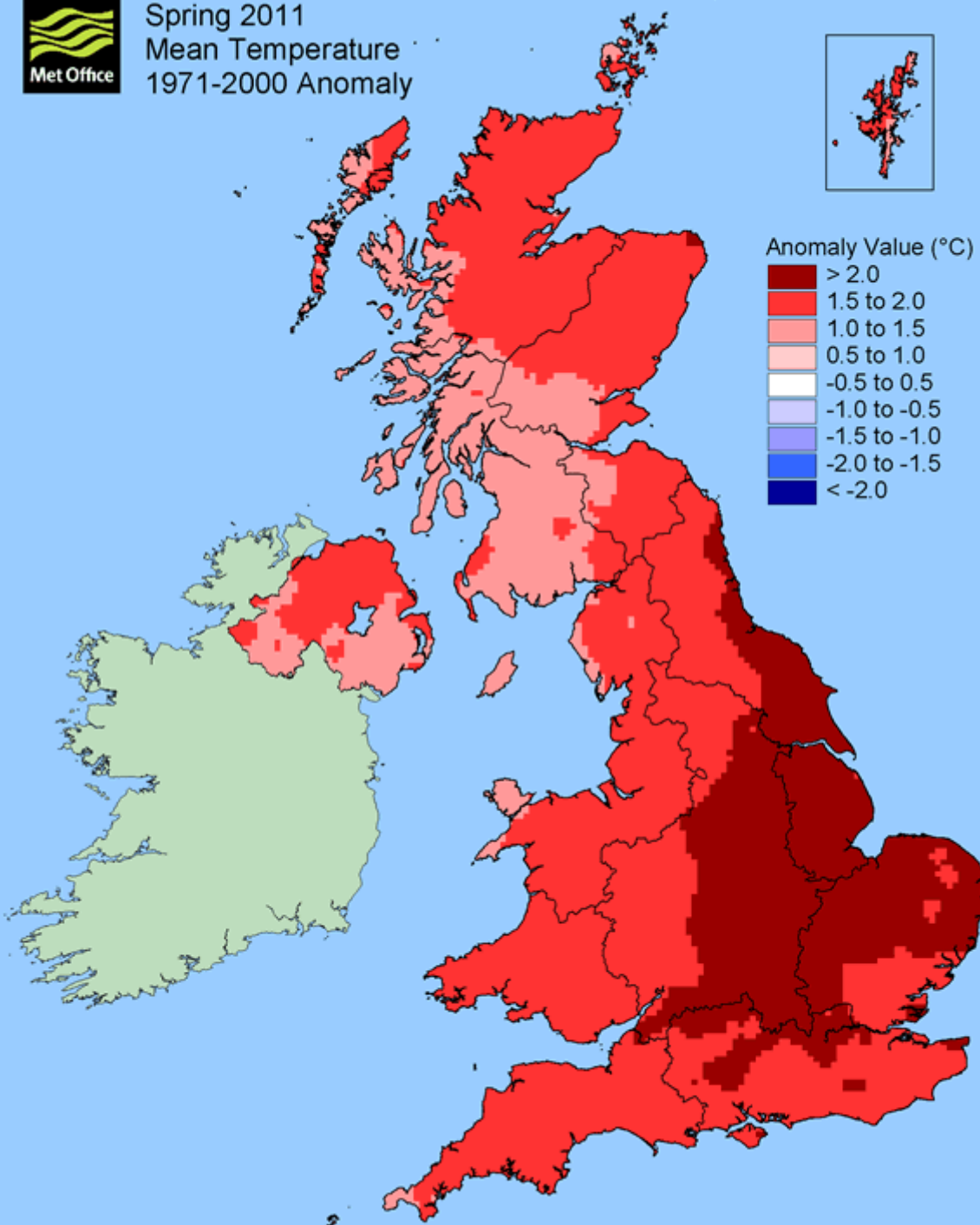
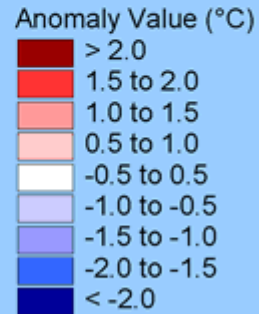
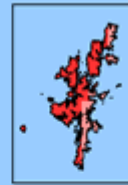
Following the exceptionally dry Spring, on 10 June, parts of the east Midlands and East Anglia were declared to be suffering drought conditions. This declaration allowed additional restrictions to be placed on the extraction of water from rivers for irrigation purposes. However, the remainder of June saw some rain on many days, even in the drought-hit areas, relieving the situation somewhat.

Weather Data

It was the equal-warmest Spring across the UK in a series from 1910 (just warmer than Spring 2007). In the Central England temperature series from 1659, the mean temperature for Spring of 10.2 °C made it the equal-warmest (as warm as Spring 1893 and warmer than 2007, when the mean was 10.1 °C). The seasonal value was dominated by the exceptionally warm April - the warmest in both the UK and the Central England temperature series.



Spring 2011 Mean Temperature 1971-2000 Anomaly

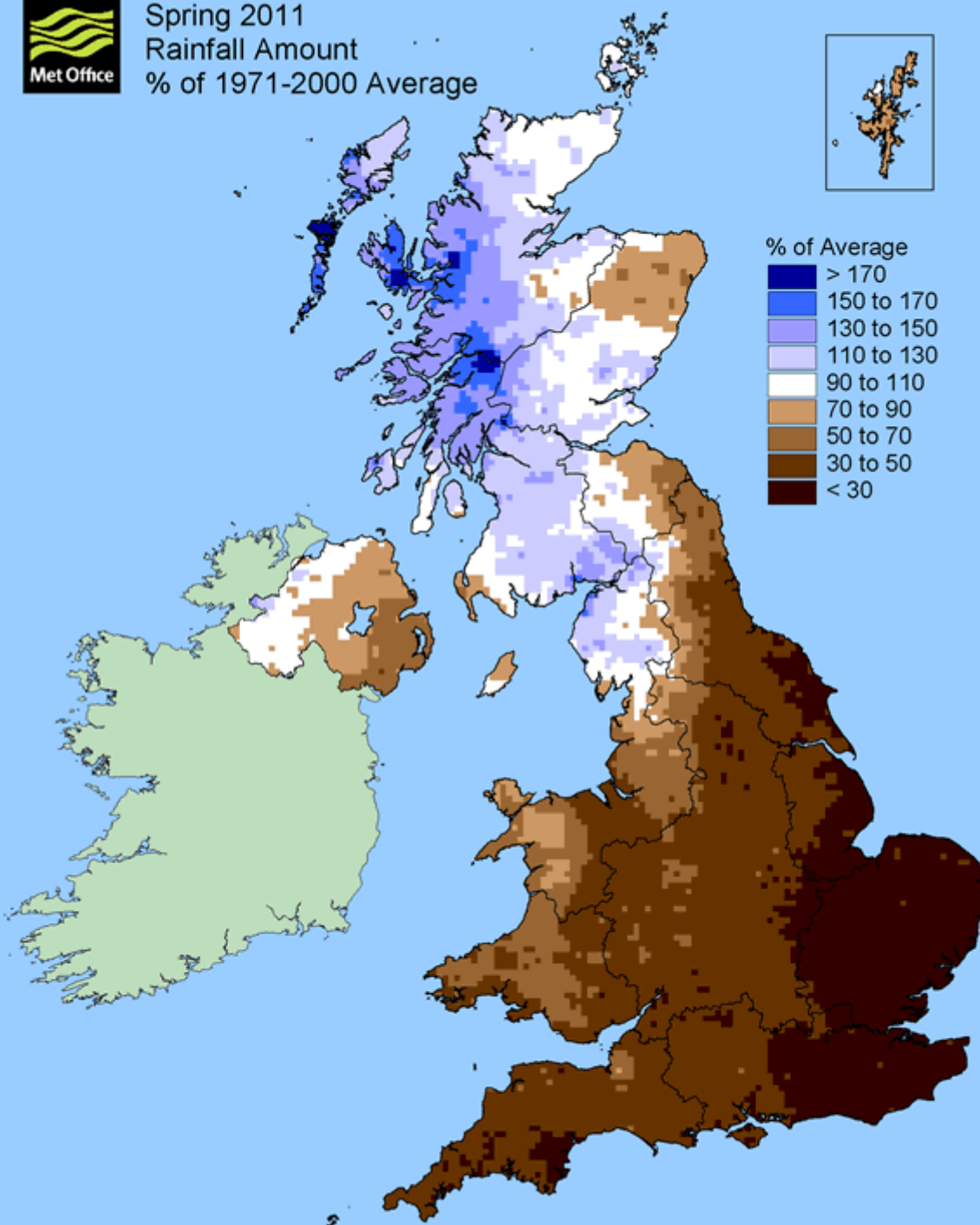
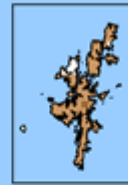


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Provisionally, the 79 mm of rainfall recorded across England made it the second driest Spring in a series from 1910, with Spring 1990 marginally drier. In the historic England and Wales rainfall series from 1766, it was the third driest Spring and the driest since 1893. It was particularly dry over the eastern half of England, where less than a third of the normal amount fell; across much of East Anglia, only about a fifth of average was recorded. Some places received just less than 20 mm during the three months of March to May.



Spring 2011
Rainfall Amount
% of 1971-2000 Average

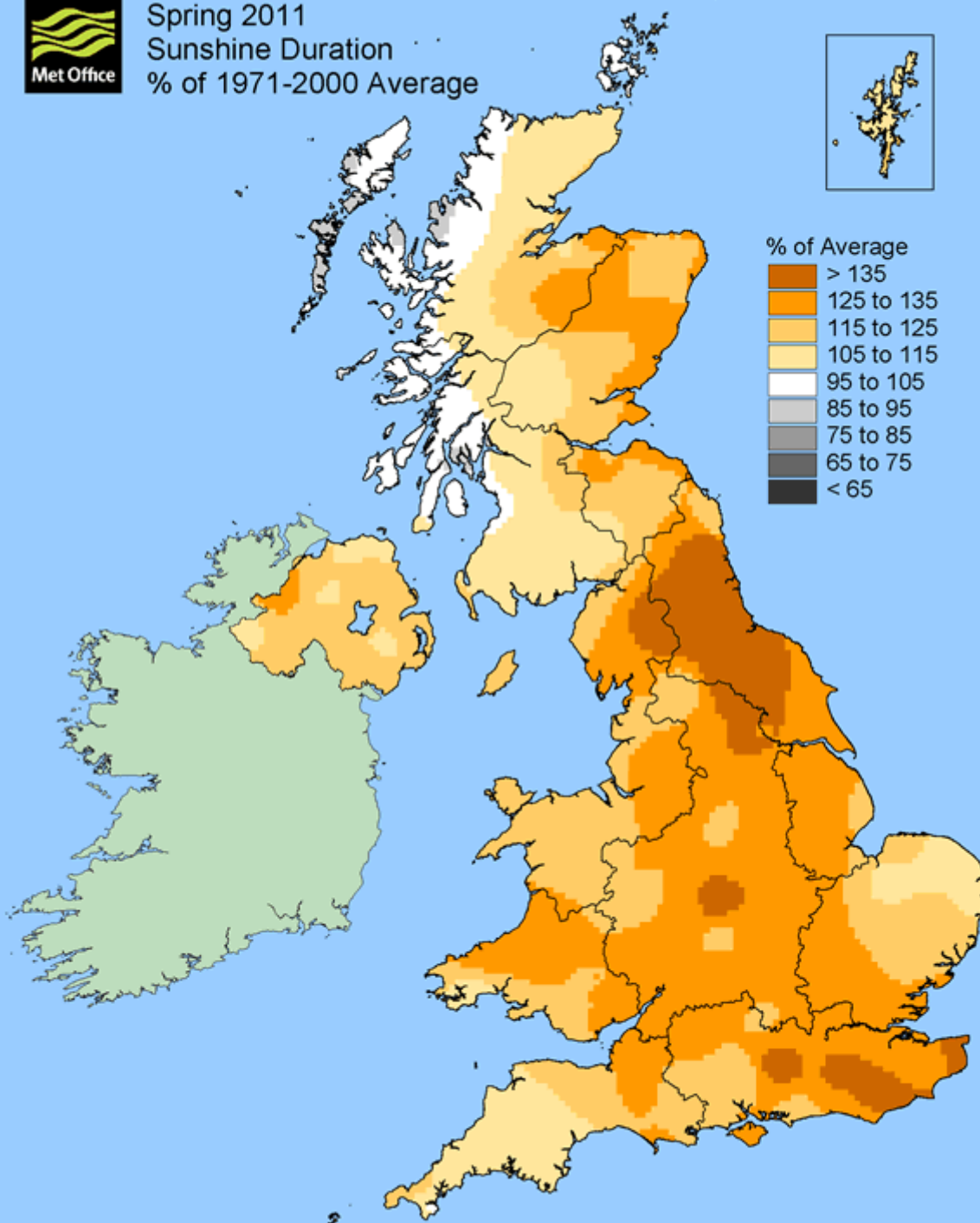
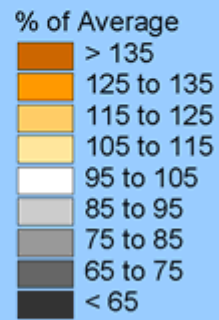
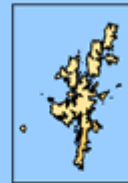


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This was one of the sunniest Springs in the series from 1929, and it was particularly sunny across England and Wales where more than 125% was recorded widely. With high pressure and clear skies, April was a particularly sunny month with almost 50% more sunshine than normal and was the third sunniest April in the UK series after 1942 and 2007.

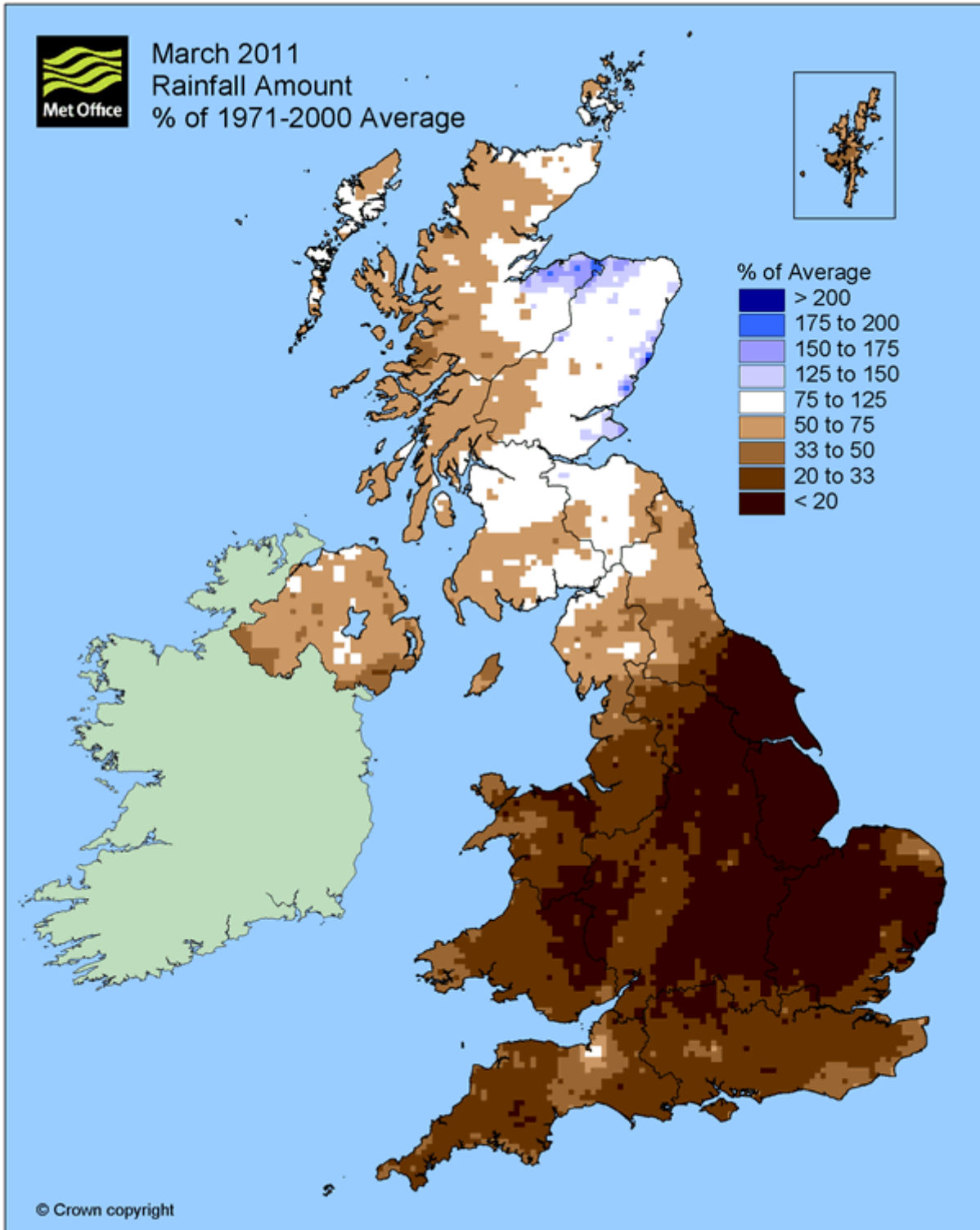


Spring 2011
Sunshine Duration
% of 1971-2000 Average



March

Rainfall amounts were notably low over large parts of England and Wales where, provisionally, it was the driest March for 50 years and the fifth driest in a series from 1910. Over much of central and eastern England less than 20% of the normal March rainfall was recorded, with a number of places recording less than 5 mm for the whole month. East Anglia had its equal-second driest March in a series since 1910, with only 1929 drier.

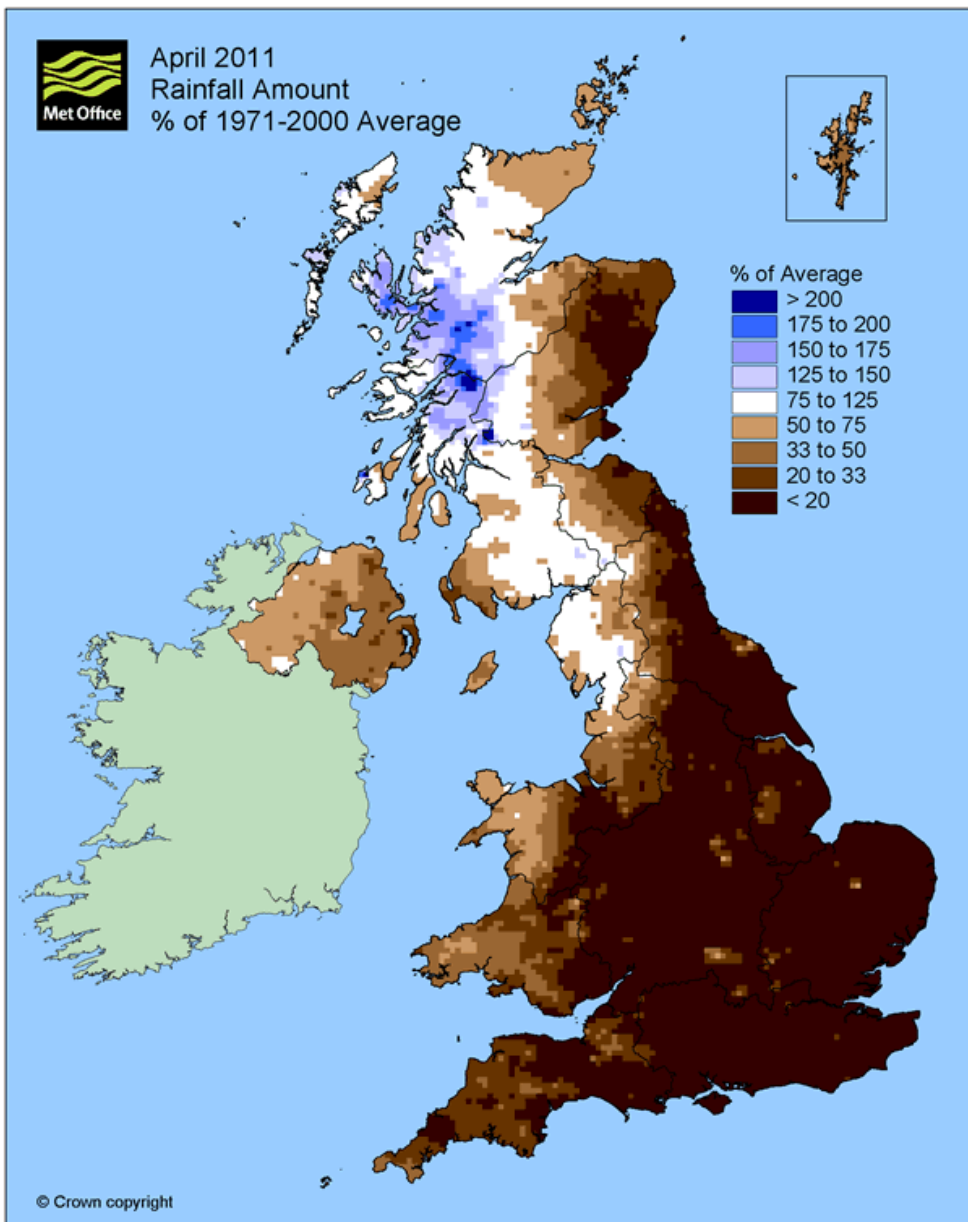


April

High pressure was again over or near the UK for much of the month, with plenty of fine weather. In warm Spring sunshine, daytime maximum temperatures responded, reaching as high as 27.8 °C at Wisley, Surrey on 23rd, the highest April temperature anywhere in the UK since 1949. Mean daily maximum temperatures were above average by as much as 6 °C in south-east England. This was the warmest April in the UK series from 1910, being 0.5 °C warmer than April 2007, and also in the historic Central England Temperature series (from 1659).

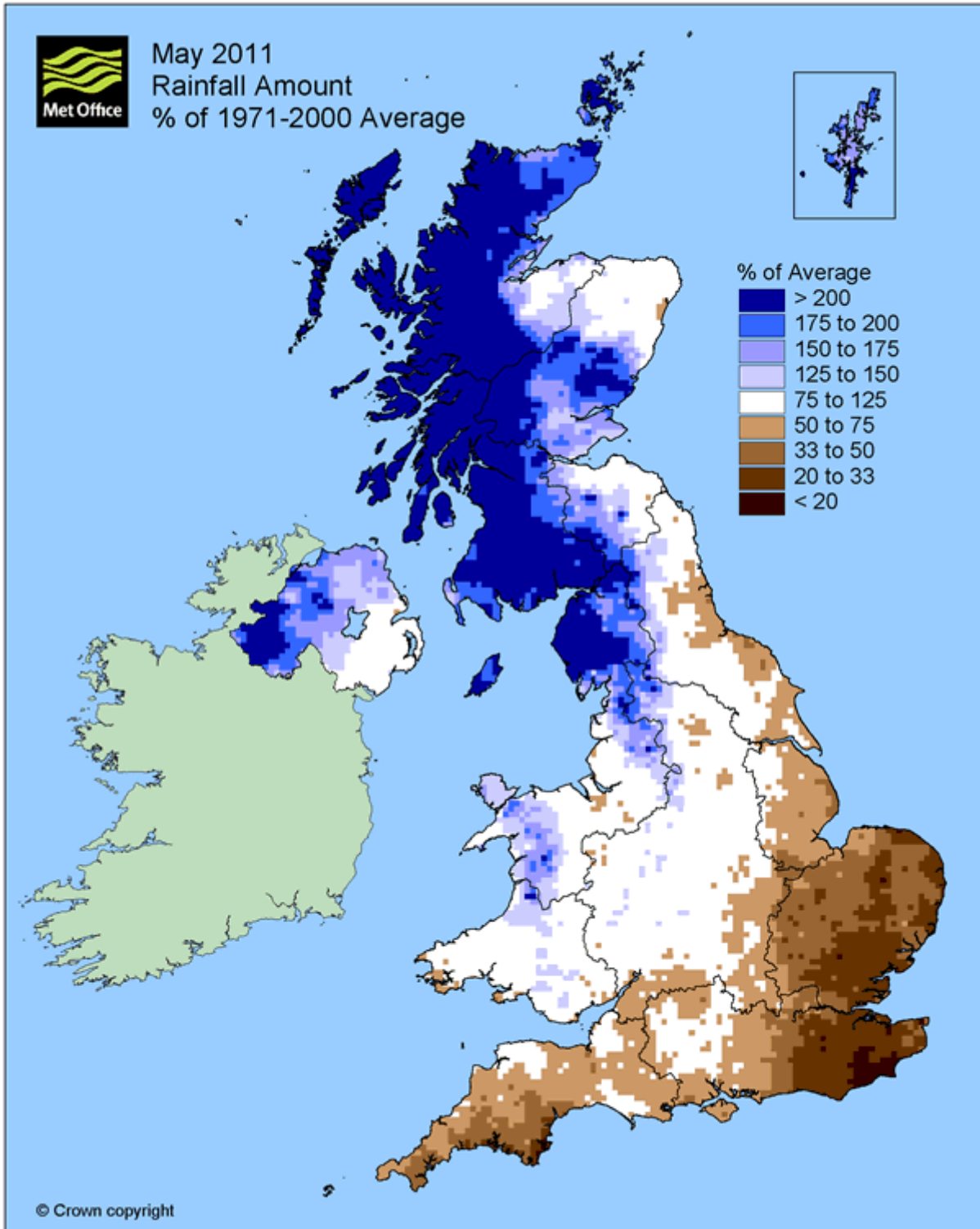
April was again exceptionally dry over much of southern, central and eastern England where less than 10% of normal rainfall was recorded; several places recording less than 1 mm for the whole month. In East Anglia it was the second driest April in a series from 1910; with only April 2007 drier.

It was also a very sunny month across the UK, with amounts generally 50% above normal, making it the third-sunniest April in the series from 1929.



May

With low pressure to the north or west of the UK, northern and western parts received copious rainfall and it was the wettest May in Scotland in the series from 1910. In contrast, the very dry conditions persisted over much of East Anglia and south-east England where less than 40% of normal rainfall was recorded - and some places recorded only 10 mm of rain for the whole month. Provisionally, Essex and Kent had one of the driest Mays on record. In drier eastern counties, mean monthly temperatures were also around 2 °C above average.



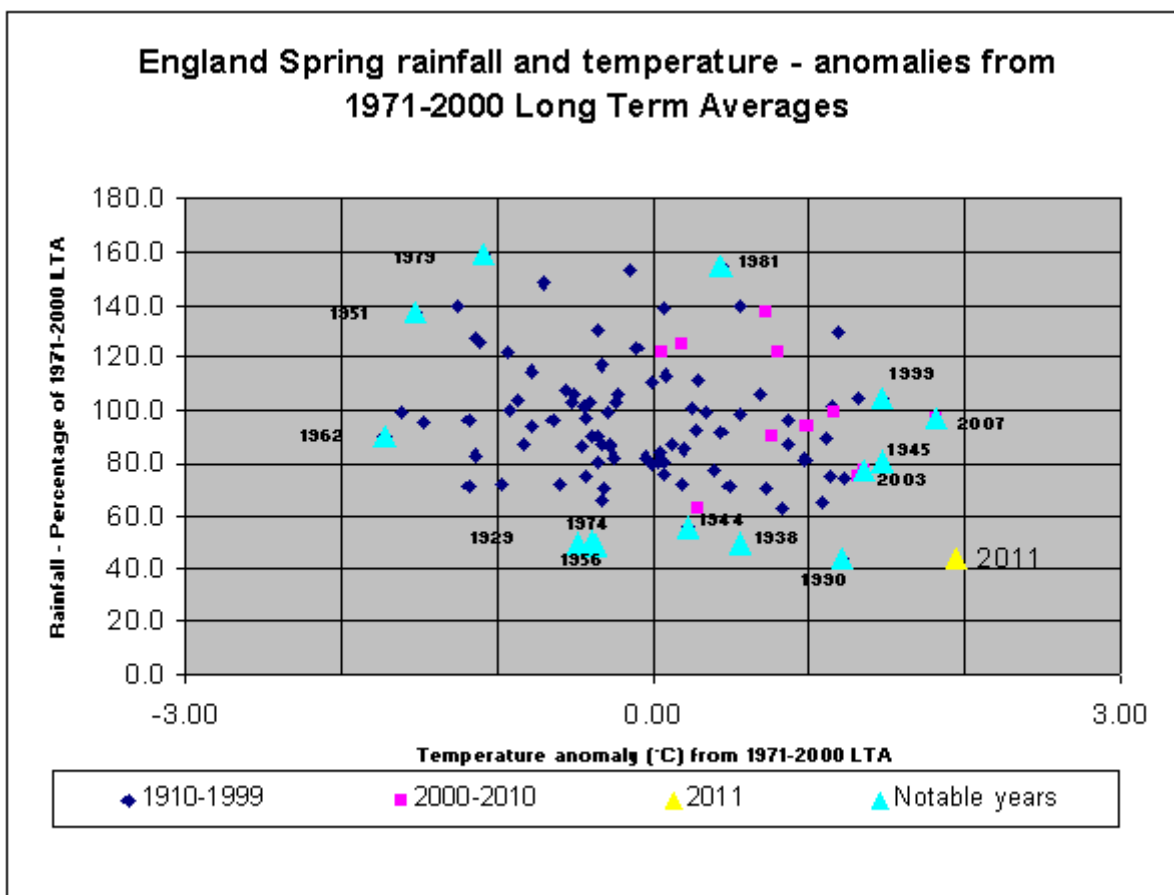
The persistent lack of rain meant that a large number of counties to the east of a line from Cornwall to Yorkshire experienced their driest ever Spring, in rainfall series from 1910. For some counties in East Anglia and the east Midlands, it was the driest by a wide margin and Spring 2011 was also the driest of *any* three-month period.

Counties for which Spring was the driest of any three-month period.

County	March rainfall (mm)	April rainfall (mm)	May rainfall (mm)	Spring rainfall (mm)	Previous driest three-month period
Cambridgeshire	4.0	3.4	17.6	25.0	Feb - Apr 1938 (28.2 mm)
Essex	8.6	3.6	12.7	24.0	Feb - Apr 1938 (32.8 mm)
Huntingdonshire	4.8	2.8	17.7	25.2	Feb - Apr 1938 (25.5 mm)
Kent	15.4	2.8	12.1	30.3	Apr - Jun 1976 (40.3 mm)
Norfolk	9.0	5.1	17.3	31.4	Aug - Oct 1947 (36.4 mm)
Suffolk	6.7	4.0	13.8	24.5	Apr - Jun 1996 (35.8 mm)

Over England, Spring 2011 was the warmest on record, in a series running back to 1910 (previously Spring 2007 had been warmest). It was tied with 1990 as equal-driest on record, in a series running back to 1910.

The following chart plots the Spring temperature and rainfall anomalies (relative to 1971-2000 averages) for England, showing how unusual 2011 was compared to Springs from 1910, particularly when considering the combination of both warmth and dryness. Other notable years are also highlighted. All Springs since 1996 have been warmer than the 1971-2000 average.



The dry Spring of 2011 followed on from a dry 2010, in which the UK received 84% of average rainfall. 11 of the 17 months from January 2010 to May 2011 inclusive have seen below average rainfall for the UK overall.

Last updated: 16 June 2016

