



Met Office

Education case study UK Indian summer 2011

An Indian summer is a warm, calm spell in autumn, around the end of September to the middle of November. The phrase comes from America and refers to the Native American Indians.

What is an Indian summer?

After a fairly disappointing summer in 2011 the UK experienced what is known as an Indian summer. This is a settled period in autumn with temperatures well above normal. The Native Americans living on the eastern seaboard used to depend on extended periods of fine, quiet, sunny weather at this time of the year to complete their harvest and to put together stores of food to see them through the long, cold winter.

The photo below shows London looking more like it would on a spring or summer day.



The meteorological situation

The average September temperature for England (1971–2000) is 17.5 °C. In the final week of September, temperatures began to rise. On 1 October 2011 a temperature of 29.9 °C was recorded at Gravesend (Kent), a new English October record. This beat the previous record of 29.4 °C. Temperatures in England were higher than the Bahamas, Los Angeles and Barcelona.

In Wales 28.2 °C was recorded in Hawarden (Flintshire) on 1 October 2011, beating the previous record of 26.4 °C. Unfortunately, a weather front over Scotland and Northern Ireland meant that cloud and rain gave them a much shorter warm spell, although on Wednesday 28 September in Edinburgh they did enjoy the warmest day in Scotland for over 50 years.

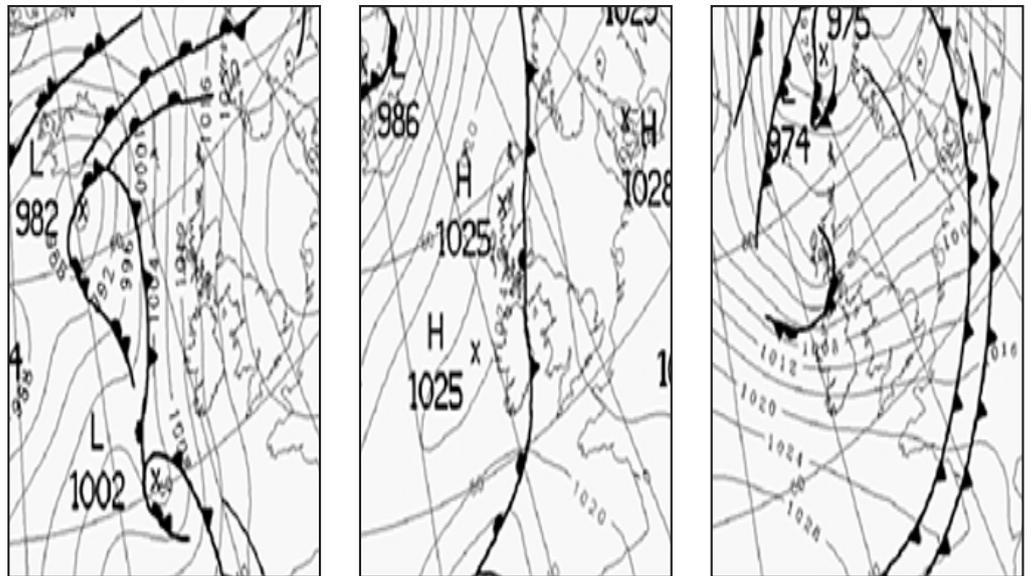


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What caused the high temperatures?

If we look at the weather charts for 28 September (below left) and 1 October (middle) high pressure is centred over Central Europe and with the air flowing in a clockwise direction. Winds are from a warm southerly direction, coming from the Mediterranean and North Africa. The air mass is tropical continental.



On 3 October weather fronts move across the UK from the west. By 6 October (shown above right) a brisk northwesterly flow was affecting all parts of the UK and brought a spell of colder weather. Not only was the air coming from a warm direction but the settled weather associated with high pressure gave a spell of sunny weather by day and temperatures gradually rose.

Often in autumn when high pressure controls the weather the overnight periods are fairly clear and cool. In this particular spell the overnight periods brought mist and fog. The blanket of low cloud led to mild nights. Temperatures rose a little each day with records ultimately being broken on 1 October.

The ground had been left so dry by the small amount of rain during the year that small streams had begun to dry up. Dry ground heats up more quickly than damp ground.

Looking at the weather charts the isobars (lines of equal pressure) are well-spaced across the south of the UK. This means that the winds were light, enabling the warm air to remain close to the surface and not mixed with cooler air above.



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The impacts

Many people went out to enjoy the warm sunshine, bringing a welcome boost to tourism to many areas. It's rare to see so many people on a beach (Brighton shown below) at the start of October. Confused plants burst into flower, when they were not expected to bloom again until the following spring.

The lack of rain worsened the drought already being experienced in the south-east due to a very dry winter and spring beforehand. Summer 2011 had seen average rainfall, but not enough to replenish the water supplies.

