

# Prime Meridian

(27) June 18, 2014

A newsletter following global environmental issues alongside the cycle of the seasons in Southern England

Above: Our planet from NOAA's GOES-East satellite taken on Earth Day, April 22, 2014 at 11:45 UTC. NASA/NOAA.

## Globally, April 2014 tied with April 2010 as warmest on record.

A report from the USA's National Oceanic and Atmospheric Administration has brought the news that the global average temperature (combining both land and ocean surfaces) for April 2014 was  $0.77 \pm 0.08^\circ\text{C}$  above the 20<sup>th</sup> Century average of  $13.7^\circ\text{C}$ .

For land surfaces across the world, the temperature was  $1.35 \pm 0.11^\circ\text{C}$  warmer than the average, which made it the 3<sup>rd</sup> warmest April on record (with 2007 as the warmest). For the oceans, taken as a whole, the temperature was  $0.55 \pm 0.05^\circ\text{C}$  above the average, so that they also experienced their 3<sup>rd</sup> warmest April (1998 and 2010 were joint equal as warmest). For the Northern Hemisphere, the combined result for land and ocean was  $0.92 \pm 0.10^\circ\text{C}$ , so that it tied with 2012 as the hottest on record. Land in the Northern Hemisphere was overall  $1.55 \pm 0.11^\circ\text{C}$  above the norm (4<sup>th</sup> warmest, the warmest was April 2012), with the ocean  $0.53 \pm 0.05^\circ\text{C}$  above the average (the 2<sup>nd</sup> warmest with 2010 as warmest). In the Southern Hemisphere, the combined land and ocean temperature was  $+0.61 \pm 0.07$ , which made it the 4<sup>th</sup> warmest; 1998 was warmest on record. The ocean, at  $0.57 \pm 0.05^\circ\text{C}$  above the average, was the 2<sup>nd</sup> warmest on record, behind 1998. The land, meanwhile was a less impressive  $0.81 \pm 0.11^\circ\text{C}$  above the mean, but this was still in the top ten as the 9<sup>th</sup> warmest (April 2005 was the all-time warmest).

The highest recorded temperatures were not topped, but temperatures for the whole planet and both hemispheres were amongst the very highest in a record extending back to 1880.

Below: Apple blossoms in an old orchard, which has been restored at New Ash Green, Kent, UK on April 28, 2014.





Above: Ramsons (*Allium ursinum*) bloom in woodland in Upper Norwood, South London, April 27, 2014.

The NOAA report stated that: *“Continuing its recent trend, part of the eastern North Pacific Ocean was record warm. Several other regions were also record warm, including parts of the eastern equatorial Pacific off the coast of Mexico and scattered regions of the equatorial western and South Pacific, western North and South Atlantic Ocean, sections of the Norwegian and Barents Seas, the central Indian Ocean, and regions of the Southern Ocean south of Africa. Regions of the central North Atlantic, eastern South Pacific and a small section of the western central Pacific, and the Southern Ocean south of South America were much cooler than average for April.”*

Source: NOAA National Climatic Data Center, *State of the Climate: Global Analysis for April, 2014*, published online. Data are provisional.

Right: On April 23, a dull day, a sea gull wheels above a family come to enjoy the sea (April 23). Above them rise the famous Chalk cliffs of southern England. At their highest point, Beachy Head, they rise to 162 m above sea level. They are composed largely of microscopic calcium carbonate coccoliths, shed by the resting stages of ancient marine algae when the area was covered by the Chalk Sea, back in the late Cretaceous. Typically, Chalk is overlain by rendzina, a thin soil with a darker humus layer overlying a brown hill wash containing chalk pellets. Because Chalk is porous there may be significant fluctuations of the water table, with dry valleys during the summer and streams known as “winterbournes” during winter. The shallow, nutrient deficient soil and hill slopes do not encourage crops, but (such areas are being lost to development) host calcareous grassland - a classic British habitat. This is maintained by grazing and would otherwise revert to scrubland.

The photo was taken by Penelope Stanford at Birling Gap, East Sussex.



Seasons in South East England  
April, 2014



Above: A field of oil seed in flower. Vicinity of Ash, Kent. April 26, 2014.

**Wild flowers bloom in woods and hedgerows in UK's fourth warmest April on record.**

This was a warm April by the standards of the UK. According to the UK's Met Office: "The mean temperature for the month was 1.8°C above the 1981-2010 average, and it was the fourth warmest April in a series from 1910. Rainfall overall was 93% of average, but this figure masks significant regional variations, with East Anglia having less than half of average but places within an area bounded by Bournemouth, Salisbury, Guildford and Brighton having around twice as much as the average."

The month began with unsettled conditions. The first day of April was generally bright and Gravesend in Kent recorded 20.5°C. After some heavy overnight showers for northern areas, The first day of the month was generally bright and Gravesend in Kent recorded 20.5°C. A front arrived on April 5, and for the next two days, it was the south which bore the brunt of showers. On March 7, at Wych Cross in East Sussex, 22.8 mm was recorded. The next 12 days were predominantly dry and sunny and on April 16, St James's Park in central London enjoyed a temperature of 17.7°C. Weather conditions during the earlier part of April saw dust from the Sahara sprinkle the southern UK.

Left, from top to bottom: A hedgerow, still looking rather bare, near West Kingsdown, Kent on April 2. Violets (*Viola riviniana*) on April 2 and primroses (*Primula vulgaris*) on April 5 in Saxten's & Cage's Wood, Kent. Below: Speedwell (*Veronica persica*) around field margin near West Kingsdown on April 28, 2014.





Above, left to right: Cuckoo flower (*Cardamine pratensis*) on woodland floor Saxten's and Cage's Wood, Kent (April 5, 2014). Bluebells (*Hyacinthoides non-scriptus*), same date and location. Dogwood (*Cornus sanguinea*) flowering in hedgerow near West Kingsdown (April 28). Anemone (*Anemone nemorosa*) (April 21), Hartley Bottom, Kent.



Winds turned easterly on April 20, bringing spells of rain for many central and southern areas, with In SW England, at Dunkeswell in Devon, 30.8 mm of rain fell. The afternoon of March 21 saw heavy showers and isolated thunderstorms in the Home Counties (28.6 mm of rain fell at Alice Holt (Hampshire). Thunderstorms occurred early on March 25 in Hampshire (SE England) and Dorset (SW England). March 26 saw sunshine and showers and showers in the W and S, but there was dry weather in the E. On April 27, an area of low pressure reached the English Channel bringing showers to southern and central England and rain also spread up the E coast. The afternoon of the following day saw isolated thunderstorms in S and central England. Episodes of rain were felt in the SE on April 29 and the afternoon saw thunderstorms over Hampshire and Sussex, drier conditions arriving for the last day of the month.



SE and central S England, mean max. temp.: 15.0°C (1.8°C); mean min. temp.: 6.1°C (1.9°C). Hours of sunshine: 170.6 (100%). Rain: 80.3 mm (150%). Anomalies re. 1981-2010 norm in brackets. Source: online Met Office data.



Left, top to bottom: A view across Sydenham Hill Wood and Dulwich Wood, South London on April 2 and April 26, 2014. Red campion (*Silene dioica*) amongst forget-me-nots (*Myosotis arvensis*), Surrey. April 21, Bluebells on woodland floor, Surrey. Below: Wood and hedgerow greening at, Hartley Bottom, Kent, April 21.

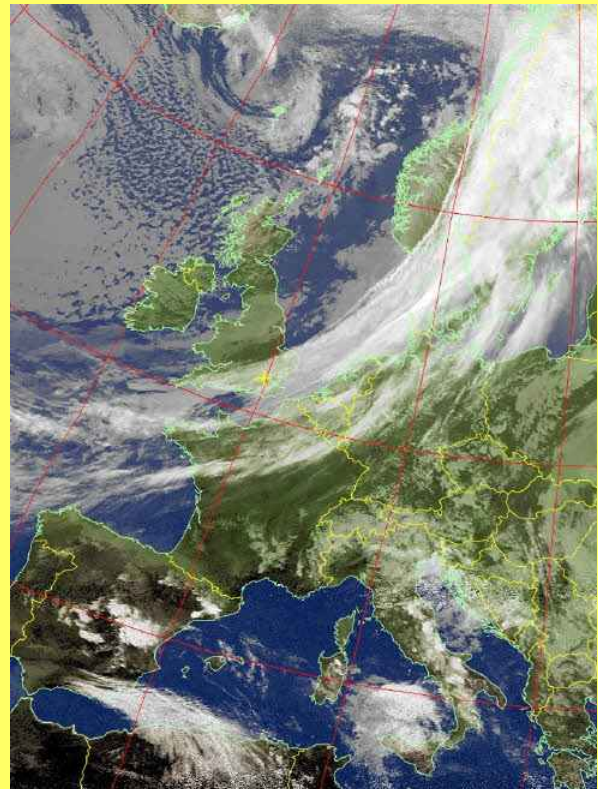




Above, left to right: April 13, 2014: Cowslip (*Primula veris*), Palace Road Nature Garden, South London. April 19: Broom (*Cytisus scoparius*) vicinity of Dartford Heath, Kent. Early purple orchid (*Orchis mascula*) in woodland near Ash, Kent, wild strawberry (*Fragaria vesca*) in hedgerow at New Ash Green, Kent. Hawthorn (*Crataegus monogyna*) blossoms in the vicinity of Dartford Heath, Kent.

Right upper: Weather systems over western Europe on April 12, 2014 at 14:54, as seen by the NOAA-18 satellite. Courtesy of Geoff Hamilton. Right lower: Marsh marigolds (*Caltha palustris*) in a pond on the Palace Road Nature Garden, South London on April 13.

Ecology consultant Andrew Waller of ASW Ecology, who is regularly out in the field, told us that the mild weather had produced early signs of life, particularly amongst birds, with feral pigeons breeding as early as January.



Left: Dust from the Sahara speckles a car in a street in West Norwood, South London, on April 3, 2014. From time to time, a suitable combination of weather conditions favours dust lifted by winds over the desert ending up in western Europe. It can also have significant consequences for ecosystems on the far side of the Atlantic, as we shall discuss in the next issue of Prime Meridian.

Below: Lambs in an E. Sussex field, April 23. Penelope Stanford.



## New Met Office study indicates that a warmer climate will mean greater summer rainfall for southern UK.

A Met Office information release for June 2, 2014 reported an advance in climate modelling that allowed researchers to predict how hourly rainfall might change in a warmer world.

The new, high resolution model had been developed by the Met Office in conjunction with Newcastle University and Dr Lizzie Kendon, who had been the lead author of the research at the Met Office, was quoted as saying: *"It shows heavier summer downpours in the future, with almost five times more events exceeding 28mm in one hour in the future than in the current climate - changes we might expect theoretically as the world warms."* She cautioned, however, that this detailed prediction was *"only based on one model - so we need to wait for other centres to run similarly detailed simulations to see whether their results support these findings."*

Understanding hourly rates of rainfall, it was explained, is particularly valuable in regard to summer rains, which often arrive in intense bursts associated with convective storms (as with floods in Boscastle in 2004 and Newcastle in 2012).



## April 15, 2014 total eclipse of the Moon.

The western church celebrates Easter on the first Sunday after the Paschal Full Moon, which is the first full Moon after the spring equinox. This tradition was established at the First Council of Nicaea in 325. The equinox (often falling on March 20) is always taken as March 21. Right: Easter morning mass at All Saints Church, West Dulwich, London on April 20.



This year, on April 15, the Paschal Full Moon underwent total eclipse, passing just south of the centre of the Earth's shadow. Totality lasted 1 hour and 18 minutes. This event was not visible from the UK, but many regions of the Americas saw the whole of totality and part was witnessed in E. Australia and New Zealand. Sunlight which had passed through the Earth's atmosphere imparted sunset hues to our satellite. Left: Totality is coming to an end in this photo taken from San Jose, California at 8:23am UTC. Andrew tk tang (from Wikipedia).

Prime Meridian is published as part the outreach programme of the Ecospheres Project - Earth Campaign.

prime-meridian01@hotmail.com  
<http://www.ecospheresproject.wordpress.com/>