



Highlights of Spring 2019



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Summary

Your records show that 2019 was an early year in terms of spring's seasonal changes. Wildlife reacted to the mild overall, but highly changeable, weather.

When compared to 2001* all but one of the Nature's Calendar spring events were early, many considerably so. Noticeably, unusual February weather resulted in a flurry of activity; insects and amphibians emerged, frogs and many birds began to breed and plants flourished.



**WOODLAND
TRUST**

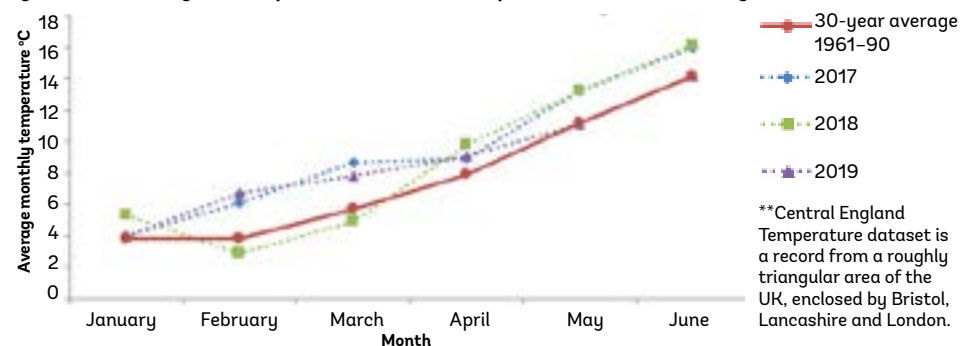
*2001 is used as a benchmark as weather conditions closely reflected the 30 year average (1961-90).

Weather compared with the UK 30-year average (1961-90)

Temperature

- Average monthly temperatures in February, March and April were 2.9, 2.1 and 1.2 °C above the Central England Temperature**30-year averages (1961-90).
- Although February started off cold, with snow showers, exceptionally mild weather followed, with record breaking temperatures from February 21-27. Overall, it was the second warmest February since 1910.
- Average monthly temperatures in January, May and June were very similar to the 30-year averages.

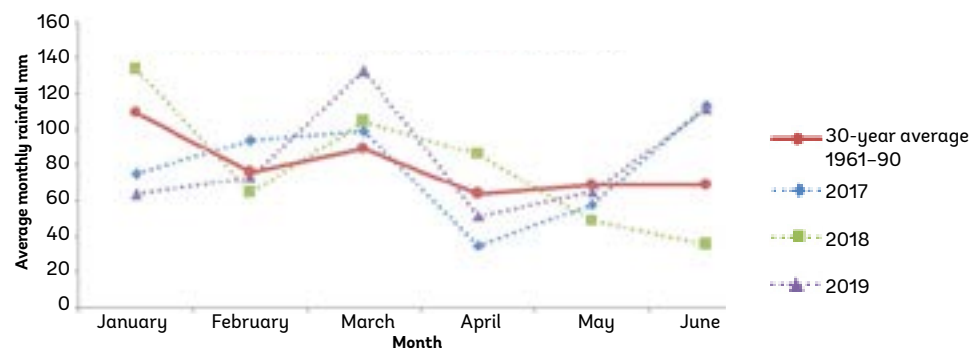
Figure 1. Central England Temperature** 2017-19 compared with 1961-90 average



Rainfall

- January was a dry month. The rainfall total was 46mm less than the 30-year average and it was the driest January since 2006. Snow was widespread in the second half of the month.
- In contrast, March and June were wet months. The rainfall totals were 44 and 43mm more than the 30-year averages. March was the second wettest since 1910.

Figure 2. UK rainfall 2017-19 compared with 1961-90 average



Sunshine

- February was a sunny month, with 37 more sunshine hours than the 30-year average.

What your spring 2019 records show

Phenology is the study of seasonal changes in plants and animals from year to year, especially their timing in relation to the weather and climate.

Over time, your records are helping scientists to understand the impacts of

weather and climate change on wildlife.

We provide a brief analysis and discussion of your spring 2019 records. The UK average date for each species and event in spring 2019 is compared to the UK average date in the benchmark year of 2001.

Figure 3. Average recording dates during 2017, 2018 and 2019 compared to the 2001 benchmark year.

Negative numbers represent days earlier and positive numbers represent days later than the benchmark year			
Event	2017	2018	2019
Budburst	-16.6	-2.9	-15.9
First Leaf	-16.5	-4.9	-16.5
First Flowering	-15.8	-8.5	-17.9
Amphibians first recorded	-12.0	-2.3	-13.3
Insects first recorded	-15.4	1.4	-23.2
Birds first recorded	-5.5	-1.5	-5.2
Lawn first cut	-13.0	6.0	-21

Budburst

- All 11 tree species had an average budburst date earlier than in the 2001 benchmark year.
- Rowan, pedunculate oak, elder, larch, hawthorn, beech and alder all had an average budburst date two weeks or more earlier than in the benchmark year.
- Notably, elder budburst was almost a whole month earlier (29 days). Being one of the first trees to come into leaf, it responded to the mild start to the year.

birch leafing is particularly important for breeding blue tits whose caterpillar food source feed on the young leaves (see more in the News in Brief).

- Ash was the least early of all the tree species (seven days early) compared to the benchmark. Pedunculate oak was 21 days early, indicating another year that oak has the competitive advantage over its canopy competitor ash in a mild spring. Evidence suggests that oak trees are able to react quicker to warmer conditions.

First leaf

- The early budburst pattern was followed by early first leaf for all 11 tree species.
- As with budburst, rowan, pedunculate oak, elder, larch, hawthorn, beech and alder all had first leaf averages two weeks or more earlier than in the benchmark year.
- Silver birch and horse chestnut were also over two weeks early compared to the benchmark first leaf date. The timing of

First flowering

- We received nearly 1,000 records of first flowering snowdrops. On average snowdrops flowered 18 days early on 18 January. Of these, 74 records reveal first flowering in November or December. Both these months had average monthly temperatures well above the 30-year average (1961-1990). We are increasingly seeing plants such as snowdrops taking advantage of these milder winter temperatures.

- Every plant was recorded as first flowering early. Blackthorn (27 days), hazel (38 days) and purple lilac (20 days) all flowered significantly earlier than in the benchmark year.
- Hazel is consistently flowering early and the overall impact on the following autumn fruiting is largely unknown. Nature's Calendar data is being used to look at whether there is an increasing mismatch between dormouse phenology and food availability, as dormice rely on fruit and nuts, including hazel, to build reserves before their winter dormancy.

Amphibians

- Being ectotherms, newts and frogs largely rely on external heat sources. Both reacted to the warmer February weather: frogspawn (11 days early), tadpoles (14 days early) and first-seen newts (15 days early).
- There may be implications of this early activity on frog populations, as subsequent freezing temperatures can impact frogspawn success rate. Current research using Nature's Calendar data is investigating the potential for increased predation by newts on frog tadpoles as a result of this phenological shift.

Insects

- Brimstone butterfly and ladybird were the most popular species to record. The average 2019 first recorded date for both species was 6 March, 34 days early for average first recording of brimstone compared to the benchmark year.
- Relative to the benchmark, the UK

average first-seen date for all insects was over 23 days early. The range was between five days (queen red-tailed bumblebee) and 36 days early (red admiral butterfly).

- Ladybird mating was first-seen on 14 February this year – Valentine's Day!
- Within these early records there was a noticeable peak in the warm and sunny latter half of February which stirred insects out of dormancy, correctly known for insects as *diapause*.

Birds

- The average date for swifts returning to the UK was 13 May (three days late). This was the only event recorded as being later than the benchmark year. Given that swifts are a migratory species, it could be that they responded to 'push' factors in Africa. For example, if food resources are still available there, then the swifts may delay their departure to the UK.
- First nest building was early compared to the benchmark year: rook (13 days), blackbird (11 days), blue tit and great tit (eight days). As a consequence the date for feeding young and young first seen was also over six days early, on average.

Lawn first cut

- The unfavourable weather in early spring 2018 meant the average lawn first cut was six days late compared to the benchmark year. This year the mild temperatures resulted in early grass growth, with records showing the average date to first cut your lawn was 10 March (21 days early).

Thank you so much for your continued support,
we really do appreciate all the time and effort you put into recording.

When you have finished reading this analysis and our *News in Brief*, please feel free to pass it on.

You never know – you may inspire another generation of phenology recorders!

Anyone can sign up and you can find out more at naturescalendar.woodlandtrust.org.uk



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