



## The study of spring

It's now officially spring and as we pass the equinox, we have over 12 hours of daylight each day. Daylight and temperature are big cues for wildlife and we should start to notice many signs of spring accelerate in the coming weeks. Many people watch out for the buds opening, animals emerging from hibernation (like butterflies, ladybirds and reptiles) and summer migrant birds returning.

The study of seasonal changes and recording of key milestones like these, is called 'phenology'. (Not to be confused with phrenology!) At least in this country, we have records dating back to the 1700's so we can see if there are any trends over time<sup>i</sup>. What scientists have noticed is that spring events like buds opening are happening earlier and earlier over time and this is linked with a rise in temperatures for the time of year. Scientists now agree that it is a likely result of climate change<sup>ii</sup>.

While we might like to see spring come earlier, it is a cause of concern. Many plants and animals precisely time important life events like bud opening, breeding and migration to coincide with other plants or animals they rely on in the food chain<sup>iii</sup>. One classic example is as follows:



(This is like a time delayed food chain.)

Each of these animals, times their breeding to match the peak in food availability. It's called synchrony. What phenological records have shown, is that the predators have been slower than their prey, in responding to changes in temperature (e.g. breeding earlier), meaning they are getting out of sync and are not likely to breed as well<sup>iii</sup>. This could have a big impact on biodiversity, which is already under pressure.

Fortunately, there are things you can do to help:



**Take part in [Nature's Calendar](#) surveys** – Results from these contribute towards scientific studies to understand and predict the impacts of climate change. If we understand better we can then plan ways to limit the damage.



**Feed the birds** – You can help to provide essential food for chicks through the breeding season as well as through winter, helping to sustain animals higher up the food chain as well.



**Improve biodiversity in your area** – Anything from a bug hotel to growing some native plants, will help wildlife cope by providing a wider choice of food.

Visit our [giving nature a hand](#) pages for ideas like bug hotels and bird feeders.

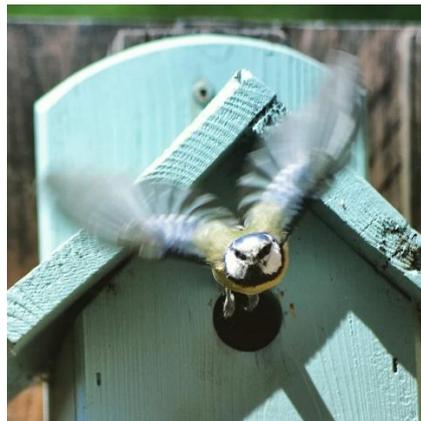


Photo: Grace Horsfall

## References:

<sup>i</sup> Woodland Trust (2021) *Nature's Calendar* <https://naturescalendar.woodlandtrust.org.uk/>

<sup>ii</sup> Heather M. Kharouba, Johan Ehrlén, Andrew Gelman, Kjell Bolmgren, Jenica M. Allen, Steve E. Travers, Elizabeth M. Wolkovich (2018). *Global shifts in the phenological synchrony of species interactions over recent decades*. Proceedings of the National Academy of Sciences May 2018, 115 (20) 5211-5216; DOI: 10.1073/pnas.1714511115

<sup>iii</sup> Both, C., Van Asch, M., Bijlsma, R.G., Van Den Burg, A.B. and Visser, M.E. (2009), *Climate change and unequal phenological changes across four trophic levels: constraints or adaptations?*. Journal of Animal Ecology, 78: 73-83. <https://doi.org/10.1111/j.1365-2656.2008.01458.x>