



# Weather and climate

Funny old summer, eh? But then they all are. Nevertheless this one did have major effect on a lot of wildlife, although some undoubtedly benefitted. In our garden the orchids were their best ever, but the bats have really suffered. When bats emerge from hibernation in spring they need to fatten up quickly to recover weight lost through the winter. The females have stored sperm from autumn or winter mating and now fertilise. Normal pregnancy is about six weeks, but if conditions are bad they can go back into torpor and that extends pregnancy. Once she has given birth, the mother must just keep going to be able to suckle her youngster, and to get it flying and independent as soon as possible. This year, they had a good start, but as the bad weather settled in, the colonies of females became less obvious, and births were late and poorly synchronised within the colonies. The weather stayed bad and the bat hospitals around Sussex received very high numbers of calls to pick up exhausted adult bats or deserted babies. But the problem doesn't end there; the young that do survive are likely to be of low weight and with less time to sort themselves out before hibernation, which generally results in a poor survival rate, particularly through the first winter. And with one young per year, it can take a while to make up major losses in populations.

The weather similarly affected a number of, principally insectivorous, birds.

So bad weather is normal, but we are led to expect more extremes of weather with climate change. With respect to climate change, we can already see well recorded changes in events like spring flowering or insect emergence dates or arrivals of migrant birds. We can also expect changes to our species composition, but these can often be difficult to link to climate change. Thus, still with bats for a moment, Kuhl's pipistrelle bat was basically a Mediterranean species but started to spread northwards in the 70s. In the 90s it spread rapidly and now breeds from Normandy, through southern Germany to the Crimea. For Britain, it breeds in Jersey and I have nine mainland records since the first in 1991, mainly from the south coast and including one from Sussex (found on the beach at Eastbourne). Personally I don't think this distribution shift is related to climate change, but many people think it is.

The bat food, insects, also seemed to have been affected by the weather: butterflies and bumblebees were scarce for much of the summer, and when I was doing a survey of grasshoppers, they were mostly much younger than they should have been for the time of year. But I was particularly intrigued by a call to somebody in the village with bees in the wall of their relatively new house. They were bumble bees, but I had a lot of trouble identifying the species from my old books and eventually found it was the so-called tree bumble bee, *Bombus hypnorum*, which was first found in the UK in 2001. I later saw the same species (mixed with another species of bumble bee) via a webcam set up in somebody's bird box about 200m from that first site, and apparently it is already one of the more common bumble bees in Sussex. It is quite a small bumblebee and characteristic with a bright orange-furred thorax and black abdomen with a white tip. And it doesn't particularly need trees. What prompted this sudden and very successful colonisation is another mystery.

Tony Hutson  
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