

The Biodiversity Extinction Emergency (the state of nature and climate change)

Elsewhere there is another guide on ‘why biodiversity matters’, but here we will quickly explore the current state of our biodiversity across the world and in the UK.

Quite simply, many of the world’s experts are of the opinion that the condition of our natural world is under great threat, and that human activity may be causing the sixth great mass extinction: the fifth mass extinction occurred 66 million years ago and led not just to the dying out of the dinosaurs across the entirety of the planet but also the death of 75% of the plants and animals – that is the possible scale of the current impact that human activity is having ([Ceballos, G. et al \(2015\)](#)).

Hopefully, the end result of that will be some way off (!) but there is evidence that species extinction rates might currently be more than 100 times greater than the naturally expected ‘normal’ rates, and globally more than 25% of plants and animals (at least, for those whose status has been assessed) are now threatened with extinction in the near future ([IPBES \(2019\)](#)).

Here in Great Britain, the state of nature is also considered a cause for concern: a recent assessment of 7,615 species found that 971 (13%) are currently threatened with extinction from Great Britain (England-specific assessments on threat of extinction are not available) ([Hayhow et al 2019](#)).

As a further measure of the possible declines in the status of species, there is a suggestion that in the UK there were 44 million fewer birds in 2012 than there were in 1966 and that in Germany there has been a decline of more than 75 percent over 27 years to 2016 in total flying insect biomass in protected areas ([Birdlife, 2012](#); [Hallmann et al 2017](#)).

Biodiversity is not just restricted to species, of course, but as a defining term it also encompasses habitats and ecosystems and by extension the role that different groups of species play within those systems is an important consideration.

In the last few years the plight of pollinators (which are not just honey bees!) has been the subject of much research and the subject of the first report of the Inter-governmental Panel for Biodiversity and Ecosystem Services (IPBES – the biodiversity equivalent of the IPCC global panel working on climate change).

The assessment found that wild pollinators have declined in occurrence and diversity (and abundance for certain species) at local and regional scales in North West Europe and North America, putting at risk the estimated 5–8% of current global crop production, with an annual market value of \$235 billion–\$577 billion (in 2015) worldwide that is directly attributable to animal pollination ([IPBES, 2016](#)).

In all of this, it should be remembered that there are species which have increased, so it's not all bad news! The complexity then lies in understanding the reasons for those increases and whether they are desirable: many species have recently colonised Great Britain as a result of climate change, for instance, and others have increased in numbers because of their association with human beings. Still others have increased because they are introduced, are pests or have 'invasive' capabilities.

There is no specific data for Leicestershire but it is highly likely that the situation is similar, if not worse since the county has one of the lowest percentages of land that is not directly used for housing and growing food in the country.

The changes mentioned above (and elsewhere) have mainly occurred because of the intensification of agriculture, because of climate change, consumption of natural resources, and other land use changes, and might have significant implications for humans and our quality of life ([Burns, et al. \(2016\)](#)).

The UK Government maintains, and continues to develop, a [suite of indicators of the health of biodiversity](#), and reports annually on the status and trends for each of those indicators .

Across 22 European countries, the proportions of vascular plants, bryophytes, mammals, reptiles, dragonflies, and grasshoppers facing medium-to-high extinction risks are more closely matched to indicators of socioeconomic pressures from the early or mid-, rather than the late, 20th century.

***The negative impact of human activities on current biodiversity
will not become fully realised until several decades into the future.***

Links:

[Dullinger, S. et al. 2013 Europe's other debt crisis caused by the long legacy of future extinctions. Proc. Natl. Acad. Sci 110, 7342-7347](#)

[Urban, M. C. 2015 Accelerating extinction risk from climate change. Science 348, 571, doi:10.1126/science.aaa4984](#)

[Urban, M. C. 2015 Accelerating extinction risk from climate change. Science 348, 571](#)

<https://science.sciencemag.org/content/348/6234/571.full>

[Díaz, S. et al. 2019 Pervasive human-driven decline of life on Earth points to the need for transformative change. Science 366, eaax3100, doi:10.1126/science.aax3100](#)

[Díaz, S. et al. 2019 Pervasive human-driven decline of life on Earth points to the need for transformative change. Science 366](#)

<https://science.sciencemag.org/content/sci/366/6471/eaax3100.full.pdf>

<https://jncc.gov.uk/our-work/uk-biodiversity-indicators-2019/>

<https://www.rtpi.org.uk/knowledge/better-planning/better-planning-climate-change/>