

TRENDS IN BAT POPULATIONS

Chiroptera species use a wide variety of habitats for different aspects of their life cycle (reproduction, feeding, hibernation). Bats are therefore highly sensitive to changes in the environment and as such are a good indicator of the state of biodiversity and ecosystem functioning.

Winter monitoring for a trend indicator

Chiropterans are monitored in various ways in Wallonia, depending on the time of year and species. Winter inventories consist of visiting a group of underground cavities each year (caves, quarries, tunnels, etc.) used as hibernacula by certain species¹ and counting the numbers of species found. This standardised monitoring has made it possible to draw up a trend index of wintering populations.

Overall increasing trend

The populations of the bats being monitored (15 taxa²) almost tripled between 1995 and 2016. Of the 13 representative taxa³, 12 were significantly increasing and 1 taxon showed an uncertain trend (the latter, the Western barbastelle, is a very rare forest species in Wallonia, and moreover, barely present underground in winter). The most striking increase was in the populations of Geoffroy's bat, the Greater mouse-eared bat, and the Greater Horseshoe bat. Long-eared bats showed the most moderate increase. A similar trend indicator has been developed on a pan-European scale⁴ and suggests that populations of the 16 taxa concerned increased by 42% between 1993 and 2011.

The results ought to be qualified

These apparent increases are very encouraging but should be qualified: they could reflect the improvement in prospecting techniques and the amplification of observer networks. Furthermore, the total numbers remain low and far removed from those observed in the 1950s, prior to the significant decline recorded in the

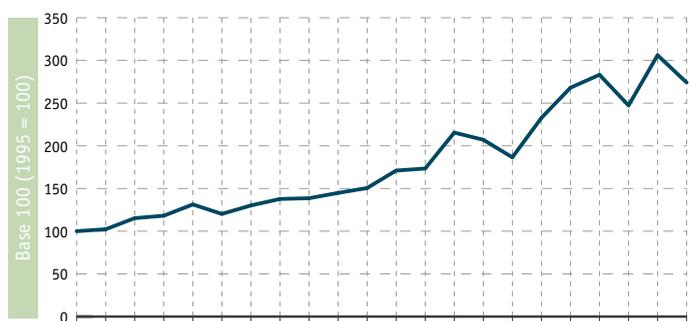
second half of the 20th century. A study⁵ has reported major changes in the composition of bat populations in Wallonia by comparing the results of ringing campaigns for bats wintering between 1939 and 1952 with the results of winter counts between 1995 and 2008: the specific diversity within hibernation sites decreased by half between these periods.

Multifactorial threats

Risk factors include the loss of landscape structural elements (hunting grounds for many species), the decline of prey (grubs or dung beetles⁶) and nuisances caused by night lighting⁷. Certain measures and actions developed in Wallonia benefit these species: the designation of protected natural sites⁸, the arrangement of church lofts and belfries⁹, work carried out as part of certain LIFE projects¹⁰, the implementation of agri-environmental programmes¹¹ or the development of favourable forestry practices (maintaining deadwood and cavity trees)¹².

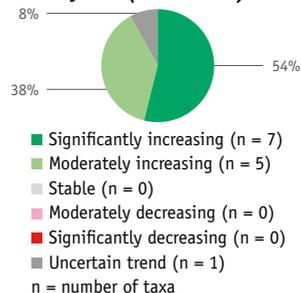
[¹] Of the 22 Walloon species, 17 are found underground and are the subject of winter counts. | [²] A taxon (family, genus, species, etc.) groups living beings according to their common characteristics and kinship. Some species of bats cannot be differentiated in hibernation or are too recently identified and are therefore considered together. | [³] The two taxa not considered were undetermined bats. | [⁴] EEA, 2013 | [⁵] Kervyn *et al.*, 2009 | [⁶] Negatively affected by livestock pest control treatments and pesticides use | [⁷] Disruption of biological rhythms (changes in foraging periods and impact on juveniles growth), etc. | [⁸] → FFH 16 | [⁹] → FFH 17 | [¹⁰] → FFH 19 | [¹¹] → AGRI 10 | [¹²] → FFH 3

Fig. FFH 9-1 Trends in wintering bat populations* in Wallonia



*15 taxa considered, including 17 species out of the 22 species present in Wallonia. These 17 species frequent underground environments and are the subject of standardised winter counts.

Population trends of the representative 13 taxa** of bats (1995-2016)



** The two taxa not considered were undetermined bats.