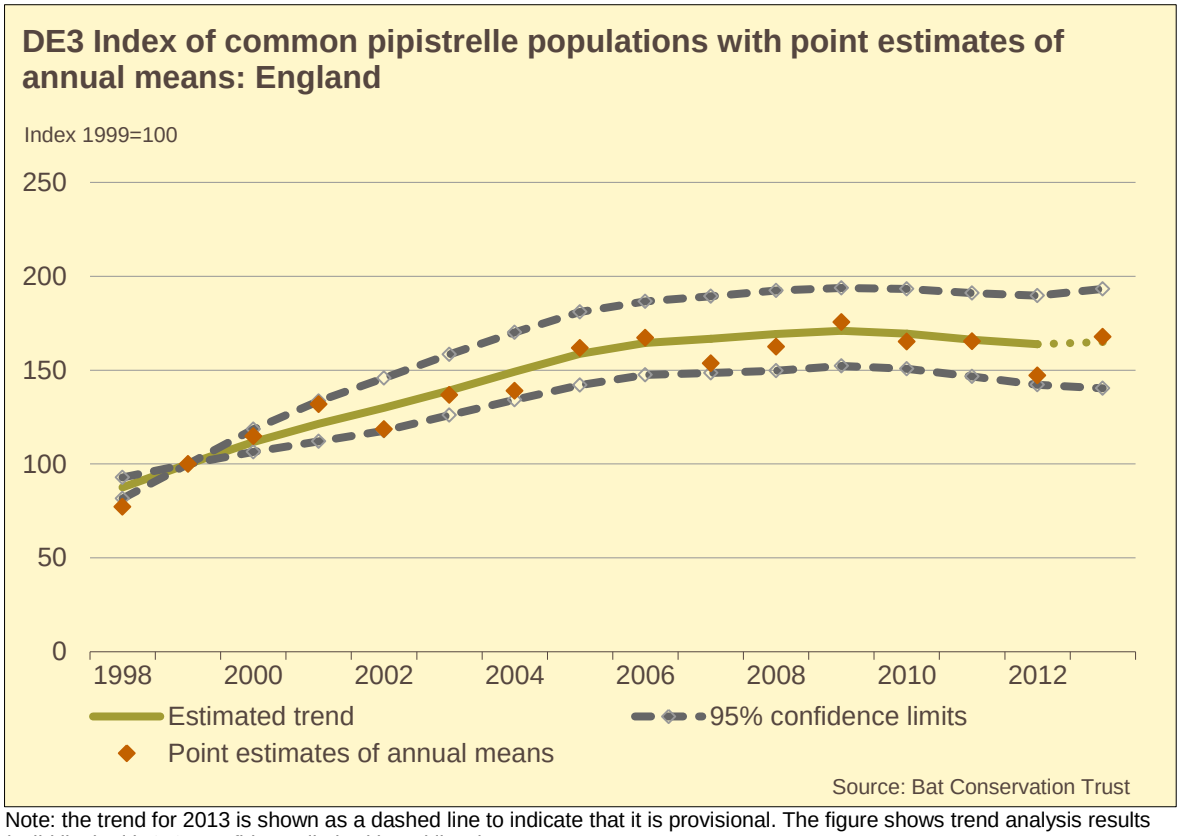
Observatory monitoring framework – indicator data sheet

Environmental impact: Biodiversity

Indicator DE3: Population trends for common pipistrelles



Note: the trend for 2013 is shown as a dashed line to indicate that it is provisional. The figure shows trend analysis results (solid line) with 95% confidence limits (dotted lines).

In 2013 the index stands at 168. This represents an increase of 21 on the 2012 value.

The estimated trend value is approximately 65% above the 1999 baseline, with the positive trend equating to an average annual increase of 3.6%.

This indicator was updated in January 2015. It will next be updated in December 2015.

Further information and contact

For queries or information on this indicator contact Defra's Observatory team on +44 (0) 1904 455058 or email Observatory@defra.gsi.gov.uk

Observatory monitoring framework – indicator fact sheet

Environmental impact: Biodiversity

Indicator DE3: Population trends for common pipistrelles.

Indicator	Common pipistrelle population
Data	Indices of population trends from the NBMP field survey
Geographic coverage	England
Years	1998 – 2013
Source	National Bat Monitoring Programme (NBMP)
Origin of data	Bat Conservation Trust
Updates	This data will be updated annually. The next update is expected in December 2015.
Background	This indicator shows the population trends indices for the Common pipistrelle in England. The data presented here are the Field Survey results from the National Bat Monitoring Programme (NBMP) conducted by the Bat Conservation Trust. Pipistrelles are the commonest bat species in the UK and are legally protected in the UK and internationally under the EU Habitats Directive Annex IV and various other regulations. Estimates from the National Bat Colony Survey suggest a population decline of 70% between 1978 and 1993. Pipistrelles are widely distributed and commonly found on farmland. As they are dependent on insects, they are a useful indicator of changes at lower levels of the food chain. Common pipistrelles in particular are considered to be a good indicator of the state of the environment and especially of the impact of general agricultural practices on small insect populations. The amount and quality of hedgerows and the level of insecticide/pesticide usage are considered to be important for the species. 187 sites (representing 31% of the total England network) were surveyed. Trends currently cover all habitats. Separate trends for farmland may be produced in the future.
Statistical & methodological information	Data presented here are from field counts of bat passes, which are the most representative for monitoring purposes as they are collected through a standardised, repeatable methodology from 1km squares selected at random. Volunteers are assigned a square at random within 10km of their home address. Within each square a triangular 'ideal' transect containing 12 marked stopping points is overlaid. Surveyors make a day visit to secure landowner permission and assess the site for safety. On two evenings in July they walk the transect with heterodyne ultrasonic detectors. At each of the 12 stopping points they listen for common and soprano pipistrelles for two minutes then re-tune their detector and listen for noctule and serotine bats whilst walking to the next stopping point. The survey starts at twenty minutes post sunset. Analysis is based on the proportion of points with bats in order to reduce the risk of distortion from a few survey points with continuous activity. Annual mean proportions are calculated from a log-linear model (including factors that could influence the means eg bat detector, temperature). A smoothed trend line is derived using GAM

	models (General Additive Modelling). The analysis includes a covariate to take account of the effect of the type of bat detector used, a significant factor in the common pipistrelle model. For ease of interpretation the annual mean proportion and trend line have been converted to indices set to 1999=100. The estimate for the most recent year should be treated as provisional. Further methodological information can be found within the NBMP annual reports.
Further information	The 2013 NBMP annual report can be found at: http://www.bats.org.uk/pages/results_and_reports.html The Bat Conservation Trust Website is: http://www.bats.org.uk/ Further information on Biodiversity Action Plans can be found at: http://jncc.defra.gov.uk/default.aspx?page=6189