

## C5b Birds of the Countryside: Woodland Birds

This Evidence Statement should be read in conjunction with the *Summary of Evidence* document (Annex 3). Assertions in bold text have been assigned a confidence rating following assessment by a panel of independent experts (see main report for details).

### A. Background, structure and statistical issues/biases

- This indicator describes trends in the UK's native breeding woodland birds from 1970-2014, based on 37 species that breed mainly in woodland and for which sufficient data exist. The population trends reflect changes of the entire populations of species, not just of the proportion using woodland.
- Indices are derived from the Common Bird Census (CBC: up to 2000) and its successor, the Breeding Bird Survey (BBS: since 1994). Within the measures, each species is given equal weighting, and the annual index is the geometric mean of the individual species indices for that year<sup>i</sup>. Species indices are derived from a statistical model of both datasets.
- The BBS employs a random stratified sampling approach and has good coverage of UK habitats<sup>ii</sup>, although the CBC did not. England is over-represented in the BBS compared with other countries<sup>iii</sup>, but a statistical correction at the region level is applied to counter any spatial bias.
- Assessment of the woodland bird index is relatively robust to temporal biases<sup>iv</sup>.

### B. Representation

1. **The indicator is the average trend in relative abundance, during the breeding season, of common and widespread woodland bird species, but prior to 1994 is likely to show some geographical bias** <sup>[High]</sup>. It does not measure the average trend of populations living in woodland.
2. **There is little evidence on whether other woodland biodiversity shows similar patterns of change as those exhibited in the woodland bird indicator** <sup>[Medium]</sup>, although we know some are affected by similar drivers of change<sup>v</sup>.

### C. The Trend

3. The headline indicator declined by 20% from 1970-2014<sup>vi</sup>. Most of this decline occurred before 1990, although the change in trajectory is not thought to be attributable to the switch in date source from CBC to BBS<sup>vii</sup>. **The magnitude of the change and the narrow confidence intervals constitute strong evidence for a decline in the abundance of woodland birds** <sup>[High]</sup>.
4. Thirteen species (36%) declined in the long-term and eleven (30%) increased. The rates of change among declining species were on average slightly larger than among increasing species<sup>viii</sup>. Compared with other indicators, the species contributing to the woodland bird indicator are moderately coherent in trajectory<sup>ix</sup>. **There is good evidence that some woodland bird species have declined much faster than the headline indicator, and others have increased in abundance** <sup>[High]</sup>.
5. **The indicator is no longer declining and is now stable** <sup>[Medium]</sup>. The smoothed had the same value for 2013 as in 2008. However, during which time 13 species (36%) declined and 12 (32%) increased<sup>viii</sup>.
6. The England woodland bird indicator exhibits a similar significant decline in the long and short term as for the UK. A similar indicator for Scotland increased by 51% between 1994 and 2013; a number of woodland species stable or decreasing in southern UK are increasing in Scotland<sup>x</sup>. **There is moderately strong evidence for regional variation in trends across the UK** <sup>[High]</sup>.

### D. Wider Application

7. Many woodland birds are insectivorous and forage on farmland, and so have the potential to play a role in the regulation of moths and other insect pests of agricultural crops<sup>xi</sup>. However, few hard data exist on the effectiveness of birds as biocontrol agents and little is known about the nature of the relationship between abundance or species richness of birds and the level of pest

control provided. Therefore, it is unclear how changes in the indicator could be used as a measure of pest control services.

8. Birds are charismatic and highly visible animals that provide an important way for people to connect with nature (i.e. cultural ecosystem services)<sup>xi</sup>. However, the link between species status and cultural services is not well-established, so it remains unclear how changes in the indicator could be used as a measure of cultural ecosystem services.
9. Many woodland birds also use farmland, so this indicator is considered a primary indicator of Aichi target 7, about the sustainable management of agricultural land<sup>xii</sup>. **The trend in woodland birds is a weak and indirect measure of progress towards components of Aichi Target 7** <sup>[Medium]</sup>.
10. **The status of woodland birds should not be used to measure progress towards Aichi target 12** <sup>[Medium]</sup> (extinction of threatened species)<sup>xii</sup>. Most woodland birds remain common: those that are rare or declining also contribute to indicator C4a, which is a more direct measure of progress towards Aichi target 12.

#### E. Drivers of change

11. **There is moderate evidence that agricultural intensification has had a very strong negative impact upon woodland birds** <sup>[Medium]</sup>. Many species have substantial populations outside woodland (e.g. on farmland), and have been impacted by the loss of hedgerows and other semi-natural habitats<sup>xiii</sup>.
12. **There is very good evidence that non-UK drivers had a strong, predominantly negative, impact on woodland birds** <sup>[Medium]</sup>, with nine species likely to be declining due to predation by humans on migration routes and/or habitat loss on sub-Saharan wintering grounds<sup>xiv</sup>.
13. **Trends in abundance in the majority of the species within this indicator are associated with climate change, with moderate to strong evidence that more species are increasing than decreasing** <sup>[High]</sup>. Many species have benefitted from milder winters, but there have been adverse effects too: wet springs depressed Capercaillie productivity<sup>xv</sup>.
14. The cessation of traditional practices such as coppicing has been deleterious for understory species such as Nightingale, while removal of dead trees has impacted species that feed or nest within dead wood. **There is good evidence that changes in woodland management have contributed to the decline in the woodland bird indicator**<sup>xvi</sup> <sup>[Medium]</sup>.
15. **Increasing plantation forest area has had a positive effect, and increasing forest age a more balanced impact** <sup>[Medium]</sup>, although the evidence for the impact of these two drivers is moderate<sup>xvii</sup>.

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Endnotes refer to the “Technical Report – Summary of Evidence” document, unless otherwise stated

<sup>i</sup> [http://jncc.defra.gov.uk/docs/UKBI2015\\_TechBG\\_C5\\_Final.doc](http://jncc.defra.gov.uk/docs/UKBI2015_TechBG_C5_Final.doc)

<sup>ii</sup> Table 2.3, section 2.2.8

<sup>iii</sup> Table 2.3

<sup>iv</sup> Sections 2.3.4 – 2.3.6, notably figure 2.6.

<sup>v</sup> Section 3.4.1.3.

<sup>vi</sup> <http://jncc.defra.gov.uk/page-4235>

<sup>vii</sup> <http://www.bto.org/sites/default/files/u196/downloads/rr303.pdf>

<sup>viii</sup> [http://jncc.defra.gov.uk/docs/UKBI2015\\_DS\\_C5\\_Final.xlsx](http://jncc.defra.gov.uk/docs/UKBI2015_DS_C5_Final.xlsx)

<sup>ix</sup> Section 2.1.5, table 2.1.

<sup>x</sup> <http://www.snh.gov.uk/docs/B536405.pdf>

<sup>xi</sup> Section 3.4.2.1

<sup>xii</sup> <http://jncc.defra.gov.uk/page-6121>

<sup>xiii</sup> Section 3.2.4, especially table 3.13 and subsection 3.2.4.2

<sup>xiv</sup> Section 3.2.4, especially table 3.13 and subsection 3.2.4.3

<sup>xv</sup> Section 3.2.4, especially table 3.13 and subsection 3.2.4.1

<sup>xvi</sup> Section 3.2.4, especially table 3.13 and subsection 3.2.4.4 and 3.2.4.6

<sup>xvii</sup> Section 3.2.4, especially table 3.13 and subsections 3.2.4.5, and 3.2.4.7