



BIODIVERSITY INDICATOR FOR EUROPE: POPULATION TRENDS OF WILD BIRDS

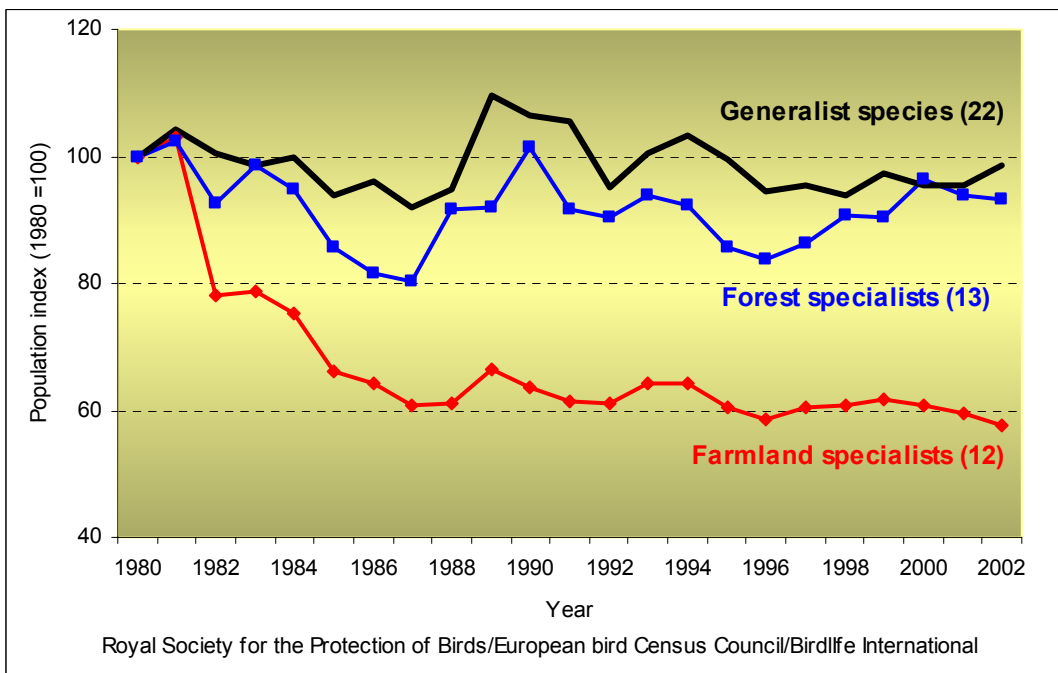
A *meaningful and robust* biodiversity indicator¹ based on wild birds is available immediately (detailed below). Methods used are harmonised, proven and statistically robust, combining cutting-edge expertise from the Netherlands and the UK. National trend data, upon which the indicator is based, are subject to rigorous checking and validation. Data come from 18 countries and this number is set to rise. The wild bird indicator is timely, relevant, capable of annual update in the future, and suitable for development to meet policy needs. It has all the qualities of an effective headline indicator, and is by far the most advanced biodiversity indicator currently available.

Composite indicators of this kind provide a basis for measuring progress towards the goal agreed by the Governments of Europe to reduce biodiversity loss in Europe by 2010. They complement other information on habitats, sites and species (e.g. extinction risk). Their strength is their simplicity, sensitivity to change and ease of update. Their purpose is to enable policy makers to assess and respond to changes in the environment, as well as to increase public awareness of these issues.

Birds as bio-indicators

Birds can be excellent barometers of the health of the wider environment and of the sustainability of human activities. They occur in a range of habitats in considerable numbers, reflect changes in other biodiversity (e.g. other animals and plants), and are responsive and sensitive to environmental change. Excellent current and historical data exist, and these data are realistic and relatively inexpensive to collect. In addition, birds have meaning, resonance and symbolic value for many audiences, and are very popular with the public.

A biodiversity indicator for Europe



¹ With reference to decisions of the Environment Council, 27th October 2003, Luxembourg, 13685/03 (Presse 305)

On average, populations of common generalist birds² in Europe have remained stable over the last twenty years, although numbers have fluctuated in response to winter conditions (trend 1980-2002 = -2%). Common specialist birds of forest have declined to a small degree (trend 1980-2002 = -7%). Populations of common specialist birds of farmland, however, have declined sharply, especially in the 1980s, and this downward trend continues at a slower rate (trend 1980-2002 = -42%). This reflects deterioration in the quality of farmland habitats, affecting both birds and other elements of biodiversity. There is abundant evidence that declines among farmland birds in Europe have been driven by agricultural intensification. Such degradation does not relate only to rare species, or to Special Protection Areas, both of which are critical elements of biodiversity; rather, it relates to biodiversity in the wider countryside.

Indicator Methods

Trend information was derived from annually operated national breeding bird surveys spanning different periods from 18 European countries³, obtained through the *Pan-European Common Bird Monitoring Scheme*. A software package named TRIM (which allows for missing counts in the time series and thus yields unbiased yearly indices and standard errors using Poisson regression) was used to calculate national species' indices and then to combine these into supranational indices for species, weighted by estimates of national population sizes. Weighting allows for the fact that different countries hold different proportions of each species' European population. Supranational indices for species were then combined (on a geometric scale) to create multi-species indicators, fixed (for the purpose of presentation) to a value of 100 in 1980. Although national schemes differ in count methods in the field, these differences do not influence the supranational results, because the indices are standardised before being combined.

Harmonised Data Collection – *The Pan-European Common Bird Monitoring Scheme*

The PECBM scheme collates national data in a harmonised way from a European network of ornithologists. It aims to increase both the number of countries collecting and submitting data on trends, and the number of bird species covered, to help develop and promote biodiversity indicators in Europe. More widely, the project aims to improve the scientific standard of bird monitoring across Europe by fostering co-operation and the sharing of best practice and expertise. Project co-ordinator: Dr Petr Vorisek, Project manager: Dr Richard Gregory, Statistical advice: Dr Arco van Strien, Statistics Netherlands.

The European Environment Agency (through the European Topic Centre/Nature Protection & Biodiversity) is supporting the development of this indicator in the framework of its core set of biodiversity indicators.

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References

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² **Generalist species** = Accipiter nisus, Athene noctua, Buteo buteo, Carduelis cannabina, Carduelis chloris, Corvus corone, Corvus monedula, Dendrocops major, Emberiza schoeniclus, Erithacus rubecula, Falco subbuteo, Falco tinnunculus, Fringilla coelebs, Hirundo rustica, Jynx torquilla, Motacilla flava, Parus caeruleus, Parus major, Phylloscopus trochilus, Pica pica, Sylvia borin, Turdus merula. **Forest specialists** = Anthus trivialis, Aegithalos caudatus, Garrulus glandarius, Muscicapa striata, Parus ater, Phoenicurus phoenicurus, Phylloscopus collybita, Prunella modularis, Regulus regulus, Sylvia atricapilla, Troglodytes troglodytes, Turdus philomelos, Turdus viscivorus. **Farmland specialists** = Alauda arvensis, Carduelis carduelis, Columba palumbus, Emberiza citrinella, Lanius collurio, Miliaria calandra, Passer montanus, Saxicola rubetra, Streptopelia turtur, Sturnus vulgaris, Sylvia communis, Vanellus vanellus.

³ **Contributing countries** - EU: Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Spain, Sweden and United Kingdom. *Accession*: Estonia, Latvia, Poland, Czech Republic and Hungary. *Others*: Norway and Switzerland.