European Environment Agency

8th Environment Action Programme

Common bird index in Europe

8TH EAP HEADLINE INDICATOR, 2024

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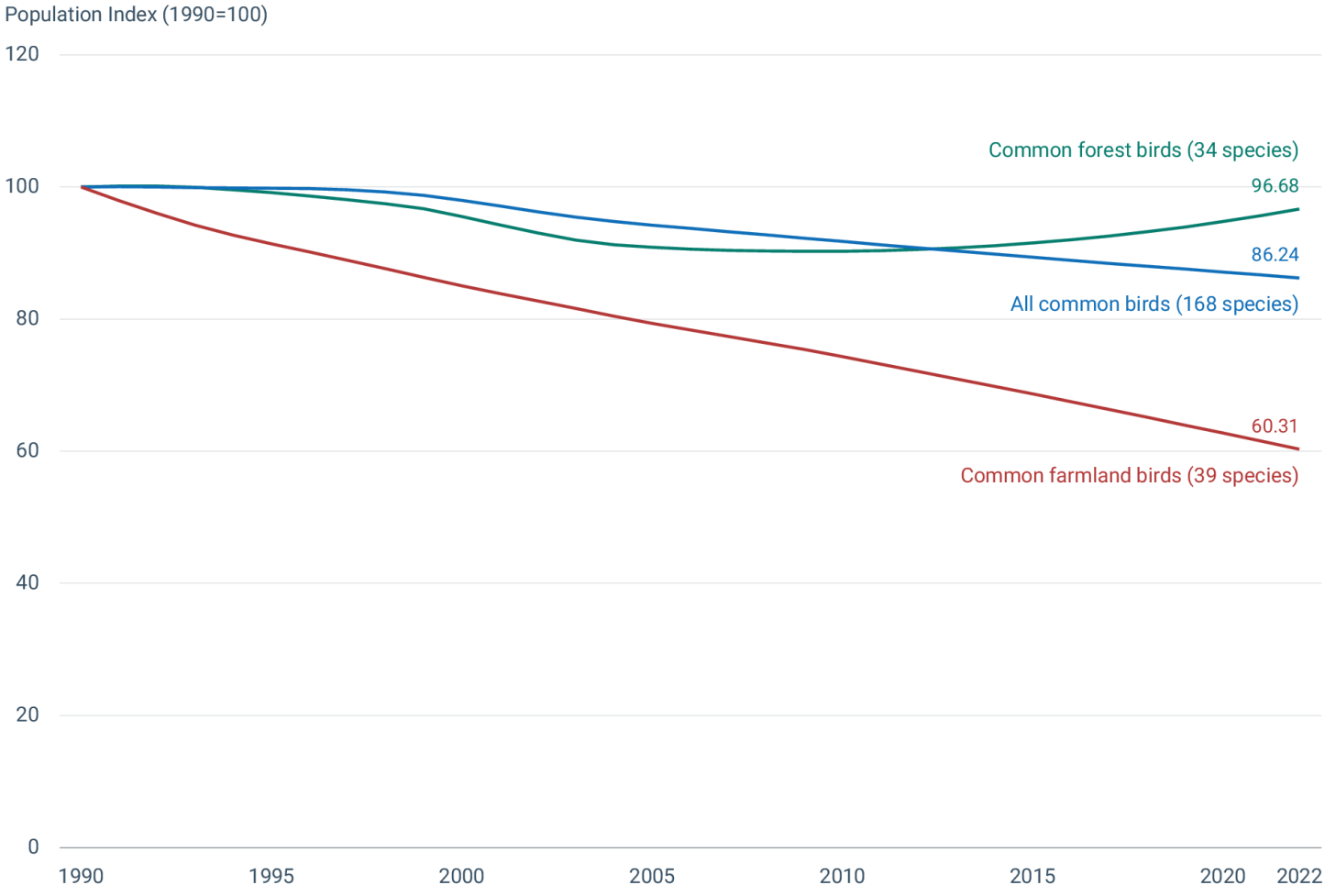
Birds are sensitive to environmental pressures and can indicate the health of the environment. Long-term trends show that between 1990 and 2022 the index of 168 common birds decreased by 14% in the EU. The decline was much stronger in common farmland birds, at 40%, while the common forest bird index decreased by 3%. At present, it seems unlikely that the decline in populations of common birds can be reversed by 2030. Member States need to significantly increase the implementation of existing policies and put new conservation and restoration measures in place to ensure their recovery.

Figure 1. Common bird index in the EU, 1990-2022



Birds are sensitive to environmental pressures. Therefore, their population numbers can serve as an indicator of the health of the environment and help **measure progress** towards the EU's aim to put biodiversity on the path to

recovery by 2030. The status of bird populations has been the subject of long-term monitoring in Europe, much of it via voluntary effort. This is a good example of how the power of **citizen science** can be released through effective targeting and clearly defined monitoring methods [1].

Long-term trends of 168 common birds in the 26 EU Member States with monitoring schemes reveal significant **population declines**. Between 1990 and 2022, the common bird index decreased by 14%, while the common forest bird index decreased by 3%. The decline in common farmland birds was much more pronounced, at 40%. Although this indicator uses 1990 as a baseline, significant decreases had already occurred before this date [2].

These trends demonstrate a major decline in biodiversity in Europe, caused by anthropogenic pressures [3][4][5] . **Agricultural intensification**, in particular pesticides and fertiliser use, is the **main pressure** causing bird population declines [6]. This not only impacts farmland species but also many other common species, especially those whose diet relies on insects and other invertebrates.

There are **other factors** that have adverse effects on the recovery of populations. These include land use change and associated habitat loss and degradation[7][8][9], fragmentation and loss of landscape features [10][11][12][13], intensive forest management [14][15], urbanisation [6], climate change [16][17], increasing competition for land for production of renewable energy and biofuels [18][19], and illegal killing.

It is difficult to forecast how soon biodiversity, as illustrated by the abundance of bird populations, can recover. This recovery is influenced by a complex combination of socio-economic drivers, environmental factors, and policy measures[20]. The measures set out in the Birds and Habitats Directives have helped protect target bird species and their habitats[21][22] . However, the overall decline of bird populations in the EU is mainly driven by large declines in a number of common species [4][5].

The EU regulation on nature restoration paves the way for a broad range of **ecosystems** to be restored. It includes **obligations** to achieve an increasing trend of common farmland and forest bird indices by 2030 and thereafter. This will require Member States to put appropriate restoration measures in place.

The past trend indicates a **steady decline** in the population of **all common birds**, which seems unlikely to be reversed by 2030, as the time needed for species to respond to conservation and restoration actions is unclear. In addition, it is crucial that more effective and ambitious measures to halt biodiversity loss are included in other policies, such as the EU common agricultural policy (CAP) and that CAP Strategic Plans support the implementation and effectiveness of the current and upcoming EU biodiversity and nature legislation [23].

Supporting information

Definition

This indicator is a multi-species index measuring changes in population abundance of all common bird species (n=168), as well as those associated with specific habitats: common farmland bird species (n=39) and common forest bird species (n=34). The index for each group is calculated as an EU aggregate, using 1990 as reference year. Each of the three EU bird indices is presented as a smoothed time series and is calculated with 95% confidence limits.

Methodology

The data for this indicator originate from national monitoring data collected by the Pan-European Common Bird Monitoring Scheme (PECBMS). The PECBMS coordination unit is part of the Czech Society for Ornithology(CSO), based in Prague, Czechia.

Trend information spanning different time periods is derived from annual national breeding bird surveys in 26 EU countries. Skilled survey participants, including volunteers, carry out counting and data collection. Data are collected nationally on an annual basis during the breeding season through common bird monitoring schemes. National bird monitoring data are gathered using several count methods (e.g., standardised point transects/line transects, territory mapping), using a variety of sampling strategies (from free choice of plots to stratified random sampling), and individual plot sizes vary within each country (from 1×1km or 2×2km squares or 2.5-degree grid squares to irregular polygons).

Indicators (multi-species indices) are computed using the MSI-tool (R-script) for calculating multi-species indicators (MSIs) and trends in MSIs. A Monte Carlo method is used to account for sampling error and when not all yearly index numbers for all species are available. The method of calculation is described in [24]. European, EU or regional species indices including standard errors are used as source data.

The PECBMS European species classification (farmland, forest and other common birds) has been developed over time as the indicators have been published and refined. See the PECBMS website for further details on "Species selection and classification".

The current population index of common birds at EU level was produced for the following 168 species:

- **Common farmland birds**: *Alauda arvensis, Alectoris rufa, Anthus campestris, Anthus pratensis, Bubulcus ibis, Burhinus oedicnemus, Calandrella brachydactyla, Ciconia ciconia, Corvus frugilegus, Emberiza calndra, Emberiza cirlus, Emberiza citrinella, Emberiza hortulana, Emberiza malanocephala, Falco tinnunculus, Galerida cristata, Galerida theklae, Hirundo rustica, Lanius collurio, Lanius minor, Lanius senator, Limosa limosa, Linaria cannabina, Melanocorypha calandra, Motacilla flava, Oenanthe hispanica, Passer montanus, Perdix perdix, Petronia petronia, Saxicola rubetra, Saxicola torquatus, Serinus serinus, Streptopelia turtur, Sturnus unicolor, Sturnus vulgaris, Sylvia communis, Tetrax tetrax, Upupa epops and Vanellus vanellus*;
- **Common forest birds**: *Accipiter nisus, Anthus trivialis, Bombycilla garrulous, Bonasa bonasia, Carduelis cintinella, Certhia brachydactyla, Certhia familiaris, Coccothraustes coccothraustes, Columba oenas, Cyanopica cyanus, Dryobates minor, Dryocopus martius, Emberiza rustica, Ficedula albicollis, Ficedula hypoleuca, Garrulus glandarius, Leiopicus medius, Lophophanes cristatus, Nucifraga caryocatactes, Periparus ater, Phoenicurus phoenicurus, Phylloscopus bonelli, Phylloscopus collybita, Phylloscopus sibilatrix, Picus canus, Poecile montanus, Poecile palustris, Pyrrhula pyrrhula, Regulus ignicapilla, Regulus regulus, Sitta europaea, Spinus spinus, Tringa ochropus and Turdus viscivorus;*
- **Other common birds**: *Acanthis flammea, Acrocephalus arundinaceus, Acrocephalus palustris, Acrocephalus schoenobaenus, Acrocephalus scirpaceus, Actitis hypoleucus, Aegithalos caudatus, Alcedo atthis, Anas platyrhynchos, Apus apus, Ardea cinerea, Buteo buteo, Calcarius lapponicus, Cecropis daurica, Cettia cetti, Chloris chloris, Circus aeruginosus, Cisticola juncidis, Clamator glandarius, Columba palumbus, Corvus corax, Corvus corone, Corvus monedula, Cuculus canorus, Cyanecula svecica, Cyanistes caeruleus, Cygnus olor, Delichon urbicum, Dendrocopos major, Dendrocopos syriacus, Egretta garzetta, Emberiza cia, Emberiza schoeniclus, Erithacus rubecula, Fringilla coelebs, Fringilla montifringilla, Fulica atra, Gallinago gallinago, Gallinula chloropus, Grus grus, Haematopus ostralegus, Hippolais icterina, Hippolais polyglotta, Iduna pallida, Jynx torquilla, Larus ridibundus, Locustella fluviatilis, Locustella naevia, Lullula arborea, Luscinia luscinia, Luscinia megarhynchos, Lyrurus tetrix, Merops apiaster, Motacilla alba, Motacilla cinerea, Muscicapa striata, Numenius arquata, Numenius phaeopus, Oenanthe oenanthe, Oriolus oriolus, Parus major, Passer domesticus, Phasianus colchicus, Phoenicurus ochruros, Phylloscopus trochilus, Pica pica, Picus viridis, Pluvialis apricaria, Podiceps cristatus, Prunella modularis, Ptyonoprogne rupestris, Pyrrhocorax pyrrhocorax,*

Streptopelia decaocto, Sylvia atricapilla, Sylvia borin, Sylvia cantillans, Sylvia curruca, Sylvia hortensis, Sylvia melanocephala, Sylvia nisoria, Sylvia undata, Tachybaptus ruficollis, Tadorna tadorna, Tringa erythropus, Tringa glareola, Tringa nebularia, Tringa totanus, Troglodytes troglodytes, Turdus iliacus, Turdus merula, Turdus philomelos, Turdus pilaris and Turdus torquatus.

National monitoring schemes and indices can contain a subset of these 168 species, reflecting their varying occurrence in different countries. More information is available at: https://pecbms.info/country/.

Policy/environmental relevance

The common bird index is a headline indicator for monitoring progress towards the 8th Environment Action Programme (8th EAP). It mainly contributes to monitoring aspects of the 8th EAP priority objective Article 2.2.e that shall be met by 2030: 'protecting, preserving and restoring marine and terrestrial biodiversity and the biodiversity of inland waters inside and outside protected areas by, inter alia, halting and reversing biodiversity loss and improving the state of ecosystems and their functions and the services they provide, and by improving the state of the environment, in particular air, water and soil, as well as by combating desertification and soil degradation' (EU, 2022). For the purposes of the 8th EAP monitoring framework this indicator assesses specifically whether the EU will 'reverse *by 2030* the decline in populations of common birds', (EC, 2022).

The EU regulation on nature restoration in Articles 11 and 12 includes obligations for Member States to achieve an increasing trend at national level of common farmland and forest bird indices by 2030 and thereafter, as further specified in Annexes V and VI to the regulation.

The common bird index is also used in the EU biodiversity dashboard to monitor progress towards the EU Biodiversity Strategy for 2030 and as an EU indicator to monitor progress towards the Sustainable Development Goal 15: "Life on land".

The EU has been taking action to protect biodiversity for a considerable number of years, for example by adopting the Birds Directive — Council Directive 79/409/EEC (updated by Directive 2009/147/EC) and the Habitats Directive — Council Directive 92/43/EEC.

Accuracy and uncertainties

Country coverage (i.e. reflecting the availability of high-quality monitoring data from annually operated common bird monitoring schemes employing generic survey methods and producing reliable national trends): Austria (since 1998), Belgium (Brussels since 1992; Flanders since 2007; Wallonia since 1990), Bulgaria (since 2005), Croatia (since 2015), Cyprus (since 2006), Czechia (since 1982), Denmark (since 1976), Estonia (since 1983), Finland (since 1975), France (since 1989), Germany (since 1989), Greece (since 2007), Hungary (since 1999), Ireland (since 1998), Italy (since 2000), Latvia (since 1995), Lithuania (since 2011), Luxembourg (since 2009), the Netherlands (since 1984), Poland (since 2000), Portugal (since 2004), Romania (since 2007), Slovakia (since 2005), Slovenia (since 2008), Spain (since 1998) and Sweden (since 1975).

Data sources and providers

- Common bird index by type of species - EU aggregate, European Bird Census Council, BirdLife International, Royal Society for the Protection of Birds, Czech Society for Ornithology

Metadata

DPSIR

Impact

Topics

 # Biodiversity # Nature protection and restoration

Tags

 # biodiversity # common birds # population trends # bird populations # Common bird index # SEBI027 # common farmland and forest birds # conservation # birds # animal and plant population # 8th EAP

Temporal coverage

1990-2022

Geographic coverage

Austria
Belgium
Bulgaria
Croatia
Cyprus
Czechia
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Latvia
Lithuania
Luxembourg
Netherlands
Poland
Portugal
Romania
Slovakia
Slovenia
Spain
Sweden

Typology

Descriptive indicator (Type A - What is happening to the environment and to humans?)

UN SDGs

SDG15: Life on land

Unit of measure

Population index (1990=100)

Frequency of dissemination

Once a year

References and footnotes

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