



Geoff Simpson (rspb-images.com)

Why are biodiversity indicators needed?

Biodiversity is a vital indicator of the wellbeing of our planet. In 2002, at the World Summit on Sustainable Development, world leaders agreed the need to achieve a significant reduction in the rate of loss of biodiversity by 2010. A more ambitious target – to halt biodiversity loss by 2010 – was adopted by the EU at its Gothenburg Summit (2001) and by the Ministerial Declaration of the Biodiversity Convention's 6th Conference of the Parties (2002).

There is a pressing need to agree key biodiversity indicators to monitor progress towards these targets and to fulfil our obligations under international treaties, such as the Biodiversity Convention. Birds offer the best potential for providing biodiversity indicators. Just as economic indicators are routinely used by decision makers, so bird indicators should help in adjusting Europe's policies and practices to maximise their environmental sustainability and to assess progress towards conserving our natural heritage.

Why are birds the best basis for a pan-European biodiversity indicator?

Birds are sensitive indicators of the health of the environment and sustainability, reflecting trends in other biodiversity, being responsive to change, high in food chains, inexpensive to survey and the best known and most popular component of Europe's wildlife.

Birds offer probably the best developed biodiversity monitoring network in Europe with:

- pan-European coverage across a wide range of habitats
- relatively long time-series of data and annual monitoring
- scientifically sound methods, providing extensive, high quality, internationally standardised datasets

- analysis at national and international levels
- a cost-effective network of professionally co-ordinated volunteers, as well as the collaboration of scientific and nature management organisations.

How is BirdLife producing the best European biodiversity indicators?

BirdLife can provide a comprehensive picture of the state of Europe's environment through high quality monitoring and assessment of the state of birds and their critical sites, the pressures they face and the actions being taken to conserve them. This involves three inter-related European bird monitoring programmes on:

- common birds, which indicate sustainability of land use
- Important Bird Areas, including the effects of conservation management and other impacts on these core sites
- the most threatened birds, including the risk of extinction and the effectiveness of species action plans.

What action is needed to support monitoring of bird indicators?

Investment is urgently needed to develop and implement national schemes and to co-ordinate data collection, storage, analysis and reporting internationally.

Improved pan-European harmonisation and integration is vital among all those developing, monitoring and using biodiversity indicators, including through:

- efficient flows of information and all countries following common principles, so increasing the usefulness of biodiversity indicators to decision makers
- engagement with the European Environment Agency and its European Biodiversity Monitoring and Indicator Framework (under the UNECE Environment for Europe ministerial process).

BirdLife International

BirdLife is a worldwide partnership of conservation organisations, represented in more than 100 countries (including more than 40 in Europe) and with more than 2.5 million members worldwide. BirdLife works for the diversity of all life and the sustainable use of natural resources through the conservation of birds and their habitats.

- BirdLife's research and monitoring work is based on scientific criteria and standard guidelines.
- The World Bird Database stores comprehensive data on Important Bird Areas and Globally Threatened Birds, allowing analysis, synthesis and presentation.
- Reliable, validated data are central to BirdLife's priority setting and are used to inform policy makers nationally and internationally.
- Capacity building of the network is a key element, including sharing expertise on data collection and maintenance.
- On behalf of IUCN, BirdLife has maintained, for more than 20 years, the red list of birds threatened with global extinction, publishing checklists in 1988, 1994 and 2000.
- BirdLife compiles regional inventories of Important Bird Areas (in 1979 and 2000 for Europe).
- BirdLife undertakes assessments of the conservation status of all European bird species through the Birds in Europe programme (1994, 2004 and ongoing).
- BirdLife helps ensure implementation of the biodiversity-related conventions (eg Biodiversity, Wetlands, Migratory Species, European Wildlife etc) and the EU Birds and Habitats Directives.

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The European Bird Census Council (EBCC)

The EBCC brings together ornithologists from all European countries representing national bodies responsible for monitoring bird populations and their distribution, to encourage bird-monitoring work (especially atlassing and common bird monitoring) aimed both at better conservation and management of bird populations and at providing indicators of the changing ability of European landscapes to support wildlife generally.

- The EBCC promotes monitoring that is rigorously planned, has clear objectives and assesses changing populations against desired target levels.
- The EBCC works to promote links between ornithologists and policy/decision makers.
- The EBCC enables its members to exchange ideas and expertise through its journal (*Bird Census News*) and through its programme of conferences and workshops; it has hosted 14 major international conferences, on a 3–4 year cycle across Europe, with published proceedings.

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EBCC

European Bird Census Council



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Birds as biodiversity indicators for sustainability: a pan-European strategy



EBCC
European Bird Census Council



Sustainability of Europe's land use

Common and widespread species

What indicators can BirdLife monitor?

State: population trends of common breeding birds (farmland and forest birds are the initial focus).

Pressure: threats such as agricultural and forestry policies.

Response: environmentally sensitive policy measures and conservation measures for species in the countryside.

How often? Trends to be determined annually from 2003 onwards; status assessed every 10 years.

How widely? There are 20 countries involved in 2003 and more will join.

Why are common species indicators essential?

Birds have long been used to provide early warning of environmental problems. It is now well established that dramatic declines in farmland birds across Europe are due to the unsustainability of post-war agriculture policy and practices, especially the EU Common Agricultural Policy.

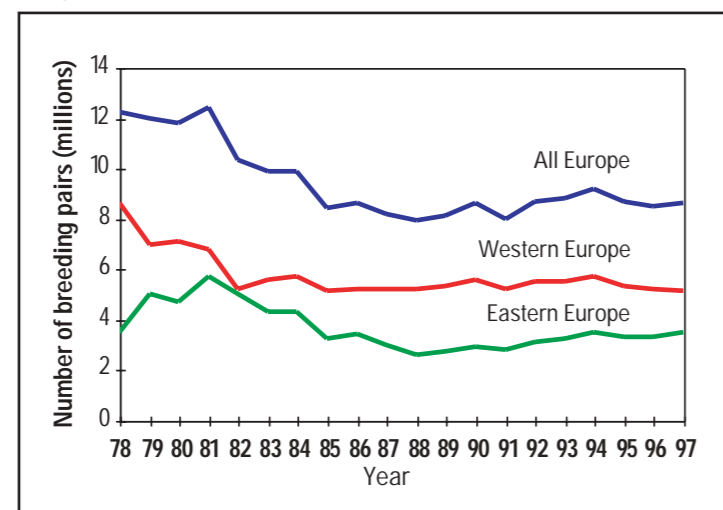
Trends in numbers of common and widespread birds provide the best available indicator of the sustainability of Europe's land use. In 1999, the UK Government adopted wild birds as one of its 15 annual headline indicators of 'quality of life'. There is a compelling need for decision-makers to modulate land use policies in ways that are informed by these trends. The urgency is particularly acute as the EU enlarges with countries towards the east, many of which have a relatively large share of Europe's remaining natural heritage.

How can common birds be monitored?

- The *Pan-European Common Bird Monitoring Project* of the BirdLife/European Bird Census Council is generating the first ever 'pan-European indicators' for common wildlife populations. The data for this project come from many high quality national monitoring schemes.
- The *Birds in Europe* programme of BirdLife updates population estimates and trends and analyses the conservation status of all Europe's birds (first assessment 1994, second nearing completion).
- Combining data on national trends from these two programmes will give multi-species European indicators. These can then be split by, for example, species and habitat group, such as farmland and forest, to shed light on the drivers of change.

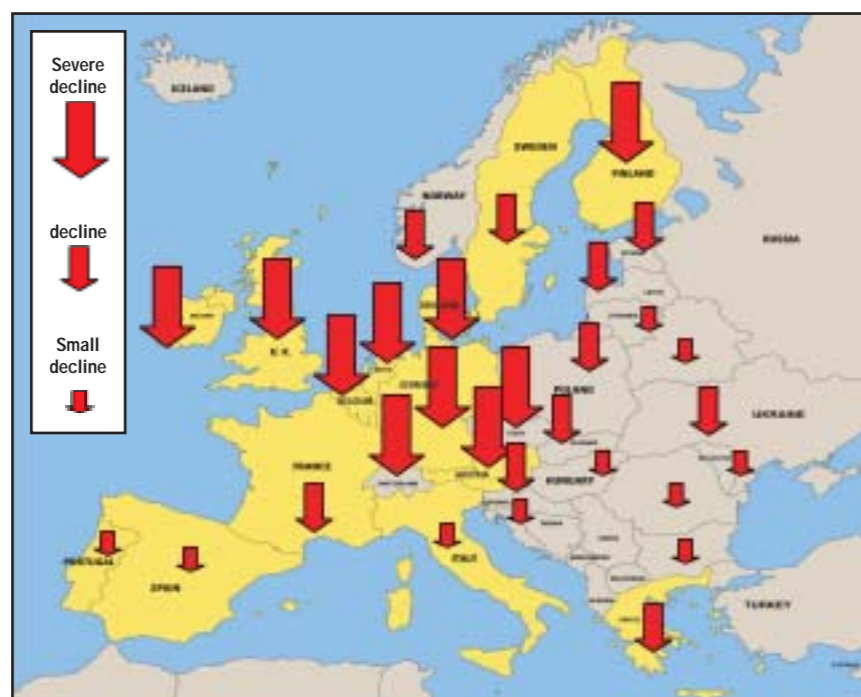
Provisional 'pan-European' indices for Skylark *Alauda arvensis* (right) combining national indices for seven countries. Trends for 'all Europe' and 'eastern' and 'western' Europe appear separately.

[van Strien *et al.* 2001 *Bird Study* 48, 200–213]



The relative severity of farmland bird declines (1970–1990) across Europe.

[BirdLife/European Bird Census Council's European Bird Database. Donald *et al.* 2001 *Proc. Roy. Soc. London* (B) 268, 25–29]



Europe's core sites for nature

Important Bird Areas (IBAs)

What indicators can BirdLife monitor?

State: areas of IBAs and their bird populations, habitats and land use.

Pressure: threats.

Response: overlap with protected areas and existence and implementation of management plans.

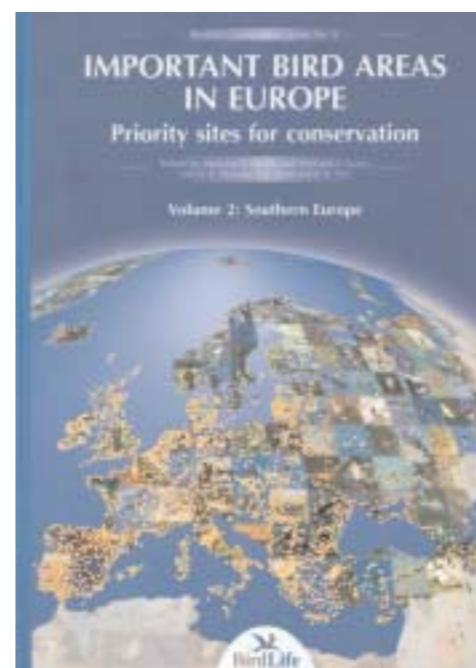
How often? Annually, with a comprehensive update every 10 years.

How widely? In at least 23 countries.

Why are site indicators essential?

Most (95%) of Europe's critical core biodiversity sites are managed through agriculture, forestry and other land uses, as well as by specific conservation policies. The health of these sites and their key species is a vital indicator of the sustainability of Europe's management of the environment. Declines in the condition of these special sites and their unique biodiversity would ring alarm bells for conservation policy, as well as for the state of the environment as a whole.

In line with the Convention on Biological Diversity, a Pan-European Ecological Network is being established. Key sites in this network are being designated under international

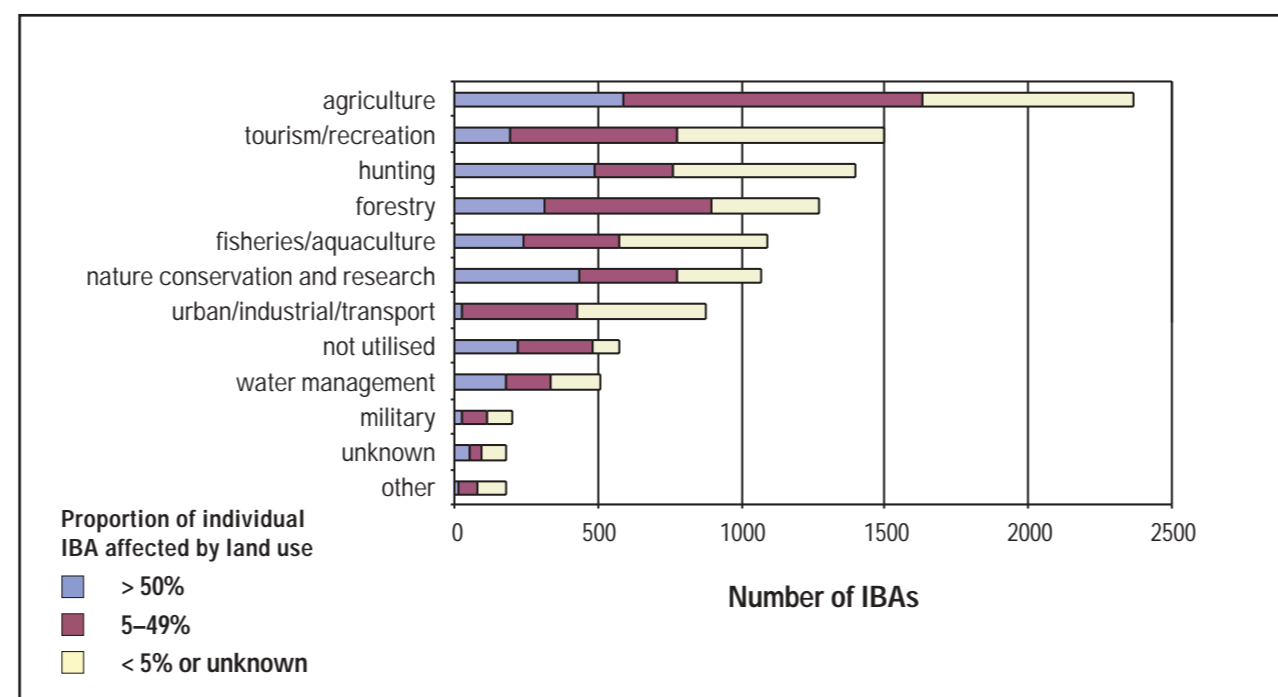


agreements, such as the Ramsar and Bern Conventions and the EU Birds and Habitats Directives. Important Bird Areas, identified by BirdLife through the application of internationally standardised, robust scientific criteria, comprise a large proportion of these key sites. It is widely accepted that they should be protected by at least one of these international instruments.

How can IBAs be monitored?

- A two-tier system is being developed by BirdLife's European Partnership encompassing *basic monitoring* of all IBAs and *detailed monitoring* of a selection of IBAs.
- This new initiative builds on and integrates existing initiatives such as the International Waterfowl Census of Wetlands International and other national and international schemes.
- It is based on the collaborative efforts of volunteer site caretaker networks, scientific institutions and nature management authorities.

The numbers of Europe's 3,619 IBAs subject to particular land-uses.



Extinction risk: an ultimate measure of sustainability

Threatened birds

What indicators can BirdLife monitor?

State: change in global/European IUCN Red List category of Europe's birds, and trends in their numbers and distribution.

Pressure: relative seriousness of different threats.

Response: implementation of Species Action Plans, species protection status, percentage of populations inside protected areas and relevant species policy measures in the countryside.

How often? New information incorporated annually, with a detailed assessment every four years.

How widely? Throughout Europe.

Why are threatened bird indicators essential?

The risk of extinction of species is the ultimate measure of the health of the environment. Therefore, identifying and tracking changes in the conservation status of Europe's most threatened bird species, as well as monitoring the implementation of species action plans, provides an overarching indicator of sustainability. It is also essential to have feedback about conservation efforts that aim to reduce the risk of extinction.

Threatened species are the subject of national and international conservation efforts, including Species Action Plans under the auspices of international legal instruments (eg the Convention on Migratory Species and its African–Eurasian Waterbird Agreement, Bern Convention, EU Birds Directive). The number of threatened bird species is accepted as a key indicator of integration of environmental considerations into sectoral policies, for example in the OECD's work on agriculture and that on forest biodiversity by the Ministerial Conference on the Protection of Forests in Europe.

How can threatened species be monitored?

- BirdLife undertakes periodic assessments of the regional and/or national conservation status of all Europe's birds.
- The assessments use data from internationally co-ordinated national surveys of particular species and atlas work, with some species also being monitored through IBA monitoring programmes.
- Species Action Plan implementation is currently being monitored by BirdLife and others.

Main threats to Europe's 16 Globally Threatened Birds

Species	Threat
Zino's Petrel <i>Pterodroma madeira</i>	predation by non-native rats and cats
Lesser White-fronted Goose <i>Anser erythropus</i>	hunting, habitat deterioration due to agriculture
Red-breasted Goose <i>Branta ruficollis</i>	agriculture, hunting
Marbled Teal <i>Marmaronetta angustirostris</i>	agriculture and hydrological developments
White-headed Duck <i>Oxyura leucocephala</i>	drainage, pollution, hybridisation with non-native Ruddy Ducks
Greater Spotted Eagle <i>Aquila clanga</i>	forestry and agriculture, shooting, poisoning, human disturbance
Imperial Eagle <i>Aquila heliaca</i>	forestry, human disturbance, exploitation, poisoning, powerlines
Spanish Imperial Eagle <i>Aquila adalberti</i>	agriculture and forestry, poisoning, mortality from powerlines
Lesser Kestrel <i>Falco naumanni</i>	agriculture and afforestation
Corncrake <i>Crex crex</i>	agricultural change
Great Bustard <i>Otis tarda</i>	agricultural intensification
Sociable Lapwing <i>Vanellus gregaria</i>	agriculture
Slender-billed Curlew <i>Numenius tenuirostris</i>	agriculture, hunting
White-tailed Laurel Pigeon <i>Columba junoniae</i>	predation by non-native rats, habitat loss to forestry
Aquatic Warbler <i>Acrocephalus paludicola</i>	agriculture, peat extraction and hydrological developments
Azores Bullfinch <i>Pyrrhula murina</i>	deforestation and invasive alien plants