THE STATE OF EUROPE'S COMMON BIRDS 2008

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The long-term trend of Winter Wren *Troglodytes troglodytes* shows a moderate increase, although there are marked fluctuations, probably in reaction to severe winters.

Photo by D. Jirovský (wildbirdphoto.eu)

Acknowledgements

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Cover photo: Northern Lapwing *Vanellus vanellus* by T. Bělka (birdphoto.cz).

Summary

- This report presents the combined population trends of 135 common bird species based on data collected from 21 European countries, covering the period 1980–2006. Compared to earlier reports in this series, the reliability of the results has improved due to enhanced data quality control and increased geographical coverage.

- Of the 135 species covered, 36 have increased moderately and one strongly, 53 have declined moderately and two steeply, while 29 have remained stable. In only 14 cases do species trends remain uncertain.

- 36 species were classified as farmland birds, of which 20 declined, seven increased, four remained stable and five were classified as uncertain.

- 29 species were classified as forest birds, of which 12 declined, six increased, nine remained stable and two were classified as uncertain.

- The other 70 species were classified as 'other common birds', and included generalists and specialists of other habitats. Of these, 23 declined, 24 increased, 16 remained stable and seven were classified as uncertain.

- Common birds as a whole are still in moderate decline in Europe. Average population levels have fallen by 10% over the last 26 years.

- The numbers of common farmland birds have on average fallen by 48%. Although the decline appears to have levelled off in recent years, Europe has still lost half of its farmland birds in the last quarter of a century. Furthermore, there are signs that the large declines witnessed in the old EU Member States may now be repeated in the new Member States. These losses must be reversed and prevented, respectively.

- The numbers of common forest birds have declined on average by 9%, but there are regional differences. Those in eastern and western Europe have remained relatively stable, but those in northern and possibly southern Europe have shown steep declines.

- The wild bird indicators produced by PECBMS are successfully used by policy makers as official biodiversity indicators in Europe. For example, the Farmland Bird Indicator (FBI) has been adopted by the EU as a Structural Indicator, a Sustainable Development Indicator, and a baseline indicator for monitoring the implementation of the Rural Development Regulation under the Common Agricultural Policy (CAP).

- SEBI2010 (Streamlining European 2010 Biodiversity Indicators), a pan-European initiative led by the European Environment Agency, has also incorporated the wild bird indicators in a set of 26 indicators to assess progress towards the European target of halting biodiversity loss by 2010.

Eurasian Tree Sparrow *Passer montanus* populations showed a moderate decline in the 1980s as did its more common relative, House Sparrow *Passer domesticus*. However, the former species has been stable more recently, while the latter has continued to decline.

Ortolan Bunting *Emberiza hortulana* is decreasing steeply across much of Europe.

Introduction

This is the third report in a series describing the health of common bird populations in Europe, brought together by the Pan-European Common Bird Monitoring Scheme (PECBMS). It presents the population trends of 135 bird species, as well as multi-species indices (indicators), based on data from 21 annually operated national breeding bird surveys spanning the period from 1980 to 2006. With more countries contributing their data, and improvements in data quality control, the results are now more representative and more precise than before. In fact, the number of common terrestrial species that it is possible to monitor using generic sampling surveys in the breeding season is probably nearing its maximum. To expand further and produce relevant European trends and indices for more species, PECBMS would need to extend its remit and collate data on rarer species, for example from species-specific surveys.

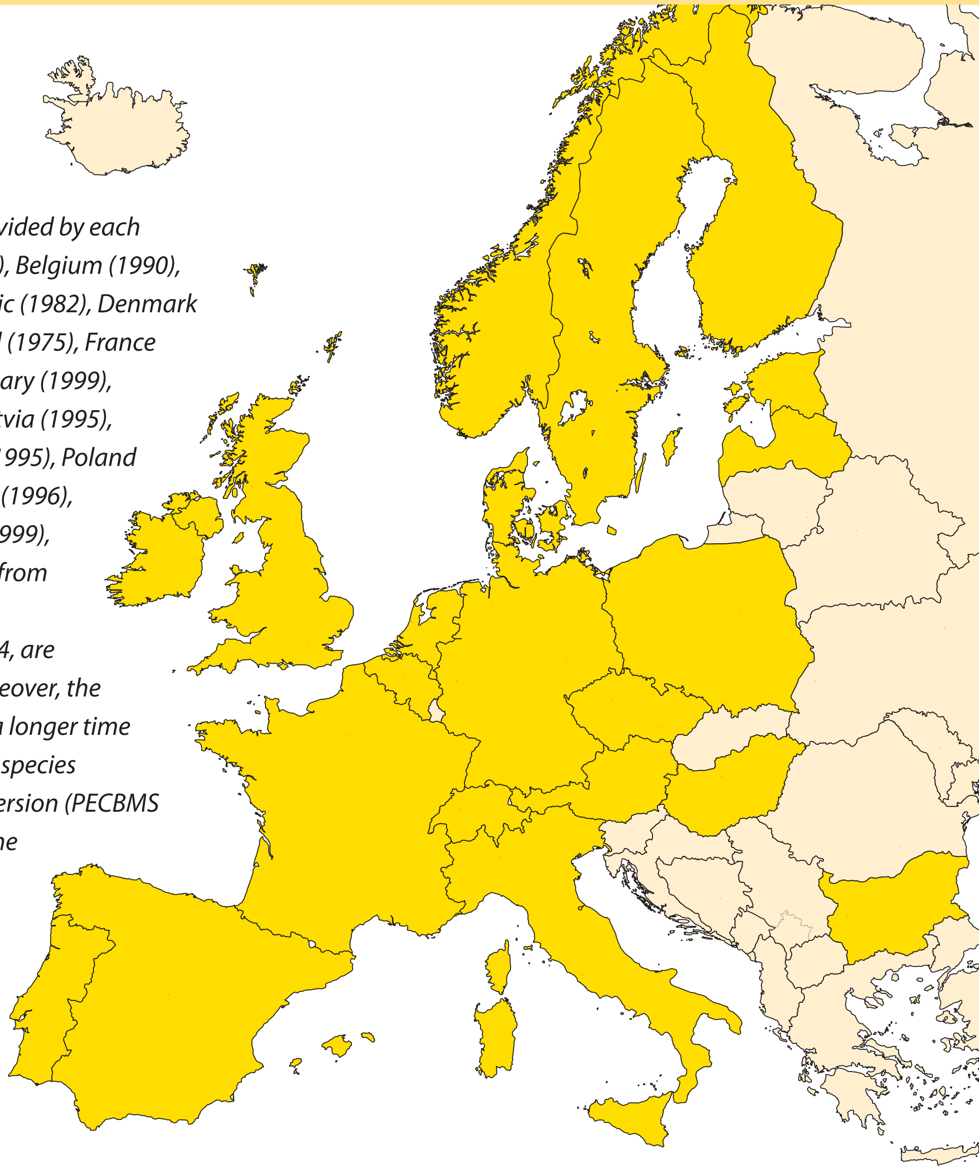
Over the last few years, the indicators produced by PECBMS have been used increasingly widely for policy purposes, both at European and national levels, illustrating the relevance of the indicators. The aim is to help policy makers understand changes in the environment and then make more informed decisions about the management of natural resources. Furthermore, the underlying information on individual species trends has its own value. These data can be used in assessments of species' conservation status, to explore the effects of driving forces at different spatial and temporal scales, and to trigger more detailed research into the reasons underlying species' population changes.

Data | The data are derived from annually operated breeding bird surveys in 21 European countries, spanning different time periods (see www.ebcc.info/pecbm.html), coordinated through the PECBMS.

This report not only presents the latest update of the wild bird indicators, but also describes the use of the indicators for policy purposes and for scientific research. It also summarises the state of knowledge about common bird population changes, and indicates the direction of current and future research.

Indicators

The latest set of wild bird indicators shows what is happening to many species that are considered as common and widespread across Europe. While many rare and localised bird species have benefited from special protection under the EU Birds Directive and the Natura 2000 network (Donald *et al.* 2007), many common species have continued to decline. Overall, the numbers of all common birds declined by around 10% between 1980 and 2006 (see Figure 1).



Map 1 | Countries contributing their data to PECBMS.
The numbers in parentheses show the first year of data provided by each national survey: Austria (1998), Belgium (1990), Bulgaria (2004), Czech Republic (1982), Denmark (1976), Estonia (1983), Finland (1975), France (1989), Germany (1989), Hungary (1999), Ireland (1998), Italy (2000), Latvia (1995), Netherlands (1990), Norway (1995), Poland (2000), Portugal (2004), Spain (1996), Sweden (1975), Switzerland (1999), United Kingdom (1966). Data from the relatively new scheme in Bulgaria, which started in 2004, are included for the first time. Moreover, the data from Estonia now cover a longer time period (1983–2006) and more species compared with the previous version (PECBMS 2007). Data from Belgium come from two regional monitoring schemes in Wallonia and Brussels, covering the period 1990–2005; data from the whole of Belgium are expected to become available in the near future.

As well as increased geographical coverage, data quality control has been also improved. Data quality is controlled at two main levels: **(1)** species; and **(2)** multi-species indices (indicators).

(1) To produce a European species index, data should first be available from countries which together host at least 50% of 'PECBMS European' population of a species. 'PECBMS Europe' includes those countries which already provide their data, as well as those which are actively involved in the project and expect to provide their data by 2010 (for the full list of the countries, see http://www.ebcc.info/index.php?ID=362). Second, each national species trend is inspected to confirm whether it reliably reflects real population changes. This procedure involves assessing statistical characteristics, such as slope value and its standard error, index value and its standard error, and the proportion of each species' national population covered by the monitoring scheme. It also involves consulting with the coordinators of the national monitoring schemes (for more details, see http://www.ebcc.info/index.php?ID=362).

(2) Confidence limits and extent of fluctuations in a species' index are used to assess whether a species should be included in an indicator. Indices with low precision and large fluctuations are examined in detail (for more details, see http://www.ebcc.info/index.php?ID=362).
Although stricter criteria have been applied, the resulting indicators are consistent with the previous versions published in 2007, thereby confirming the robustness of the indicators. For more details on methods, data quality control and species classification, see http://www.ebcc.info/index.php?ID=362 and http://www.ebcc.info/index.p?ID=301.

Common farmland birds have undergone the largest overall decrease in numbers. Their populations declined on average by 48% from 1980 to 2006. Much of this decline took place between 1980 and the mid-1990s, since when the trend appears to have levelled off. However, inspection of the underlying species trends shows that many farmland birds, particularly specialists, are still declining, while only a few species (mainly generalists) are increasing. Comparing trends in old and new EU Member States (i.e. those which joined the EU before or after 2004) highlights an important difference that became evident during the early 1990s (see Figure 2). At that time, farmland birds in the old EU countries continued to decline, but populations in the new EU countries staged something of a recovery, most probably due to a return to less intensive agriculture following the collapse of Communism. Since then, however, farmland birds have declined again in the new EU countries, and they are now following a similar trajectory to those in the old EU countries.

There is a great deal of evidence to suggest that the main factor driving changes in these bird populations has been agricultural intensification and specialisation, such as the loss of crop diversity, destruction of grasslands and hedgerows, and increased use of pesticides and fertilizers (Aebischer *et al.* 2000, Donald *et al.* 2001, Newton 2004). However, the causes of farmland bird population changes and relative importance of individual driving forces may vary across Europe (e.g. Reif *et al.* 2008, Henle *et al.* 2008). For example, there are signals from some southern and eastern European countries suggesting that while farmland species are declining due to intensification in some areas, in others they are suffering from habitat loss caused by abandonment and succession, whereby formerly extensively farmed land has gradually been replaced by scrub and woodland (e.g. Sirami *et al.* 2008).

If we consider the farmland bird indicator from a regional perspective, a more pronounced decline is apparent in all regions (see Figure 3). The indicator shows that northern Europe, like western Europe, now holds only half as many farmland birds as in 1980. In Sweden, for example, a combination of intensification and abandonment, as well as the simultaneous loss of landscape heterogeneity and factors operating on the wintering grounds, have all been implicated in the steep decline of farmland birds (Wretenberg *et al.* 2006).

The equivalent figures for common forest bird populations show that they continue to decline moderately. On average, they have fallen in numbers by 9% from 1980 to 2006. Differences between regions are apparent (see Figure 4). While in western, central and eastern Europe the forest birds remain stable, a pronounced decrease of their populations is obvious in the

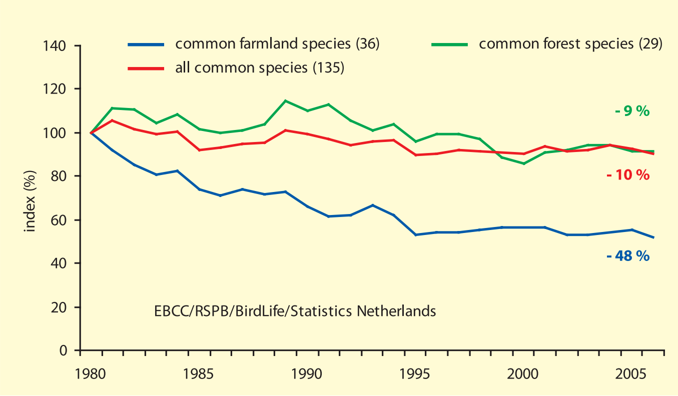


Figure 1 | The wild bird indicators for Europe. The numbers in parentheses show the numbers of species in each indicator.

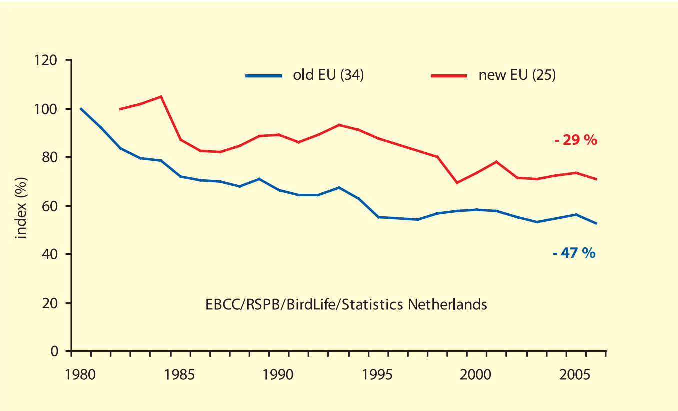


Figure 2 | The farmland bird indicator for the Old EU Member States (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, UK) and New EU Member States, which joined the EU in 2004 or 2007 (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Poland). The numbers in parentheses show the numbers of species in each indicator.

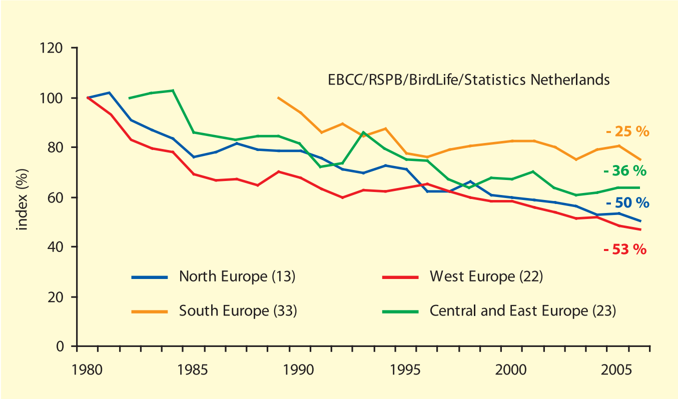


Figure 3 | Regional indicators of common farmland birds in four European regions. Countries contributing their data are grouped as follows: ***North Europe:*** Finland, Norway, Sweden; ***West Europe:*** Austria, Belgium, Denmark, former West Germany, Ireland, Netherlands, Switzerland, United Kingdom; ***South Europe:*** France, Italy, Portugal, Spain; ***Central and East Europe:*** Czech Republic, Estonia, former East Germany, Hungary, Latvia, Poland. The numbers in parentheses show the numbers of species in each indicator.

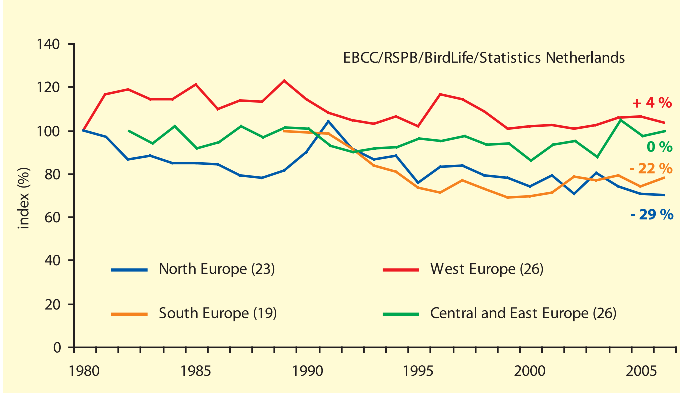


Figure 4 | Regional indicators of common forest birds in four European regions. Countries contributing their data are grouped as follows: ***North Europe:*** Finland, Norway, Sweden; ***West Europe:*** Austria, Belgium, Denmark, former West Germany, Ireland, Netherlands, Switzerland, United Kingdom; ***South Europe:*** France, Italy, Portugal, Spain; ***Central and East Europe:*** Czech Republic, Estonia, former East Germany, Hungary, Latvia, Poland. The numbers in parentheses show the numbers of species in each indicator.

north and south Europe. The driving forces behind these declines are rather uncertain, but it is thought that intensive forestry exploitation may threaten some northern forest birds. In southern Europe, the trends are more uncertain but wild fires and unregulated logging might be involved.

White Stork *Ciconia ciconia* started to recover in the 1990s after large declines during the 20th century caused by both breeding and foraging habitat losses induced by modern agriculture practices and negative conditions on the wintering sites. These declines provoked reintroduction programmes in several European countries. However, we should continue to pay attention to White Stork, as the trend in eastern Europe shows a moderate decline in recent years.

Species trends

Trends for 135 bird species were produced in 2008. According to the species trend classification, which takes into account the precision of trend estimates (see Box 1 on page 17), almost half of the species have been stable or have increased (49%) and 41% have declined. Trends of the remaining 10% of species were classified as uncertain. See Figures 5 and 6 for details.

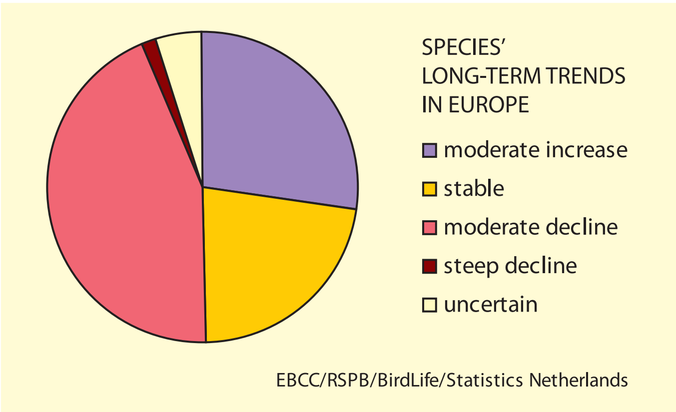


Figure 5 | Data for 109 species were available to produce long-term trends (time period from 1980 or 1982 to 2006). Of these, 48 (43%) declined moderately and two (2%) steeply, while 30 (28%) increased moderately and 24 (22%) were stable. Only five (5%) species' trends were classified as uncertain.

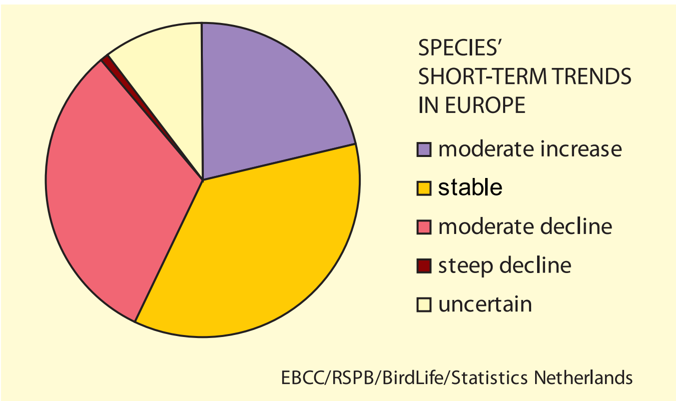


Figure 6 | Data for all 135 species were available to produce short-term trends (with the starting year ranging from 1990 to 2004). For 14 of these species (10%), the trend was classified as uncertain, reflecting the current lack of sufficiently long time series. 29 species (21%) increased moderately, while 43 species declined moderately (32%) and one (1%) steeply. The largest proportion of species (48; 36%) remained stable.

Several farmland species have suffered some of the best documented declines in Europe (see Figure 7 for their comparison). There is good evidence that the widespread decline (see Figure 8) of the Grey Partridge *Perdix perdix* has been caused by agricultural intensification, which has altered the species' breeding and feeding habitats (Aebischer and Kavanagh 1997). The use of fungicides and herbicides on cereal fields reduces the abundance of insects as food and results in lower chick survival (Rands 1985). The quality of insect food is also important for chick survival: the proportion of aphids in the cereal arthropod fauna has increased since the introduction of herbicides, with negative consequences for chick growth (Borg and Toft 2000). Predation is an important cause of adult Grey Partridge mortality, especially during the nesting period (e. g. Tapper *et al.* 1996), and it has been suggested that the abundance of predators is also linked with changes in habitat management (Bro *et al.* 2008). Survival rates over the winter are also important demographic influences on population growth rate (Bro *et al.* 2000).

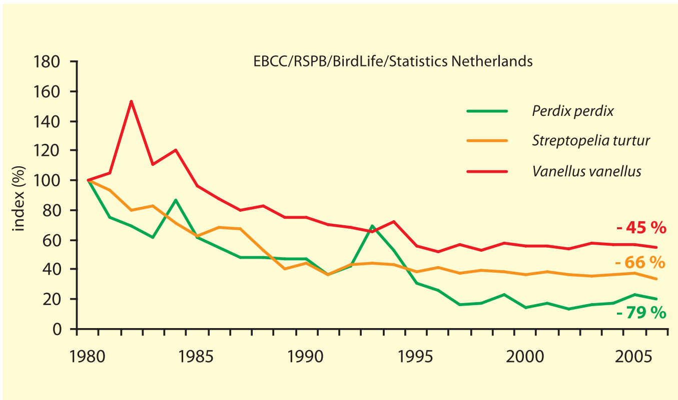


Figure 7 | European trends of three farmland species that have shown some of the largest and best documented declines in Europe (see Table 1).

The decline of the European Turtle-dove *Streptopelia turtur* at least partly reflects changes in agricultural practice, which have reduced the quantity and variety of wildflowers on arable land (Marchant *et al.* 1990). The loss of

hedgerows and thickets on farmland is likely to have had an adverse effect on the population.

The loss of hedgerows and thickets on farmland is likely to have had an adverse effect on the population of the European Turtle-dove *Streptopelia turtur*.

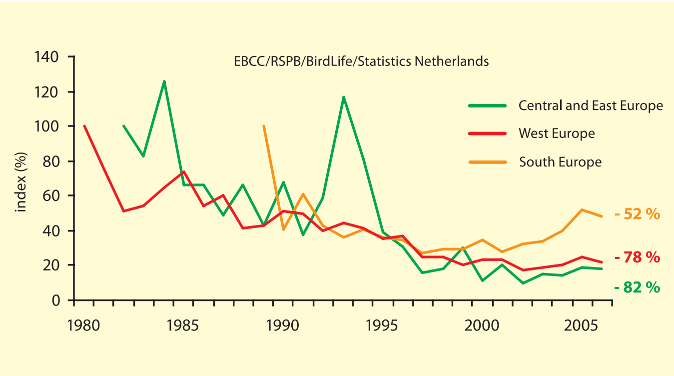


Figure 8 | Regional trends of the Grey Partridge *Perdix perdix* in Europe. Countries contributing their data are grouped as follows: ***West Europe:*** Austria, Belgium, Denmark, former West Germany, Netherlands, United Kingdom; ***South Europe:*** France; ***Central and East Europe:*** Czech Republic, former East Germany, Hungary, Poland.

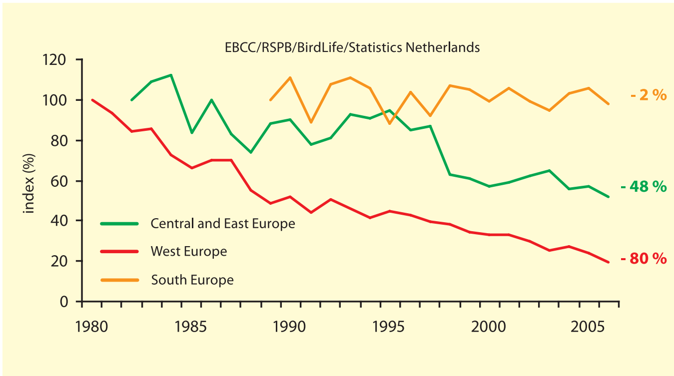


Figure 9 | Regional trends of the European Turtle-dove *Streptopelia turtur* in Europe. Countries contributing their data are grouped as follows: ***West Europe:*** Austria, Belgium, former West Germany, Netherlands, United Kingdom; ***South Europe:*** France, Italy, Portugal, Spain; ***Central and East Europe:*** Czech Republic, Estonia, former East Germany, Hungary, Latvia, Poland.

As a long-distance migrant, the European Turtle-dove faces threats on its migration routes and wintering areas. Hunting can be seen as an aggravating factor especially where it takes place in spring during migration and the reproduction period, as the species suffers from low

Drainage of wetlands and use of herbicides are thought to have caused moderate decline of Yellow Wagtail *Motacilla flava*, a species which prefers moist grassy habitats. It is also possible, that this migratory bird suffers increasing mortality rates during migration, e.g. because of environmental degradation of the Sahel region.

productivity and low adult and juvenile survivorship (Glutz and Jensen 2007). Attention must also be paid to possible competition with the Eurasian Collared-dove, *Streptopelia decaocto*, which is expanding in Europe. Drought conditions and habitat destruction in acacia scrub in the Sahel region, where European Turtle-doves spend part of the year, have coincided with the decline in numbers (Jarry 1992). The regional differences in the species' trend (see Figure 9) are probably caused by different migration routes and wintering areas of the populations and arable land management in different parts of Europe.

The numbers of the Northern Lapwing *Vanellus vanellus* have decreased all around Europe, yet with marked regional differences in the timing and rate of decline (see Figure 10). Intensification of grassland systems is believed to be a causal factor in population declines of this species, which inhabits open grassland habitats and grazed meadows. The use of chemicals reduces the availability of invertebrates, while agricultural machinery and cattle trampling lead to high nest and fledgling losses (Pakkala *et al.* 1997). Drainage and conversion to improved grassland has reduced the availability of wet grassland, one of the Northern Lapwing's preferred nesting habitats (Taylor and Grant 2004). Increased predation of clutches on improved pastures largely accounts for the reduced breeding success (Baines 1990).

This report also contains information on eleven species for which the data were sufficient to produce reliable European trends for the first time. Amongst these, the Eurasian Thick-knee *Burhinus oedicnemus* has shown a moderate increase since 1996, albeit with considerable fluctuations. This formerly more widespread species underwent a large decline during 1970–1990 across much of Europe, due to habitat loss induced by human activities (Nipkow 1997). The trend of this species is based on data from France and Spain, the latter holds more than half of the European population, and is where the species shows some signs of recovery.

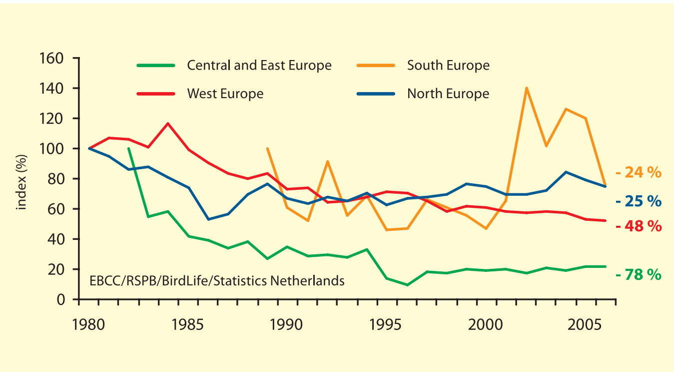


Figure 10 | Regional trends of the Northern Lapwing *Vanellus vanellus* in Europe. Countries contributing their data are grouped as follows: ***West Europe:*** Austria, Denmark, former West Germany, Netherlands, United Kingdom; ***South Europe:*** France, Italy; ***Central and East Europe:*** Czech Republic, Estonia, former East Germany, Hungary, Latvia, Poland; ***North Europe:*** Finland, Sweden.

The Raven *Corvus corax* is increasing in numbers by around 3% per year. After a long period of persecution, the species has experienced a natural recolonisation process, assisted in some places by reintroduction programmes (Bednorz 1997). While both long- (1980–2006) and short-term trends (1990–2006) have shown a moderate increase, since 1995 the trend is classified as stable. For regional trends see Figure 11.

Photo by T. Pospíšil (birdphoto.cz)

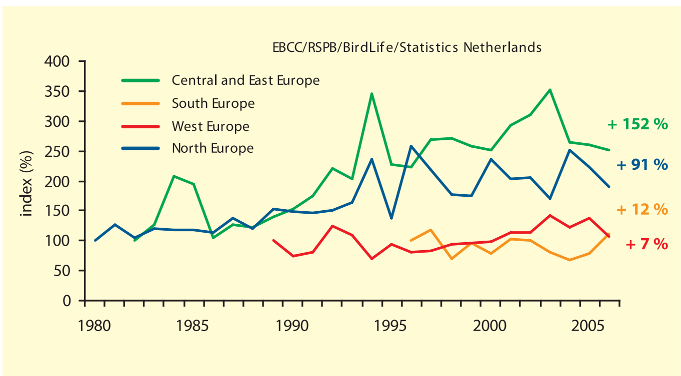


Figure 11 | Regional trends of the Raven *Corvus corax* in Europe. Countries contributing their data are grouped as follows: ***North Europe:*** Finland, Norway, Sweden; ***West Europe:*** Austria, former West Germany, Netherlands, Switzerland, United Kingdom; ***South Europe:*** France, Italy, Portugal, Spain; ***Central and East Europe:*** Czech Republic, Estonia, former East Germany, Hungary, Poland.

Among the species that have shown some of the greatest increases in Europe between 1980 and 2006 is the Great Reed-warbler *Acrocephalus arundinaceus*, which has increased in abundance by around 3.5% per year. It seems that the population decrease experienced during 1970–1990 in many European countries has been followed by a recovery, at least in several countries holding significant populations.
As the population declines were explained by the overall poor state of European inland wetlands (drainage, eutrophication, lower arthropod densities, reduced plant density; Schulze-Hagen 1997), we can assume at least some of these parameters have improved.

Legend for Table 1 | Despite the strict data quality control measures undertaken, the quality of outputs may differ species by species. In some cases, the coverage of species' populations and thus the representativeness of the data may be lower at the beginning of the time series (for information on the time span and the list of countries contributing their data for individual species, see http://www.ebcc.info/index.php?ID=358). Furthermore, year to year fluctuations might not always reflect real population change, so we recommend cautious interpretation of year by year changes. Readers should also pay attention to individual species' legends. Before using the results presented in this report, we recommend consulting the PECBMS coordination unit.

Long/short-term trend: change (in %) in an index value between first and last year of a time period.

Long/short-term annual change: average percentage change per year.

Long-term: 1980–2006; **Short-term**: 1990–2006.

For more details on species trends, including standard errors, see www.ebcc.info/index.php?ID=358.

Trend classification - ↑↑ strong increase, ↑ moderate increase, - stable, ↓ moderate decline, ↓↓ steep decline, **?** uncertain.

For details on species trend classification see Box 1 on page 17.

Table 1		Population trends of common birds in Europe.						
Species		Long-term		Class.	Short-term		Class.	Habitat
		Trend (%)	Annual Change (%)		Trend (%)	Annual Change (%)		
Accipiter nisus	Eurasian Sparrowhawk	53	0	—	13	-2	?	for
Acrocephalus arundinaceus	Great Reed-warbler [2,7]	106	4	↑	-3	1	—	oth
Acrocephalus palustris	Marsh Warbler	20	0	—	-15	1	—	oth
Acrocephalus scirpaceus	Eurasian Reed-warbler	-6	-1	↓	-18	-1	↓	oth
Acrocephalus schoenobaenus	Sedge Warbler	-13	0	—	3	0	—	oth
Actitis hypoleucos	Common Sandpiper	-20	-2	↓	-18	-2	↓	oth
Aegithalos caudatus	Long-tailed Tit	38	1	—	-19	0	—	oth
Alauda arvensis	Eurasian Skylark	-49	-2	↓	-28	-2	↓	farm
Anas platyrhynchos	Mallard [8]	42	1	↑	-24	-1	—	oth
Anthus campestris	Tawny Pipit [1,3]				-1	-3	?	farm
Anthus pratensis	Meadow Pipit	-56	-2	↓	-42	-3	↓	farm
Anthus trivialis	Tree Pipit	-47	-3	↓	-30	-2	↓	for
Apus apus	Common Swift	-6	-1	—	8	1	—	oth
Ardea cinerea	Grey Heron	286	4	↑	8	2	↑	oth
Bonasa bonasia	Hazel Grouse	-30	-1	—	19	-1	—	for
Burhinus oedicnemus	Eurasian Thick-knee [1,4]				80	4	↑	farm
Buteo buteo	Common Buzzard	73	2	↑	-17	-1	—	oth
Calandrella brachydactyla	Greater Short-toed Lark [1,4]				-57	-4	↓	farm
Carduelis cannabina	Eurasian Linnet	-65	-2	↓	-55	-4	↓	farm
Carduelis carduelis	European Goldfinch	-14	2	↑	-6	1	—	oth
Carduelis flammea	Common Redpoll	-70	-3	↓	-10	0	—	oth
Carduelis chloris	European Greenfinch	35	0	↑	-11	0	—	oth
Carduelis spinus	Eurasian Siskin	4	-1	↓	-20	-1	↓	for
Carpodacus erythrinus	Common Rosefinch	-1	0	—	-31	-3	↓	oth
Certhia brachydactyla	Short-toed Treecreeper [2,7]	-55	-1	—	18	2	↑	for
Certhia familiaris	Eurasian Treecreeper	-9	0	—	-6	0	—	for
Cettia cetti	Cetti's Warbler [1]				478	6	↑	oth
Ciconia ciconia	White Stork [2]	107	3	↑	53	3	↑	farm
Circus aeruginosus	Western Marsh-harrier	216	4	↑	-25	-1	—	oth
Cisticola juncidis	Zitting Cisticola [1,4]				9	-1	—	oth
Coccothraustes coccothraustes	Hawfinch [7]	532	2	↑	-34	-2	↓	for
Columba oenas	Stock Dove	19	1	—	13	1	—	for
Columba palumbus	Common Wood-pigeon	75	2	↑	21	1	↑	oth

Class. – Trend classification: ↑ moderate increase, — stable, ↓ moderate decline, ↓↓ steep decline, **?** uncertain. Habitat: **farm** – farmland, **for** – forest, **oth** – other.
1 long-term trend not available, **2** long-term trend: 1982–2006, **3** short-term trend: 1991–2006, **4** short-term trend: 1996–2006, **5** short-term trend: 1999–2006, **6** short-term trend: 2004–2006, **7** index in early years might be less reliable, **8** index might be influenced by releases by hunters. See page 17 for a full description of the classifications.

Table 1	Population trends of common birds in Europe.							
Species		Long-term		Class.	Short-term		Class.	Habitat
		Trend (%)	Annual Change (%)		Trend (%)	Annual Change (%)		
Corvus corax	Common Raven	118	3	↑	58	2	↑	oth
Corvus corone & cornix	Carrion & Hooded Crow	22	1	↑	9	0	—	oth
Corvus frugilegus	Rook	42	1	↑	23	1	↑	farm
Corvus monedula	Eurasian Jackdaw	22	0	—	-6	-1	—	oth
Cuculus canorus	Common Cuckoo	-12	-1	↓	-5	-1	↓	oth
Cyanopica cyanus	Azure-winged Magpie [1, 4]				225	11	↑	oth
Delichon urbicum	Northern House-martin	-3	-2	↓	-12	-2	—	oth
Dendrocopos major	Great Spotted Woodpecker	46	1	↑	16	2	↑	oth
Dendrocopos minor	Lesser Spotted Woodpecker	-75	-7	↓	-47	-6	?	for
Dendrocopos syriacus	Syrian Woodpecker [1, 5]				26	1	?	oth
Dryocopus martius	Black Woodpecker	93	2	↑	69	2	?	for
Emberiza cia	Rock Bunting [1, 4, 7]				144	4	↑	oth
Emberiza cirlus	Cirl Bunting [1]				62	4	↑	farm
Emberiza citrinella	Yellowhammer	-40	-2	↓	-19	-1	↓	farm
Emberiza hortulana	Ortolan Bunting [7]	-79	-6	↓↓	-28	1	—	farm
Emberiza melanocephala	Black-headed Bunting [1, 6]				0	0	?	farm
Emberiza rustica	Rustic Bunting	-78	-4	↓	-67	-7	↓	for
Emberiza schoeniclus	Reed Bunting	-19	-1	↓	-6	-1	↓	oth
Erithacus rubecula	European Robin	15	1	↑	6	1	↑	oth
Falco tinnunculus	Common Kestrel	-26	-1	↓	-32	-3	↓	farm
Ficedula albicollis	Collared Flycatcher [2, 7]	207	3	↑	71	0	—	for
Ficedula hypoleuca	European Pied Flycatcher	-22	-1	↓	-27	-1	↓	for
Fringilla coelebs	Eurasian Chaffinch	4	0	↓	-6	0	—	oth
Fringilla montifringilla	Brambling	-67	-3	↓	-27	-2	↓	oth
Galerida cristata	Crested Lark [2, 7]	-98	-16	↓↓	-88	-9	↓↓	farm
Galerida theklae	Thekla Lark [1, 4]				11	1	—	farm
Gallinago gallinago	Common Snipe	-36	-2	↓	-16	0	—	oth
Garrulus glandarius	Eurasian Jay	37	0	—	49	2	↑	for
Hippolais icterina	Icterine Warbler	-37	-2	↓	-5	-1	↓	oth
Hippolais polyglotta	Melodious Warbler [1]				-2	-1	—	oth
Hirundo rupestris	Eurasian Crag-martin [1, 4]				105	4	?	oth
Hirundo rustica	Barn Swallow	-7	0	—	-9	-1	↓	farm
Jynx torquilla	Eurasian Wryneck [7]	-63	-4	↓	-44	-4	↓	oth
Lanius collurio	Red-backed Shrike	-27	0	—	37	1	—	farm
Lanius minor	Lesser Grey Shrike [1, 5]				2	0	?	farm
Lanius senator	Woodchat Shrike [1, 4, 7]				-46	-3	↓	farm

Class. – Trend classification: ↑ moderate increase, — stable, ↓ moderate decline, ↓↓ steep decline, **?** uncertain. Habitat: **farm** – farmland, **for** – forest, **oth** – other. **1** long-term trend not available, **2** long-term trend: 1982–2006, **3** short-term trend: 1991–2006, **4** short-term trend: 1996–2006, **5** short-term trend: 1999–2006, **6** short-term trend: 2004–2006, **7** index in early years might be less reliable, **8** index might be influenced by releases by hunters. See page 17 for a full description of the classifications.

Table 1 **Population trends of common birds in Europe.**

Species		Long-term Trend (%)	Long-term Annual Change (%)	Class.	Short-term Trend (%)	Short-term Annual Change (%)	Class.	Habitat
Limosa limosa	Black-tailed Godwit [1]				-40	-3	↓	farm
Locustella fluviatilis	Eurasian River Warbler [2, 7]	-56	-1	—	-23	-1	—	oth
Locustella naevia	Common Grasshopper-warbler	-39	-1	—	-23	-2	↓	oth
Lullula arborea	Wood Lark [7]	-47	-2	?	14	0	—	oth
Luscinia luscinia	Thrush Nightingale	14	1	↑	19	1	↑	oth
Luscinia megarhynchos	Common Nightingale	-63	-4	↓	6	0	—	oth
Melanocorypha calandra	Calandra Lark [1, 4]				22	1	—	farm
Merops apiaster	European Bee-eater [1]				-1	2	?	oth
Miliaria calandra	Corn Bunting	-64	-3	↓	-14	-1	—	farm
Motacilla alba	White Wagtail	-16	0	↓	-28	-1	↓	oth
Motacilla cinerea	Grey Wagtail [7]	386	0	—	-31	-1	↓	oth
Motacilla flava	Yellow Wagtail	-61	-3	↓	-24	-1	—	farm
Muscicapa striata	Spotted Flycatcher	-50	-3	↓	-28	-2	—	oth
Nucifraga caryocatactes	Spotted Nutcracker	50	-1	—	-45	-4	↓	for
Oenanthe hispanica	Black-eared Wheatear [1, 4]				-41	-3	↓	farm
Oenanthe oenanthe	Northern Wheatear [7]	-52	-4	↓	-51	-4	↓	oth
Oriolus oriolus	Eurasian Golden Oriole [2]	44	2	↑	35	1	—	oth
Parus ater	Coal Tit	-5	0	—	-15	-1	↓	for
Parus caeruleus	Blue Tit	37	1	↑	27	2	↑	oth
Parus cristatus	Crested Tit	-33	-1	↓	-5	0	—	for
Parus major	Great Tit	11	0	—	16	1	↑	oth
Parus montanus	Willow Tit	-56	-4	↓	-34	-2	—	for
Parus palustris	Marsh Tit	-36	-2	↓	-16	-1	—	for
Passer domesticus	House Sparrow	-58	-3	↓	-5	-1	↓	oth
Passer montanus	Eurasian Tree Sparrow	-52	-2	↓	7	-1	—	farm
Perdix perdix	Grey Partridge	-79	-7	↓	-56	-7	↓	farm
Petronia petronia	Rock Sparrow [1, 4, 7]				76	3	↑	farm
Phoenicurus ochruros	Black Redstart [2, 7]	28	0	—	-3	0	—	oth
Phoenicurus phoenicurus	Common Redstart	9	1	↑	38	1	↑	for
Phylloscopus bonelli	Bonelli's Warbler [1]				-35	-2	?	for
Phylloscopus collybita	Common Chiffchaff	34	2	↑	-32	-1	↓	for
Phylloscopus sibilatrix	Wood Warbler	-27	-2	↓	-28	-4	↓	for
Phylloscopus trochilus	Willow Warbler	-26	-2	↓	-26	-2	↓	oth

Class. – Trend classification: ↑ moderate increase, — stable, ↓ moderate decline, ↓↓ steep decline, **?** uncertain. Habitat: **farm** – farmland, **for** – forest, **oth** – other. **1** long-term trend not available, **2** long-term trend: 1982–2006, **3** short-term trend: 1991–2006, **4** short-term trend: 1996–2006, **5** short-term trend: 1999–2006, **6** short-term trend: 2004–2006, **7** index in early years might be less reliable, **8** index might be influenced by releases by hunters. See page 17 for a full description of the classifications.

Table 1 Population trends of common birds in Europe.

Species		Long-term Trend (%)	Long-term Annual Change (%)	Class.	Short-term Trend (%)	Short-term Annual Change (%)	Class.	Habitat
Pica pica	Black-billed Magpie	2	-1	↓	-30	-3	↓	oth
Picus canus	Grey-faced Woodpecker [2,7]	53	1	?	-15	-2	—	for
Picus viridis	Eurasian Green Woodpecker	55	2	↑	61	3	↑	oth
Prunella modularis	Hedge Accentor	-30	-1	↓	-10	-1	↓	oth
Pyrrhocorax pyrrhocorax	Red-billed Chough [1,4]				63	5	?	oth
Pyrrhula pyrrhula	Eurasian Bullfinch	-50	-1	↓	-33	-2	↓	for
Regulus ignicapilla	Firecrest [2,7]	-32	0	—	-43	0	—	for
Regulus regulus	Goldcrest	-41	-1	↓	-56	-2	↓	for
Saxicola rubetra	Whinchat	-55	-2	↓	0	0	—	farm
Saxicola torquatus	Common Stonechat [2,7]	-45	-1	?	-32	-1	—	farm
Serinus serinus	European Serin [2,7]	-48	-4	↓	-40	-3	↓	farm
Sitta europaea	Wood Nuthatch	71	1	↑	-10	-1	—	for
Streptopelia decaocto	Eurasian Collared-dove	99	3	↑	116	5	↑	oth
Streptopelia turtur	European Turtle-dove	-66	-4	↓	-23	-1	↓	farm
Sturnus unicolor	Spotless Starling [1,4]				67	4	↑	farm
Sturnus vulgaris	Common Starling	-52	-2	↓	-6	-1	—	farm
Sylvia atricapilla	Blackcap	89	3	↑	28	2	↑	oth
Sylvia borin	Garden Warbler	-17	-1	↓	-13	0	—	oth
Sylvia cantillans	Subalpine Warbler [1]				-5	1	?	oth
Sylvia communis	Common Whitethroat	23	1	↑	8	1	↑	farm
Sylvia curruca	Lesser Whitethroat	-14	0	—	9	1	↑	oth
Sylvia melanocephala	Sardinian Warbler [1]				-18	2	—	oth
Sylvia nisoria	Barred Warbler [2,7]	40	0	?	-21	-2	?	oth
Sylvia undata	Dartford Warbler [1,4]				-43	-5	↓	oth
Tringa totanus	Common Redshank	-34	-3	↓	-8	-1	—	oth
Troglodytes troglodytes	Winter Wren	44	2	↑	0	1	↑	oth
Turdus iliacus	Redwing	-1	0	—	7	0	↑	oth
Turdus merula	Eurasian Blackbird	11	1	↑	13	1	↑	oth
Turdus philomelos	Song Thrush	-10	0	↓	13	1	↑	oth
Turdus pilaris	Fieldfare	-3	1	↑	-43	-1	↓	oth
Turdus viscivorus	Mistle Thrush	-30	-1	↓	-15	-1	—	for
Upupa epops	Eurasian Hoopoe [2,7]	251	5	?	-20	-1	?	farm
Vanellus vanellus	Northern Lapwing	-45	-3	↓	-27	-2	↓	farm

Class. – Trend classification: ↑ moderate increase, — stable, ↓ moderate decline, ↓↓ steep decline, **?** uncertain. Habitat: **farm** – farmland, **for** – forest, **oth** – other. **1** long-term trend not available, **2** long-term trend: 1982–2006, **3** short-term trend: 1991–2006, **4** short-term trend: 1996–2006, **5** short-term trend: 1999–2006, **6** short-term trend: 2004–2006, **7** index in early years might be less reliable, **8** index might be influenced by releases by hunters. See page 17 for a full description of the classifications.

Lesser Whitethroat *Sylvia curruca* has been stable across Europe, possibly due to the south-easterly direction of its migration, which makes it unaffected by the Sahel drought.

Photo by D. Jirovský (wildbirdphoto.eu)

BOX 1: Trend classification

The multiplicative overall slope estimate (trend value) in TRIM is converted into one of the following categories. The category depends on the overall slope, as well as its 95% confidence interval (= slope +/- 1.96 times the standard error of the slope).

- *Strong increase* – increase significantly more than 5% per year (5% would mean a doubling in abundance within 15 years). Criterion: lower limit of confidence interval > 1.05.
- *Moderate increase* – significant increase, but not significantly more than 5% per year. Criterion: 1.00 < lower limit of confidence interval < 1.05.
- *Stable* – no significant increase or decline, and it is certain that trends are less than 5% per year. Criterion: confidence interval encloses 1.00 but lower limit > 0.95 and upper limit < 1.05.
- *Uncertain* – no significant increase or decline, but not certain if trends are less than 5% per year. Criterion: confidence interval encloses 1.00 but lower limit < 0.95 or upper limit > 1.05.
- *Moderate decline* – significant decline, but not significantly more than 5% per year. Criterion: 0.95 < upper limit of confidence interval < 1.00.
- *Steep decline* - decline significantly more than 5% per year (5% would mean a halving in abundance within 15 years). Criterion: upper limit of confidence interval < 0.95.

Photo by T. Pospíšil (birdphoto.cz)

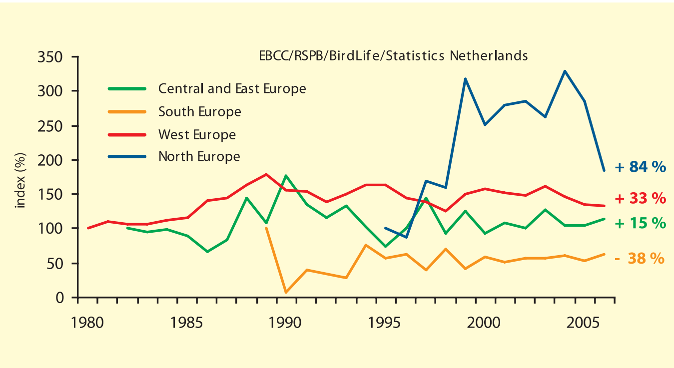


Figure 12 | Regional trends of the Mallard *Anas platyrhynchos* in Europe. Countries contributing their data are grouped as follows: ***North Europe:*** Norway; ***West Europe:*** Belgium, Denmark, former West Germany, Netherlands; ***South Europe:*** France; ***Central and East Europe:*** Czech Republic, Estonia, former East Germany, Hungary, Poland.
[The sudden decline of the index in South European region at the beginning of the time period most likely reflects insufficient data rather than real decline.]

The long-term trend of the Mallard *Anas platyrhynchos* has shown a moderate increase, but since 1985 the species has remained stable. The increase is more prominent in western and northern Europe, while the southern and eastern European population appears to be stable (see Figure 12). The increase of the European population may be caused partially by releases of hand-reared birds for hunting. The common and widespread nature of this species means that it is one of the few waterfowl whose abundance can be assessed using common breeding bird monitoring scheme methods. The information that this provides about the breeding population can be compared to other programmes, such as the International Waterbird Census, which monitors the wintering population.

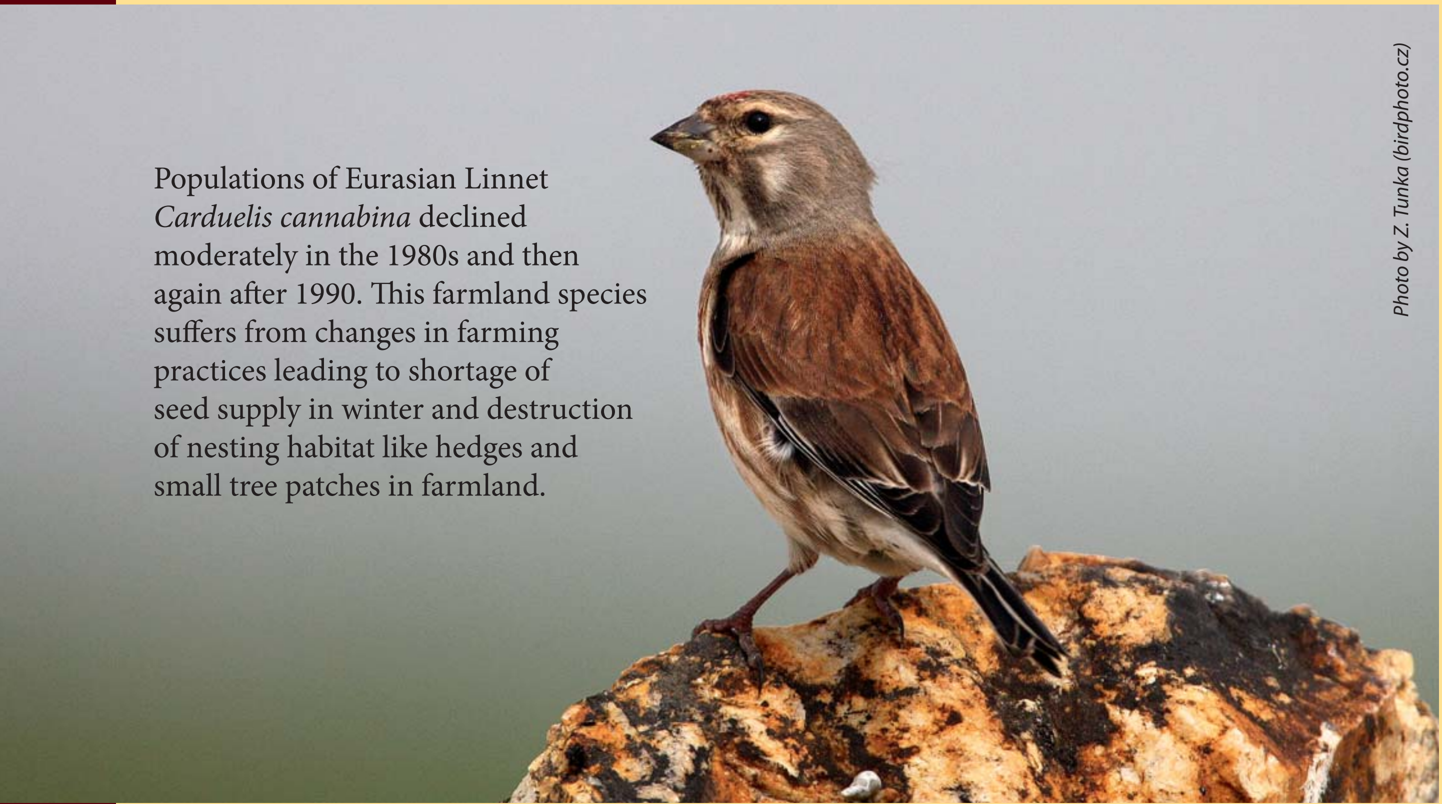
Use of common bird monitoring data for policy and science

The interaction and cooperation between scientists and policy makers has been a critical feature in the successful development and adoption of the wild bird indicators in Europe. This interaction has helped the PECBMS to develop summary statistics and information that specifically target and understand the policy needs. Thanks to this, the wild bird indicators have been promoted for official use in a number of different reporting processes in Europe.

The Farmland Bird Index (FBI) has been adopted by the EU as an Indicator of Sustainable Development and a Structural Indicator (http://ec.europa.eu/eurostat). Furthermore, the FBI, produced in accordance with the methodology developed by the PECBMS, has been adopted as an indicator for the EU Rural Development Plans under the Council Regulation (EC) No. 1698/2005 (http://ec.europa.eu/agriculture/rurdev/eval/index_en.htm). Indicators under the framework of the Structural and Sustainable Development Indicators are routinely produced by the PECBMS at a national level using a single European species' habitat classification, but national versions of the indicators that use their own species' classifications are in common use for good reasons. The European-scale species classifications allow meaningful comparisons of indicators across countries, so-called 'benchmarking', while national-scale species' classifications may be able to capture important elements of the local environment within national wild bird indicators. National versions of the FBI used in Rural Development Plans, for example, can use country-specific species' habitat classifications, and due to this the

The Redshank *Tringa totanus* has shown a moderate decline since 1980. The loss and fragmentation of its habitat due to agriculture practices is believed to be a key factor in its decline. This wet grassland species tend to nest in small patches of relatively tall vegetation which are likely to be uncommon on the short and uniform sward that is characteristic of heavily grazed saltmarshes (Norris *et al.* 1998). Habitat fragmentation concentrates breeding birds into smaller areas, where they are less effective at driving away predators. This effect may be compounded by a parallel increase in the populations of crows and foxes. It is therefore likely that these factors are affecting the breeding productivity of Redshank as well as other waders (Stanbury *et al.* 2000). However, the precise numbers of breeding birds are rather difficult to obtain due to the low territoriality of the species.

Photo by P. Šaj (birdphoto.cz)



Populations of Eurasian Linnet *Carduelis cannabina* declined moderately in the 1980s and then again after 1990. This farmland species suffers from changes in farming practices leading to shortage of seed supply in winter and destruction of nesting habitat like hedges and small tree patches in farmland.

Photo by Z. Tunka (birdphoto.cz)

indicators may well differ slightly. In presenting different indicators, it is important to explain species selection and define the purpose of each indicator.

The SEBI 2010 (Streamlining European 2010 Biodiversity Indicators) project, a pan-European initiative led by the European Environment Agency (EEA), incorporated the wild bird indicator in the set of indicators to assess progress towards the European target of halting biodiversity loss by 2010 (Gregory *et al.* 2008). Other international initiatives and organisations use the wild bird indicators and underlying data produced by the PECBMS too. Examples include the OECD, the Core Set of Indicators of the EEA, the Living Planet Index (http://assets.panda.org/downloads/living_planet_report_2008.pdf) and several others. The European approach developed and promoted by the PECBMS is also beginning to inspire other similar initiatives in other continents; recently, for example, in the USA where the first wild bird indicators have been published in spring 2009 (http://www.stateofthebirds.org/pdf_files/State_of_the_Birds_2009.pdf). The European wild bird indicators also paved the way for the development of the so called 'Global World Bird Index Project', an RSPB and BirdLife International initiative, seeking to motivate, encourage and support bird population monitoring around the globe through the 2010 Biodiversity Indicators Partnership Project (http://www.twentyten.net).

Wild bird indicators have been adopted at national level in at least 15 European countries too. In Sweden, for example, the government has adopted 16 environmental objectives, four of which are underpinned by common bird indices (http://miljomal.nu). France is using an indicator system where species are grouped by habitat and specialisation (http://www.mnhn.fr/vigie-nature/STOC_indicateurs.htm). In the Netherlands, a number of indicators for many kinds of habitats and species groups have been developed and the government reports on them annually, although, as yet, they do not have formal status (www.natuurcompendium.nl). In the UK, the common bird indicator is a part of an official set of high profile, 'Framework' indicators and the UK government and its agencies have pledged to reverse the decline of farmland and woodland birds by 2020. Similar frameworks are being developed in other European countries, too (Gregory *et al.* 2008).

Furthermore, the development and use of wild bird indicators in Europe has triggered more intensive research into the potential driving forces behind population trends of species and development of species action plans, as illustrated by examples from the UK and the Netherlands. While most of these examples point to successful progress and the intelligent use of wild bird indicators to promote informed conservation and land management policies, there is a need for stronger support and leadership from the EU and national governments in securing the underlying data and in indicator production and use. Such assistance would allow targets for biodiversity conservation to be more tightly defined; such targets could then be regularly reviewed, and integrated recovery plans could be developed.

Monitoring data can be also used in research. It is desirable to use monitoring data to develop hypotheses on trends using explorative analysis, or to test hypotheses on large-scale drivers of population changes. Publications in scientific papers also help to disseminate information on species' trends and methodology. This brings transparency and credibility to the project products. Numerous examples of scientific papers using monitoring data at national level can be found in the literature, and some papers clearly linked to PECBMS European outputs can be identified too. The publication of scientific papers linked to PECBMS started well before the official start of the scheme in 2002. For example, the results of a pilot study paved the methodological road to routine production of European species trends and indices (Van Strien *et al.* 2001). This innovative paper describes clearly a method how national species indices can be combined into multi-national ones. The national species indices should be ideally calculated using log-linear regression, which allows for plot turnover. Such calculations were made easy by the software tool TRIM (www.ebcc.info; Pannekoek and Van Strien 2001). A further conceptual paper was published in 2005 (Gregory *et al.* 2005), which presented the approach of PECBMS in developing biodiversity indicators using data from common bird monitoring schemes. This described a methodology by which data

The Black Redstart *Phoenicurus ochruros* population remains stable in both long- and short-term across Europe. Its exploitation of nesting sites in urban areas since the 19th century seems to be successful and this recently colonised habitat still provides suitable conditions for breeding.

The Great Reed-warbler *Acrocephalus arundinaceus* is expected to benefit from climate change (Gregory *et al.* 2009). In Poland, it has already been shown to be adapting well by shifting its laying dates, probably to optimise food resources (Dyrcz and Halupka 2009).

from national or regional breeding bird monitoring schemes can be analysed, supranational species indices can be generated and multi-species indicators can be calculated by averaging the resulting indices. The paper showed how data collated by skilled volunteers and by methods and survey designs that differ slightly between countries can be combined to produce relevant multi-national results. It also described how and why national species indices need to be weighted by population size in order to produce relevant supra-national figures. The paper also showed that common farmland birds in Europe have declined steeply since 1980, and that evidence elsewhere shows that the main driver of farmland bird declines is agricultural intensification.

Both papers represented a milestone in reference to PECBMS, mostly as a source of information about the methods used to calculate species indices and indicators.

Another paper, published quite recently (Gregory *et al.* 2008), uses examples from the UK and Europe to illustrate the state of play regarding the use of birds as indicators. The UK experience provides an excellent example of turning scientific data into policy measures in nature conservation, which has subsequently been followed by other countries. Also at European level, the common bird indicators proved to be successful in terms of use in policy and in fact they represent one of very few fully operational biodiversity indicators in Europe.

The PECBMS European data were also used for explorative analysis of species trends, particularly of forest species (Gregory *et al.* 2007). This showed that since 1980, forest specialists have declined more than forest generalists, but trends differed regionally, and interestingly forest species in Central and Eastern Europe have shown stability or even increased. An independent study demonstrated that forest specialists have increased in the Czech Republic, most likely as a result of increasing forest coverage and age (Reif *et al.* 2007). At European level, among common forest birds, long-distance migrants and residents on average declined most strongly, whereas short-distance migrants were largely stable, or even increased. There was some evidence to suggest that ground- or low-nesting species declined more strongly on average, as did forest birds with invertebrate diets. It also appeared that in a small number of species, year-to-year variation in abundance can be influenced by cold winters. However, much more research needs to be done to understand trends of forest bird species and their driving forces.

Another topic of PECBMS research is rapid climatic change, which poses a threat to global biodiversity. Evidence is accumulating that climatic change in recent decades has altered many biological phenomena across the globe, including the geographical ranges and abundance of plants and animals, and the timing of events in their lives such as growth, reproduction and migration. Scientists and policy makers are calling for the development of indicators of the impacts of climatic change on biodiversity based upon these phenomena that summarise impacts over many species and large areas. The purpose of such indicators is to summarise sets of related impacts, to describe how they are changing in an accessible way, to raise awareness of the biological consequences of climatic warming, and to assist both in setting targets for the reduction of impacts and in guiding the implementation of mitigation and adaptation measures. PECBMS has made practical progress by working with academics and other experts to develop a biological indicator of climatic change impacts in two steps. The first step was testing the performance of projections of change in the extent of species' geographical range (based upon climatic envelope models) as predictors of observed interspecific variation in long-term change in population size of land bird species over a large part of Europe derived from the PECBMS. Having found a robust relationship of this kind, the second step was to construct a climatic impact indicator based upon the divergence in population trends between species expected to be positively and negatively affected by climatic change. This work detected a significant positive relationship between interspecific variation in population trend and the change in potential range extent between the late 20th and late 21st centuries, as forecast by climatic envelope models. The derived indicator measures divergence in population trend between bird species predicted by climatic envelope models to be favourably affected by climatic change and those adversely affected. The 'Climatic Impact Indicator' has increased strongly in the past twenty years, coinciding with a period of rapid climatic warming in Europe. The key messages to emerge from the study are that climate change is having a detectable effect on bird populations at a European scale, including evidence of negative as well as positive effects on their populations. The number of bird species whose populations are observed to be negatively impacted by climatic change is three times larger than those observed to be positively affected by climate warming in this set of European land birds (see Figures 13 and 14). The potential links between changes in bird populations and ecosystem functioning are not well understood. It is suggested that increasing climatic effects might alter ecosystem functioning and resilience.

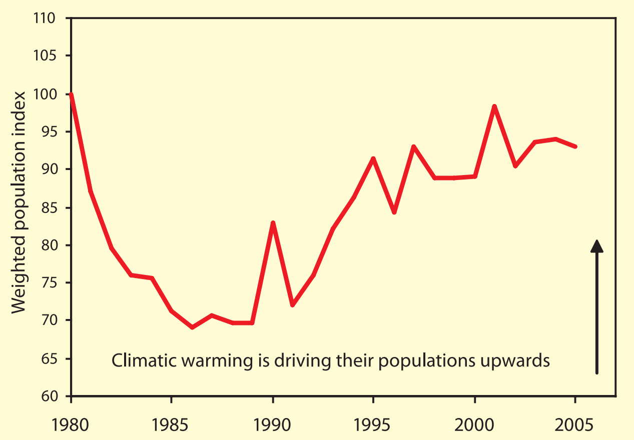


Figure 13 | Weighted population trend of species predicted to gain range in response to climatic change (30 species).

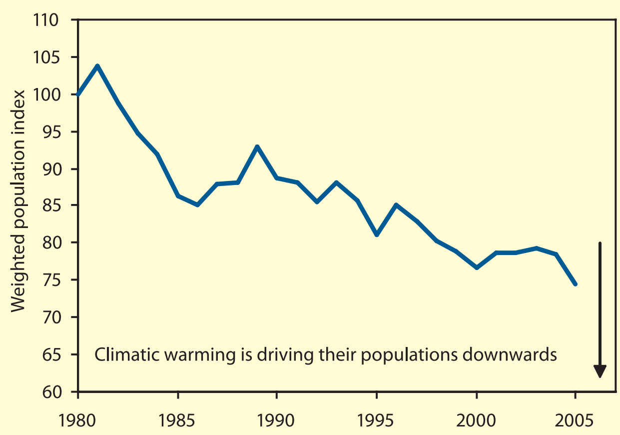


Figure 14 | Weighted population trend of species predicted to lose range in response to climatic change (92 species).

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Photo by D. Jirovský (wildbirdphoto.eu)

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The Eurasian Wryneck *Jynx torquilla* is declining across Europe. Long-term changes in temperature and rainfall are thought to explain this sharp population decline. Habitat destruction, modern forestry techniques and declining ant populations most probably contribute to this process too.

Pan-European Common Bird Monitoring Scheme (PECBMS) is a joint initiative of the European Bird Census Council (EBCC) and BirdLife International. The main aim of the scheme is to use common birds as indicators of the general state of nature, using scientific data on changes in breeding populations across Europe. The PECBMS uses data from large-scale monitoring schemes based on volunteer fieldwork with a standardised methodology and formal design. Through the generation of national and supra-national indices for individual species, it produces European composite indices for groups of species (indicators). The PECBMS supports and provides assistance to national or regional common bird monitoring schemes, facilitates the sharing of knowledge between monitoring schemes and strives to establish new monitoring schemes in countries and regions where such schemes are lacking. *www.ebcc.info/pecbm.html*

Contact: Petr Voříšek, project coordinator, Czech Society for Ornithology, Na Bělidle 252/34, CZ-150 00, Praha 5 -Smíchov, Czech Republic. E-mail: EuroMonitoring@birdlife.cz

European Bird Census Council (EBCC)

brings together ornithologists from all European countries representing national bodies responsible for monitoring bird populations, distribution and demography, to encourage bird-monitoring work aimed at better conservation and management of bird populations and at providing indicators of the changing ability of European landscapes to support wildlife generally. *www.ebcc.info*

BirdLife International

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. *www.birdlife.org*

Photo by T. Kolaas (naturspesialisten.no)

The trend of the Azure-winged Magpie *Cyanopica cyanus cooki* was based on the data from both Portugal and Spain, the only two European countries populated by this subspecies, endemic to Iberia.

The Royal Society for the Protection of Birds (RSPB)

is the UK charity working to secure a healthy environment for birds and other wildlife, helping to create a better world for us all. The RSPB is the BirdLife Partner in the UK. *www.rspb.org.uk*

Statistics Netherlands (SN)

is the official Bureau of Statistics of the Netherlands and is responsible for compiling statistics on a wide range of developments in society. SN cooperates closely with NGOs to produce wildlife statistics. These statistics currently concern 14 monitoring programmes, ranging from birds to butterflies and plants. *www.cbs.nl/en-GB*

Czech Society for Ornithology (CSO)

is a non-governmental organisation which aims to perform, support and promote research and conservation of wild living birds and their habitats. CSO is the BirdLife Partner in the Czech Republic. *www.birdlife.cz*

PECBMS national data providers

Austria
Belgium
Bulgary
Czech Republic
Denmark

Denmark
Denmark
Estonia
Finland

France
Germany
Hungary
Ireland
Ireland

Ireland
Italy
Italy
Italy
Italy

Latvia
Latvia
Netherlands
Norway
Norway

Norway
Poland
Poland
Portugal

Spain
Spain
Sweden
Sweden

Switzerland
United Kingdom
United Kingdom
United Kingdom