



Common Bird Index



Content

Abbreviations.....	2
Introduction.....	3
Short Overview of Indicator	4
Methodology.....	5
List of Species	5
Rationale for Species Selection.....	7
Update Frequency.....	7
Geographical Coverage	7
Coordination and Implementation of Counts	8
Training and Materials.....	8
Data Analyses	8
Indicator Presentation and Interpretation	9
Indicator Budget	11
Evaluation the Indicator.....	12
Reference.....	13

Abbreviations

CBD	Convention on Biological Diversity
COP CBD	Conference of the Parties to the Convention on Biological Diversity
EBMI-F	European Biodiversity Monitoring and Indicator Framework
EEA	European Environmental Agency
EU	European Union
IUCN	International Union for Conservation of Nature
IUCN POSC	IUCN Programme Office for the Southern Caucasus
PA	Protected Areas
PEBLDS	Pan-European Biological and Landscape Diversity Strategy
PECBM	Pan-European Common Bird Monitoring
SEBI 2010	Streamlining European 2010 Biodiversity Indicators
SPEC	Species of European Conservation Concern
TRIM	Trends and Indices for Monitoring

Introduction

The past decades of the 20th and the beginning of the 21st centuries were remarkable by the acknowledgment from the world community of the meaning of biodiversity conservation and the understanding of the urgency of taking measures to reduce or even halt the loss of biodiversity. One of the most important initiatives was the development and establishment of a set of biodiversity indicators. Biodiversity indicators are the best tools to measure the progress made on biodiversity conservation. Some of them are used to assess the impacts and threats on biodiversity, others to evaluate sustainability of the use of biodiversity. A set of indicators was designed to measure the influence of different sectors and policies on biodiversity (EEA report 11, 2007).

The history of the development and choosing of priority biodiversity indicators started with the decisions made at the Conference of the Parties to the Convention on Biological Diversity (COP CBD). In 2002 the Parties to the Convention made the commitment to reduce the loss of biodiversity by 2010. To achieve this goal the development and use of biodiversity indicators was recognized to be important. The CBD identified seven focal areas against which a set of indicators are intended to be developed and monitored (CBD 2004). Biodiversity indicators were recognized as best tools to implement the CBD and national biodiversity strategies at local, national, regional and global level. It was suggested that indicators at national level should be developed to assess progress at national level.

At the pan-European level the CBD decision found further continuation in the form of different initiatives, projects or processes. For instance, the European Environmental Agency (EEA) initiated the project Streamlining European 2010 Biodiversity Indicators (SEBI 2010), a joint pan-European activity with countries and other interested bodies. The primary goal of the project is to develop and implement biodiversity indicators for assessing, reporting on and communicating achievement of the 2010 target to halt the loss of biodiversity. SEBI 2010 in a way continues the work started under the Pan-European Biological and Landscape Diversity Strategy (PEBLDS) to develop a European Biodiversity Monitoring and Indicator Framework (EBMI-F) that was integrated into the target within the Kiev Resolution (EEA report 11, 2007).

One of the important global initiatives is Countdown 2010 that is a network of partners hosted by International Union for Conservation of Nature (IUCN). Countdown 2010 was initiated at the stakeholder conference "Sustaining Livelihoods and Biodiversity: Attaining the 2010 Target in the European Biodiversity Strategy" (Message from Malahide, 2004). It promotes any activities and measures to deal with the degradation of biodiversity at all geographical levels through its partners. It helps governments throughout the world to meet their commitments on the way to reduce and halt the loss of biodiversity. It also aims to assess the progress towards this goal (Countdown 2010, visited in 2008).

The Southern Caucasian states responded to the Countdown 2010 by launching the initiative in Gudauri Conference in 2006 (Georgia). The regional implementation of the Countdown 2010 in Armenia, Azerbaijan and Georgia has been translated into the project "Halting the loss of biodiversity: regional implementation of the Countdown 2010 initiative" funded by the Norwegian government. The project is led by IUCN Programme Office for the Southern Caucasus (IUCN POSC) and aims to achieve better monitoring of biodiversity, the sustainable use and management of the natural resources, improve the network of protected areas and promote ecotourism in the region. One of the components of the project is the development and adaptation of the biodiversity indicators widely used worldwide. The Indicator "Common Bird Index" is one of the priority acknowledged indicators important to be developed by all three states of the Caucasus.

Short Overview of Indicator

Title: Abundance and distribution of selected species: common birds.

Focal area: Status and trends of the components of biological diversity.

Status: Submitted for review to the governments of Armenia, Azerbaijan and Georgia.

Definition: This indicator shows trends in the abundance of common birds over time across their national ranges.

Key policy question: Which species are being reduced in abundance and distribution, and what actions are being taken to reverse these negative trends?

Geographical coverage: National.

Temporal coverage: Not initiated yet.

Update frequency: Could be annually, if national monitoring is supported at national level.

Identified experts: Academic institutions, rangers of forest units and Protected Areas (PAs), NGOs, volunteers.

Composite population trend indicators, such as the common bird index, provide a tangible basis for measuring progress towards the European target of halting biodiversity loss by 2010, and thus towards the global target of reducing the current rate of biodiversity loss by 2010. The strength of this approach is its simplicity, statistical rigor, sensitivity to change, and ease of update (which is possible annually).

The purpose of the common bird index is to enable policy makers to assess and respond to changes in the environment, and then to review the effectiveness of their actions through time.

Birds are excellent barometers for the health of the environment. They occur in many habitats, reflect changes in other animals and plants, are sensitive to environmental change and have great resonance with the public.

Besides, often birds are the focus of volunteer efforts and there is possibility to involve communities in monitoring schemes and action.

The index complements other trend information on species, sites and habitats.

Methodology

Trend information is derived from annually operated national breeding bird surveys spanning different periods. A software package named Trends and Indices for Monitoring (TRIM) data (which allows for missing counts in the time series and yields unbiased yearly indices and standard errors using Poisson regression) is 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. Updated population size estimates, derived from BirdLife International (2004) are used for weighting. For more details see Gregory *et al.* (2005).

List of Species

The lists of common birds for monitoring are provided in the Tables 1-3 (forest birds, farmland birds, and other common birds). Considering high costs of this index, the recommendation is made to select only 10 species in each category. However, other additional species are also included here in each category and in case of funding availability a country can add the species.

Table 1: Forest Common Birds.

#	Latin Name	English Name	Georgian Name
a) Priority Species			
1.	<i>Picus viridis</i>	Eurasian Green Woodpecker	მწვანე კოდალა
2.	<i>Dryocopus martius</i>	Black Woodpecker	შავი კოდალა
3.	<i>Dendrocopos minor</i>	Lesser Spotted Woodpecker	მცირე ჭრელი კოდალა
4.	<i>Garrulus glandarius</i>	Eurasian Jay	ჩხიკვი
5.	<i>Oriolus oriolus</i>	Eurasian Golden Oriol	მოლალური
6.	<i>Lullula arborea</i>	Wood Lark	ტყის ტოროლა
7.	<i>Anthus trivialis</i>	Tree Pipit	ტყის მწვერჩიტა
8.	<i>Coccothraustes coccothraustes</i>	Hawfinch	კულუმბური
9.	<i>Jynx torquilla</i>	Eurasian Wryneck	მაქცია
10.	<i>Luscinia megarhynchos</i>	Common Nightingale	ჩვეულებრივი ბულბული
b) Additional Species			
11.	<i>Carduelis spinus</i>	Eurasian Siskin	შავთავა მწვანულა
12.	<i>Certhia brachydactyla</i>	Short-toed Tree-creeper	მოკლეთითა მგლინავა
13.	<i>Certhia familiaris</i>	Eurasian Tree-creeper	ჩვეულებრივი მგლინავა
14.	<i>Ficedula albicollis</i>	Collared Flycatcher	თეთრყელა ბუზიჭერია
15.	<i>Ficedula hypoleuca</i>	European Pied Flycatcher	ჭრელი ბუზიჭერია
16.	<i>Muscicapa striata</i>	Spotted Flycatcher	რუხი ბუზიჭერია
17.	<i>Fringilla montifringilla</i>	Brambling	ჩრდილოეთის სკვინჩა
18.	<i>Parus ater</i>	Coal Tit	მცირე წივწივა
19.	<i>Parus caeruleus</i>	Blue Tit	მოლურჯო წივწივა
20.	<i>Parus palustris</i>	Marsh Tit	შავთავა წივწივა
21.	<i>Phylloscopus collybita</i>	Eurasian Chiffchaff	ჩვეულებრივი ჭივჭავი
22.	<i>Phylloscopus sibilatrix</i>	Wood Warbler	თერმუცელა ჭივჭავი
23.	<i>Sitta europaea</i>	Eurasian Nuthatch	ჩვეულებრივი ხეცოცია
24.	<i>Pyrrhula pyrrhula</i>	Eurasian Bullfinch	სტვენია
25.	<i>Prunella modularis</i>	Dunnock	ტყის ჭვინტაკა
26.	<i>Hippolais icterina</i>	Icterine Warbler	მწვანე ბუტბუტა
27.	<i>Sylvia borin</i>	Garden Warbler	ბალის ასპუჭაკა
28.	<i>Phoenicurus phoenicurus</i>	Common Redstart	ბოლოცეცხლა
29.	<i>Regulus regulus</i>	Common Goldcrest	ყვითელი ნარჩიტა

Table 2: Common Farmland Birds.

#	Latin Name	English Name	Georgian Name
a) Priority Species			
1.	<i>Alauda arvensis</i>	Eurasian Skylark	მინდვრის ტოროლა
2.	<i>Galerida cristata</i>	Crested Lark	ქოჩორა ტოროლა
3.	<i>Passer montanus</i>	Tree Sparrow	მინდვრის ბელურა
4.	<i>Motacilla flava</i>	Yellow Wagtail	ყვითელი ბოლოქანქარა
5.	<i>Hirundo rustica</i>	Barn Swallow	სოფლის მერცხალი
6.	<i>Streptopelia turtur</i>	Eurasian Turtle-Dove	ჩვეულებრივი გვრიტი
7.	<i>Columba palumbus</i>	Common Wood-Pigeon	ქედანი
8.	<i>Sturnus vulgaris</i>	Common Starling	შოშია
9.	<i>Lanius collurio</i>	Red-backed Shrike	ჩვეულებრივი ღაჟო
10.	<i>Falco tinnunculus</i>	Common Kestrel	ჩვეულებრივი კირკიტა
b) Additional Species			
11.	<i>Burhinus oediconemus</i>	Stone-Curlew	თვალჭყეცია
12.	<i>Carduelis carduelis</i>	European Goldfinch	ჩიტბატონა
13.	<i>Emberiza citrinella</i>	Yellowhammer	მოყვითალო გრატა
14.	<i>Lanius senator</i>	Woodchat Shrike	წითელთავა ღაჟო
15.	<i>Limosa limosa</i>	Black-tailed Goldwit	შავკუდა ლია
16.	<i>Miliaria calandra</i>	Corn Bunting	მეფეტვია
17.	<i>Saxicola rubetra</i>	Whinchat	მდელოს ოვსადი
18.	<i>Sylvia communis</i>	Lesser Whitethroat	დიდი თეთრყელა ასპუჭაკა
19.	<i>Vanellus vanellus</i>	Northern Lapwing	პრანწია

Table 3: Other Common Birds.

#	Latin Name	English Name	Georgian name
a) Priority Species			
1.	<i>Accipiter nisus</i>	Eurasian Sparrowhawk	მიმინო
2.	<i>Buteo buteo</i>	Common Buzzard	ჩვეულებრივი კაკაჩა
3.	<i>Upupa epops</i>	Eurasian Hoopoe	ოფოფი
4.	<i>Dendrocopos major</i>	Greater Spotted Woodpecker	დიდი ჭრელი კოდალა
5.	<i>Turdus merula</i>	Eurasian Blackbird	შაშვი
6.	<i>Turdus viscivorus</i>	Mistle Thrush	ჩხართვი
7.	<i>Pica pica</i>	Black-billed Magpie	კაჭკაჭი
8.	<i>Corvus corone corone/cornix</i>	Hooded crow	რუხი ყვავი
9.	<i>Corvus monedula</i>	Eurasian Jackdaw	ჭკა
10.	<i>Erithacus rubecula</i>	European robin	გულწითელა
b) Additional Species			
11.	<i>Fringilla coelebs</i>	Chaffinch	სკეინჩა
12.	<i>Motacilla alba</i>	White Wagtail	თეთრი ბოლოქანქარა
13.	<i>Sylvia atricapilla</i>	Blackcap	შავთავა ასპუჭაკა
14.	<i>Phylloscopus trochilus</i>	Common Goldcrest	გაზაფხულა ჭივჭავი
15.	<i>Turdus philomelos</i>	Song Thrush	წრიბა შაშვი
16.	<i>Aegithalos caudatus</i>	Long-tailed Tit	თონიტარა
17.	<i>Troglodytes troglodytes</i>	Winter Wren	ჭინჭრაქა
18.	<i>Emberiza schoeniclus</i>	Reed Bunting	ლელიანის გრატა
19.	<i>Carduelis cannabina</i>	Eurasian Linnet	ჭვინტა (მეკანაფია)
20.	<i>Carduelis chloris</i>	European Greenfinch	მწვანულა
21.	<i>Cettia cetti</i>	Cetti's Warbler	ფართოკუდა ლერწამა
22.	<i>Parus major</i>	Great Tit	დიდი წივწივა (წიწკანა)

Rationale for Species Selection

Selection in Europe

For the indicator the species selection was based on BirdLife's *Habitats for birds in Europe* (Tucker and Evans, 1997) — arguably the most comprehensive treatment of habitats and habitat use by birds. It quantitatively assesses the proportion of each species' population that occurs in predefined habitat types across Europe. The overall assessment, while mostly quantitative, also relied to some degree on expert judgment through habitat working groups.

In the Pan-European Common Bird Monitoring (PECBM) scheme, species were classified to habitat using the assessment of Tucker and Evans (1997), with the exception that montane grassland, (originally included as a sub-class of agricultural habitats) was classified as a separate habitat. All species with more than 75 % of their population occurring in one of the following eight habitats were classified as specialists of that habitat: marine, coastal, inland wetland, tundra, mires and moorland, boreal and temperate forests, Mediterranean forest, shrubland and rocky habitats, agricultural and grassland (excluding montane grassland), and montane grassland (Tucker and Evans, 1997).

In addition, species with 10–75 % of their population using only one of the above were classed as specialists in that habitat, according either to Tucker and Evans (1997) for Species of European Conservation Concern (SPECs), or according to the description of Snow and Perrins (1998) for non-SPECs. Species with 10–75 % of their population in three or more woodland or farmland sub-categories in Tucker and Evans (1997) and 10–75 % of their population in only one other habitat category were classified as woodland or farmland specialist species respectively.

Remaining species with more than 10 % of their population occurring on more than one habitat were classed as non-specialists. Any species that did not meet the above criteria (due to insufficient data) remained unclassified. Tucker and Evans (1997) include a further habitat of lowland Atlantic heathland; however, no species met the criteria to be classed as a specialist of this habitat.

This species-habitat classification is being used in a number of BirdLife analyses — for example, of farmland birds and long-distance migrants using *Bird in Europe 2* trends (Donald *et al.*, 2006; Sanderson *et al.*, 2006). The PECBM scheme also explores a biogeographical approach to species selection and habitat choice knowing that some species may have different habitat preferences according to the biogeographic context.

Species selection in the Caucasus

Considering limited available funding at national levels, not all species are recommended for monitoring in the Caucasus region. 10 priority species are selected in each group (forest birds, farmland birds and other common birds) based on the following criteria:

1. Be in the list of the European Common Bird indicator;
2. Be common and typical to the habitat for a given country;
3. Be easily recognizable and known by general public;
4. Be easy to monitor.

Update Frequency

The frequency of counts in each category preferable to be annually if funding allows.

Geographical Coverage

The following representative districts are selected in Georgia for counts for different categories:

Forest common birds	Lagodekhi, Tetrtskaro, Dusheti, Kaspi, Borjomi, Qeda, Ozurgeti, Poti, Kutaisi, Oni.
Farmland common birds	Gurjaani, Marneuli, Mtsketa, Qareli, Ninotsminda, Khelvachauri, Abasha, Samtredia.
Other common birds	Telavi, Tbilisi, Akhaltsikhe, Batumi, Lanchkhuti, Zestaphoni, Zugdidi.

Coordination and Implementation of Counts

Species counts at national level can be coordinated by relevant academic institutions or NGOs. It is possible to select for coordination several organizations and distribute tasks by categories and/or by geographical districts.

Coordinating organizations should select counters at local levels (rangers, local NGOs and CBOs, local birdwatchers) and provide trainings and necessary materials to them.

Training and Materials

It is required to provide the following to local counters:

1. Training in bird identifications for selected species;
2. Small guide-books (or leaflets) with photos (or drawings) of selected species and small identification texts;
3. Binoculars.

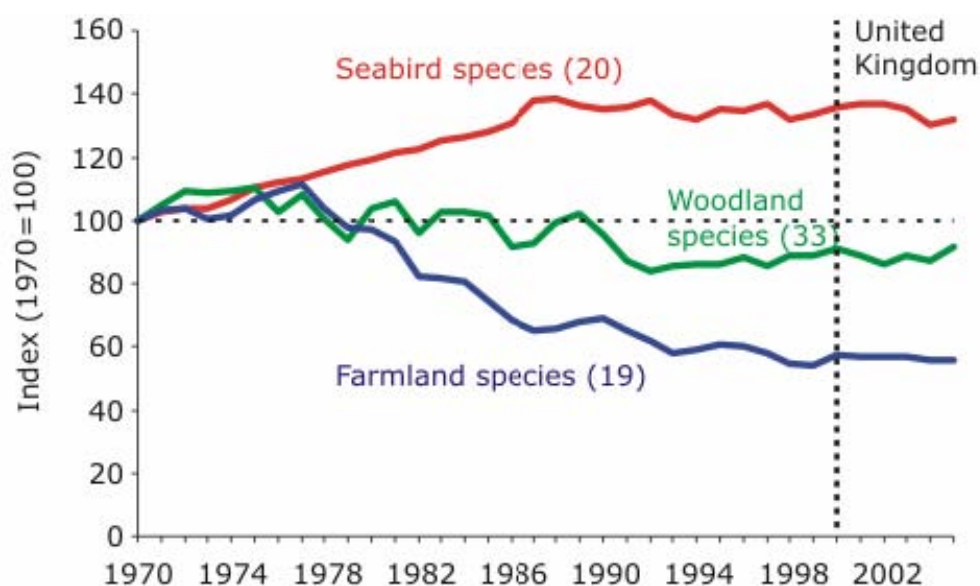
Data Analyses

Initial data analyses should be conducted by the counts coordinating organization(s) and after collated the responsible national agency for biodiversity monitoring.

Indicator Presentation and Interpretation

Below is provided two examples of indicator presentation.

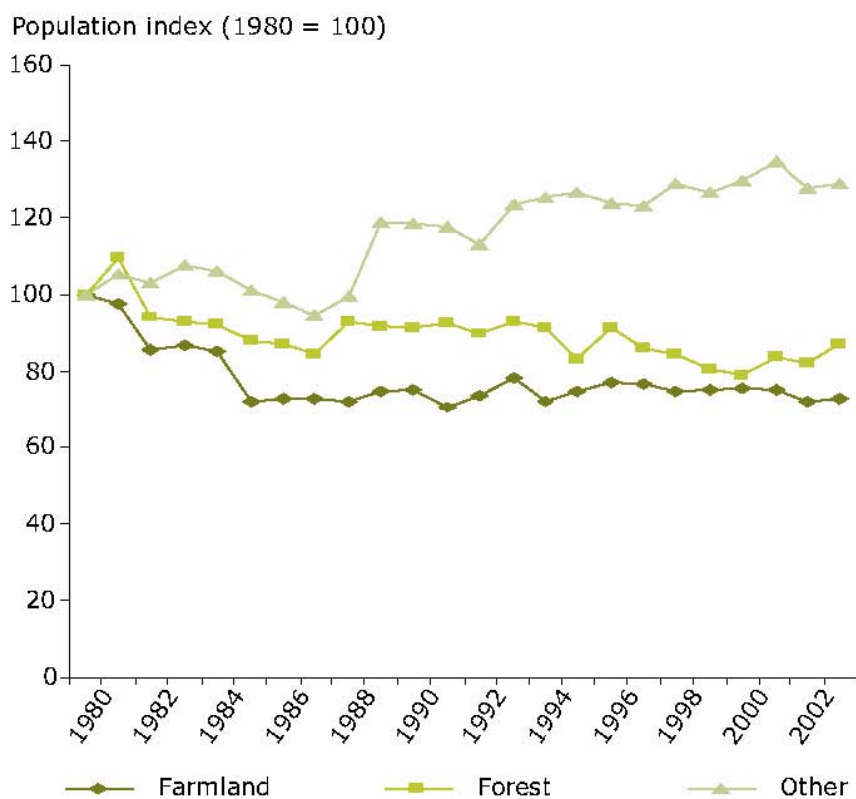
Figure 1: Common Bird Indicator in UK.



Note: Figures in brackets show the number of species included in each category.

Source: Royal Society for the protection of Birds, British Trust for Ornithology, Defra, Joint nature Conservation Committee.

Figure 2: European Common Bird Indicator.



Source: EBCC/RSPB/BirdLife/Statistics Netherlands.

Note: This graph is based on data from: Austria, Belgium (Brussels region), Czech Republic, Denmark, Estonia, France, Germany, Finland, Hungary, Ireland, Italy, Latvia, Netherlands, Norway, Poland, Sweden, Switzerland and the United Kingdom.

Indicator interpretation

If the index goes down, this shows reduction of species populations (which can be linked to different factors), and biodiversity is lost. If the line is level, there is no change.

If the line in the graph goes up, this can be a sign of halting of biodiversity loss. However, positive trends are not necessarily a good signal for biodiversity. An increase means that there are more species whose populations have increased than species whose populations have decreased: it does not necessarily mean that the overall population has increased. It can be due to expansion of some species at the cost of other species or habitats. Detailed data must then be used to assess the signal.

Indicator Budget

Tables 3 and 4 provide the estimate cost related to developing, producing and updating the indicator in Georgia.

Table 3: Start-up Indicator Budget (trainings, materials, baseline data).

#	Categories and Items	Unite Cost (in US Dollars)	Number of Unit	Total
1.	Counts coordination			
1.1.	Management fee	500	25 (districts)	12,500
1.2.	Cost of counters (travel, fee)	200	50 (two in each district)	10,000
2.	Materials			
2.1.	Central computer	2,000	1	2,000
2.2.	Binoculars	30	100	3,000
2.3.	Guide-books	20	500	10,000
3.	Trainings	200	25	5,000
TOTAL				42,500

Table 4: Annual Indicator Budget.

#	Categories and Items	Unite Cost (in US Dollars)	Number of Unit	Total
1.	Counts coordination			
1.1.	Management fee	500	25 (districts)	12,500
1.2.	Cost of counters (travel, fee)	200	50 (two in each district)	10,000
TOTAL				22,500

Evaluation the Indicator

Main advantages of the indicator:

1. **Policy relevance:** this indicator contributes to the assessment of biodiversity conservation policy, land use policy, as well as overarching factors such as climate change and European policies measures such as the Birds and Habitats Directives;
2. **Biodiversity relevant:** birds can be excellent barometers of the health of the environment. They occur in many habitats, can reflect changes in other animals and plants, and are sensitive to environmental change;
3. **Scientifically sound and methodological well founded:** methods used are being harmonised (national systems may differ but indices are standardised before being combined), proven and statistically robust;
4. **Progress towards target:** this indicator provides a tangible basis for measuring progress towards the 2010 Biodiversity Target;
5. **Broad acceptance and understandability:** this indicator reports on birds, familiar group of species and well known to the public. The Common Bird indicator has already been adopted by the European Union as a structural indicator, a sustainable development indicator and as a baseline indicator under the Rural Development Regulation (Council Regulation (EC) No 1698/2005). It was recommended for immediate use by the European Academics Science Advisory Council.

Main disadvantages of the indicator:

Temporal coverage: none of the South Caucasus countries had common bird monitoring schemes in place till now, which restricts calculation of representative trends in time for next several years.

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