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ALIMENTARI E FORESTALI



Fondo europeo agricolo  
per lo sviluppo rurale:  
"l'Europa investe nelle zone rurali"

# Common breeding birds in Italy

Update of population trends and Farmland  
Bird Indicator for the National Rural Network



*These publications are dedicated to  
Paolo Boldregghini, Sergio Frugis,  
Gaspare Guerrieri and Helmar Schenk*

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*Related web sites*

[www.lipu.it](http://www.lipu.it) | [www.mito2000.it](http://www.mito2000.it) | [www.ebcc.info](http://www.ebcc.info)

*The english and italian versions of this  
brochure, together with the technical reports  
in italian, can be downloaded from:*  
[www.reterurale.it/farmlandbirdindex](http://www.reterurale.it/farmlandbirdindex)  
[www.mito2000.it](http://www.mito2000.it)

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European Robin and Squirrel by Sergio Luzzini and Luigi Meroni

# The indicators

**B**ased on data collected by MITO2000 (the Italian monitoring scheme that actively contributes to the Pan-European Common Bird Monitoring Scheme - PECBMS), common breeding birds in Italy show a general moderate decline with an aggregate indicator value of 84% between 2000 and 2013 (All common birds indicator - ALL). Other bird indicators considered are: **common farmland birds (FBI)**, **common mountain grassland birds (FBI<sub>pm</sub>)** and **common forest birds (WBI)**. These indicators are functional tools to survey and to communicate the overall pattern of population changes for each group of species. In the specific context of rural development policy, FBI is used by National Rural Network as the baseline indicator for calculating the “*Population of farmland birds*” (see the box on page 6). Since 2009, MITO2000 data has been used also to calculate the FBI at the regional level; regional technical reports are downloadable from the webpage <http://www.reterurale.it/farmlandbirdindex>.

**Farmland bird species are still declining**, confirming the trend of the last few years. In the 2013 the FBI value is 83% of the value of the first year. Twenty-seven species are used to calculate the FBI (see the table on page 11-12-13); of these, 13 have declined, 10 have increased and 4 have remained stable. Species typical of Mediterranean pseudo-steppes such as Skylark and Greater Short-toed Lark, and those typical of heterogeneous farmland with semi-natural elements as hedges, woodlots, dry stone walls, etc such as Red-backed Shrike, Wryneck and Stonechat, are among the species that show a negative trend. The situation is critical for all the species in the genus *Passer*, in particular the Spanish Sparrow, although all three species in the genus show a general decreasing trend.

The wild bird indicators for Italy: all common birds (ALL), common farmland birds (FBI), common mountain grassland birds (FBI<sub>pm</sub>) and common forest birds (WBI) between 2000 and 2013.



**The FBI<sub>pm</sub> shows an even more obvious and pronounced decline**, falling by 29% over the last 14 years. Six of these species have remained stable, seven have declined moderately and no species has increased; only one species trend, Rock Thrush, is classified as uncertain.

**Common forest birds appear to still be increasing, and indeed the WBI trend has remained almost unchanged** with a value equal to 120% compared to the first year of data collection. Only two species out of 23 are declining (Bullfinch and Goldcrest), while 15 species are increasing and five are remaining stable. Forest cover has increased over most of the national territory – by 7.7%, about 500,000 hectares, just in the period 1990-2008. The trend towards deforestation that prevailed over the last several centuries has now been completely reversed, and forest cover is extensive in many parts of Italy, with a consequent reduction in open habitats. Despite this, the exploitation of forest resources has increased recently and is projected to continue to do so, with more wood extracted for the production of energy.

Indicators trends are a good tool for assessing population dynamics but for an exhaustive analysis of the conservation status of a species this information must be combined with other kinds of data, such as range and population size. For these reasons, we believe that in addition to presenting the results of the MITO2000 project, it will be useful to add the conservation status of species as defined by LIPU and the extinction risk as defined in the Italian Red List of breeding birds in accordance with IUCN criteria to the table on pages 11-13.

Annex VIII of Regulation EC 1974/06 established a list of indicators: baseline related to objectives, baseline related to context, output, result and impact. “Population of farmland birds” is one of three baseline indicators related to objectives for biodiversity; the other two indicators are “High nature value farmland and forestry” and “Tree species composition”. The National Rural Network uses the FBI for assessing the “Population of farmland birds”. The latest rural development policy has confirmed, for the period 2014-2020, the use of bird indicators including the common baseline indicator related to context n° 35 (*Farmland Bird Index - FBI*)

### Birds of mountain grassland

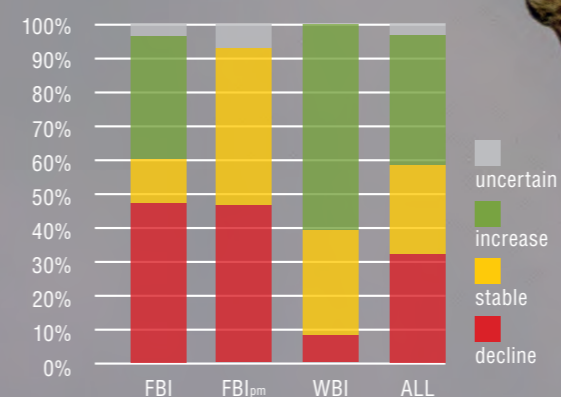
In this brochure we have chosen to investigate the status of birds of mountain grassland; these species show an overall unfavourable conservation status: of the 14 species that contribute to calculating the FBI<sub>pm</sub>, none has a positive trend. These data underscore an alarming situation caused by the synergic action of a number of very different factors. Some, such as climate change, are difficult to confront effectively, at least on a local scale; others, such as the abandonment of traditional agricultural activities, may instead be tackled by land-use policies such as rural development policy. Rising temperatures result in a higher treeline at the expense of alpine grasslands and shrublands. In the subalpine belt at lower altitudes the abandonment of traditional agricultural and livestock activities that preserved open habitats from forestation caused the decline of a number of grassland species. These two phenomena often appear to act synergistically: while warmer temperatures encourage the growth of vegetation at increasingly higher ele-

vations, the lack of grazing on the part of cattle helps accelerate the loss of open habitats. At lower altitudes, this process is compounded by the abandonment of other agricultural practices, such as mowing meadows.

The alpine areas at the highest elevations are probably the most sensitive to climate change, as they are typified by very specific conditions that many species depend on, including those in the FBI<sub>pm</sub>. On the other hand, reduced farming activities, or the shift towards less traditional and more intensive forms of farming, probably affects areas at lower elevations even more dramatically: many high-elevation species had spread to lower-elevation areas thanks to human-induced changes in the landscape, and are now disappearing from there. Indeed over the last centuries, thanks to continuous human action, forests have been replaced by grasslands and meadows and many open-country species found suitable conditions for breeding in these artificial habitats; these species include Whinchat, Ring Ouzel, and Tree Pipit. This is particularly evident in the Apennines and in the Prealps where, unlike in the Alps, the extent of native, high-elevation open habitats is very limited. These species were able to take advantage of these man-made habitats, including the meadows and pastures where Whinchats breed and the forest-pasture ecotone that is home to Ring Ouzels and Tree Pipits. As a result of social and economic changes, which have been particularly pronounced in mountain areas and which have led to their depopulation and the disappearance of traditional activities, many species associated with pastures and grasslands showed population declines or disappeared altogether. These processes are especially evident at lower elevations where, as a result of abandonment, the natural forestation process is faster.

The **Whinchat**, which prefers rich meadows and wet pastures, and the **Water Pipit**, which prefers meadows and pastures with rocky or bare areas, are two of the species most closely associated with high-elevation grasslands, and both are decreasing. Another species that occurs in grasslands, albeit with a greater presence of rocky outcrops is the **Northern Wheatear**, whose population is generally stable, although it is experiencing range contractions and local extinctions in the northern Apennines and the Prealps. The **Rock Thrush** is typical of rocky areas of the Mediterranean mountains and shows a marked preference for the most exposed and sunny areas. It is a rare and localized species, often present at low densities even in the most suitable sites; general population trends are difficult to estimate, although at least in the areas at lower altitudes there is a generalized decrea-

se. The **Black Redstart** uses similar habitats and is often the commonest species in pastures and meadows with bare and rocky areas; in recent decades, it has successfully colonized many urban areas where it nests in buildings. Its population trend is broadly stable, with new populations establishing themselves locally in hillside and lowland towns. The **Yellowhammer** and the **Carriion Crow** are two of the species most tied to meadows and arable land. During the breeding period, they frequent edge



Classification of common Italian breeding birds into classes of population trends



Common Buzzards by Luciano Casagrande

The Common Agricultural Policy (CAP) represents the set of rules that the European Union has adopted in recognition of the centrality of the agricultural sector for the sustainable development of member states. European agriculture is not only a productive activity, it is also a source of public goods and is called upon to fulfil several functions: to provide healthy food, to protect the environment, to ensure farmers a dignified standard of living, and to preserve rural communities and the landscape. The CAP is based on two financial pillars: the first pillar provides direct payments to farmers, and the second support for rural development. The new CAP for the period 2014-2020 is still being programmed.



habitats. The Yellowhammer show a negative trend while the Carrion Crow is stable. Conversely, two other species that inhabit habitat ecotones show a stable population trend: the **Tree Pipit** and the **Ring Ouzel**. Sensitive to the abandonment of grazing in the mountains, the Ring Ouzel nests mainly in habitat ecotones near the treeline, but also within very open forests, such as larch woods, preferably if grazed.

Wind-twisted high-elevation scrub (mugo pine, alder and rhododendron) is the breeding habitat of the **Lesser Whitethroat**, a widespread species in the Alps, especially the Central-eastern Alps, and the **Dunnock**, which also occurs in deciduous and coniferous forest edge and is widespread both in the Alps and northern Apennines.

The Lesser Whitethroat's population is stable, while that of the Dunnock is undergoing a moderate decline.

Open conifer woodlands, interspersed with alpine heathlands and shrublands, are the preferred habitat of another species, the **Com-**

**mon Redpoll**; more widespread over 1500 meters, in recent decades this typical finch of high mountains has begun to nest in certain farmed valley bottoms (Trentino Alto Adige).

The **Fieldfare** was absent from the Alps until the 1970s but now breeds in a wide range of habitats characterized by uneven tree cover and the presence of open areas: orchards, woodlands next to croplands or wetlands in certain alpine valley bottoms, the margins of mountain conifer forests, parks and suburban gardens. During the period in question, the Fieldfare experienced a population decrease that highlights its sensitivity to changes in agriculture but also to the reclamation of wetlands.

The **Garden Warbler** shows a moderate decline; it is a long distance migrant and a common breeder in the western and central Alps, and locally in the Apennines and the Po Valley. It nests in shrublands and cool, humid woodlands, often near water, at high elevations or in humid dells in the Alps and along certain watercourses in the western Po Valley.

It would thus be desirable for the rural development planning for 2014-2020 to include measures favourable to species of mountain grassland through the protection and restoration of the habitats on which they depend.



# Population trends 2000 - 2013

The table below shows the population trends of common birds in Italy as measured by the MITO2000 project, from 2000 to 2013. **Species names** and **Scientific names** are given in the first two columns. The scientific names are listed alphabetically for ease of use.

**Annual change  $\pm$  SE (%)** represents the average percentage change per year in the 14 years with its standard error (SE); it measures the trend's inaccuracy, and this indirectly its reliability, for the time period in question. **Trend classification (2000-2013)** describes, using arrows and colours, population trends classified as follows (definitions recommended by EBCC):

- **strong increase**  $\blacktriangle$  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**  $\blacktriangle$  significant increase, but not significantly more than 5% per year. Criterion:  $1.00 < \text{lower limit of confidence interval} < 1.05$ ;
- **stable**  $\bullet$  no significant increase or decline, and most probable trends are less than 5% per year. Criterion: confidence interval encloses 1.00 but lower limit  $> 0.95$  and upper limit  $< 1.05$ ;
- **moderate decline**  $\blacktriangledown$  significant decline, but not significantly more than 5% per year. Criterion:  $0.95 < \text{upper limit of confidence interval} < 1.00$ ;
- **steep decline**  $\blacktriangledown$  decline significantly more than 5% per year (5% would mean a halving in abundance within 15 years). Criterion: upper limit of confidence interval  $< 0.95$ .

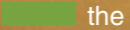

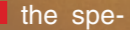

A low number of pairs counted and/or a high standard error may make trend values non-significant. Whenever one of these two conditions applies the population is prudently classified in the lower category for positive trends (*moderate increase* instead of *strong increase*, *stable* instead of *moderate increase*), or the upper category for negative trends (*moderate decline* instead of *strong decline*, *stable* instead of *moderate decline*).

• **uncertain**  $?$  no significant increase or decline, and unlikely trends are less than 5% per year. Criterion: confidence interval encloses 1.00 but lower limit  $< 0.95$  or upper limit  $> 1.05$ .

The **Squares** lists the number of 10x10 km squares whose ornithological data were used to calculate population trends for each species, namely the number of squares visited at least twice in the 2000-2013 period in which the species was present; this makes it possible to assess sample size for each species. A total of 958 10x10 km squares were used for the analysis (in order to be included, a square must have been visited at least twice). The **Indicator** column refers to the breakdown of species in accordance with habitat preferences at the national scale, as follows:

- farmland species whose population trends are used to calculate the *FBI*,
  - mountain grassland species whose population trends are used to calculate the *FBI<sub>pm</sub>*,
  - forest species whose population trends are used to calculate the *WBI*.
- All species help define the overall indicator for common birds (*ALL*). In order to provide a more comprehensive fra-

mework, additional information on MITO2000 target species was added, drawn from other studies carried out at the national scale. The **Conservation status** column lists species according to the following conservation categories:

- **Favourable conservation status**  the species can thrive without any changes to current management strategies;
- **Inadequate conservation status**  the species requires a change in management policies, but is not at risk of extinction;
- **Poor conservation status**  the species is seriously threatened with extinction (at least at the local level);
- **Unknown conservation status**  there is insufficient information for an assessment to be made.































For more information on the methodology used to define the conservation status of Italian birds, see Gustin et al., 2009, 2010a,b<sup>1</sup>, which publications can be downloaded here <http://www.ucellidaprotegere.it/content/download/2151/20482/file/stato%20di%20conservazione1.pdf> and here <http://www.minambiente.it/sites/default/files/archivio/allegati/vari/relazione%20finale%20progetto%20fsc%2021%20aprile%202009.pdf>.











Finally, the **Red List** column indicates the category assigned to each species in the 2011 Red List of Italian breeding birds. The categories are: Regionally Extinct (*RE*), Critically Endangered (*CR*), Endangered (*EN*), Vulnerable (*VU*), Near-threatened (*NT*), Data Deficient (*DD*), Least Concern (*LC*), Not Applicable (*NA*). The categories *CR*, *EN*, *VU* (threatened species) apply to species at high to very high short-term extinction risk at the national level; *NT* applies to species which have a real possibility of being upgraded to threatened in the near future; *LC* applies to species that are not at imminent risk of extinction (even if slowly declining and/or relatively rare); *DD* applies to species for which there is insufficient data to assess their extinction risk; *NA* applies to non-native species, irregular breeders, and species that only recently colonized Italy; *RE* applies to species that have recently become extinct in Italy.

For more information on the categories and criteria adopted to compile the national Red List, see Peronace et al., 2012<sup>2</sup> and the following websites: <http://ciso-coi.it/avocetta/archivio-pubblicazioni> and [www.iucnredlist.org](http://www.iucnredlist.org).

<sup>1</sup> Gustin M., Brambilla M. & Celada C., 2009. Valutazione dello stato di conservazione dell'avifauna italiana. LIPU & MATTM pp.1156  
Gustin M., Brambilla M. & Celada C., 2010a. Valutazione dello stato di conservazione dell'avifauna italiana. Volume I. Non-Passeriformes. MATTM & LIPU pp.842  
Gustin M., Brambilla M. & Celada C., 2010b. Valutazione dello stato di conservazione dell'avifauna italiana. Volume II. Passeriformes. MATTM & LIPU pp.1186

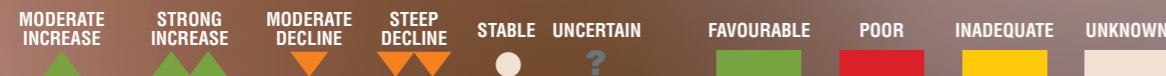
<sup>2</sup> Peronace V., Cecere J.G., Gustin M., Rondinini C., 2012. Lista Rossa 2011 degli Uccelli Nidificanti in Italia. Avocetta 36:11-58

| Scientific names                 | Species names            | Annual change<br>± SE (%) | Trend classification<br>2000-2013 | Squares | Indicator         | Conservation<br>status  | Red List  |
|----------------------------------|--------------------------|---------------------------|-----------------------------------|---------|-------------------|---|-----------|
| <i>Acrocephalus arundinaceus</i> | Great Reed Warbler       | -3.6 (±0.9)               | ▼                                 | 117     |                   |    | NT        |
| <i>Acrocephalus palustris</i>    | Marsh Warbler            | -5.0 (±1.2)               | ▼                                 | 86      |                   |    | LC        |
| <i>Acrocephalus scirpaceus</i>   | Reed Warbler             | -1.6 (±0.9)               | ●                                 | 153     |                   |    | LC        |
| <i>Aegithalos caudatus</i>       | Long-tailed Tit          | 2.3 (±0.7)                | ▲                                 | 595     | WBI               |    | LC        |
| <i>Alauda arvensis</i>           | Skylark                  | -4.0 (±0.4)               | ▼                                 | 528     | FBI               |    | VU - A2bc |
| <i>Anthus campestris</i>         | Tawny Pipit              | -2.0 (±1.1)               | ●                                 | 155     | FBI               |    | LC        |
| <i>Anthus spinoletta</i>         | Water Pipit              | -2.8 (±0.8)               | ▼                                 | 110     | FBI <sub>pm</sub> |    | LC        |
| <i>Anthus trivialis</i>          | Tree Pipit               | -1.0 (±0.7)               | ●                                 | 211     | FBI <sub>pm</sub> |    | VU - A2bc |
| <i>Buteo buteo</i>               | Common Buzzard           | 1.4 (±0.4)                | ▲                                 | 772     |                   |    | LC        |
| <i>Calandrella brachydactyla</i> | Greater Short-toed Lark  | -4.9 (±1.3)               | ▼                                 | 90      | FBI               |    | EN - A2bc |
| <i>Carduelis cannabina</i>       | Linnet                   | -2.9 (±0.5)               | ▼                                 | 497     |                   |  | NT        |
| <i>Carduelis carduelis</i>       | European Goldfinch       | -3.1 (±0.2)               | ▼                                 | 918     | FBI               |  | NT        |
| <i>Carduelis chloris</i>         | European Greenfinch      | -3.7 (±0.3)               | ▼                                 | 836     | FBI               |  | NT        |
| <i>Carduelis flammea</i>         | Common Redpoll           | -4.8 (±1.7)               | ▼                                 | 63      | FBI <sub>pm</sub> |  | LC        |
| <i>Certhia brachydactyla</i>     | Short-toed Treecreeper   | 6.7 (±0.7)                | ▲▲                                | 503     | WBI               |  | LC        |
| <i>Certhia familiaris</i>        | Common Treecreeper       | 3.8 (±1.7)                | ▲                                 | 101     | WBI               |  | LC        |
| <i>Cettia cetti</i>              | Cetti's Warbler          | -1.2 (±0.5)               | ▼                                 | 479     |                   |  | LC        |
| <i>Cisticola juncidis</i>        | Zitting Cisticola        | 0.3 (±0.5)                | ●                                 | 441     |                   |  | LC        |
| <i>Columba palumbus</i>          | Woodpigeon               | 12.2 (±0.5)               | ▲▲                                | 723     |                   |  | LC        |
| <i>Corvus cornix</i>             | Hooded Crow              | 1.5 (±0.2)                | ▲                                 | 852     | FBI               |  | LC        |
| <i>Corvus corone</i>             | Carrion Crow             | -1.5 (±0.9)               | ●                                 | 154     | FBI <sub>pm</sub> |  | LC        |
| <i>Corvus corax</i>              | Common Raven             | -0.1 (±1.0)               | ●                                 | 284     |                   |  | LC        |
| <i>Coturnix coturnix</i>         | Common Quail             | 2.0 (±0.6)                | ▲                                 | 435     |                   |  | DD        |
| <i>Cuculus canorus</i>           | Common Cuckoo            | -1.6 (±0.3)               | ▼                                 | 802     |                   |  | LC        |
| <i>Cyanistes caeruleus</i>       | Blue Tit                 | 4.2 (±0.4)                | ▲                                 | 791     | WBI               |  | LC        |
| <i>Delichon urbicum</i>          | House Martin             | -1.6 (±0.4)               | ▼                                 | 848     |                   |  | NT        |
| <i>Dendrocopos major</i>         | Great Spotted Woodpecker | 3.9 (±0.4)                | ▲                                 | 702     | WBI               |  | LC        |
| <i>Dryocopus martius</i>         | Black Woodpecker         | -0.2 (±1.8)               | ●                                 | 113     | WBI               |  | LC        |
| <i>Emberiza calandra</i>         | Corn Bunting             | 1.2 (±0.4)                | ▲                                 | 569     | FBI               |  | LC        |
| <i>Emberiza cia</i>              | Rock Bunting             | -0.5 (±1.0)               | ●                                 | 215     |                   |  | LC        |
| <i>Emberiza cirius</i>           | Cirl Bunting             | 0.9 (±0.3)                | ▲                                 | 623     |                   |  | LC        |
| <i>Emberiza citrinella</i>       | Yellowhammer             | -2.5 (±0.8)               | ▼                                 | 176     | FBI <sub>pm</sub> |  | LC        |
| <i>Emberiza hortulana</i>        | Ortolan Bunting          | 5.2 (±1.8)                | ▲                                 | 67      | FBI               |  | DD        |

MODERATE INCREASE  STRONG INCREASE  MODERATE DECLINE  STEEP DECLINE  STABLE  UNCERTAIN  FAVOURABLE  POOR  INADEQUATE  UNKNOWN 

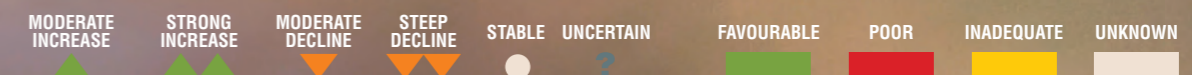
\* species with uncertain trend classification not used for computation of the indicator

| Scientific names               | Species names             | Annual change<br>± SE (%) | Trend classification<br>2000-2013 | Squares | Indicator           | Conservation<br>status | Red List  |
|--------------------------------|---------------------------|---------------------------|-----------------------------------|---------|---------------------|------------------------|-----------|
| <i>Erithacus rubecula</i>      | European Robin            | 1.9 (±0.3)                | ▲                                 | 705     | WBI                 | ■                      | LC        |
| <i>Falco tinnunculus</i>       | Eurasian Kestrel          | 1.6 (±0.4)                | ▲                                 | 767     | FBI                 | ■                      | LC        |
| <i>Fringilla coelebs</i>       | Common Chaffinch          | 0.6 (±0.2)                | ▲                                 | 865     | WBI                 | ■                      | LC        |
| <i>Galerida cristata</i>       | Crested Lark              | -1.1 (±0.4)               | ▼                                 | 348     | FBI                 | ■                      | LC        |
| <i>Garrulus glandarius</i>     | Eurasian Jay              | 1.6 (±0.3)                | ▲                                 | 822     | WBI                 | ■                      | LC        |
| <i>Hippolais polyglotta</i>    | Melodious Warbler         | 3.1 (±0.7)                | ▲                                 | 323     |                     | ■                      | LC        |
| <i>Hirundo rustica</i>         | Barn Swallow              | -1.3 (±0.3)               | ▼                                 | 866     | FBI                 | ■                      | NT        |
| <i>Jynx torquilla</i>          | Wryneck                   | -6.2 (±0.7)               | ▼                                 | 382     | FBI                 | ■                      | EN - A2b  |
| <i>Lanius collurio</i>         | Red-backed Shrike         | -4.4 (±0.5)               | ▼                                 | 559     | FBI                 | ■                      | VU - A2bc |
| <i>Lanius senator</i>          | Woodchat Shrike           | -11.5 (±1.0)              | ▼▼                                | 198     |                     | ■                      | EN - A2bc |
| <i>Lophophanes cristatus</i>   | Crested Tit               | 0.3 (±1.1)                | ●                                 | 171     | WBI                 | ■                      | LC        |
| <i>Lullula arborea</i>         | Woodlark                  | 2.2 (±0.6)                | ▲                                 | 375     |                     | ■                      | LC        |
| <i>Luscinia megarhynchos</i>   | Nightingale               | -0.1 (±0.3)               | ●                                 | 705     | FBI                 | ■                      | LC        |
| <i>Melanocorypha calandra</i>  | Calandra Lark             | -                         | ?                                 | 57      | FBI*                | ■                      | VU - A2ac |
| <i>Merops apiaster</i>         | European Bee-eater        | 3.7 (±0.7)                | ▲                                 | 424     |                     | ■                      | LC        |
| <i>Monticola saxatilis</i>     | Rock Thrush               | -                         | ?                                 | 44      | FBI <sub>pm</sub> * | ■                      | VU - A2ac |
| <i>Monticola solitarius</i>    | Blue Rock Thrush          | -1.5 (±1.6)               | ●                                 | 126     |                     | ■                      | LC        |
| <i>Motacilla alba</i>          | White Wagtail             | 0.1 (±0.4)                | ●                                 | 728     | FBI                 | ■                      | LC        |
| <i>Motacilla cinerea</i>       | Grey Wagtail              | -0.5 (±0.8)               | ●                                 | 363     |                     | ■                      | LC        |
| <i>Motacilla flava</i>         | Yellow Wagtail            | -2.8 (±0.6)               | ▼                                 | 194     | FBI                 | ■                      | VU - A2bc |
| <i>Muscicapa striata</i>       | Spotted Flycatcher        | -1.8 (±0.6)               | ▼                                 | 528     |                     | ■                      | LC        |
| <i>Nucifraga caryocatactes</i> | Spotted Nutcracker        | 0.7 (±1.2)                | ●                                 | 97      | WBI                 | ■                      | LC        |
| <i>Oenanthe oenanthe</i>       | Northern Wheatear         | 1.2 (±0.8)                | ●                                 | 169     | FBI <sub>pm</sub>   | ■                      | NT        |
| <i>Oriolus oriolus</i>         | Golden Oriole             | 4.6 (±0.4)                | ▲                                 | 558     | FBI                 | ■                      | LC        |
| <i>Parus major</i>             | Great Tit                 | 1.0 (±0.3)                | ▲                                 | 930     |                     | ■                      | LC        |
| <i>Passer italiae</i>          | Italian Sparrow           | -3.9 (±0.3)               | ▼                                 | 794     | FBI                 | ■                      | VU - A2bc |
| <i>Passer hispaniolensis</i>   | Spanish Sparrow           | -5.7 (±0.7)               | ▼                                 | 127     | FBI                 | ■                      | VU - A2bc |
| <i>Passer montanus</i>         | Tree sparrow              | -3.3 (±0.4)               | ▼                                 | 671     | FBI                 | ■                      | VU - A2bc |
| <i>Periparus ater</i>          | Coal Tit                  | -0.2 (±0.5)               | ●                                 | 391     | WBI                 | ■                      | LC        |
| <i>Phoenicurus ochruros</i>    | Black Redstart            | 1.0 (±0.5)                | ●                                 | 390     | FBI <sub>pm</sub>   | ■                      | LC        |
| <i>Phoenicurus phoenicurus</i> | Common Redstart           | 7.2 (±0.6)                | ▲▲                                | 496     |                     | ■                      | LC        |
| <i>Phylloscopus bonelli</i>    | Western Bonelli's Warbler | 2.6 (±0.7)                | ▲                                 | 272     | WBI                 | ■                      | LC        |
| <i>Phylloscopus collybita</i>  | Common Chiffchaff         | -0.4 (±0.3)               | ●                                 | 591     | WBI                 | ■                      | LC        |



\* species with uncertain trend classification not used for computation of the indicator

| Scientific names                   | Species names                              | Annual change<br>± SE (%) | Trend classification<br>2000-2013 | Squares | Indicator         | Conservation<br>status | Red List  |
|------------------------------------|--|---------------------------|-----------------------------------|---------|-------------------|------------------------|-----------|
| <i>Pica pica</i>                   | Eurasian Magpie                            | 2.5 (±0.3)                | ▲                                 | 704     | FBI               | ■                      | LC        |
| <i>Picus viridis</i>               | Green Woodpecker                           | 3.8 (±0.4)                | ▲                                 | 653     |                   | ■                      | LC        |
| <i>Poecile montanus</i>            | Willow Tit                                 | 1.6 (±1.3)                | ●                                 | 115     | WBI               | ■                      | LC        |
| <i>Poecile palustris</i>           | Marsh Tit                                  | 3.6 (±0.8)                | ▲                                 | 344     | WBI               | ■                      | LC        |
| <i>Prunella collaris</i>           | Alpine Accentor                            | -                         | ?                                 | 53      | *                 | ■                      | LC        |
| <i>Prunella modularis</i>          | Dunnock                                    | -1.9 (±0.8)               | ▼                                 | 136     | FBI <sub>pm</sub> | ■                      | LC        |
| <i>Ptyonoprogne rupestris</i>      | Crag Martin                                | -0.9 (±0.9)               | ●                                 | 260     |                   | ■                      | LC        |
| <i>Pyrrhula pyrrhula</i>           | Eurasian Bullfinch                         | -2.7 (±0.9)               | ▼                                 | 213     | WBI               | ■                      | VU - A2b  |
| <i>Regulus ignicapilla</i>         | Firecrest                                  | 2.5 (±0.7)                | ▲                                 | 399     | WBI               | ■                      | LC        |
| <i>Regulus regulus</i>             | Goldcrest                                  | -3.3 (±0.9)               | ▼                                 | 158     | WBI               | ■                      | NT        |
| <i>Saxicola rubetra</i>            | Whinchat                                   | -5.5 (±1.3)               | ▼                                 | 88      | FBI <sub>pm</sub> | ■                      | LC        |
| <i>Saxicola torquatus</i>          | European Stonechat                         | -5.2 (±0.4)               | ▼                                 | 637     | FBI               | ■                      | VU - A2bc |
| <i>Serinus serinus</i>             | European Serin                             | 0.0 (±0.2)                | ●                                 | 874     | FBI               | ■                      | LC        |
| <i>Sitta europaea</i>              | Eurasian Nuthatch                          | 4.4 (±0.7)                | ▲                                 | 470     | WBI               | ■                      | LC        |
| <i>Streptopelia decaocto</i>       | Eurasian Collared Dove                     | 5.9 (±0.4)                | ▲▲                                | 697     |                   | ■                      | LC        |
| <i>Streptopelia turtur</i>         | Turtle Dove                                | 0.8 (±0.3)                | ▲                                 | 704     | FBI               | ■                      | LC        |
| <i>Sturnus unicolor</i>            | Spotless Starling                          | 4.2 (±0.9)                | ▲                                 | 113     | FBI               | ■                      | LC        |
| <i>Sturnus vulgaris</i>            | European Starling                          | 1.8 (±0.4)                | ▲                                 | 580     | FBI               | ■                      | LC        |
| <i>Sylvia atricapilla</i>          | Blackcap                                   | 2.1 (±0.2)                | ▲                                 | 924     |                   | ■                      | LC        |
| <i>Sylvia borin</i>                | Garden Warbler                             | -7.1 (±1.4)               | ▼                                 | 71      | FBI <sub>pm</sub> | ■                      | LC        |
| <i>Sylvia cantillans/subalpina</i> | Subalpine Warbler (inc. Moltoni's Warbler) | 2.9 (±0.6)                | ▲                                 | 486     |                   | ■                      | LC        |
| <i>Sylvia communis</i>             | Common Whitethroat                         | -1.5 (±0.6)               | ▼                                 | 369     |                   | ■                      | LC        |
| <i>Sylvia conspicillata</i>        | Spectacled Warbler                         | -                         | ?                                 | 54      | *                 | ■                      | LC        |
| <i>Sylvia curruca</i>              | Lesser Whitethroat                         | 0.9 (±1.5)                | ●                                 | 92      | FBI <sub>pm</sub> | ■                      | LC        |
| <i>Sylvia melanocephala</i>        | Sardinian Warbler                          | -0.6 (±0.3)               | ●                                 | 489     |                   | ■                      | LC        |
| <i>Sylvia undata</i>               | Darford Warbler                            | -9.0 (±3.5)               | ▼                                 | 51      |                   | ■                      | VU - A2bc |
| <i>Troglodytes troglodytes</i>     | Wren                                       | -0.3 (±0.3)               | ●                                 | 756     | WBI               | ■                      | LC        |
| <i>Turdus merula</i>               | Common Blackbird                           | 2.2 (±0.2)                | ▲                                 | 919     |                   | ■                      | LC        |
| <i>Turdus philomelos</i>           | Song Thrush                                | 4.7 (±0.6)                | ▲                                 | 354     | WBI               | ■                      | LC        |
| <i>Turdus pilaris</i>              | Fieldfare                                  | -6.7 (±1.2)               | ▼                                 | 78      | FBI <sub>pm</sub> | ■                      | NT        |
| <i>Turdus torquatus</i>            | Ring Ouzel                                 | -1.3 (±1.6)               | ●                                 | 76      | FBI <sub>pm</sub> | ■                      | LC        |
| <i>Turdus viscivorus</i>           | Mistle Thrush                              | 4.1 (±0.7)                | ▲                                 | 344     | WBI               | ■                      | LC        |
| <i>Upupa epops</i>                 | Hoopoe                                     | 1.3 (±0.5)                | ▲                                 | 574     | FBI               | ■                      | LC        |



\* species with uncertain trend classification not used for computation of the indicator



Passer ssp by Luigi and Svetlana Piccirillo

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