# Bird Census News

*Journal of the European Bird Census Council*
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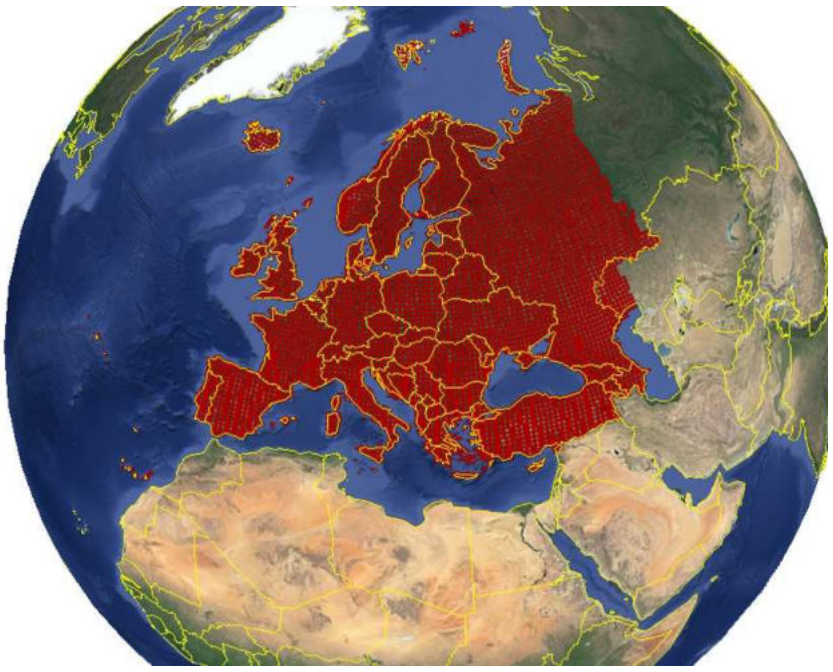

Special Volume

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# Bird Census News

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Bird Census News is the Journal of the European Bird Census Council or EBCC. The EBCC exists to promote the organisation and development of atlas, census work and population studies in all European countries; it promotes communication and arranges contacts between organisations and individuals interested in census and atlas work, primarily (but not exclusively) in Europe.

Bird Census News reports developments in census and atlas work in Europe, from the local to the continental scale, and provides a forum for discussion on methodological issues.



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**Bird Census News**
**Volume 26/1–2, October 2014**

# EDITORIAL

In the last issue we mentioned our intentions to dedicate the next volume of Bird Census News to the new European Atlas of Breeding Birds (EBBA2) project. Here it is! Since the official start last year important progress has been made in many fields and fieldwork is well under way in many countries.

In a first contribution, Verena Keller, as Chair of the Atlas Steering Committee and one of the main driving forces behind EBBA2, summarizes its organisation, aims, planned output and challenges of data collection. In the next article Sergi Herrando and Petr Voříšek, both EBBA2 coordinators, present together with Verena the methodological principles of the new atlas. The simulated distribution and abundance maps showing the potential use of the data look very promising! Dawn Balmer and Simon Gillings explain us how the recent Bird Atlas 2007-11 of Britain and Ireland (published in 2013) has been carried out, taking into account new challenges and opportunities. In the European Atlas News section, we present some examples of national breeding bird atlas projects from across Europe which are currently running. Some are repeated atlases, others are the "first ever", but all will provide data for the European project. At the end of this section, Magne Husby learns us more about a way to increase the number of volunteers in bird census and atlas work.

The Book and Journals section offers a short review of the already mentioned Bird Atlas. In the Events, Kerem Ali Boyla from Turkey reports on the kick-off meeting of their national atlas project. The last contribution to this volume brings the sad news of Andres Kuresoo's death. Andres was EBCC Board member in 1992-1995. We will not forget him.

In summer 2014 an additional part-time post has been created at the Czech Society for Ornithology which has been taken up by Martin Kupka as EBBA2 communication and network officer. Among other things, Martin has been working on the structure of the project website and on an EBBA2 facebook page, see *https://www.facebook.com/EBBA2.info*.

In the next issues of BCN we plan to focus a little more on EBCC's other important project: the Pan-European Common Bird Monitoring Scheme (PECBMS), a joint initiative of EBCC and BirdLife International. Here also, progress has been made with important updates of European trends, indices and indicators. For more details, we invite you to have a look at the EBBCC website at *http://www.ebcc.info/index.php?ID=569*.

Enjoy this volume!

Anny Anselin
Editor Bird Census News

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# EBBA2 — A New European Atlas of Breeding Birds

**Verena Keller**

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**Abstract.** The European Bird Census Council (EBCC) started a new European bird atlas to document the distribution of breeding birds around thirty years after the production of the first atlas. The main fieldwork period is planned for 2013 to 2017, and in many countries is well under way. This continent-wide project needs a strong collaboration between very diverse countries and poses particular challenges in east and southeast Europe.

## Introduction

The first European Breeding Bird Atlas (Hagemeijer & Blair 1997) was a milestone in European ornithology. Its outputs and data have been widely used in nature conservation and scientific studies. But the European landscape and climate are rapidly changing. We need to understand the consequences of these changes for biodiversity in order to better protect it. The European Bird Census Council (EBCC) therefore started a new atlas project, with fieldwork concentrating on the years 2013 to 2017.

## Organisation

First ideas for a new atlas were presented by the board of the EBCC at a workshop during the EBCC conference in Caceres in 2010. Following the support by delegates the Board started work on this new and challenging project. In 2011 it set up an atlas steering committee (ASC), consisting of members and observers on the Board: Verena Keller (chair), Hans-Günther Bauer, Lluís Brotons, Ian Burfield, Mark Eaton, Ruud Foppen, Mikhail Kalyakin, and David Noble. Lacking a central coordinator, the first tasks were carried out by members of the ASC. In 2012 the small amounts of funding available allowed to set up a coordination team consisting of Sergi Herrando from the Catalan Ornithological Institute (ICO) and Petr Voříšek from the Czech Society for Ornithology (CSO), under the supervision of Verena Keller from the Swiss Ornithological Institute as chair of the ASC. This decentralised organisation is very much in line with the structure of EBCC and allows a strong collaboration with other projects EBCC is involved in, in particular the Pan European Common Bird Monitoring Scheme (PECBMS), which is also coordinated from Prague and involves much the same network of national organisations for data collection. In summer 2014, an additional part-time post could be created at CSO, which has been taken up by Martin Kupka. So far, work concentrated on defining the methodology (see article by Herrando *et al*. in this volume) and supporting countries in data collection at national level. A few examples of national atlas projects from across Europe are presented in this volume.

## Aims and planned outputs

The new atlas will document the distribution and abundance of breeding birds across the whole of Europe (Figure 1), and determine changes in relation to the situation 30 years ago. It will help our understanding of the many environmental changes that have impacted on populations of birds across Europe and thus contribute to improving the conservation status of European breeding birds by helping to target conservation action. The provision of up-to-date data on range and abundance of all breeding bird species will improve European trend indices and indicators, enable better Red-List assessments across Europe and at EU level and help set conservation

priorities for the coming years. The project will provide a rich source of data for multiple future uses. It will help countries to meet governmental reporting requirements and will be a starting point for further scientific research.
The decentralised organisation, involving thousands of citizen scientists across the entire continent of Europe as well as professional ornithologists, will increase capacity for monitoring and conservation, particularly in regions of Europe with less well developed networks of ornithologists. Experience in many countries has shown that atlas projects are ideal for recruiting and training new volunteers, and that many of the participants continue to collaborate in monitoring projects when an atlas has been finished. The common goal of producing a European atlas will also strengthen existing networks of ornithologists across Europe providing a strong platform for future projects.

## Challenges of data collection

Europe is a diverse continent. The size of a country, accessibility for bird surveys, availability of ornithologists for surveys and coordination, tradition in volunteer work, and financial resources all influence the possibilities for fieldwork. In Europe, the first national atlases were produced in the 1970s, and for many countries the first EBCC atlas project spurred the collection of field data and the production of national atlases in the course of the 1980s and 1990s (Gibbons *et al*. 2007). Since then, atlas work has been progressing fast but at the same time the gap between countries mostly in western Europe which have already produced one or two repeat atlases using advanced analytical tools and those countries that still lack distribution data for large parts of their country has widened. At the same time, political changes have opened new possibilities for collaboration across Europe. The most important step towards coverage of the whole of Europe has been made in Russia. The European part of Russia alone makes up around 40% of the surface area of Europe but there were hardly any data available for the first EBCC atlas. Today, the Russian atlas is well under way (see Kalyakin & Voltzit in this volume).
A European atlas project has to find the balance between the very detailed information available in some western European countries and the possibilities in countries with fewer resources. A questionnaire sent to the EBCC delegates in 2011 clearly showed that, while the enthusiasm to collaborate in this European project was great, there would be enormous challenges in particular in east and southeast Europe. A workshop for countries from this region that had indicated a need for support, was therefore held in Barcelona in 2013. General guidelines and supporting documents have been made available on the EBCC website (*http://www.ebcc.info/index.php?ID=506*) and individual technical support is provided to national coordinators where needed.
Many countries will need help in data collection by foreign observers to cover gaps. Several short expeditions have already taken place e.g. by German birdwatchers to Albania (Ernst 2013), Czech ones to Macedonia and Moldova (*http://www.ebcc.info/index.php?ID=555*), and by a team from Catalonia to Montenegro and Turkey (*http://www.ebcc.info/index.php?ID=567*). With more countries now well advanced in the organisation of their national projects, support from visitors will become more important in the coming years and can be targeted in collaboration with national coordinators. Modern tools for online entry of observations will play an increasingly important role also for the collection of data by travelling birdwatchers (see guidelines *http://www.ebcc.info/index.php?ID=545*).

## Outlook

Thanks to thousands of skilled volunteers and professional ornithologists, we will be able to determine the distribution and numbers of birds across Europe. In parallel to data collection setting up a database and developing data analysis procedures will be the main tasks for the coordination team. Funding for this huge project is not secured yet. Information and fundraising will have a high priority, too. The articles gathered in this issue of Bird Census News give an insight into the work in progress and will hopefully increase the collaboration between partners across Europe. The EBCC has always shown its strength in achieving projects with the help of a dedicated network of individuals and organisations, and EBBA2 will be no exception.

**Figure 1. The second European Breeding Bird Atlas covers the whole of Europe, including Turkey and the European part of Russia, for which only few data were available for the first EBCC atlas.**

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# The methodology of the new European breeding bird atlas: finding standards across diverse situations

Promoted and organised by the European Bird Census Council

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**Abstract.** The European Breeding Bird Atlas 2 (EBBA2) will update the information on the distribution of breeding birds collected c. 30 years ago for the first European atlas. In this article we present the methodological principles of the new atlas, based both on a comparison with the first atlas and also on an attempt to improve the information shown in its maps. Two main methodological approaches will be implemented in EBBA2. The main one is based on gathering as much information as possible for every 50×50 km square in order to produce maps that show (1) breeding evidence, (2) abundance and (3) change with respect to the first atlas. In addition, a second approach will be established in order to collect standardised data from a sample of 10×10 km squares and to use this information to generate modelled fine-grained maps for common species. Many sources could potentially provide data for the project and defining simple and common protocols is crucial in the very heterogeneous European context.

## Introduction

The first *EBCC Atlas of European Breeding Birds* was published in 1997 (Hagemeijer & Blair 1997) and represented a milestone for bird science and conservation in Europe. A recent review by Tulloch *et al*. (2013) showed that this had the highest Google Scholar citation rate of all bird atlases anywhere in the world. The atlas data have been used for a wide range of scientific studies from single-species analyses to Europe-wide projects like the projections of species' ranges under future climatic scenarios made in *A Climatic Atlas of European Breeding Birds* (Huntley *et al*. 2007) or the conservation status assessment carried out in *Birds in Europe: population estimates, trends and conservation status* (BirdLife International 2004). The data used in this ground-breaking first atlas are now around 30 years old and many environmental changes such as land use and climate have had impacts on populations of birds across Europe. This alone is a good reason for updating the atlas. New opportunities have also arisen that can improve our ability to incorporate data from even the most remote parts of Europe and to provide a robust baseline for effective conservation and informed decision taking. The EBCC, together with its partners across Europe, therefore plans to produce a second European Breeding Bird Atlas (EBBA2).

Although there have been significant changes in recent decades in the way atlas surveys are undertaken, no single standardised method has evolved. This flexibility is not just related to scientific requirements but reflects the need to adapt atlas surveys to situations varying in orders of magnitude in terms of the area of study and the number of observers (Gibbons *et al*. 2007). Regarding EBBA2, a context of over 50 countries, 10 000 000 km$^2$ and a fieldwork period focused

on 2013 to 2017 give rise to extremely diverse situations, ranging from countries with intensive atlas work planned for this period to large regions for which ornithological exploration represents a huge challenge even today. Consequently, the methodology of EBBA2 has to take into account the different capacities and contexts and will end up as a compromise between what is desired and what is possible. Fundamentally, it is composed of a number of standards for data collection aimed at structuring a very diverse reality into one of the largest projects on bird distribution ever carried out. In this paper we present and discuss the methodology of EBBA2. All methodological details, grids, species lists, breeding codes, etc. can be downloaded from the EBBA2 website (*http://www.ebcc.info/new-atlas.html*).

## Aims and methodological principles

Any new version of a bird atlas has to cope with two clearly distinct objectives: (1) improve as much as possible the information on bird distribution taking into account available capacities and techniques, and (2) allow comparisons with the previous atlas/es. These objectives have usually to balance opposite requirements. The first aim needs to maximise the effort for every cell, whereas the second aim requires ensuring that the methodological protocols are the same as they were in the past (Balmer *et al*. 2013). This is certainly the case for the new European bird atlas, whose specific aims lie totally or partly within these two general objectives for a 'repeated' atlas. Specifically, EBBA2 aims to document breeding evidence and estimate abundance for all bird species as accurately as possible. This aim essentially points to maximum effort in order to gather the greatest amount of information for each studied square. However, EBBA2 also attempts to document the changes in bird species distribution occurring since the 1980s, for which we should ideally try to use fieldwork procedures similar to the first atlas.

Like the first atlas, EBBA2 aims at gathering the most comprehensive list of breeding bird species observed in each 50×50 km square. This is the basis of the main result of this atlas, which is a series of maps that will show breeding evidence and abundance for all bird species for a grid of 50×50 km squares. However, differences in the completeness of the information across European countries and regions will certainly be very relevant in EBBA2. Consequently, comparisons between 50×50 km squares will not be trivial and will require statistical techniques accounting for variations in effort. In addition, one of the expected improvements in this new atlas is to present comparable information on species occurrence at a high spatial resolution for as many species as possible. Specifically, EBBA2 will use timed censuses in a sample of 10×10 km squares across the whole of Europe to produce fine-grained maps of the probability of occurrence.

The lack of protocols for standardising fieldwork in the first atlas and the foreseeable problems to implement standards in EBBA2 hamper robust comparisons between the two atlases. Different approaches are therefore explored in this new atlas to cope with these difficulties as efficiently as possible. Thus, comparability between atlases is maximised whenever possible and determine the selection of grid type, breeding codes and abundance codes. EBBA2 also attempts to take a decisive step forward for future comparisons of bird species distribution across the whole continent. Thus, the implementation of the sample of timed censuses could represent a basis for more robust comparisons with a (still far-off) third European atlas.

## Data sources

Fortunately, many ornithological societies, natural history museums, universities, etc. in Europe currently conduct bird monitoring studies. These projects may contribute data to EBBA2 but will have to be complemented by targeted surveys in many regions. Therefore, no attempt has been made to develop a common field procedure for all European countries, an approach which was successfully used in the Pan-European Common Bird Monitoring Scheme (Gregory & Voříšek 2003).

Many field data sources could be considered as suitable for inclusion in this huge project: 1) national and regional breeding bird atlases whose study periods coincide totally or partially with that of EBBA2, 2) systematic breeding bird monitoring schemes, 3) species-specific schemes (e.g. censuses of colonial species or rare species) or site monitoring (e.g. IBA monitoring), and 4) casual records, often collected via on-line platforms. In some cases, in which no actual field data are available for the study period, a combination of old data and expert knowledge of the expected

current situation will be accepted if recorded with information on the origin of the data.

## The EBBA2 species list

One of the most important elements for sharing information in EBBA2 is a common species list. Consequently, a species list containing all bird species that are certain or — at least very likely — to be found breeding in the area covered by the new atlas has been drawn up. This list comprises 582 indigenous bird species and 63 non-native breeding birds (neozoans) that are considered to breed regularly in Europe (a number that will probably increase over the course of the project). The species list is available via the atlas web site *http://www.ebcc.info/new-atlas.html*.
For practical reasons, the initial aim of this list was to be as consistent as possible with previous species lists and database structures. Therefore we used the species list which was used for the first European atlas and Birds in Europe 2 (BirdLife International 2004) as a basis. However, in the mean time new information has become available, which we felt were necessary and important for this new list. Many of the changes follow decisions taken by BirdLife International's Taxonomic Working Group (BTWG), as well as further adaptations, in order to render the list "as up-to-date as possible". However, the taxonomic debates are still in progress and a final overall taxonomic revision will be necessary after data flow and before publication.

## Methodological standards for 50×50 km maps

For the first atlas a 50×50 km grid was chosen. Many countries have since produced atlases at a finer scale (e.g. 10×10 km) but it would be impossible to cover the whole of Europe at that scale. The basic grid for EBBA2 therefore remains 50×50 km. The primary objective of collecting bird data at this scale is to gather the most complete list of breeding bird species for each reported square. Given the marked differences of resources across Europe, data are not expected to be collected with a comparable effort in every country. Nevertheless, a simple measure of the completeness of the survey in each square based on expert knowledge will be given (guidelines will be provided to the national coordinators).

### *Squares*

In order to maximise the comparability of data between atlases, the new atlas uses the same UTM grid as the first European atlas, which was subsequently adapted to improve its usability in modern geographic information systems (Sierdsema 2008). A second important reason for selecting this grid system was the fact that it is currently in use in the Breeding Bird Atlas of European Russia (see *http://zmmu.msu.ru/en*), undoubtedly the largest national atlas, covering c. 40% of the entire continent.
The study area is divided in 5 217 squares. In many countries, data will be provided for all squares but in some countries data will only be available for a part of the total number of squares. In the latter cases, EBBA2, together with national coordinators, focuses on fieldwork in a representative sample of 50×50 km squares to cover appropriately the different habitats within a country, ideally in a stratified random fashion (e.g. Gregory & Greenwood 2008).

### *Breeding codes*

Recording information about the likelihood that a bird species breeds in a particular square is essential for a breeding bird atlas. This is particularly relevant in order to distinguish actual breeding birds from those using the area as visitors during migration or post-breeding dispersal. Breeding evidence is usually represented by a series of categorised types of observation that determine whether the species is a possible, probable or confirmed breeder. The 16 codes implemented in the first European atlas have become the basis for many atlases since their publication over 40 years ago (Sharrock 1973). For EBBA2, these 16 breeding codes will be used, with an additional code for species recorded during the breeding season but suspected to be non-breeders. This non-breeding code represents, essentially, a way of improving the chances of classifying correctly observations of migrants and non-breeding summering birds, and has been implemented in some recent atlases (e.g. Balmer *et al*. 2013).

### *Abundance codes*

EBBA2 attempts to incorporate an estimate of bird species abundance in every 50×50 km square. Despite the expected difficulties of assessing reliable estimates in many circumstanc-

es, this information may represent a useful tool for calculating population sizes across Europe and will allow comparisons with those made 30 years ago. The abundance classes in EBBA2 are the same semi-quantitative estimates used in the first European atlas, which were categorised on a logarithmic scale (1–9 pairs, 10–99 pairs, etc.). In addition to the mentioned semi-quantitative estimates, in some countries more precise estimates may be available. In these cases the precision and accuracy of population estimates will probably be higher. However, EBBA2 abundance codes will be shown for all 50×50 km squares to allow for comparisons. All these estimates of abundance will be generated for each square by 1) direct counts, 2) statistical inference from a sample of counts and 3) expert assessment.

## A standardised survey for 10×10 km maps

EBBA2 attempts to show information on species distribution at 10×10 km, which can be considered a fine resolution at the scale of Europe (a map based on more than 100 000 cells). It would be too ambitious to cover the whole of Europe with a 10×10 km grid; nevertheless, modelling maps at such a resolution should be possible for many species using a sampling approach. These types of fine-grained maps are based on statistical models that allow inference of species occurrence in non-surveyed squares on the basis of knowledge of the patterns of species occurrence in a number of surveyed areas (e.g. Guisan & Zimmermann 2000). The generation of these maps represents a new challenge on a European level and they are expected to be a source of information of great interest for science and conservation.

Thus, in order to fulfil this objective, in EBBA2 a sample of 10×10 km squares (or similar size; e.g. 11×12 km squares are commonly used in the Czech republic) have to be selected. Unlike the 50×50 km approach, there is no particular requirement of grid type for this sampling since models can be generated from data originating from several different grids (e.g. different earth projection systems such as UTM, ETRS 1989, etc.) and then projected onto a given 10×10 km grid. The number of 10×10 km squares to be selected should be flexible and will range ideally from one to five for each 50×50 km square, but it is perfectly understandable that in certain regions carrying out standardised surveys in all 50×50 km squares will not be possible. Analytical procedures will have to adapt to this unequal distribution of the surveyed areas.

The information obtained in a small portion of the total number of 10×10 km squares in Europe needs to meet a relatively high level of standardisation since the role of modelling is expected to be very relevant. Common bird monitoring schemes may represent one of the most valuable sources for obtaining standardised data and this type of information has already been successfully incorporated into bird atlases (e.g. Herrando *et al*. 2011). Therefore, finding synergies between monitoring and atlas data may be a great opportunity for making the best use of the often limited resources in many European countries. Some basic rules have been designed to allow data from the many monitoring schemes in Europe to be used in EBBA2. Essentially, this procedure consists of selecting a particular monitoring census conducted on one day when all potential breeders are present (typically a May/June census) within a given 10×10 km square, and then generate a list of the breeding species reported in 60 to 120 minutes (the longer, the better — up to 120 minutes; exact time provided). These data will come from the whole or a portion of the time invested in a line transect, by combining a number of point counts within the square, or from surveys carried out in plots for territory-mapping. Countries with running monitoring projects could use this protocol to provide data for this standardised survey without much additional fieldwork.

However, many European countries do not have any on-going bird monitoring scheme or the schemes are limited to certain areas or species groups (e.g. farmland birds). In these cases a standardised survey could be promoted by carrying out timed walks that have a similar duration as those implemented in monitoring projects. These timed walks should be understood as highly flexible visits made when all breeding species are present (essentially May/June) in which only time is controlled and with no special requirement regarding the area covered, the speed, etc. Such timed walks can be targeted specifically to collect data for the atlas but are also commonly used in online-recording platforms.

Finally, it should be mentioned that a combination of the two protocols could be very useful to increase the amount of information at 10×10 km resolution. Thus, in case there is a monitoring scheme within a country but some areas are

poorly covered by this scheme, timed walks could be implemented there to complement data gathered by monitoring censuses.

## The role of modelling

The inference of species distribution data by means of spatial modelling techniques in areas with no available field data is one of the aims of EBBA2. However, the reliability of these models is very limited if field data are scarce or of poor quality. In principle, the results of modelling will be presented in different ways depending on each product. For 50×50 km maps, the aim will be to fill in gaps by using the results of models for showing information on presence/absence, abundance or breeding probability exclusively in the non-surveyed squares. By contrast, the information presented at a 10×10 km scale will represent the outcome of models for the entire range of the species.

At a time when modelling techniques are constantly evolving, it is too early to decide which analytical approach will be followed in EBBA2. Providing even simple data for the whole of Europe is a huge challenge and it is still uncertain whether ambitious targets will be met. Despite the constraints, standardised data provided for the whole of Europe as in this methodology will provide many opportunities for species distribution modelling and thus for achieving good quality maps.

## Acknowledgements

The EBBA2 methodology was developed by the Atlas Steering Committee (ASC) of the European Bird Census Council after two years of work with experts and national representatives from across Europe. We thank our colleagues in the ASC, Hans-Günther Bauer, Lluís Brotons, Ian Burfield, Mark Eaton, Ruud Foppen, Mikhail Kalyakin and David Noble, for the fruitful discussions. Two major events should be mentioned: a specific workshop carried out in Barcelona in March 2013 for national representatives with little experience in bird atlases and a workshop at the EBCC conference in Cluj in September 2013 for the whole EBCC community. On behalf of the ASC, we would like to thank the hundreds of contributions that have made this important step in the New Atlas of the Breeding Birds of Europe possible.

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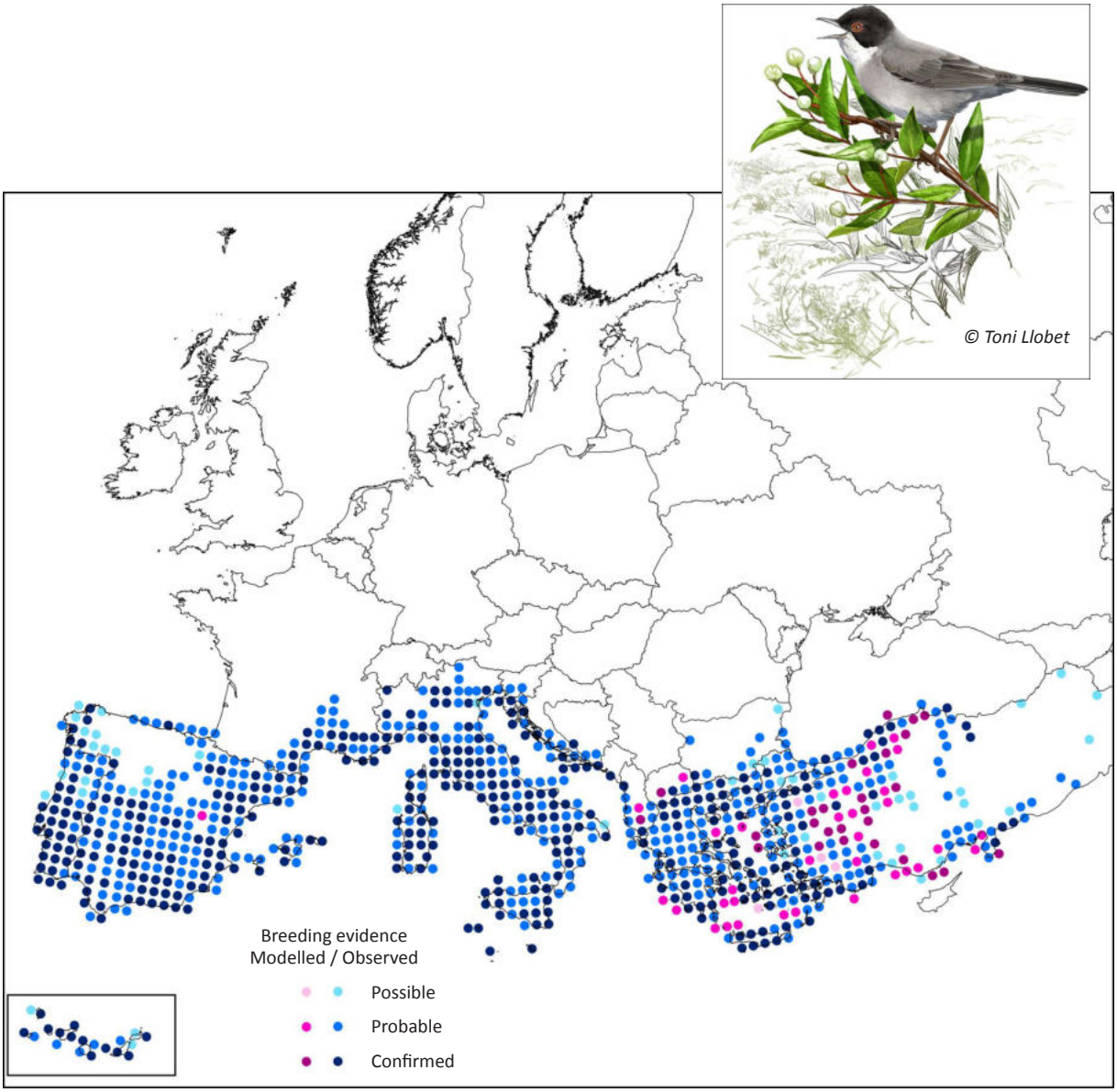
## Appendix. Simulated potential final products

We have used available data on species distribution and expert knowledge to produce the first simulations of the type of products we can achieve in EBBA2. The following four maps show these simulations for the Sardinian Warbler *Sylvia melanocephala*.

### *Final product 1*

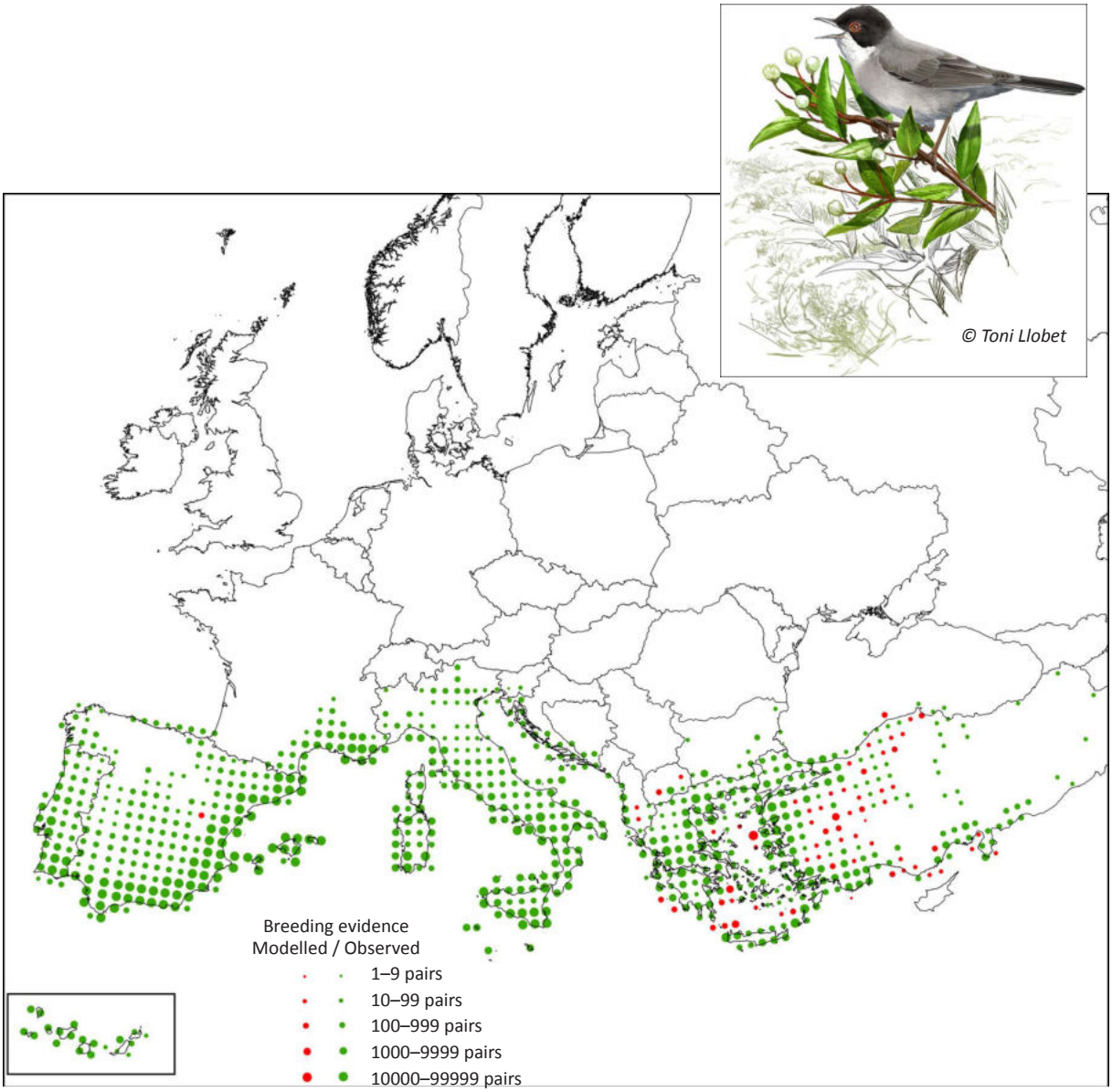
The final map will present breeding evidence for each 50×50 km square. A modelling approach will be used to predict occurrence in non- or poorly surveyed squares.




EBBA2 simulated map for the breeding likelihood of the Sardinian Warbler *Sylvia melanocephala*. The project will attempt to illustrate the predictions of statistical models in non-surveyed squares as well as observed data.

***Final product 2***

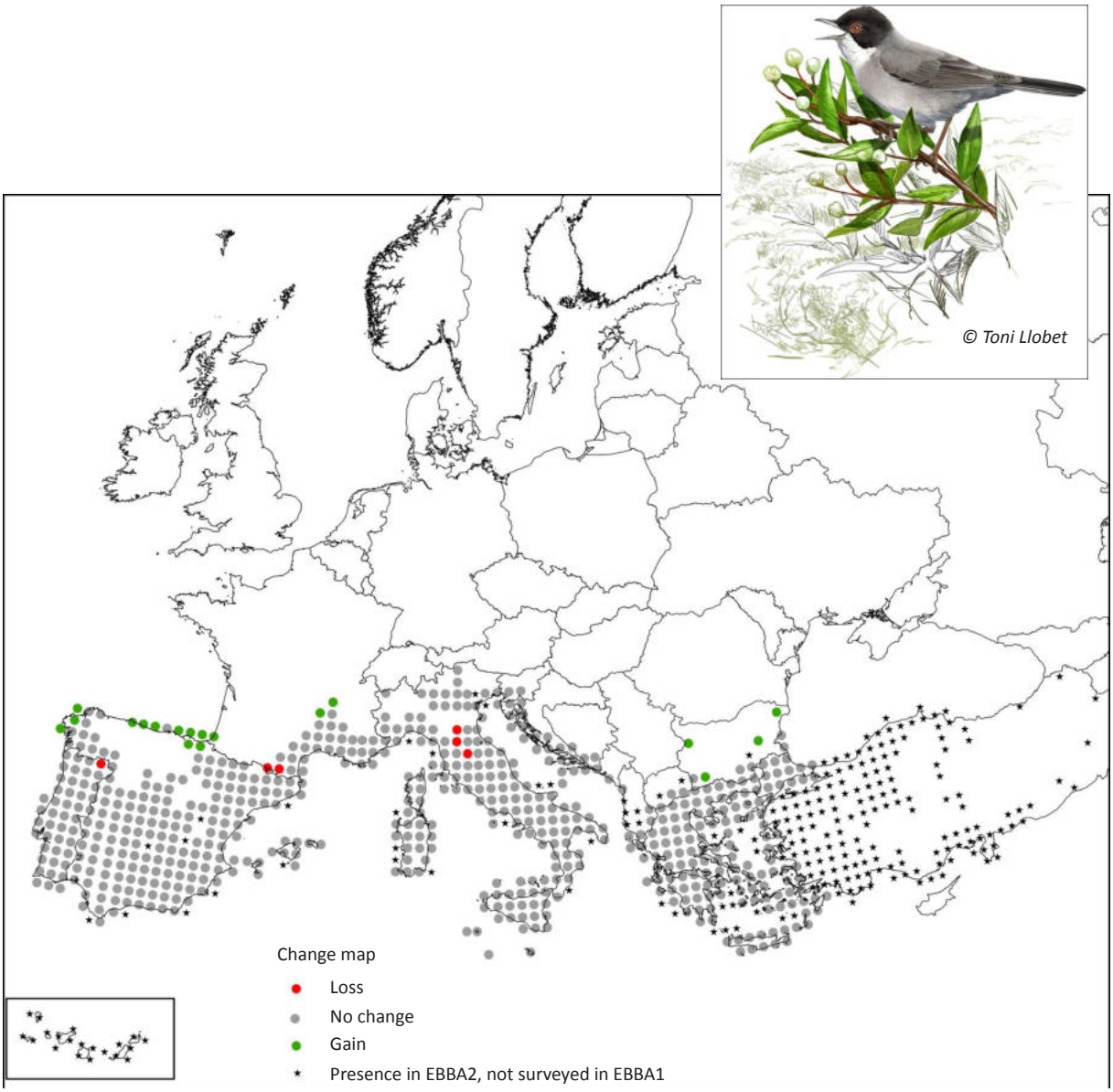
The final map will present abundance estimates for each 50×50 km square. A modelling approach will be used to predict abundance in non- or poorly surveyed squares.




EBBA2 simulated abundance map for the Sardinian Warbler *Sylvia melanocephala*. The project will attempt to illustrate the predictions of statistical models in non-surveyed squares as well as observed data.

***Final product 3***

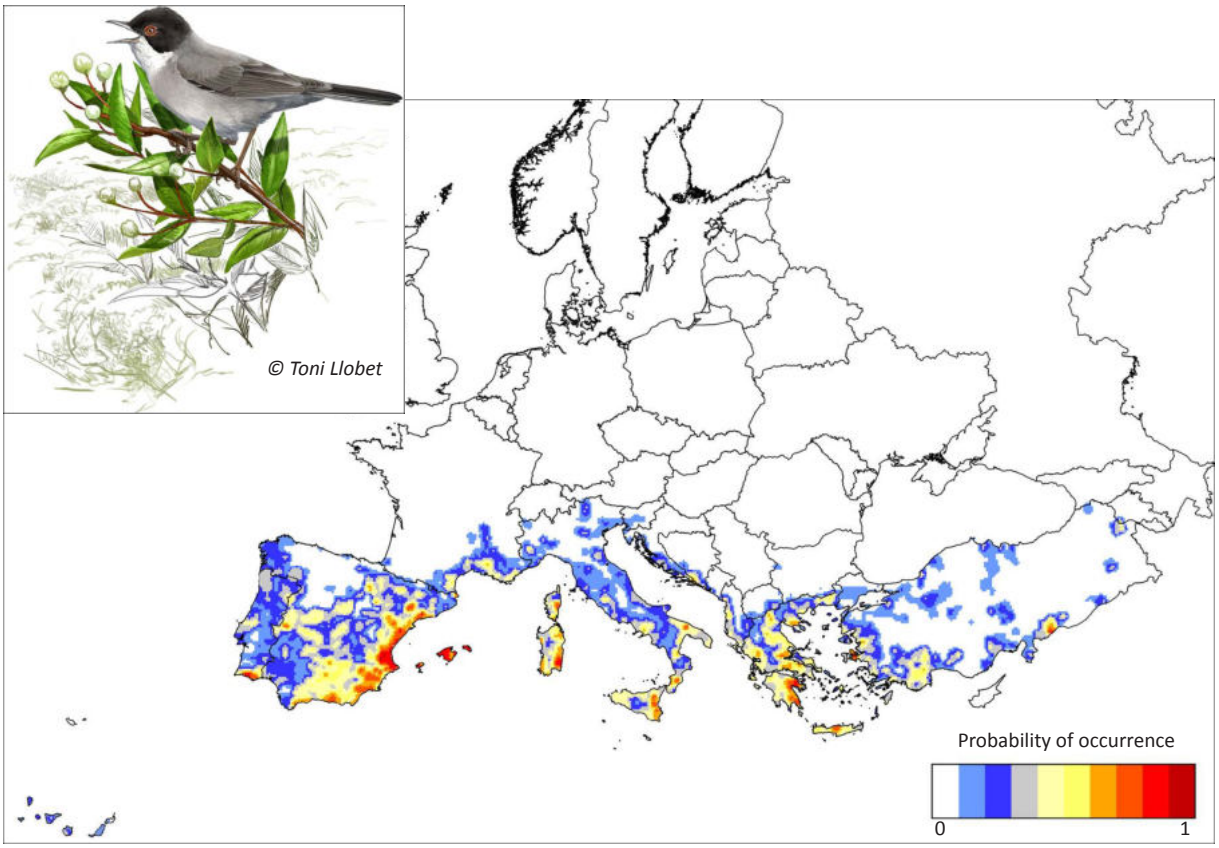
The data provision at 50×50 km will also be the basis for a map showing the change in species distribution between the first European Breeding Bird Atlas and the new atlas.




EBBA2 simulated map for the change in the species distribution between the two European atlases for the Sardinian Warbler *Sylvia melanocephala*.

***Final product 4***

The final map will present the probability of occurrence at 10×10 km resolution.




EBBA2 simulated high resolution map (10×10 km) for the Sardinian Warbler *Sylvia melanocephala*.

Bird Census News 2013, 26/1–2: 15–24

# Bird Atlas 2007–11: putting the dots on the map and what they tell us

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**Abstract.** Fieldwork for a combined winter and breeding atlas was carried out in Britain and Ireland between 1 November 2007 and the end of the breeding season 2011. Around 40,000 volunteers covered 99.9% of the islands' 10-km grid squares to contribute some 19 million records of over 500 species and subspecies. The published book contains distribution and relative abundance maps for both winter and the breeding season for c.300 species. Alongside these, distribution changes were mapped for 20-, 30- or 40-year periods. Additionally, novel maps of change in breeding-season relative abundance were produced for common and widespread species. An online appendix (Mapstore) was produced for the remaining c. 200 scarce and vagrant species, plus maps for all previous atlases. The published book also contains the results of preliminary analyses looking across species at patterns and potential drivers of change.

## Introduction

From 1st November 2007, for four winters and four breeding seasons, thousands of birdwatchers visited every corner to produce Britain & Ireland's third breeding atlas and its second wintering bird atlas. The 20+ years since previous atlases had seen many changes — not just in bird populations — but also in technology, surveyor numbers, methodologies and analytical techniques. Full details of how we responded to these changes to bring Bird Atlas 2007–2011 to fruition are covered in the introductory chapters of the published book (Balmer *et al.* 2013), but in this article we highlight particular aspects that may be of interest to those contemplating a national atlas.

There is a long history of bird atlases in Britain and Ireland. *The 'Atlas of Breeding Birds in Britain and Ireland'* was organised by the British Trust for Ornithology (BTO) and Irish Wildbird Conservancy (IWC) (Sharrock 1976). The aim was to cover a 10-km square and to record every species breeding in it during 1968–1972 and, if possible, to prove breeding for each species. It was estimated that 10,000–15,000 observers contributed, resulting in dot-distribution maps with the size of dot representing levels of breeding evidence (possible, probable and confirmed).

The second atlas was '*The Atlas of Wintering Birds in Britain and Ireland*' (Lack 1986). The successful partnership of the BTO and IWC continued, and fieldwork was carried out over three winters 1981/82 – 1983/84. Observers were asked to spend a minimum of one hour in a 10-km square and to count the number of birds of each species seen and/or heard. Participants could also submit supplementary records. The maps showed abundance using 'the number of birds seen in a day', where a 'day' was defined as six hours in the field. In total, 3,761 10-km squares received an average of 16 visits, representing nearly 180,000 hours by over 10,000 observers.

The third atlas to be carried out was '*The New Atlas of Breeding Birds in Britain and Ireland*' (Gibbons *et al*. 1993). The BTO and IWC joined forces with the Scottish Ornithologists' Club and fieldwork was conducted between April 1st and July 31st in each of the four years 1988–1991. In addition to the standard inventory type atlasing for 10-km squares, observers visited a minimum of eight tetrads (2×2 km squares) in each 10-km square and spent two hours in each tetrad, listing all species seen and heardThe proportion of these tetrads that were occupied was used as a frequency index of abundance of each species in each 10-km square. This is the first time that patterns of abundance were available for most spe-

cies in Britain and Ireland. All records were used to complete the distribution maps. A total of 551,370 10-km square records was submitted to the Atlas. These were based on 320,595 records collected during time tetrad visits, and 230,775 supplementary records.

## Start early

To continue a rolling 20-year programme of atlases, work for the 2007–2011 atlas started in December 2001 when the idea was first proposed to BTO Council. Between 2002 and 2004 negotiations took place between the BTO, BirdWatch Ireland (formerly Irish Wildbird Conservancy) and the Scottish Ornithologist's Club (SOC), and in 2004 the project was announced to the national network of local bird clubs and natural history societies. This early start gave time for many local atlas projects to run concurrently with the national one, providing additional fine-scale map outputs in some areas. Early planning was essential, especially as this would be our first combined breeding and wintering atlas. Serious planning began in 2004 with the formation of working groups and steering groups comprising staff from BTO and BirdWatch Ireland, SOC representatives, previous national and local atlas organisers, experienced BTO regional organisers, academics and data users. These groups met twice per year and were invaluable in helping to refine methods and to steer the direction of the project. Initial field methods were drafted in 2004 and work commenced on the web applications in 2006.

## Teamwork at many levels

From the outset we recognised (though perhaps still underestimated) the high demands of running a modern citizen science project in the digital age. This and the need for specialist analytical and web expertise meant the atlas team was larger than for previous atlases, drawing on different skills from the team members. The core atlas team consisted of Dawn Balmer (Atlas Coordinator), Simon Gillings (analyst), Brian Caffrey (Irish Atlas Organiser), Bob Swann (Scottish Atlas Organiser), Iain Downie (web developer) and Rob Fuller (project supervisor). In addition, the support of the BTO's and BirdWatch Ireland's fundraisers was of paramount importance to ensure that the project was fully funded — they raised the required €2.8 million through a combination of major donations, charitable trust grants, appeal proceeds and species sponsorship auctions. Some of these proceeds were needed to employ teams of professional fieldworkers in certain areas (especially Ireland) where volunteer density was low.

Equally important was the team of volunteer Regional Organisers who liaised between staff and observers to achieve the crucial tasks of organising fieldwork and validation of data. Britain & Ireland was divided into 152 blocks to produce manageable regions. In the UK these 'Atlas Regions' followed existing BTO regions used in the organisation of BTO surveys, but in Ireland regions were created for the first time. Each region had one nominated Regional Organiser, sometimes with assistants, whose tasks were to recruit and direct observers. We gave organisers training to ensure they were familiar with the methods and the interactive Bird Atlas Online system, and provided an online forum for them to raise issues and share solutions. Each region also had between one and nine Regional Validators who had the unenviable task of checking the tens of thousands of records submitted to the Atlas in their region.

Of course the biggest team of all were the volunteers themselves — we estimate some 40,000 people took part in fieldwork, including c17,000 who submitted and managed their data directly through our web interfaces. They ranged from individuals submitting occasional records from their local area to teams who made extended expeditions to remote areas for the sole purpose of gathering atlas records.

## Publicity and promotion

A major part of the success of the project, and the number of new surveyors recruited, can be attributed to the effort that went into publicising the atlas. In addition to regular newsletters and email correspondence with participants, we wrote articles for BTO, BirdWatch Ireland and SOC publications, national and regional press, birding magazines and specialist magazines targeting groups such as mountaineers, anglers and environmental survey workers. Staff and Regional Organisers attended and spoke at many regional and county conferences and bird club meetings. A number of online and paper resources were made available to observers including forms, Atlas notebooks, cheat-sheets, Frequently Asked Questions, tips on rare breeding birds, grid reference tools. At least one paper Roving Records form was sent to as

many birdwatchers as possible via the joint memberships of the BTO, BirdWatch Ireland and SOC.

## Two complementary field methods

Any repeat atlas has to balance two opposing requirements. Firstly consistency must be maintained with previous techniques so as to allow direct comparisons and the calculation of change. But secondly, effort must be maximized so that, as far as possible, the places where a species was not recorded are places from which it is actually absent, rather than simply where the effort was insufficient to detect it. These requirements are only achievable if the atlas survey has two complementary field methods, one of them systematic and, as far as possible, identical with what was used in previous atlases, and the other designed to achieve the maximum possible effort.

For the systematic component, observers were asked to submit lists of species encountered in two 1-hour visits to a sample of eight 2-km squares (tetrads) in each 10-km square; these were called *Timed Tetrad Visits (TTV)*. TTVs could be extended to 2 hours per visit to provide additional information which was especially valuable for local atlas projects. Observers counted all individuals encountered during each hour of each TTV. This information was central to the production of relative abundance maps and statistically robust measures of change since previous atlases.

The second component, to provide the additional effort needed to increase species lists, involved the submission of supplementary records; named *Roving Records*. Observers were encouraged to include standard breeding evidence codes with all records and to submit locations with 10-km precision, or tetrad precision where possible.

## Top-up data

Although data were collected from all parts of Britain & Ireland by Atlas volunteers, there was still the possibility that some species or breeding confirmations might have been missed. This was especially true for localised species requiring specialist knowledge. As in previous atlases, the Atlas distribution data were supplemented using records compiled from bird clubs and using surveys and research organised by BirdWatch Ireland, BTO, JNCC and RSPB (Figure 1). By far the single largest source of additional data was BirdTrack (*www.birdtrack.net*), the UK's online portal for birdwatching records; during the four years of the Atlas, over 10,000 observers submitted 4.5 million records to BirdTrack, from 1.1 million visits to 126,000 sites throughout Britain & Ireland. We also sourced data from external groups and organisations such as raptor monitoring groups, Rare Breeding Birds Panel, seabird specialists and rare bird information services.

## Online data capture and engagement

Early in the planning of the Atlas we recognised that a bespoke online system was required to provide the data submission and management facilities that observers expect in these modern times. We also realised that the web offered huge potential to provide individualised feedback to motivate and better target the efforts of observers. A major online system was built by the BTO Information Systems (IS) Team. Modules for observers included those to request tetrads, submit and edit data and novel ways to summarise and view data pooled across observers to highlight recording gaps. Modules for Regional Organisers included those to manage the allocation of tetrads to volunteers and a Review and Validation for interrogating the entire dataset for a region to query unusual records that might need correction or supporting descriptions. The latter was complex to build, taking more than a year, and proved a strain on our hardware because it was handling such large volumes of records.

Results pages were developed showing progress of coverage in each region, and provisional distribution maps were presented for a small range of species. Ideas such as 'Bird of the Day' (a distribution map selected at random, excluding rare breeding birds) and 'Tip of the week' (tips on which species to focus on to confirm breeding) proved very popular.

## Uptake and coverage

Collectively the 40,000 observers submitted 19 million records, over 97% of which were received via the web. These figures are undoubtedly higher than for previous atlases but do not necessarily imply that effort was higher, owing to different data capture techniques, different levels of effort by individuals and variation in data quality (e.g. whether a record included breeding evidence).

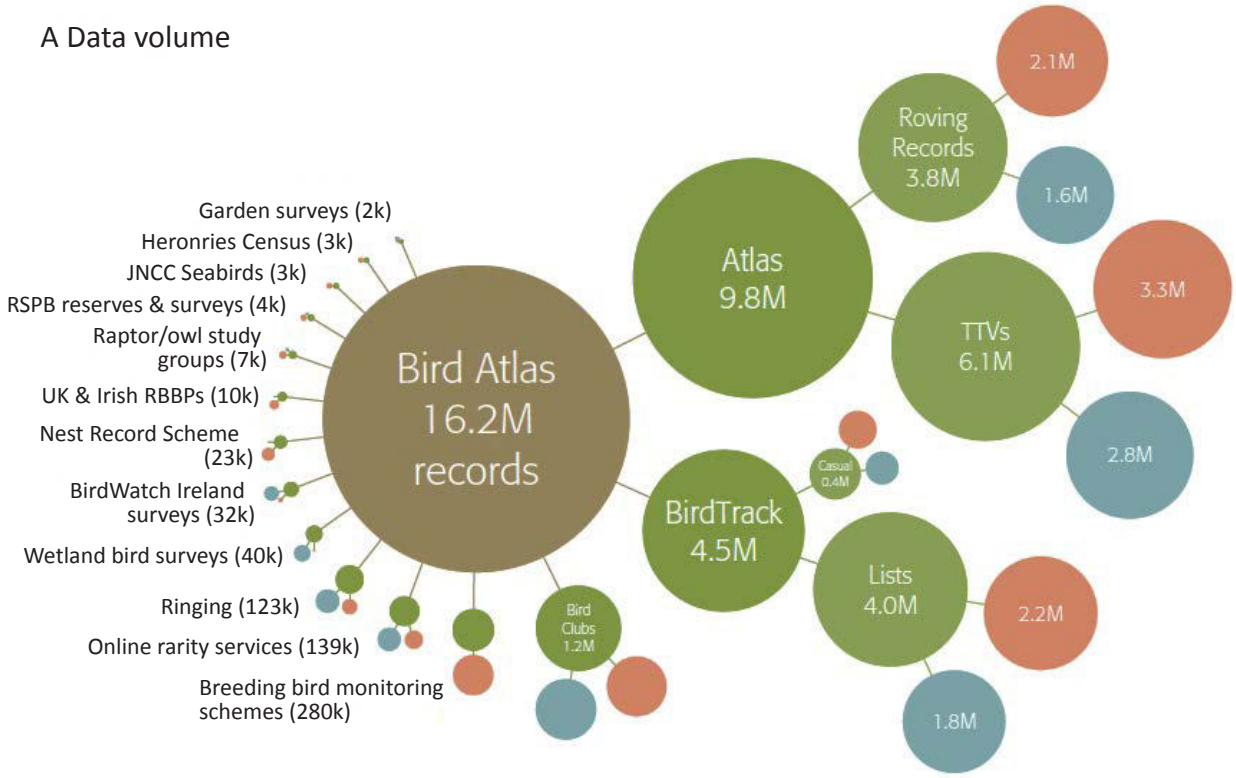


**Figure 1. Records from a very wide range of sources contributed to the Bird Atlas dataset. The area of each circle is proportional to the number of records in the particular subset of data. Figures indicate numbers of records and are rounded so may not sum perfectly. Orange circles are breeding season records and blue circles are winter records.**

Coverage was excellent; 3,844 (98.7%) of the 3,894 10-km squares in Britain and Ireland containing any land were visited at least once in both seasons. The few we missed, the 50 10-km squares with coverage in neither, or only one, season, contained only small amounts of coast, offshore sand bars and rocks and amounted to only 0.02% of the land area of Britain & Ireland. Coverage of tetrads by the TTV method for the systematic component of the Atlas exceeded all expectations (Figure 2). Between one and four TTVs were made to 50,089 of the c.80,000 available tetrads and many had the 'full set' of a pair of winter TTVs and a pair of breeding-season TTVs. In total, 182,228 TTVs were completed, amounting to a staggering 287,149 hours of dedicated timed-count field effort. Spatial representation was also excellent: our minimum target of eight tetrads per 10-km square was met in at least 97% of 10-km squares per country/region.

## Provision of breeding evidence

*Possible*, *probable* and *confirmed* breeding evidence was central to the production of breeding-season distribution maps and was provided on 55% of the c.7.9 million records submitted for the standard April–July breeding season. For distribution mapping purposes a further 0.1 million out-of-season (March, August–October) records were added: these conformed to species-specific and month-specific rules on acceptability of out-of-season breeding evidence. Great effort was made to promote the recording of breeding evidence from the outset, though we underestimated how much time and effort was required by the organisers to communicate this to the volunteers. During the last two breeding seasons we produced promotional material and online resources to help volunteers target areas and species where breeding needed to be confirmed (Figure 3).

The provision of breeding evidence was similar between the main types of Atlas survey methods with 79% of records from breeding-season TTVs and 77% of Roving Records having a breeding evidence code. The high provision of breeding evidence across the whole sample of TTVs was also replicated at the level of the individual TTV. Only 4% of TTVs were submitted with no breeding evidence for any species and 29% were submitted

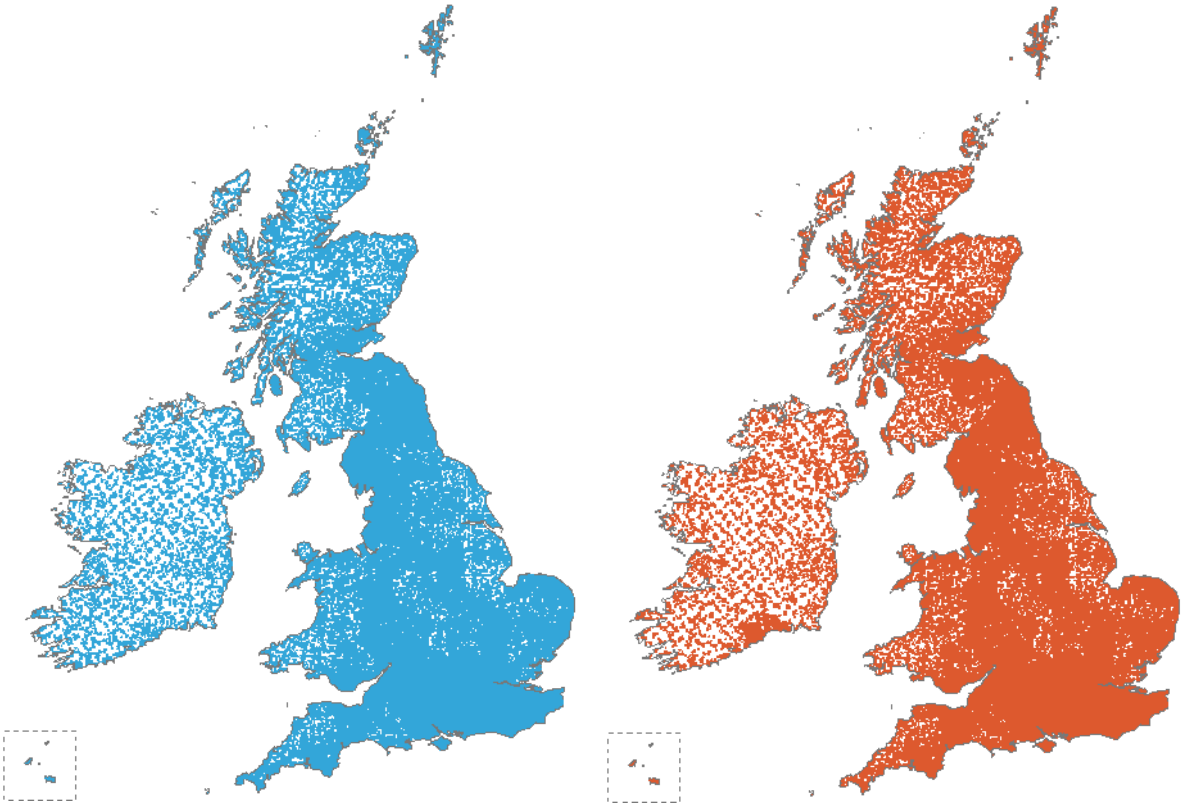

**Figure 2. Every tetrad that received at least one TTV in winter (left) or the breeding season (right) is shown. Many of the areas of solid colour are indicative of local tetrad atlases. The chequerboard effect due to prioritising every other square in Ireland, can also be seen from.**

with breeding evidence for all species encountered; the average TTV had breeding evidence for 79% of species. These figures indicate the value that fixed-effort methods (ie TTVs) can have in addition to their stated aim of abundance estimation.

## Quality assurance

The validation of records collected by volunteer observers is a critical step in ensuring records are fit for purpose and are widely accepted by the scientific community. We used existing BTO expertise in automated validation at the point of data entry to reduce many common errors but expected that simple typographic errors could still occur. We anticipated that some grid reference errors might arise, even with the use of point-and-click maps on the website and that breeding evidence codes, which were unfamiliar to many observers, might be used inappropriately on occasion. Furthermore, we had to deal with the sensitive issue of occasional species misidentification.

The Review and Validation module built as part of the Bird Atlas Online system allowed a carefully selected pool of knowledgeable regional validators to check every record submitted to the Atlas. Validators either confirmed records or marked them with one of four query types: location, count, breeding evidence or identification. Observers with queries were encouraged to check their records to correct simple errors, or to provide additional information (including descriptions where necessary) to corroborate unusual records. This process was an essential one and rapidly resolved a number of simple errors that nonetheless would have impacted upon the accuracy of the final maps. Common issues included:

- incorrect letter codes for 100-km square, especially near 100-km borders;
- central grid references for large BirdTrack sites spanning multiple 10-km squares;
- general grid reference errors;
- breeding evidence added to winter visitors still on wintering ground or on migration (e.g. Goldeneye *Bucephala clangula*, Redwing *Turdus iliacus*, Brambling *Fringilla montifringilla*);

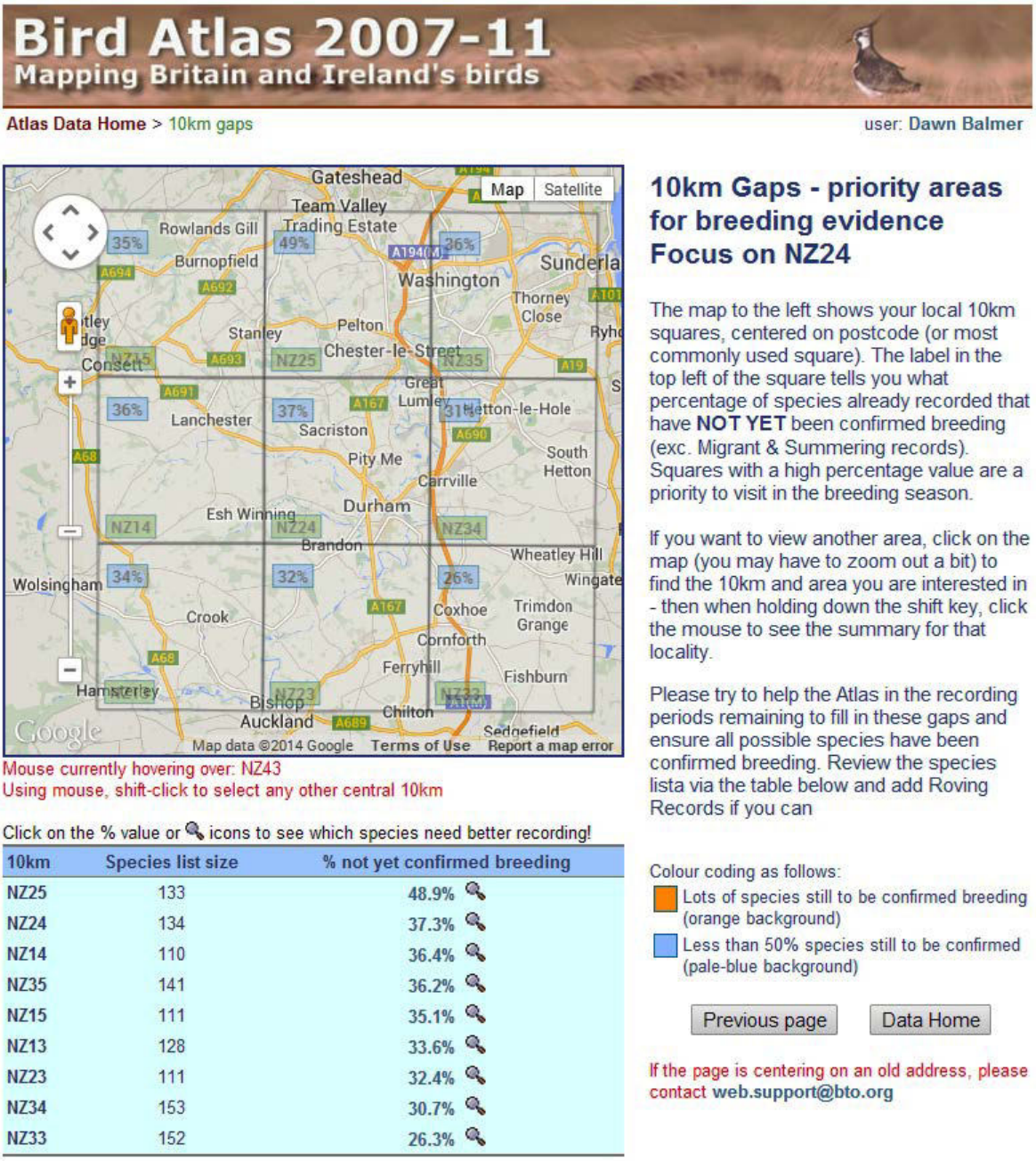


**Figure 3. We used novel approaches on Bird Atlas Online to help target volunteer effort into 10-km squares which needed further work. The percentage of species not confirmed breeding is shown for a grid of nine 10-km squares (the user can change the selection) and by clicking on the magnifying glass, the list of species is presented.**

- breeding evidence added in absence of any suitable breeding habitat in the square (e.g. terns, gulls, Grey Herons *Ardea cinerea*);
- lack of Flying (F) code for species flying over unsuitable habitat or commuting between feeding and roosting areas (e.g. Whooper Swan flocks *Cygnus cygnus* over cities).

Whilst these issues were relatively easy to resolve, some identification issues were not and required carefully worded correspondence with the observers.

## Analytical challenges and opportunities

On one hand, having c19 million records put us in the enviable position of being able to contemplate new and exciting analyses; but on the other it presented some computational and method-

ological issues. Having two previous breeding atlases and a previous winter atlas also meant we had several potential permutations over which to calculate and present changes.

For different biogeographic units we calculated standard metrics of range size, percent occupancy and estimates of percent change in the number of occupied 10-km squares between atlases common to many second-generation atlases. In addition we calculated the numbers of 10-km squares showing apparent gains and losses because some species show little overall change in range size, but still show apparent range shift or range turnover, although these could be artefacts of low detectability. Figures were supplemented by indices of change calculated solely from TTV data to avoid bias arising from variation in recording effort between atlases.

Up to eight different maps were produced for use, though a maximum of seven were presented in the book. These were:

- winter distribution 2007–2011;
- winter distribution change 1981–1983 to 2007–2011;
- winter relative abundance 2008–2011;
- breeding distribution 2008–2011;
- breeding distribution change composite 1968–1972 to 2008–2011;
- breeding distribution change 1988–1991 to 2008–2011;
- breeding relative abundance 2008–2011;
- breeding relative abundance change 1988–1991 to 2008–2011.

All maps were produced using the program R (version 2.14.0) using custom-written scripts employing the packages *maptools* (Lewin-Koh & Bivand 2011) and *sp* (Bivand *et al*. 2008) to process spatial data. A distinction was made between categorical and continuous data in their presentation, using symbols where possible to show categories (e.g. levels of breeding evidence) and colour shading to show continuous data (e.g. abundance). Maps are seasonally colour-coded, with those that relate to winter using a palette of cool blue colours and those for the breeding season a palette of warm orange-reds. All symbols and colours used for mapping were tested for readability by a range of users. In particular, red and green are never used on the same map to limit problems for red-green colour-blind readers. The only exception to this is the abundance change maps which we designed to use a red–white–brown palette, but when these were printed the browns resembled green. With hindsight, more testing of colour reproduction was needed for this map.

We worked closely with the Rare Breeding Birds Panel and the Irish Rare Breeding Birds Panel to discuss the most appropriate mapping scales for scarce and rare breeders for which there are sensitivities over locations due to the risk of disturbance or illegal persecution. We were keen to move away from the practice used in previous atlases of shifting dots because this obscures the shape of ranges and involves changing accuracy rather than precision. Instead new maps were produced with some or all of the range of sensitive species shown at a resolution of 20-km or 50-km instead of 10-km; downgrading evidence or dots were a last resort.

Whilst the distribution and distribution change maps were relatively straight-forward to prepare and present, new approaches were required for calculating and mapping relative abundance. For scarce and localised species, simple mean abundance maps were produced by averaging counts per hour across visits and tetrads within 20-km squares. For a coastal species we used inverse-distance weighting to smooth counts to represent abundance as a 'ribbon' of colour around the coastline. For the majority of common and widespread species we produced modelled abundance maps at tetrad resolution using the family of machine-learning techniques known as 'Regression Trees' (Breiman *et al*. 1984). For the first time in Britain and Ireland we were able to produce maps of relative abundance change for breeding birds, based on change in the proportional occupancy of tetrads in 1988–1991 and 2008–2011. These have provided unexpected novel insights into how Britain & Ireland bird populations are changing.

This atlas did not include population estimates. At the early stages of developing methods we decided against using complex methods for detectability correction in favour of consistency with previous atlases and simple field methods to maximise uptake. As a result we cannot derive population estimates from atlas data alone, although the maps of relative abundance have potential to be calibrated with other information on actual densities to obtain national population size estimates. The degree to which this is feasible varies widely across species. For some species, there are no data whereas for others the estimate is provided


**Figure 4. Example of the species account for Curlew (*Numenius arquata*).**

by an entirely different data source. For these reasons and to ensure timely production of the Atlas, population size estimates are not included. In the UK, we now have a separate reporting system for periodical updates of population estimates (Musgrove *et al.* 2011, 2013) and in Ireland, population estimates were being derived during the later stages of the Atlas (Crowe *et al.* 2014).

## The results

The book presents detailed accounts for 296 species, and summary statistics for a further 206 species that either occurred during the breeding season with no breeding evidence or were recorded in fewer than c10 10-km squares in winter. Species accounts vary from one quarter page to two pages, including between one and seven maps and a concise text of c.110–350 words focussing on the interpretation of maps and possible causes of change (Figure 4).

In parallel with this species-by-species approach we also present an in-depth overview of pattern and change in the avifaunas of Britain and Ireland. This highlights how species composition has changed, which species are showing the greatest changes (positive and negative) and how these relate to habitat specialisms and life history attributes. Some of the key findings are:

- breeding herons, egrets and bitterns doing well;
- lowland and inland-breeding terns and gulls doing well, but other seabirds faring poorly;
- contrasting fortunes for woodpeckers including complex regional changes for Green Woodpecker;
- marked range contractions and abundance declines for many breeding waders (Figure 5);
- migrant passerines declining in southeast but stable or increasing in northwest (Figure 5);
- many species have increasing abundance in Ireland;
- non-native species generally showing range expansion;
- birds of prey have fared well in lowlands but poorly in some upland areas;
- farmland birds show few significant recoveries, and many species show ongoing range contraction and abundance declines;
- range contractions for some wintering waterbirds are consistent with short-stopping;
- range expansions for several wintering insectivorous passerines.

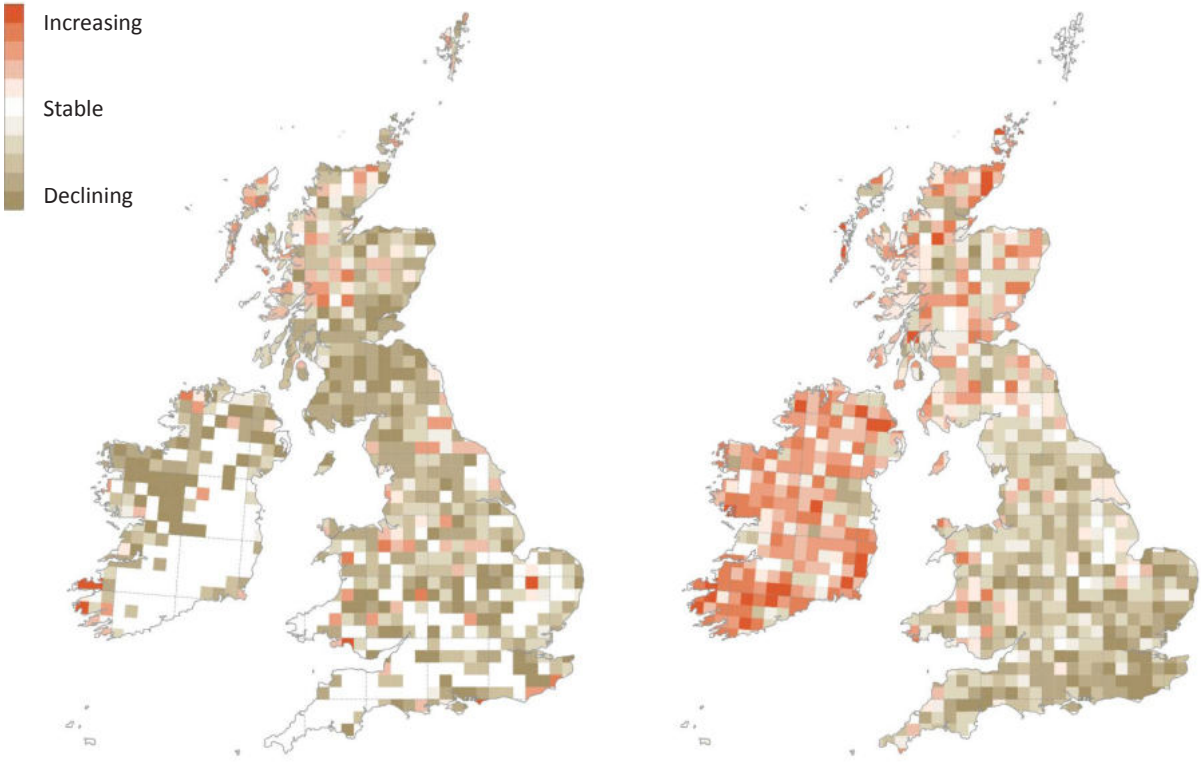


**Figure 5. Patterns of change in breeding abundance are shown across Britain and Ireland for the period 1988–1991 to 2008–2011 for two groups of breeding species: waders (left) and migrant passerines (right). Red or brown shading indicates that the members of the species group, on average, increased in abundance or decreased in abundance, respectively, in a 20-km square. Darker shading indicates that a greater proportion of the species present in the 20-km square showed an increase (or decrease), with the darkest shading indicating that all group members showed the same direction of change. The shading is independent of the number of species in a group and is only shown for 20-km squares with at least four members of a group present. Underlying data are effort-controlled (i.e. TTV data are used).**

## #beyondthemaps

Though a major milestone for us, the publication of the Atlas in November 2013 was not the end of the atlas project. In April 2014 we launched Mapstore (*www.bto.org/mapstore*) — an online directory containing all the maps from this and previous British & Irish bird atlases. It simply presents the maps, with no text or statistics. A full e-book will be launched in summer 2014 and we are making use of the underlying data to update maps in field guides.

The data have been provided to RSPB and government conservation agencies for immediate use in conservation work and we are taking forward a programme of scientific research. The 'beyond the maps' research aims to understand the factors underpinning the patterns and changes documented by the Atlas and will include both independent and collaborative work.

## Acknowledgements

Many thanks to all the Regional Organisers and volunteers that made Bird Atlas 2007–2011 possible. Mark Eaton and David Noble made useful comments on an earlier draft.

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# EUROPEAN ATLAS NEWS

## The Swiss Breeding Bird Atlas 2013–2016: preliminary results after two seasons

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**Abstract.** The Swiss Breeding Bird Atlas 2013–2016 is already revealing some interesting first results. The online portal www.ornitho.ch plays a key role. It serves as an online-atlas and allows the collaborators to produce up-to-date distribution maps and to check for each atlas square (10 × 10 km), which species are already confirmed, still to confirm or newly recorded. After two seasons, only a very limited number of atlas squares are not yet surveyed satisfyingly, mainly in the Alps and the Jura. Distribution trends are emerging for several species, thanks to comparisons with the former atlas periods 1972–1976 and 1993–1996. With simplified territory mapping in 2319 1 × 1 km squares (5.4 % of the area of the entire atlas perimeter), preliminary abundance maps based on 790 1 × 1 km squares mapped in 2013 were calculated. First results of these abundance maps are illustrating changes in densities since the 1993–1996 atlas.

## Introduction

Field work for the Swiss Breeding Bird Atlas 2013–2016 started in 2013. The methods for the new atlas are very similar to those of the 1993–1996 atlas. The grid remained the same (467 atlas squares of 10×10 km), and as before there is a requirement for simplified territory mapping (three survey visits, although only two in squares above the timberline) in five 1×1 km squares per atlas square (Knaus 2012). In summary, the goal per atlas square is to find every breeding bird species and to record especially those species classified as rare or colonial in as many square kilometres as possible. Although the 2014 season is not completely finished yet, and the data received are not fully checked, here we present some interesting preliminary results.

## Results

### *1. Data compiling*

All data are transmitted electronically. The online portal www.ornitho.ch plays a key role: the collaborators can produce up-to-date distribution maps with all observations that fulfil the atlas criteria (recording period and minimal atlas code) within fractions of a second. Since the observations from the 1993–1996 atlas (and the 1972–1976 atlas) have been uploaded to ornitho.ch as well, the field workers can also check which species have already been confirmed, are still to be confirmed or are newly recorded for each atlas square. Furthermore, they can produce comparative distribution maps for every species (except for a few sensitive species that are not visible to the public) and each atlas period. One of the many advantages of this system is that birding trips can be planned more efficiently and special attention can be paid to species (and their habitats) that are yet unrecorded but can be expected according to the former atlas data. It also points out which species have been found already and/or have many records and hence need less attention. On the other hand, providing such an online-atlas requires careful and regular checking of the data, so that the current maps are as accurate as possible.

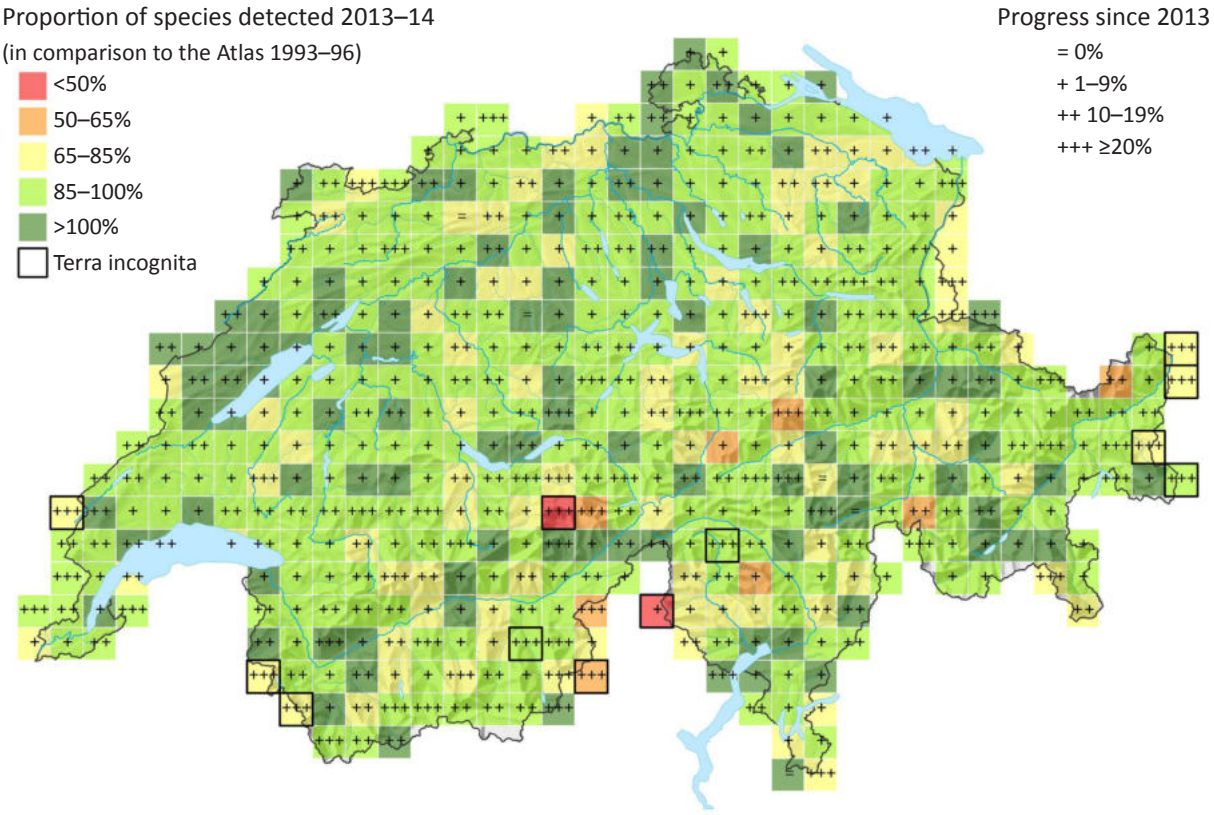


**Figure 1. In most atlas squares almost as many breeding bird species have been found after two out of the four years of fieldwork as in the entire period of the 1993–1996 atlas. In many poorly visited atlas squares tremendous progress was made in 2014 compared to 2013, particularly due to the project "Terra incognita" (note the frequent triple-plus symbols in these squares).**

The digitalisation and analysis of the simplified territory mapping is carried out online as well. These data are also uploaded to ornitho.ch so this portal contains the full set of all atlas-relevant data.

So far, over 2,670 field ornithologists have recorded valid observations on ornitho.ch. We expect a clear increase in the data submitted this year compared to 2013, when 430,000 observations were recorded for the breeding season alone. There has been an increase in observations ascribed to an exact location (compared to other observations which are recorded per 1×1 km square). This is partly due to the new ornitho-app "NaturaList" (so far only available for android phones) which only allows precise observations to be recorded and submitted.

### *2. Diversity per atlas square*

In more than 100 of the 467 atlas squares the number of breeding bird species recorded so far is the same or even higher than the total for the 1993–1996 atlas — after just two out of four seasons of field work (Figure 1)! Many other atlas squares are now only missing a few species compared to 1993–1996. Just a very limited number of atlas squares have not yet been well surveyed. These are located mainly in the Alps, the Jura and border regions. To encourage field ornithologists to visit those under-observed atlas squares, a project called "Terra incognita" was launched prior to the field season 2014: 12 critical atlas squares were chosen and voluntary collaborators were ask to spend a few days or a week in these squares. The project was successful: we found field workers for all "Terra incognita" squares. Most of these squares now have records for between 70 and 90 % of the species recorded from the 1993–1996 atlas (Figure 1).

### *3. Distribution maps*

In 2013 and 2014 208 breeding bird species (including two escapees) were recorded within the atlas area. We were pleased that new breeding species for Switzerland occurred in both seasons: Black-winged Stilt *Himantopus himantopus* and Great White Egret *Egretta alba* (Jeanmonod & Rapin 2014) in 2013 and Arctic Tern *Sterna*

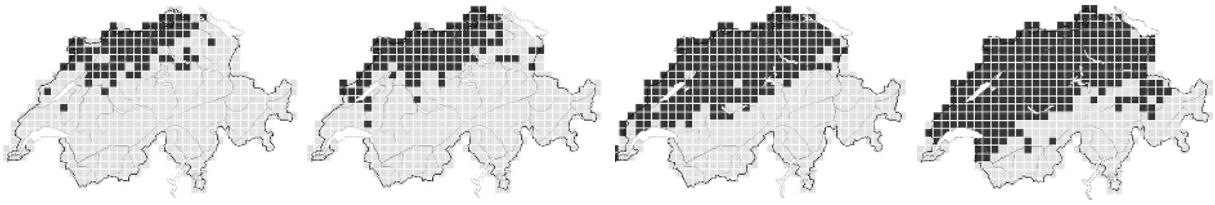

**Figure 2. Distribution map of the Red Kite *Milvus milvus*, illustrating occupied atlas squares in 1950–1959, 1972–1976, 1993–1996 and 2013–2014.**

*paradisaea* in 2014. There was also a probable breeding record of Little Egret *Egretta garzetta* in 2014; the nest was probably abandoned during incubation. Other very rare species found breeding also included Subalpine Warbler *Sylvia cantillans* (4th Swiss breeding record), Eurasian Dotterel *Charadrius morinellus* (5th breeding record; Müller-Derungs *et al*. 2014), Ferruginous Duck *Aythya nyroca* (6th breeding record) and Red-breasted Merganser *Mergus serrator* (9th breeding record). Citrine Wagtail *Motacilla citreola* bred for the second time in neighbouring Austria, but still within the atlas perimeter. On the other hand no breeding was so far suspected for former breeding birds like Cetti's Warbler *Cettia cetti*, Eurasian Penduline Tit *Remiz pendulinus* and Woodchat Shrike *Lanius senator*.

For several species we have already reached complete coverage on the basis of atlas squares (10×10 km), e.g. Black Redstart *Phoenicurus ochruros* has now been recorded in all 467 atlas squares, as it was in the 1993–1996 atlas. Some other common species like Common Buzzard *Buteo buteo*, White Wagtail *Motacilla alba*, Great Tit *Parus major* and Common Chaffinch *Fringilla coelebs* have only a handful of atlas squares occupied in 1993–1996 still awaiting records in the current atlas period.

Trends for other species are emerging as well. The population of Red Kites *Milvus milvus* had become extinct in Switzerland by the beginning of the 20th century. After 1945 an increase became noticeable and by the 1950s the Red Kite was a regular, but scarce breeding bird in the northwestern parts of Switzerland (Knaus *et al*. 2011). By 1972–1976, it had expanded its range towards the south. In the 1990s it had reached the northern edge of the Alps (Schmid *et al*. 1998) and since then the species has started to breed in some large valleys in the Alps. In 2013 and 2014 many newly occupied atlas squares were recorded, situated mainly in the Prealps, the Bernese Oberland, the Valais and the Grisons (Figure 2). While many immatures and non-breeders may wander around at higher altitudes, some breeders seem to follow them. This is illustrated by a nest found in 2014 with three young (two of them fledged) in the region of Davos at an altitude of 1550 m a.s.l. — probably the highest breeding record in Central Europe and the Alps.

The Grey-headed Woodpecker *Picus canus*, for which Switzerland lies at the southwestern edge of the range, was fairly widespread across the Plateau in the 1950s. It also occurred in the Jura and along the main valleys in the Alps (Knaus *et al*. 2011). By 1993–1996 the population had declined markedly and the range had contracted (Schmid *et al*. 1998). This shrinking has continued and large gaps were apparent in 2013–2014, mainly in the western part of Switzerland (Figure 3).

The Whinchat *Saxicola rubetra* was once widespread across the country; the first declines were noticed in the 1930s and by the 1950s it was already rare or missing in some regions of the Plateau, although it was still common in the Jura and the Alps (Knaus *et al*. 2011). In 1972–1976, the Whinchat persisted on the Plateau only locally and by 1993–1996 they had almost completely abandoned the Plateau and disappeared from the northern Jura. Since then the decline has continued, with a more recent decline in the higher altitude strongholds. Whinchats have yet to be recorded in many areas during current atlas fieldwork, particularly in the eastern Jura and the northern Prealps but also in some areas in the Alps such as parts of the Ticino (Figure 4). Some gaps may be filled over the next two years but we fear that most will not.

### *4. Abundance maps*

Distribution maps based on atlas squares only show changes in occupancy, at a low resolution. To get a finer picture, simplified territory mapping will be done in 2319 1×1 km squares (5.4 % of the entire atlas area). We were able to slightly reduce

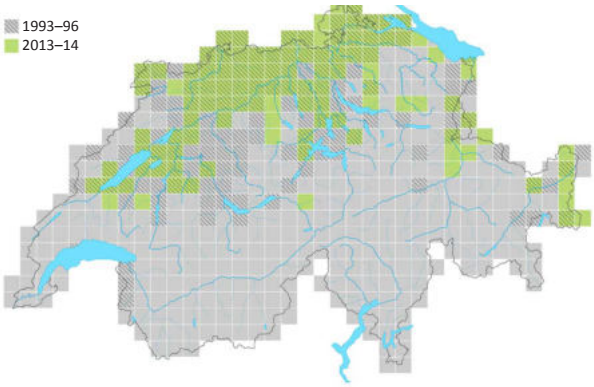


**Figure 3. Comparative distribution map of the Grey-headed Woodpecker *Picus canus*, illustrating the atlas squares occupied in 1993–1996 vs. 2013–2014.**

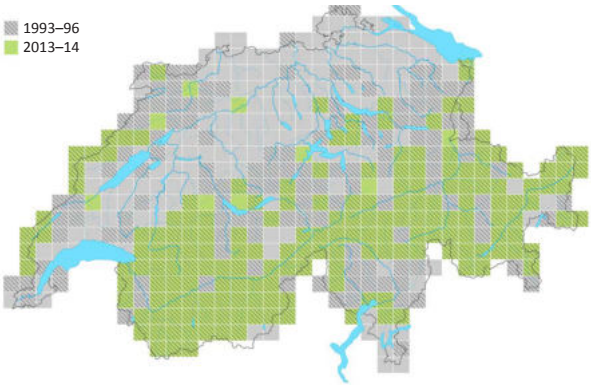


**Figure 4. Comparative distribution map of the Whinchat *Saxicola rubetra*, illustrating the atlas squares occupied in 1993–1996 vs. 2013–2014.**

this percentage compared to the 1993–1996 atlas (2934 squares or 6.9 % of the perimeter) due to more sophisticated statistical models. These 1×1 km squares are representative with regard to habitat types and altitude for each atlas square. In 2013 a total of 790 1×1 km squares were mapped, despite cold and wet spring weather; we expect a higher number in 2014 due to better weather.

Some preliminary abundance maps based on the 1×1 km squares have been calculated for several species using the 2013 data. The counts for each sampled square were modelled with boosted regression trees (Friedman 2002) using several environmental covariates: elevation, slope, northness, distance to the nearest river, distance to the nearest road and several proportions (buildings, forests, green ways, water bodies, pastures, mountain pastures, orchards, rocks, unproductive vegetation and vineyards). The counts were then interpolated across the whole country using the fitted model.

In order to account for residual spatial autocorrelation, the residuals were extracted and interpolated using ordinary kriging with a Matérn covariance function. The interpolated residuals were then added to the interpolated counts to get the final predictions. The combination of these two modelling steps can be seen as an extension of a technique called regression kriging (Odeh *et al*. 1995) where boosted regression trees are used instead of standard linear models. All the analyses were done in R 3.0.2 (R Core Team 2014) with the packages gbm (Ridgeway 2013) and gstat (Pebesma 2004).

The predictions were validated visually and also using correlation measures based on a cross-validated dataset. We note that imperfect detection is not accounted for in these models, but this will be done once all the data is available. Unfortunately the counts were censored in the 1993–1996 atlas (i.e. a maximum of 10 territories for common species). We thus had to apply the same censoring to the 2013 data (before doing any modelling) in order to get valid abundance comparisons with the previous atlas.

The first examples of these abundance maps are striking. The population of Blue Tits *Parus caeruleus* has been increasing in Switzerland since about 2000. The trend is clearly visible in the comparative abundance map with densities increasing in the strongholds, especially in large parts of the Plateau, but also the Jura, the Ticino and some alpine valleys (Figure 5). Also in the Alps the species is expanding to higher altitudes.

Spotted Flycatcher *Muscicapa striata* has shown a negative population trend in Switzerland since the mid-1990s. It is mainly distributed in the lowlands. In all hotspot regions large declines are obvious, while changes were less clear in areas with lower densities (Figure 6). The next seasons will show if and in which regions this tendency remains.

We have not yet analysed changes in altitudinal distributions since 1993–1996 in detail. However, a trend is already obvious: apart from known examples such as Rock Ptarmigan *Lagopus muta* (Revermann *et al*. 2012) and Ring Ouzel *Turdus torquatus* (von dem Bussche *et al*. 2008), other species have expanded or shifted their distribution upwards, e.g. Common Wood Pigeon *Colum-*

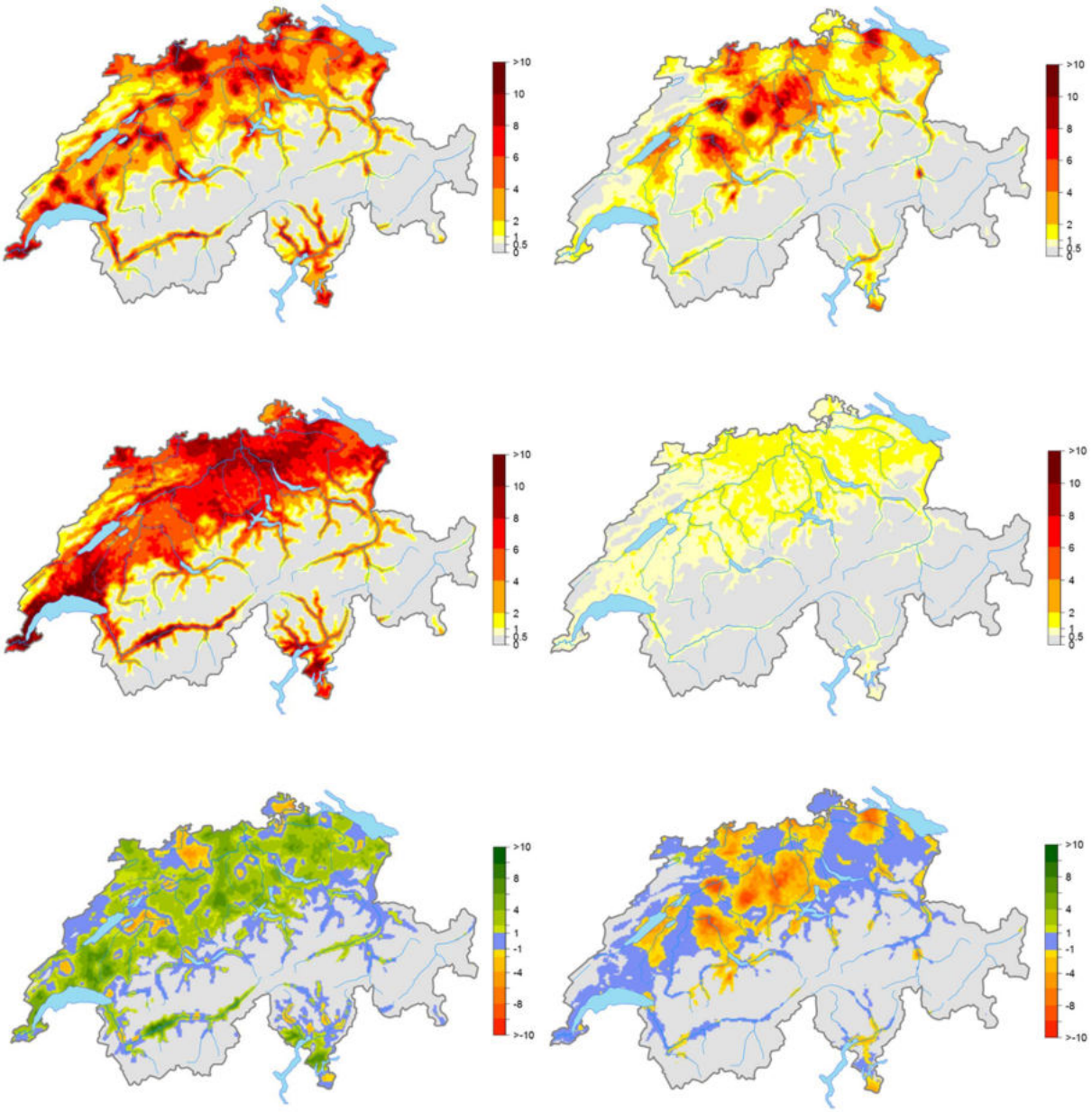


**Figure 5. Abundance map of the Blue Tit *Parus caeruleus*, illustrating territories per 1 × 1 km squares 1993–1996 (top) and 2013 (centre); dark red colours indicate high densities. Further, the comparative abundance map shows the differences in the density between 1993–1996 and 2013 (below); dark green regions depict areas with strong increases in densities within the last 20 years.**

**Figure 6. Abundance map of the Spotted Flycatcher *Muscicapa striata,* illustrating territories per 1 × 1 km squares 1993–1996 (top) and 2013 (centre); dark red colours indicate high densities. Further, the comparative abundance map shows the differences in the density between 1993–1996 and 2013 (below); orange red regions depict areas with strong declines in densities within the last 20 years.**

*ba palumbus*, Eurasian Blackcap *Sylvia atricapilla* and Great Tit *Parus major*.

There are still two breeding seasons to go, hence we are convinced that despite the topographical difficulties, all atlas squares will be surveyed satisfyingly and the current gaps in coverage will be filled. Of course we also hope that a few ornithological highlights still await us.

## Acknowledgements

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# New Dutch bird atlas. Fieldwork and preparations for analysis in progress

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**Abstract.** In the period 2013–2015 Sovon is organizing the fieldwork for a new Dutch bird atlas. The main aims of the new atlas are to provide an up to date and comprehensive description of bird distribution and numbers, both in the breeding season and in winter. The ambition is to perform this in a more quantitative way (absolute instead of relative densities per grid cell) and with higher spatial resolution than achieved in previous atlases for breeding birds (Texeira 1979 and SOVON 2002) year-round (SOVON 1987), and to evaluate changes in distribution. This article starts with a summary of the methodology, followed by a description of the progress of the fieldwork after two years. Finally we present quantitative maps of four species to illustrate preliminary results for changes in distribution and density.

## Methodology

In order to maintain comparability with previous atlases, the general design of data collection again combines assembling a comprehensive list of species present in each atlas square (5×5 km), including an estimate in classes for the scarcer species, and a more standardised and quantitative component in eight systematically selected 1×1 km quadrats per square ('timed visits in golden grid'; see Figure 1). Fieldwork in these 'golden grid' quadrats consists of one hour visits in each of two six-week periods per season, during which all species observed are ticked, and a selection of relatively scarce species is counted. Part of each hourly visit is a five-minute point count in the centre of the quadrat, during which all individuals are counted. In an optional, extended version of this point count all bird observations are mapped, and the count is repeated immediately for another five minutes. All observations of rare species and previously unknown breeding colonies, during both the quadrat and the additional atlas square visits are recorded on maps. Data entry and validation for the atlas project is entirely through an internet application (www.vogelatlas.nl).

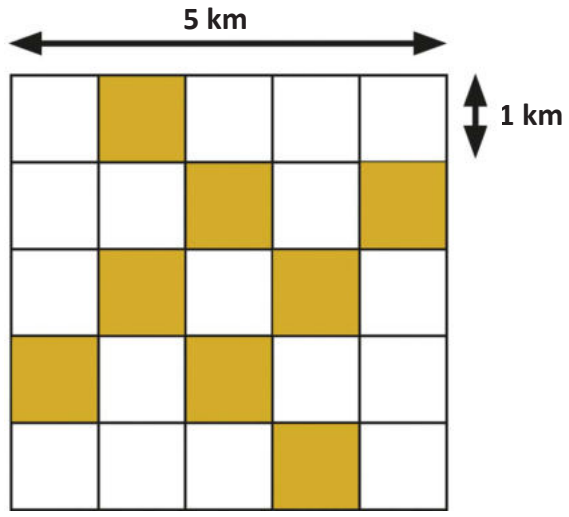


**Figure 1. "Golden grid" showing the configuration of the eight selected 1 × 1 km quadrats for standardised visits (yellow colour) within each 5 × 5 km atlas square.**

To obtain quantitative distribution (density) maps for breeding birds, the quadrat data will be combined with density information obtained from territory mapping in over 2,000 Common Bird Census plots and geo-information on land use characteristics, using state-of-the-art modelling procedures. Winter density maps of terrestrial species will primarily be based on hierarchical modelling of the extended point count data, while the distribution and numbers of water birds will be quantified mainly on the basis of count data from the monitoring scheme, combined with density estimates for areas not counted. In this design, data collected in all monitoring schemes organized by Sovon also contribute to the outcome of the atlas project.

Our ambition is to present the data in absolute densities, at least for the common breeding bird species. That requires further development and validation of distribution modelling techniques, implemented in our software package TRIMmaps (R code).

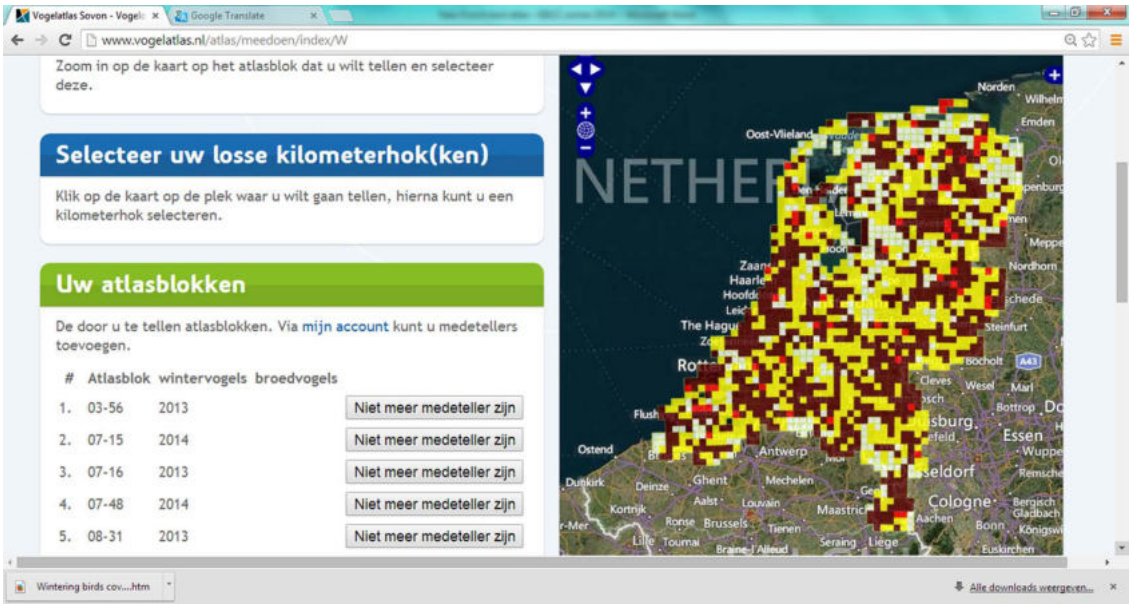


**Figure 2. Winter coverage of the Dutch atlas project after two years of fieldwork (red and brown squares: (almost) covered; yellow square: claimed or counting in progress, white square: still to be claimed).**

## After (almost) 2 years fieldwork ….

At the moment of writing the fieldwork of the second atlas year has been almost completed. However, data entry is somewhat running behind. There is quite a gap between started and fully completed atlas square counts (>40%).

The coverage results (Figure 2) raise mixed feelings: ca. 53% of the atlas squares has been counted for *winter birds* now. The coverage differs greatly between regions. Particularly in the northern and south-western regions, traditionally areas with relatively low numbers of birders, we encounter great problems in achieving sufficient coverage. Here, we are organizing 'atlas camps' over the weekend, involving fanatic atlas birders from elsewhere and offering them a reimbursement of their expenses.

In the *breeding season* we observe some, albeit not much, competition between the atlas project and the monitoring programmes. The number of completed breeding counts is significant lower than the winter counts.

The facultative repeated point count is a great success: up to now more than 40% of the point counts is carried out in the repeated version. Our expectation at the project start was 20%.

Our prognosis for the number of completely counted atlas squares after two field years is about 40–50%. Therefore, our last year of fieldwork faces us with big challenges.

## Some first results

The provisional, not validated results for all species can be viewed almost 'real time' by everyone at www.vogelatlas.nl (tab 'resultaten'). Here, we present preliminary quantitative change maps of four species. For a fair comparison with the former breeding atlas (SOVON 2002) and winter results of year round atlas (SOVON 1987) we present only the squares which are fully counted in both atlas periods.

After the completion of the fieldwork each observer is asked to indicate the number of breeding birds per species on the basis of the atlas counts, breeding bird monitoring program plots (BMP), winter counts (PTT), or additional records (e.g. from observado.org, waarnemingen.nl), using the 9 abundance classes (1–3, 4–10, 11–25, 26–50, 51–100, 101–250, 251–500, 501–1000, >1000).

The four preliminary maps show the change in abundance class for the counted atlas squares since the last atlas (SOVON Vogelonderzoek Nederland 2002). The corresponding graph shows the number of atlas squares with a lower, unchanged or higher classification. Black woodpecker and Middle spotted woodpecker are examples for the breeding season results, the abundance classes representing breeding indicating behaviour. For Yellowhammer and Woodlark we show the first results of the winter atlas counts, abundance

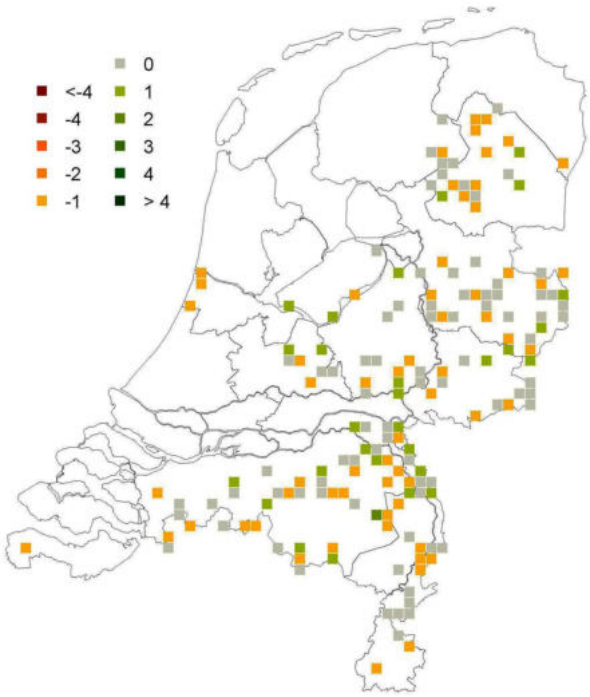


**Figure 3a. Black woodpecker: preliminary map showing the change in abundance class for the counted atlas squares since the last atlas (SOVON Vogelonderzoek Nederland 2002). Here, e.g. +2 means that the abundance has increased two classes, or e.g. from the 1–3 class to the 11–25 class, –4 means that the abundance has decreased four classes, e.g. from the 251–500 class to the 11–25 class).**

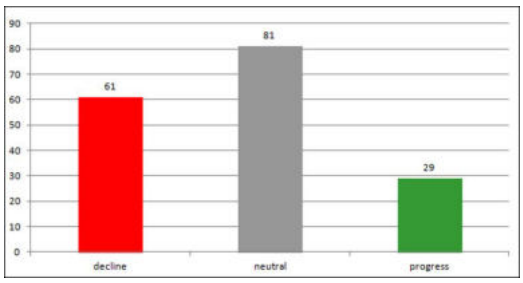


**Figure 3b. Black woodpecker: the number of atlas squares with a lower, unchanged or higher classification.**

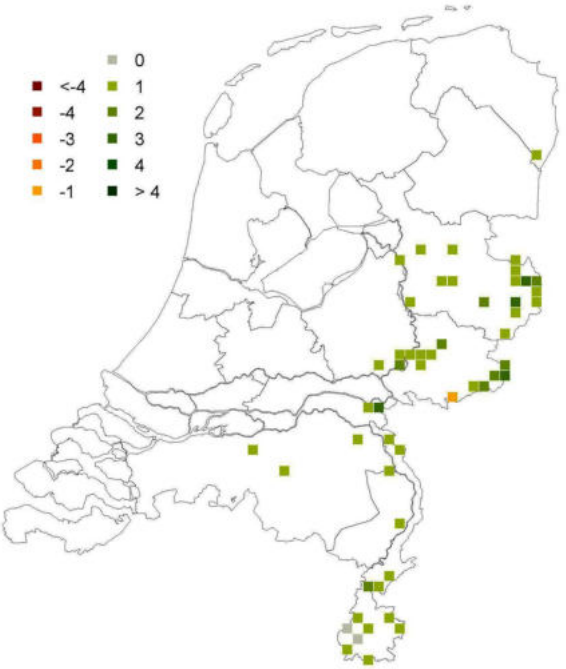


**Figure 4a. Middle spotted woodpecker: preliminary map showing the change in abundance class for the counted atlas squares since the last atlas (SOVON Vogelonderzoek Nederland 2002). Here, e.g. +2 means that the abundance has increased two classes, or e.g. from the 1–3 class to the 11–25 class, –4 means that the abundance has decreased four classes, e.g. from the 251–500 class to the 11–25 class).**

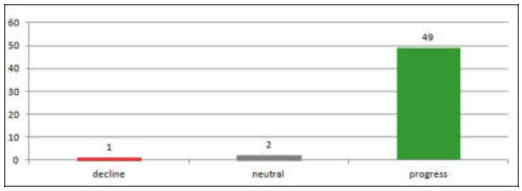


**Figure 4b. Middle spotted woodpecker: the number of atlas squares with a lower, unchanged or higher classification.**

classes representing "sedentary" individuals, excluding flying (migrating) birds.

### Black woodpecker *(Dryocopus martius)*

Figure 3a and b

The Black woodpecker is a difficult species to census: large territories, clusters of nest holes occupied by pairs for overnight and nesting (SOVON 2002). The field data of the first breeding season indicate that the small coastal population seems to have vanished. The Black woodpecker seems to be in decline in quite some squares, not only in the northern province of Drenthe, but also in quite a number of atlas squares in the province of Brabant in the south. It's a thrilling question what the situation will be in the Veluwe (central Netherlands), the top region, which isn't adequately covered yet.

### Middle spotted woodpecker *(Dendrocopos medius)*

Figure 4a and b

The Middle spotted woodpecker is a resident specialist of old deciduous and mixed forests

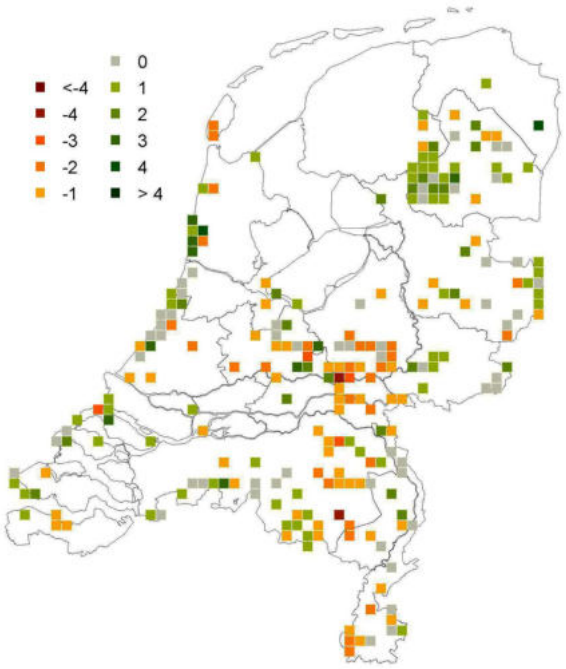


**Figure 5a. Woodlark: preliminary map showing the change in abundance class for the counted atlas squares since the last atlas (SOVON Vogelonderzoek Nederland 2002). Here, e.g. +2 means that the abundance has increased two classes, or e.g. from the 1–3 class to the 11–25 class, –4 means that the abundance has decreased four classes, e.g. from the 251–500 class to the 11–25 class).**

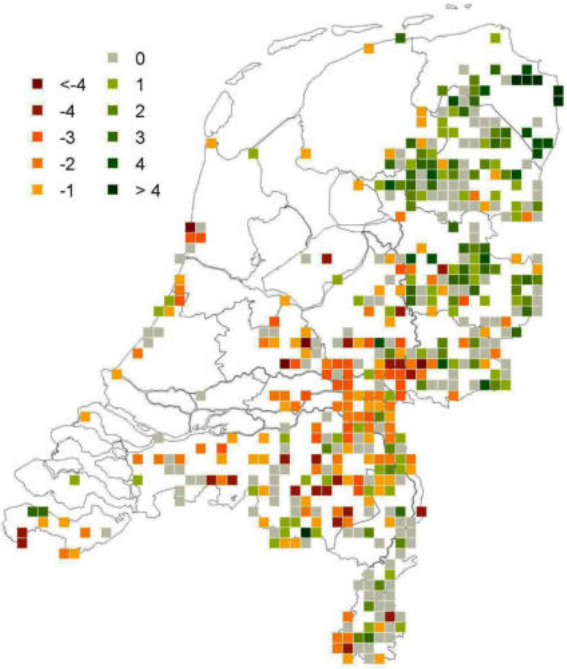


**Figure 6a. Yellowhammer: preliminary map showing the change in abundance class for the counted atlas squares since the last atlas (SOVON Vogelonderzoek Nederland 2002). Numbers indicate the increase/decrease in number of classes. Here, e.g. +2 means that the abundance has increased two classes, or e.g. from the 1–3 class to the 11–25 class, –4 means that the abundance has decreased four classes, e.g. from the 251–500 class to the 11–25 class).**

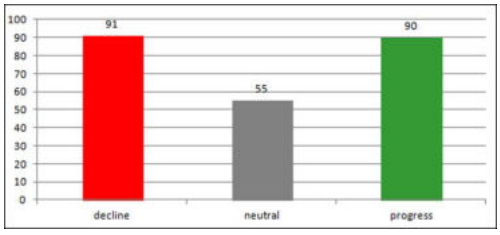


**Figure 5b. Woodlark: the number of atlas squares with a lower, unchanged or higher classification.**

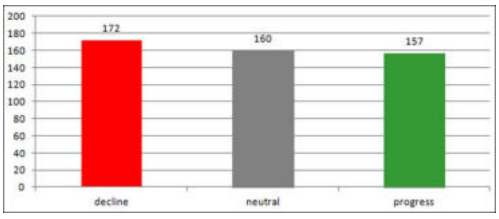


**Figure 6b. Yellowhammer: the number of atlas squares with a lower, unchanged or higher classification.**

of more than ca. 40 ha. In the 3rd Dutch atlas (SOVON 2002) the breeding of this species was detected in eleven atlas squares, especially in the province of Zuid-Limburg (utmost south). The common Bird Census Programme indicates a striking expansion of this woodpecker. In the first breeding season for the new atlas breeding indications for the Middle spotted woodpecker were established in 52 atlas squares. The second field season indicates even a further increase in number of atlas squares: the species was detected in total in 98 winter atlas squares (partial overlap with breeding squares).

## Woodlark *(Lullula arborea)*

Figure 5a and b

The Dutch year round atlas states that the Dutch breeding population of *Lullula arborea* is largely wintering in south-western France. Nevertheless woodlarks were present during all winter months (SOVON 1987). The Dutch Common Winterbird Census (PTT) doesn't yield enough data for a reliable trend for woodlark. The preliminary atlas map of woodlark in winter shows two intriguing spots. A concentration of higher valuated squares is concentrated in the northern province

of Drenthe. On the other hand a concentration of squares with lower classifications is concentrated in the centre near the breeding stronghold of the Veluwe. Again, food for thought and further analysis.

### Yellowhammer *(Emberiza citrinella)*

Figure 6a and b
In the Netherlands *Emberiza citrinella* is a non-migratory, wandering bird in winter. Since the first Dutch year round atlas (SOVON 1987) the distribution of the yellowhammer seems to retract in (north-) eastern direction. Remarkably, the indices of the Dutch Common Breeding Bird Census (BMP) show a steady increasing trend in numbers. This paradox poses an interesting question for further research on comparing and integrating atlas and monitoring data.

## Acknowledgements

We thank Erik van Winden (Sovon) for producing the species maps and Gerald Troost (Sovon) for the Web development www.vogelatlas.nl. Chris van Turnhout (Sovon), Ruud Foppen (Sovon) and Anny Anselin made valuable comments on an earlier version of this article.

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# First breeding season of the Danish bird atlas 2014–2017

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**Abstract.** Fieldwork for the third Danish Bird Atlas (2014–2017) has started this year and is co-ordinated by DOF-BirdLife Denmark. The main goals are presented and an short summary is given of the fieldwork methods and some first results.

## Introduction

The new Danish bird atlas is the third of its kind, with the previous two atlases spanning the years 1971–1974 and 1993–1996, respectively. The atlas is managed by DOF — BirdLife Denmark and has several aims:

1. Mapping the current distribution of the breeding birds and assessing changes in their distributions since the '70s.
2. Estimating the abundance of common breeding and wintering birds and their population size, using line transect with distance sampling.
3. Producing exact counts of breeding pairs of 18 selected species.

## Fieldwork

The fieldwork, launched on 1 March 2014, will span four years and is coordinated by local co-ordinators in 13 local branches. Four months into the field work, over 130,000 observations of breeding birds have been collected by more than

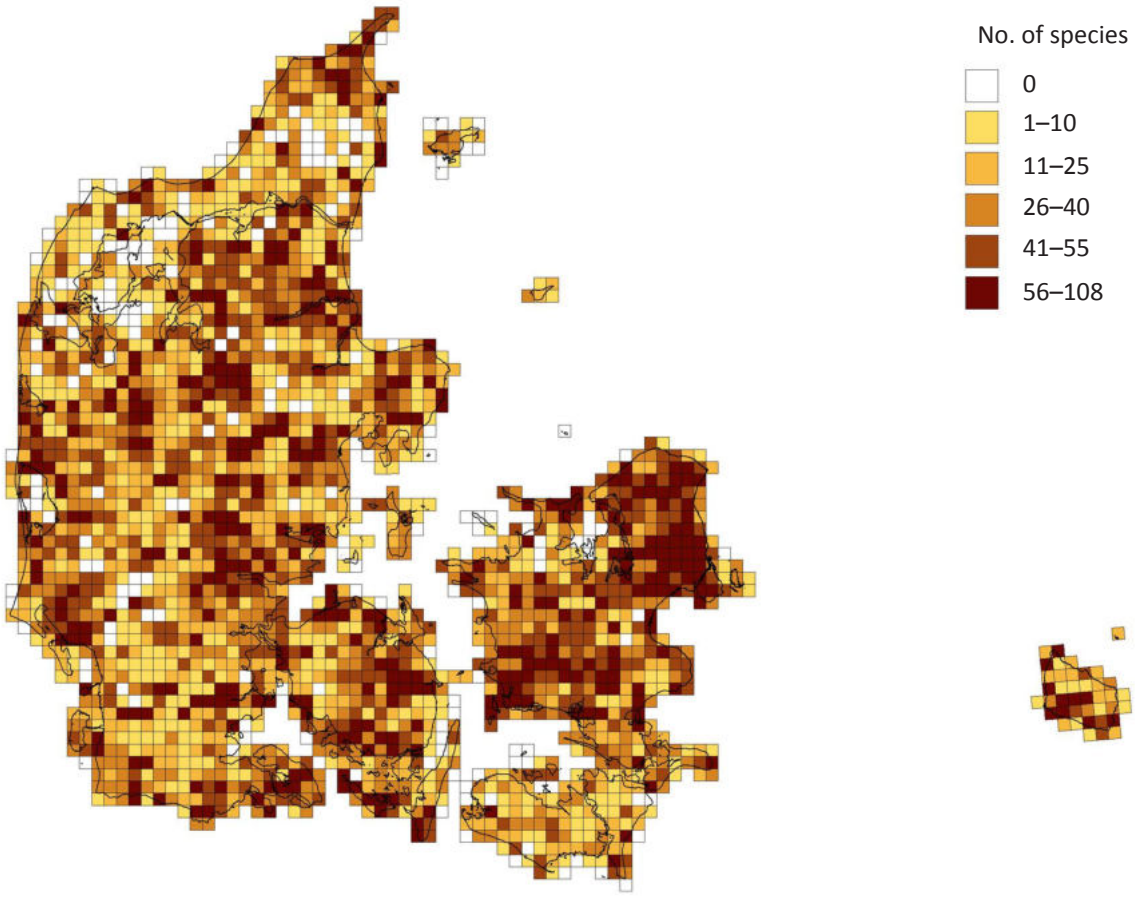


**Figure 1. A preliminary coverage map depicting the number of species registered in each grid cell as of July 2014 — four months into the field work.**

Atlas 1971–1974 | Atlas 1993–1996 | Atlas 2014–2017

Preliminary results as of July 2014

**Figure 2. The expansion of the breeding distribution of Greylag goose (*Anser anser*). Colour codes: yellow — possible breeding, orange — probable breeding and green — confimed breeding.**

1000 volunteer ornithologists. The observations cover 92% of the 2255 5×5 km atlas grid cells covering Denmark (see Figure 1).

The first breeding season is not yet over, however some patterns already emerge from the collected data. For example, Greylag goose (*Anser anser*), Common crane (*Grus grus*), Red kite (*Milvus milvus*), White-tailed eagle (*Haliaeetus albicilla*) and European stonechat (*Saxicola rubicola*) show expanded distributions compared to the previous atlases (see example in Figure 2).

The Danish atlas will be published as a digital database as well as a printed book. With the field work completed in 2017, the atlas will provide up-to-date data for the European Breeding Birds Atlas 2 (EBBA2), which is due to be published in 2019.

Follow the project at www.dofbasen.dk/atlas. To view preliminary results click on the tab 'Arter' (species) and type the scientific name of a species.

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# A new breeding bird atlas for Italy 2010–2014 (2015)

**Roberto Lardelli for Steering group of ornitho.it**

Info.ornito.it

**Abstract**. Sixteen years after the publication of the first national breeding bird atlas in Italy, the associations and partners of the online platform ornitho.it decided in 2010 to launch a new atlas project for the period 2010–2015. Distribution maps of all breeding birds will be produced at 10-km grid scale, together with semi-quantitative abundance maps based on a standardised survey in 4 selected 1-km squares within each 10-km square. Until now we have good data from 28% of the 3541 italian 10-km squares. 46% of the squares are reasonably well covered and 25% insufficiently.

## Introduction

Italy is the European country with the highest number of regional atlases but until now only one national atlas has been produced (Fraissinet 2011). Sixteen years after this first Breeding Bird publication (Meschini & Frugis 1993) and 25 years after the start of fieldwork (1983–1986) the associations and partners of the online platform ornitho.it decided in 2010 to launch a new atlas project and to invite other organisations and local groups to associate themselves when the fieldwork started. Italy is the European country with the highest number of regional atlases but until now, only one national atlas has been produced. The new atlas is semi-quantitative, in accordance with many similar initiatives in Europe and will allow Italy to join other ornithological initiatives on the continent.

## Aims and objectives

The project has several aims. At first to produce distribution maps of all breeding bird species with a grid size of 10×10 km (UTM 10×10). The second one to produce semi-quantitative distribution maps that allow to present gradients of abundance for all species with sufficient data, in particular for common and widespread species (relative abundance maps). One more aim is to localise and estimate the abundance of rare species. The last one is to collect geo-referenced information, useful for conservation and research at local, regional, national and European scale, with special emphasis on Important Bird Areas (IBA), Special Protection Areas (SPA) and other internationally important sites as well as sites of local interest.

The minimal objective, however, remains the creation of presence/absence maps for every 10×10 km UTM grid cell, based on detailed geo-referenced data (points a, c, d) that in the present or in the future will allow analyses at different scales. Semi-quantitative maps will also allow analyses in future projects.

## Methods

The data are collected following the procedure used by ornitho.it or other regional platforms that are integrated in ornitho.it (Aves for Piemont, Cronaca for Tuscany). The reference system used is the UTM grid with 10×10 km squares. Data should, however, be collected at higher geographical resolution to allow further analysis as modelling of potential distribution and abundance.

Observations are collected at three different levels:

a) attributed to UTM 1×1 km squares, with a central grid reference for each square;

b) attributed to a precise grid reference (geo-referenced data);

c) attributed to a particular site defined in ornitho.it (if impossible to attribute more precisely).

The grids are visible for the user as separate layers on top of Google Earth maps, with the UTM 1×1 km in black and 10×10 km in blue. The *.kmz file (Google Earth) can be downloaded from www.ornitho.it to create maps of the survey areas for personal use.

In the published atlas, data will be presented at the 10×10 km grid level, with the exception of sensitive species for which a larger grid size will be used. On the maps visualised in ornitho.it the data will be presented in a more detailed version, i.e. grouped by month.

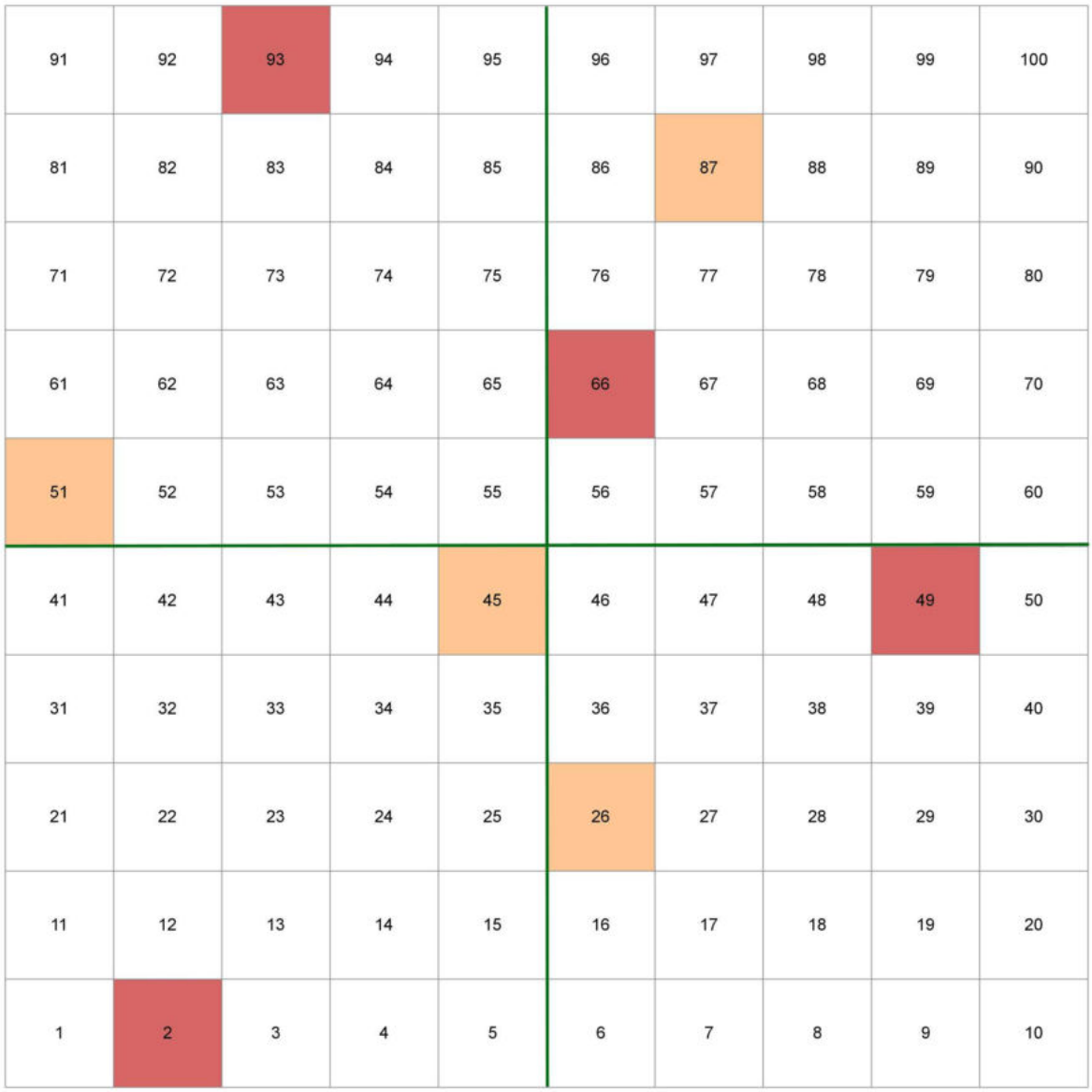


**Figure 1. UTM 10×10 km atlas square with numbered 1×1 km squares. The green line divides the four quadrants. Priority squares are marked in red, replacement squares in yellow.**

## Data collection

Observers should try to record for each 10×10 km square the highest amount of information on the presence or likely absence, on the relative occurrence (% of the square) and on abundance gradients of every breeding species. Data collection should be carried out in two phases, a profound investigation with the aim of recording the maximum number of species potentially occurring, and a semi-quantitative survey that allows to collect comparable data in the whole of the national territory.

a) **Survey of the 10×10 km square**

All habitats occurring in the square should be visited to verify the presence of all species potentially breeding there. The regional or provincial coordinators (more than 100 in Italy) should provide a list of all potential species for the region and indicate the difficulties and suggesting methods to record them. It is also advisable to regularly consult www.ornitho.it to find lists of species that have been recorded in other atlas squares in the vicinity.

When recording individual species, it is advisable to provide complete species lists for a 1×1 km square per visit (including common and wide-

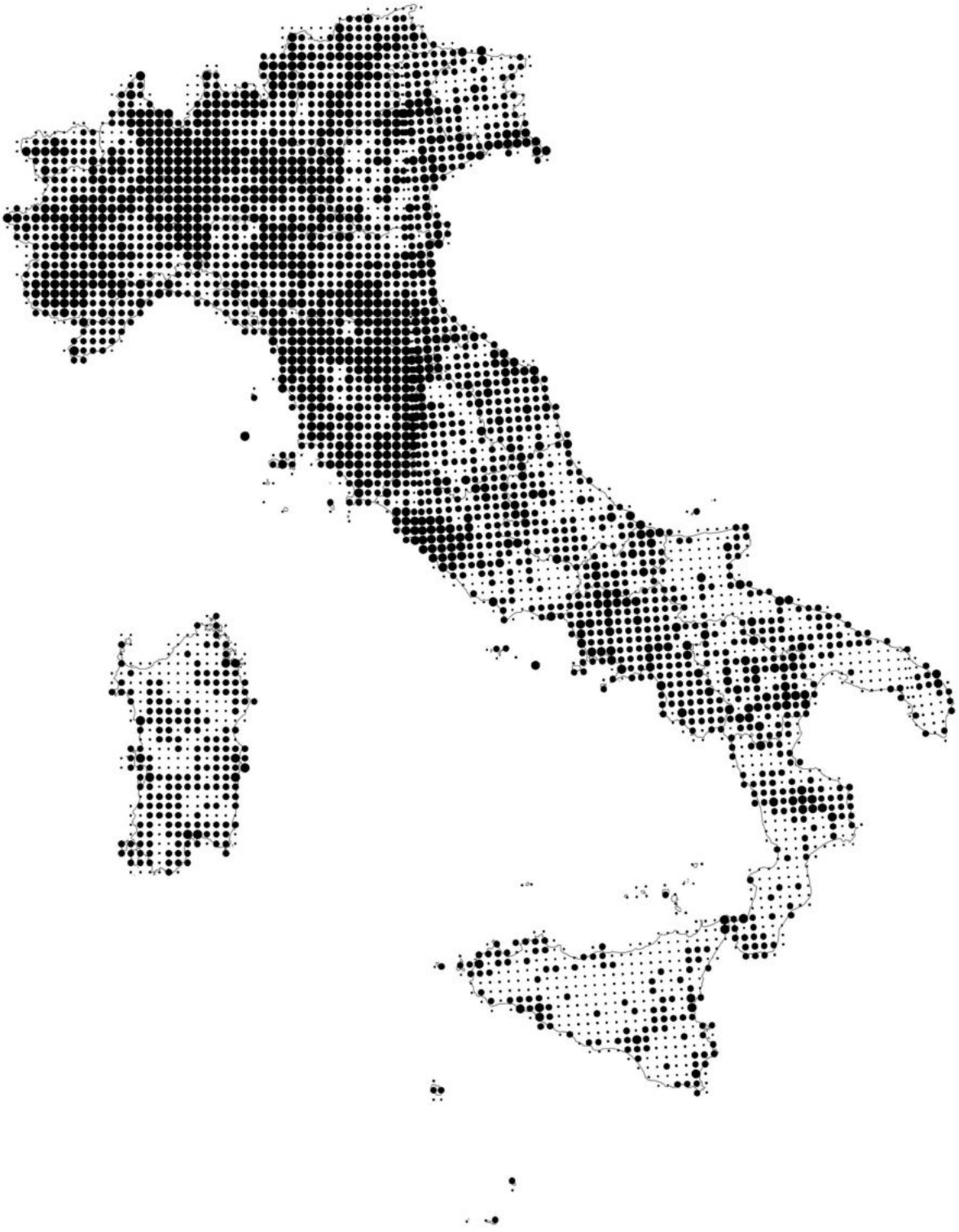

**Figure 2. UTM 10×10 km atlas square with observations 2010–2014: squares surveyed in great detail (big dot), in a satisfactory manner (medium dot), still insufficiently (small dot).**

spread species), indicating the starting and end time.

*Rare, localised or colonial species*

These species (100) should be searched for in all suitable habitats within the 10×10 km square, and each pair/territory/colony should be recorded with a precise grid reference (geo-referenced).

b) **Semi-quantitative surveys**

The semi-quantitative surveys provide basic data to establish the abundance of breeding

birds, in particular common species, across the whole country. Therefore, additional surveys have to be carried out within the 10×10 km squares, according to the following method. For each 10×10 km square four 1×1 km squares are selected according to the rules presented in Figure 1 (in red priority squares, in yellow replacement squares). Each square is visited twice in the same breeding season. The first visit is scheduled for the early breeding season, i.e. 1–30 April, the second for the late breeding season, when the trans-Saharan migrants have arrived, i.e. 15 May – 15 June (for mountainous areas these periods should be adapted to take into account the altitude effects on the timing of breeding). The regional coordinators will provide the necessary information.

*Selection of 1×1 km squares*

The survey should be carried out in the priority grid cells (red). If a square is not accessible or surveys are not possible for other reasons, the replacement cell in the same quadrant (quarter of 10×10 km square) should be surveyed, according to the following rules: 2, or 45 as replacement; 49, or 26 as replacement; 93, or 51 as replacement; 66, or 87 as replacement; If all squares within a quadrant are uinaccessible, a square adjacent to the priority cells (2, 49, 93, 66) or, as second choice, adjacent to the replacement squares (45, 26, 51, 87) should be surveyed.

## Results 2010–2014

In the first five years of fieldwork more than 1.7 million records with atlas-codes have been collected from 3404 10×10 squares out of 3541, by 3070 participants to the project. UntillUntil now, we found 278 indigenous and 20 introduced breeding species. The 28.5% of squares were surveyed in great detail, 46.5% in a satisfactory manner, but the last 25% still insufficiently (Figure 2). For this reason, the steering group of the Atlas Project has decided to extend the data collection to the breeding season of 2015.

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# The "Atlas of Breeding Birds of European Russia" (ABBER) project: Early Days

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**Abstract.** We describe the planning and development stages of the Atlas of Breeding Birds of European Russia (ABBER) project and present some encouraging initial maps of atlas coverage. Special attention is paid to problems particular to Russia, a country with a huge area, a low density of observers and a limited tradition in atlas work. Our experiences could be useful for future Russian atlas projects and also for other large countries intending to initiate national atlas projects in the future.

## How it started

It is now common practice for European countries to produce bird atlases with distribution maps, status and abundance of (usually) breeding birds. The first *EBCC Atlas of European Breeding Birds* (Hagemeijer and Blair 1997) was a pioneering achievement, working over a huge area across many countries, the very impressive result of the joint efforts of a great number of professional and volunteer ornithologists.

The contribution of Russian ornithologists to this atlas was, however, limited. At that time, the extremely difficult situation in the country after the profound changes of 1990/91, the lack of financial support from the government and institutions and the very small number of birdwatchers largely limited the possibilities of collaboration. Thanks to the efforts of Energiya Rogacheva and dozens of field ornithologists, data on bird distribution and abundance in some regions of European Russia were presented in the first EBCC Atlas. However, these data were never published in Russia, nor the names of the participants involved in the fieldwork.

At the EBCC Conference in Cáceres (Spain) in the spring 2010, the Board of EBCC unveiled the idea for a second European Breeding Bird Atlas project (EBBA2). Its purpose would be to reveal changes in bird distribution, status and abundance over the last 30 years, to extend the area covered to incorporate Turkey and European Russia, and to use the latest statistical modeling approaches to extend range and relative abundance to areas where fieldwork was not possible.

At the Cáceres Conference, the Russian delegates Alexander Mishchenko and Mikhail Kalyakin announced the desire of Russian ornithologists to participate in the project. Thus 31st March 2010 can be considered to be the start of the Atlas of Breeding Birds of European Russia (ABBER).

## Our aims

Ideally, the first breeding bird atlas for European Russia should provide up to date information on bird distribution, breeding status and abundance for all the 50×50 km squares of the UTM grid, as is planned for the rest of Europe. But it is impossible to collect data from such a large area containing. c. 1,800 50-km squares! Therefore we set the goal of obtaining data for at least one third of this area, i.e. c. 600 squares. These squares have to be distributed over European Russia in a near-random manner, proportional to the areas of different habitats, in order to enable results from these squares to be generalized to the whole of European Russia; with the assistance of a special group of experts in spatial modelling and mapping in collaboration with specialists of EBCC, we hope to be able to produce maps of the predicted distribution of the common breeding species.

In the early discussions of the ABBER coordinators with the members of the EBBA2 Atlas Steering Committee (ASC), it was suggested that considering the limited financial resources and the huge workload we should focus on producing lists of all species recorded in a square and refrain from estimating bird abundance. Nevertheless, we decided to try to measure bird abundance as well, for two main reasons. First, it might be a step forward and serve as a starting point for further research, and secondly it would require limited additional effort — the squares are being visited anyway.

In the following text we describe how we organized the development of the atlas project step by

step, highlighting some problems we met during this process, and demonstrate how coverage is developing.

## The Russian Secretariat

One of the basic requirements for a successful project is the coordination team: from 2011 onwards two coordinators, Mikhail Kalyakin and Olga Voltzit, have worked on the project together with two technical officers, Yulia Ermilina (until 2013 only) and Diana Pchyolkina. Both coordinators are staff members of the Zoological Museum of Moscow Lomonosov State University and their work on the project fits within the zoological research strategy of the Museum. The employment of technical officers required a modest financial support which was provided from various sources (see below). Their main task was to develop the observer network, find and contact potential participants and distribute background information and methodological guidelines to those willing to take part in the project. Publications on bird distribution and abundance in European Russia since 2005 were checked and their authors were invited to participate in the project. In the next phase, once the field data collection started, only one technical officer, Diana Pchyolkina, continued to work for the project. She learned the ropes of mapping software and GIS and developed methods for mapping bird species ranges and a system of symbols to designate species status and abundance in every square. She prepares maps of selected species to demonstrate progress of the project (see Kalyakin & Voltzit 2013; Preobrazhenskaya 2014) and is responsible for the monthly project progress reports which are distributed among the participants.

## The project timeline

The period from March 2010 until March 2012 can be considered as preparatory; the project design was developed, pilot surveys were done (by Vladimir Morozov and Ekaterina Preobrazhenskaya), observers recruited and maps prepared. A list of breeding and probably breeding bird species of European Russia was made out by Russian renowned experts Eugeny Koblik, Yaroslav Red'kin, and Vladimir Morozov. In this first phase of the work on the project, data of the key literature were analyzed and the atlas database was created using the database of birds of Moscow region which was available already. The form for data submission was created and the methodological guidelines were distributed to observers at the beginning of 2012. As a result of the progress made during this phase, and after very helpful discussions with our colleagues we concluded that ABBER was feasible. Further details on the various stages of development are given below.

The next phase, the main phase of fieldwork for ABBER project, started in 2012 and will run until 2017.

## The development of the observer network

### *Contacts through ornithological organisations*

At present, several relatively small ornithological organizations are active across the whole of Russia, and there are about ten regional organizations. Most of these have agreed to participate, although only a few have actually provided observers. However, in the early stage of the project a new NGO, the Menzbier Russian Society of Protection and Study of Birds (or Birds-Russia) played an important role, partly in fundraising (see later) within the ABBER project, which is a cooperative project of the Zoological Museum, EBCC and Birds-Russia.

### *Other contacts*

We initially estimated the total number of both professional ornithologists and experienced amateur birdwatchers who live and/or work in European Russia at c. 1000, but this guess proved to be too optimistic, as our final list of potential participants included slightly more than 600 names. This comprised scientists from various research institutions, institutes and universities, staff members of nature reserves and national parks, professional gamekeepers, photographers, members of ornithological societies and volunteer birdwatchers who had already participated in some ornithological or nature conservation projects, participants in different ornithological conferences in recent years as well as members of several specialized ornithological scientific working groups, e.g. on waders, geese and swans, corvids, raptors and owls and cranes. Personal invitations with a description of the project and its purposes and aims were distributed to

all the people on this list. This resulted in about 200 people indicating an interest in participating. About 25–30% of these are still yet to participate; some of the 185 people who have carried out fieldwork in the last two seasons were not on our list of 200, having joined the project later after being invited by other participants.

***Stimulation and feedback to the participants***

The main incentive for observer participation is the shared desire, and overall project goal, to obtain as complete data on distribution and status of breeding birds in European Russia as possible. But this is not the only factor driving them. We know from previous experience that providing recognition of the participants' efforts is very important. Observers like to see their names in a book, an article, a review or an atlas as a record of their contribution to a project. For example, all the 67 participants in our project *Atlas of birds of Moscow City* were mentioned in the published Atlas (Kalyakin, Voltzit & Groot Koerkamp 2014), which was much appreciated. For ABBER we will use the same concept. But as the atlas will not be published earlier than 2018 or 2019, we decided to publish interim observers' reports on their work in "their" squares as scientific papers with full reservation of all rights of the authors. This way of prompt feedback proved to be very successful during the Atlas of Moscow birds project. Additionally, news on the working progress will be presented on our website every month and all the names of the observers, co-observers and other helpers will always be referred to (see *http://zmmu.msu.ru/en/about-muzeum/divisions/division-of-the-scientific-public-oriented-projects/breeding-bird-atlas-of-european-russia*). There reports are produced electronically only, giving the advantage that we can include as many maps, photos of birds and habitats as we like, as well as financial benefits. In 2013 and 2014 two issues were published on the website of the programme *Birds of Moscow and the Moscow Region* (see the link above). In addition, findings of particular note revealed in the course of the atlas project, such as the first known breeding of Shikra *Accipiter badius* (Morozov & Kornev 2013), may be published in ornithological journals. We hope the publication of results, as well as rewarding and encouraging observers to continue, will encourage others to query, correct and supplement this data from their own knowledge and observations.

***An observer network of birdwatchers***

We have managed to recruit a substantial number of very active and efficient observers from amongst professional ornithologists and conservationists. By mentioning them here we underline our great appreciation for their cooperation and hope to stimulate other project participants to follow their example. Among the most active participants are V.N. Alekseev, A.S. Ayupov, G.V. Boyko, V.N. Fedosov, A.S. Gilyazov, G.V. Grishanov, G.N. Isakov, M.V. Korepov, S.V. Kornev, I.V. Kuzikov, G.P. Lebedeva, A.P. Levashkin, Yu.V. Lokhman, L.V. Malovichko, V.N. Melnikov, A.G. Menshikov, V.V. Morozov, A.N. Moskvichyov, E.Yu. Mosolova, D.V. Naumkin, N.D. Neyfeld, A.G. Perevozov, V.N. Piminov, E.S. Preobrazhenskaya, V.M. Ryabov, V.S. Sarychev, V.A. Simonov, A.Yu. Sokolov, V.N. Sotnikov, S.N. Spiridonov, E.A. Sukholozov, V.G. Tabachishin, V.A. Yakovlev, V.D. Zakharov, and O.A. Zubkova. The full list of participants can be found on the website and in every issue of the bulletin. In order to recruit more observers we consulted with the Ministry of Natural Resources to enable contact with staff members of nature reserves. With the kind help of the Vice-Director of the Department of State Policy and Regulation of environmental protection, V.B. Stepanitsky, an official letter was send to heads of all nature reserves, national parks and other nature conservation and protection institutions. They were asked to include breeding bird surveys for the EBBAR project within the official tasks of their staff members. As this request received a very positive response there is now good participation in EBBAR from within the nature conservation area network, with some support for transport and petrol being provided from the administration. In addition, the surveys often provide data worthwhile to publish, which is a welcome opportunity for staff to increase their number of publications: this is important as this is one of the criteria used for the annual evaluation of their work.

***Participation of volunteer birdwatchers and photographers***

Apart from the above-mentioned professional ornithologists, amateur birdwatchers are also taking part in the project, although in Russia this group is still very small and there are few amateur observers with enough experience to contribute to the Atlas. However, up to two hundred volunteers participated in the programme *Birds*

*of Moscow and the Moscow Region*. The number of amateur participants could be increased with training and seminars, but it is not considered feasible to include this within the Atlas project on top of all the other tasks. Fortunately, some NGOs are now taking up this challenge. We are, however, encouraging less experienced volunteers to participate and collect field data for the Atlas in order to acquire experience through fieldwork. They can always consult us when necessary and make use of different internet resources including our own website which provides an extensive bird photo gallery and links to further resources such as digital bird guides, galleries and sound record libraries.

There is yet another class of observers who are participating in the project: nature and wildlife photographers. This group is not very large, but extremely professional and active. During previous work on bird photo guides and atlases we have developed good contacts with the members of this community, and now some are among the most active participants of ABBER.

### *Extending the observer network*

Of course, the search for as many observers as possible has not finished yet; after the end of the fieldwork of 2014 we plan to organize a new phase of advertising to recruit more project participants (now by means of on-line registration system). We also hope that now, as the project is developing successfully, our previously sceptical colleagues will believe it to be a serious but realizable task and will thus revise their attitudes to it. We also know some specialists who have to finish other projects first, but they intend join in the atlas project subsequently.

## Fieldwork methodology and data preparation

The instructive discussions with the members of EBCC Board and ASC, the Swiss Ornithological Institute and with Prof. Les Underhill (Avian Demography Unit, University of Cape Town) all contributed to the development needed for the ABBER. The *Catalan Breeding Bird Atlas* (Estrada *et al*. 2004) as well as the experience of Russian ornithologists who participated in the atlas work in the 1990s were also very useful, and Vladimir Morozov's contribution deserves a special mention. The guidelines for ABBER were completed a little bit earlier than those for atlases in other European countries, therefore there was a need for slight revision after our first field season. We describe the general aspects of our methodology below.

### *The Atlas grid*

For ABBER we decided to use the 50-km UTM grid because it seems the only feasible grid given the large size of the territory and the low numbers of potential participants; higher resolution grids such as the 25-km or 10-km squares are unrealistic for such a large territory. The 50-km grid was used in the *EBCC Atlas of European Breeding Birds* (Hagemeijer and Blair 1997, Sierdsema 2008) and will be used in the EBBA2 too. Henk Sierdsema kindly provided us with GIS layers for the grid and habitat stratification maps of European Russia, one including 50 and another 15 habitat types (Figure 1). In a later stage of field work these layers will be used to check if the surveyed squares give a sufficient sample of the various habitat types throughout European Russia.

### *Fieldwork guidelines*

Considering the great variation in field conditions in different regions, we decided not to write detailed guidelines for field data collection. Indeed, duration of fieldwork, ways of traveling through a square, thoroughness of surveying and methods of counting birds depend greatly on many factors, including but not restricted to the observers' level of skill, knowledge of the area to be surveyed, experience in counting birds, time at their disposal, preferences for some methods, road density and other factors influencing the accessibility of the square. To standardize these and other factors seems impossible and indeed not necessary. We focused our attention on producing a standardized form to collect data on species recorded in the squares, including their breeding status (using the codes 16 plus 1, see Herrando *et al*. 2013 in this issue) and an estimate of the numbers of breeding pairs. Observers are encouraged to make estimates for a entire 50-km square, but they can estimate numbers for the survey area only if they find it impossible to judge numbers within the square more widely. The report form enables this data to be entered directly into our database, in a format compatible with the EBBA2 database and for producing species maps. To enable validation, the observers are asked to mark

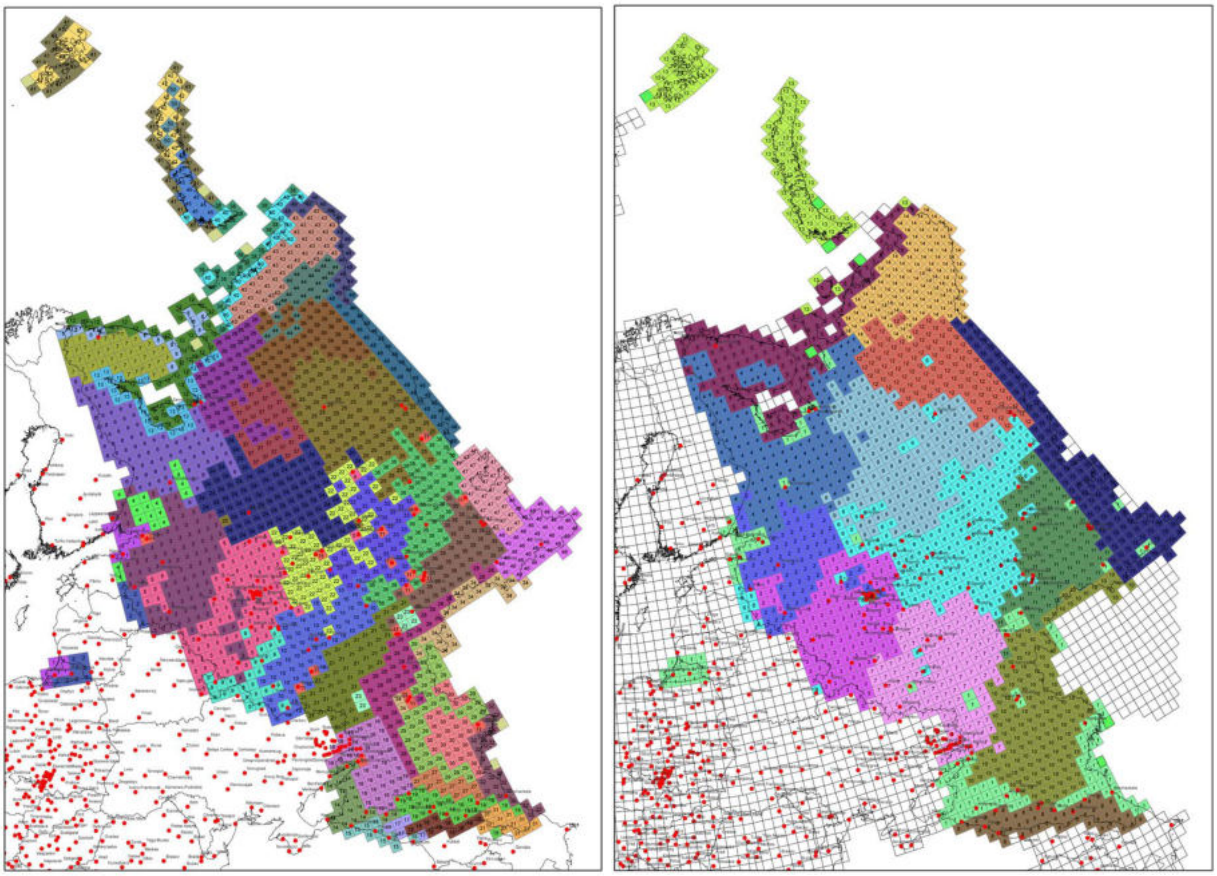

**Figure 1. Two versions of habitat stratification maps for European Russia: with 50 (left) and 15 (right) habitat types.**

all the places visited on a map of their square, give information on dates and hours of the fieldwork and to make a short description of the diversity of habitats present. All this information is included in the published reports and will be taken into consideration in the final analysis of the collated data, but the completeness of the list of species recorded as confirmed, probably or possibly breeding is of central importance.

In spite of our efforts to provide detailed instructions to observers, particularly with regard to completing the data form, many seemed to struggle the first time around and needed step-by-step guidance from the coordinators. This effort, while time-consuming, has helped to avoid problems with data processing in the next stages of the project.

## Selection of sites and timing of the fieldwork

Taking into account the large territory to cover with a low number of observers, we decided to incorporate all data collected since 2005 into the new Atlas. Beside increasing the availability of data, this would have the advantage of encouraging the participation of observers who had already collected data in previous years. We believe this older data will not impact the accuracy of the ABBER results adversely. As in other countries, field data collection will end after the 2017 breeding season.

At the start of the project we left it up to our observers to choose the squares they wanted to survey. These were generally squares which had been either investigated by them before, were easily accessible, or were of particular interest to them. To obtain data from squares that are not so easily accessible, in particular in the northern part of European Russia (Figure 2), we plan to organize special expeditions, starting in 2015. We will have to choose squares to be visited in order to obtain a more or less well-proportioned survey of the whole territory of European Russia. These expeditions will require extra financial support and organizing efforts, but by then, we will have gained some experience through organization of three expeditions to northern areas in 2014.

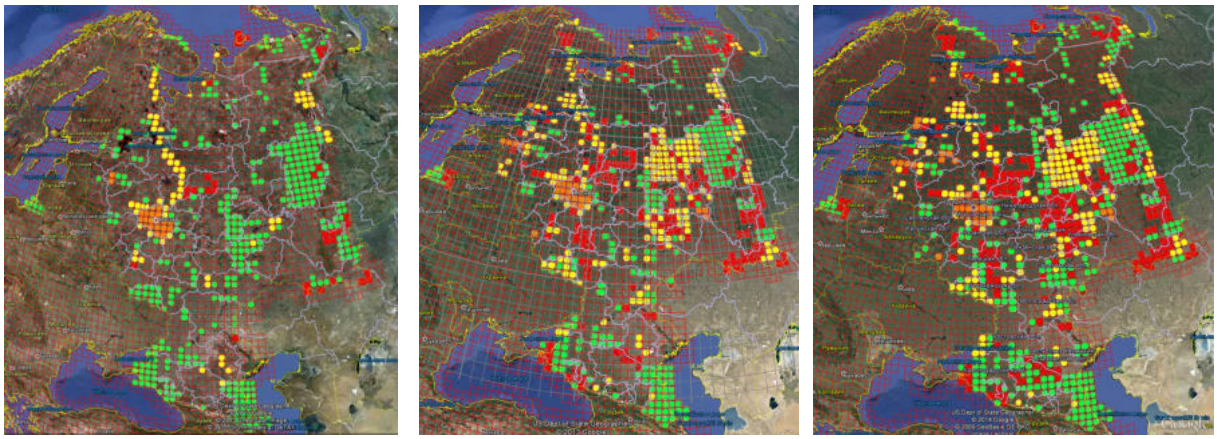

**Figure 2. Atlas coverage by December 2012 (left), December 2013 (middle) and May 2014 (right).**
**Red dots: complete data (species list with breeding status and estimates of abundance) have been received; orange dots: qualitative data (species list with breeding status) have been received; yellow dots: data for a part of the square has been received; green dots: data have been promised.**

## The main results by the beginning of fieldwork in 2014

The evolution of the number of surveyed squares and the qualitative change of the surveys are shown in the following Table and three figures (Figure 2).

| Number of squares | December 2012 | November 2013 | May 2014 |
|---|---|---|---|
| Complete data received for the square (species list with breeding status and estimate of abundance) | 33 | 112 | 238 |
| Qualitative data received for the square (species list with breeding status) | 35 | 35 | 44 |
| Data received for a part of the square | 28 | 85 | 119 |
| Data have been promised | | | 120 |

By the start of the 2014 breeding season, the fieldwork had already been completed (i.e. all the squares had been surveyed ) in four federal districts of Russia: Ivanovo Oblast, Chelyabinsk Oblast, Ulyanovsk Oblast and the Chuvash Republic. Several other federal districts are relatively well examined: at least 30–50% of the total number of the squares are surveyed in Stavropol Krai, Krasnodar Krai, Belgorod Oblast, Kaliningrad Oblast, Kostroma Oblast, Lipetsk Oblast, Orenburg Oblast, the European part of Sverdlovsk Oblast, Yaroslavl Oblast, the Udmurt Republic, and the Republic of Tatarstan. However, some regions in the central part of European Russia are still poorly studied. These are Bryansk Oblast, Vladimir Oblast, Kursk Oblast, Penza Oblast, Pskov Oblast, Ryazan Oblast, Smolensk Oblast, Tambov Oblast, and Tver Oblast.

In addition, the following northern regions are poorly covered to date: Arkhangelsk Oblast, Murmansk Oblast, the Republic of Karelia, the Komi Republic, Yamalo-Nenetsky Autonomous Okrug, as well as a few of the Arctic Islands. The same is true in some southern regions: in Astrakhan Oblast, Volgograd Oblast, the Chechen Republic, and the Republic of Dagestan, and to the east the Republic of Bashkortostan is poorly studied. Local ornithologists from some of these regions have promised to contribute to ABBER, so we hope to receive some data for these areas soon. Additional observers would be very welcome from any of the these regions; information from these remote areas is of great importance for the success of the project.

## Online field data collection platform

Experience from European countries has shown that online data collection platforms are an important tool for projects that engage a large number of observers in recording birds (or indeed, other taxa). There are several systems of this kind in Europe, and in the early stage of the project we considered three of them for use in ABBER. But the matter was settled in a different and unexpected way. One of the active participants of the programme *Birds of Moscow and the Moscow Region*, Iliya Ukolov, created a system for digital collection of bird records for the whole territory of Russia using the Russian program 1S. The purchase of a licensed version of the program was

partially sponsored by a private company, Axioma-Soft. The system is associated with a map of Eurasia and automatically identifies the number of a square in the UTM grid and the coordinates of a selected point. Reports can be created for any square selected, for different regions, and over different time periods, and maps showing species' records can be produced.
At the time of writing (July 2014) a little more than 200 persons, mostly experienced volunteers, are registered to use the system, but not all of them have entered their data yet. Many observers will be unfamiliar with the use of the internet for this sort of project, and outside of the big cities computer access is limited. We hope that use will grow to the point where is possible to collect all data online, but for time being, it serves rather as a database of bird records and other unsystematic records. We contact any observer entering such data with an invitation to participate in ABBER and ask them to make surveys in the squares that have not been surveyed yet. However, in order to make the online field data collection platform more popular, we established a competition, "The big year". The winner will be the person who records the most bird species during one year (there are competitors from the Russian Federation, the Republic of Kazakhstan, and from some other former Soviet Republics).

## Project funding

It is obvious that a project of this size needs substantial funding, and the attempts to raise money started in 2011. The salaries for the technical officers was a relatively substantial cost during the first two years, but the coordinators receive no extra payment for their work, and Mikhail Kalyakin's regular visits to the meetings of the EBCC Board and the ASC are paid by the EBCC. The coordinators' workplaces, the computers, and internet access are granted by the Zoological Museum of the Moscow University. The online platform was kindly developed by Iliya Ukolov without payment; the software required was bought using the project budget, following a generous 50% reduction by the program owners. The internet hosting service expenses are not very large either. It is fieldwork that is the main cost and a major problem.
The costs of fieldwork can not be covered fully, therefore the observers are asked to try to keep their expenses as low as possible. They are asked to submit a provisional cost estimate (of travel expenses: petrol, car or boat rental, or train tickets, if the observer lives far away from a square that is to be surveyed) to the coordinators. Each case is considered individually and different facts are taken into account, including observer's efficiency at work in the previous field season, as well as his or her punctuality in report making and the quality of the data collected. With most of the observers we were able to come to an agreement about estimated expenses and the level of financial support, but in some instances the belief that the project was sponsored by funds from Europe resulted in excessive estimates of costs and it was impossible to reach an understanding.
Fundraising is a very important and arduous task for all atlas coordinators. The ASC and its members support the Russian project coordinators continually and have done a lot to help us in finding financing, but the whole project cannot be sponsored by the EBCC which is a non-commercial organization with a very limited budget intended for the EBBA2 project. In the ASC's applications for financial support of the EBBA2 there is a separate item for the bird atlas projects of the countries of Eastern Europe. Thanks to this, the Russian project gratefully received a part of a large ASC grant last year. But it was not the only assistance: on two occasions our European colleagues have donated book royalties to us and Verena Keller, the Chairman of the ASC, twice provided a donation to ABBER from the Swiss Ornithological Institute (SOI). All these grants were extremely helpful and came always at the very moment of our financial problems. The first donation of the SOI laid the foundation for the whole work, making it possible to organize everything in the early stage of the project. The total funds received due to the help of the colleagues from the Board of the EBCC and the ASC has amounted to 20,490 Euros.
Other financial sources for the project were grants we found in Russia or via Russian NGOs. The main input in 2013 was a part of a grant received via the Birds-Russia from NABU and Martin-Hermsen Foundation, Germany (12,300 Euros). We received scientific grants from the Russian Academy of Sciences through A.N. Severtsov Institute of Ecology and Evolution (a total of c. 3,660 Euros in 2012–2013) and from the Russian Foundation of Fundamental Scientific Research (c. 2,000 Euros should be received in 2014). In 2014, 1,500 Euros were received from the internal funds of

the Birds-Russia and c. 5,500 Euros from the funds of the programme *Birds of Moscow and the Moscow Region*. It amounts to c. 23,000 Euros, a little more than a half of the whole budget of the project in 2011–2014.

The annual budget has had a increased steadily until now: c. 5,000 Euros were spent in 2011, c. 1,500 Euros in 2012, 19,000 Euros in 2013 (all the observers' requests for funding were satisfied), and 18,600 Euros in 2014 (not all the requests could be satisfied, because of the costs of more expeditions to the northern areas). In the next three years, the budget should grow, because the number of observers will hopefully increase and there will remain squares in remote areas that are much more difficult, and thus expensive, to reach (the most "easy" squares being surveyed first).

But it should be emphasized that there were and there will be a lot of observers who did and will do the fieldwork for free.

## Modelling of the bird distribution

As stated previously, not all 1,800 50-km squares can be surveyed, but we hope to generate distribution maps for the common bird species through a special group of spatial modelling and mapping experts working in collaboration with specialists of the EBCC. Until the end of 2013 it was not quite clear how to collate data for this purpose, but thanks to the kind help and advice of Sergi Herrando and his colleagues, this method has been implemented during the fieldwork in 2014, so we hope to have enough data for the modelling by 2018. We plan to have two maps for each common species in the Russian Atlas: one showing the data collated in the surveyed squares, the other extending to the entirety of European Russia as the result of the modelling.

## Conclusions

The project "Atlas of Breeding Birds of European Russia" (ABBER) is a co-operative initiative of the EBCC, the Zoological Museum of Moscow Lomonosov State University, the programme *Birds of Moscow and the Moscow Region* and the Birds-Russia. It is also a part of the second EBCC Breeding Bird Atlas (EBBA2). The Russian project has started successfully and is currently running covering over large area despite the lack of observers, the absence of a long-time birdwatching tradition and the constant fundraising necessity. The project coordinators try to invite as many observers as possible to participate in the project. Fieldwork will be conducted between 2011 and 2017, but data collected since 2005 will also be included. An important new tool is an online platform, prepared by Iliya Ukolov, for collecting bird records. The total survey of all 1800 50-km squares in European Russia seems impossible, so modelling of bird distribution will be used to extend mapping to unsurveyed squares, in particular for the common species.

Our main conclusion after the first years of this project is as follows: for coordinators standing on a start line of a project it is very important to know that all the problems can be solved only when the project is already in progress. Indeed, the work of the coordinators will cover many activities, often concurrently: they play on several chessboards simultaneously. Probably this conclusion seems trivial and banal for professional managers, but we had to learn it by experience and came to it after having started the project. However, the last few years have demonstrated that it is possible to make a Russian breeding bird atlas, therefore we are sure that it is possible for other countries despite all the problems they might face.

## Acknowledgments

We would like to extend our thanks. First of all we like to express our gratitude to our colleagues from the EBCC Board and the ASC: Verena Keller, Petr Voříšek, Sergi Herrando, Ruud Foppen, Hans-Günter Bauer, Lluís Brotons, Mark Eaton, Daniel Hayhow, David Noble, Anny Anselin, Ian Burfield, Henning Hjeldberg, Åke Lindstrom, Oskars Keišs, Jana Škorpilová, Aleksi Lehikoinen, Szabolcs Nagy and Danae Portolou. We would like to emphasize our debts to the Chairman of the ASC Verena Keller who organized financial support for the Russian project. She and her colleagues from the Swiss Ornithological Institute — Hans Schmidt, Peter Knaus and Niklaus Zbinden — prepared a series of consultations on atlas work for Mikhail Kalyakin during his visit to the SOI in 2012. Mikhail also received a very detailed lecture on this topic with references to the experience collated during preparation of the Atlas on Birds of Southern Africa from Les Underhill in Brazil in 2010. Hans Schmidt's advice on using the online platform for data collection given in Mikulov, Czech Republic

in 2012 was very helpful and informative. We are grateful to Henk Sierdsema for presentation of the maps and for the first guidance in approaches to the modelling of bird distribution and to Sergi Herrando for his clear and detailed description of all the nuances of the methodology, including the methodology of one-hour counts for the modelling purposes. Many thanks to Marc Anton for his hospitality during our visits to Barcelona.

In Cáceres, 2010, before the open announcement of the EBBA2 Mikhail Kalyakin had an opportunity to speak with the colleagues from the Aquatic Warbler Conservation Team, Martin Flade and Hans-Günter Bauer, who had had experience of cooperative expeditions to European Russia and Western Siberia. This discussion helped Mikhail to assess the possibility of atlas compiling for European Russia, so Martin Flade and Hans-Günter Bauer can be considered as godfathers of the Russian Atlas project.

We are happy to direct our sincere acknowledgement to all the sponsors. Ulf Ottosson, Richard Ottvall, Johan Elmberg, Martin Green, Rolf Gustafsson, Fredrik Haas, Niklas Holmqvist, Åke Lindström, Leif Nilsson, Mikael Svensson, Sören Svensson, and Martin Tjernberg from the Sweden Ornithological Society and Sergi Herrando, Lluís Brotons, Joan Estrada, and Marc Anton from the Catalan Ornithological Institute kindly donated their own money (their royalties from published books) to us. The Swiss Ornithological Institute as well as Martin-Hermsen Foundation (Germany) & NABU have all provided grants, with special thanks to Verena Keller (SOI), Eugeny Syroechkovsky (Birds-Russia) and Christoph Zoekler. We also are grateful to Eugeny Syroechkovsky for his help in fundraising and all the colleagues from the Board of the Birds-Russia for the direct financial support of the project in 2014. Many thanks to Vyacheslav Rozhnov and Varos Petrosyan from A.N. Severtsov Institute of Ecology and Evolution for their assistance in receiving a part of the big grant of the Russian Academy of Sciences "Biodiversity: condition and dynamics". The financial support of the Birds-Russia and of the Board of the EBCC as well as a grant of the Russian Foundation of Fundamental Research No. 3-15-14 were very helpful.

We are very grateful to Iliya Ukolov for his valuable contribution in the project as a developer and administrator of the online platform. The purchase of the computer program was partly sponsored by "Axioma-Soft" Ltd.

Compiling the list of breeding and probably breeding bird species in European Russia was undertaken by Eugeny Koblik, Yaroslav Redkin, and Vladimir Morozov.

We direct our acknowledgments to Vladimir Morozov for assistance in preparation of the methodological guidelines for the participants in the project and for advertizing the project at several conferences and meetings, and to Ekaterina Preobrazhenskaya for her activity not only in the fieldwork but also recruitment of new observers by including her activity in the Russian Birds Conservation union. We are very grateful to Nikolay Kudryavtsev for his support and developing of the website of the programme *Birds of Moscow and the Moscow Region* as well as for assistance in earning funds of the programme used in the project.

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Many thanks to Olga Chernyakhovskaya for her help in the solution of many technical problems.

Of course, we are very thankful to our colleagues Yulia Ermilina and Diana Pchyolkina. We would like to express our gratitude to Mark Eaton for correcting the English of the present paper.

But our greatest acknowledgments are to all 185 observers who are really co-authors of the future atlas! The complete list of their names is presented on the website of the project (*http://zmmu.msu.ru/en/about-muzeum/divisions/division-of-the-scientific-public-oriented-projects/breeding-bird-atlas-of-european-russia*) and in the two volumes of the project bulletin.

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# Participation of Greece in the EBBA2 project — The first Greek Breeding Birds Atlas

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**Abstract.** The Hellenic Ornithological Society (HOS) sets out to participate in the EBBA2 project through the Greek Breeding Bird Atlas (GBBA1) project. Both Greek and foreign observers are expected to contribute with data and thus attain the best possible coverage of squares over the next three breeding seasons. Data will be collected in 10 × 10 km square units either by participation in monitoring projects or standardized timed-effort visits, or through casual records submitted through online platforms. Low coverage has been achieved up to now, which is expected to increase significantly with the launch of GBBA1 in relevant fora and groups.

## Introduction

The Hellenic Ornithological Society (HOS) is about to launch its participation to the EBBA2 project, through the initiation of the Greek Breeding Bird Atlas (GBBA1) project. This is the first national attempt to map accurately the distribution of breeding bird species over the whole of the country!

The project follows the main guidelines set out by the EBBA2 Steering Committee, and will incorporate data from field seasons 2013–2017. Data will be provided by hundreds of volunteer Greek observers, either through existing monitoring projects run by HOS, and through standardized surveys, specially designed for the atlas project, and casual records. HOS will also count on the support of observers visiting from abroad to contribute to the project substantially. A website has been set up for the needs of the GBBA1 / EBBA2 project (http://www.ornithologiki.gr/en/ebba2), providing guidelines and datasheets, showing available atlas squares and preliminary results.

## Sampling Units

All data will be collected in 10×10 km square units (10-km) using the National Greek Grid (EGSA87). In all, there are 2,068 such squares (Figure 1), each with its own unique code (e.g. 17/435). Data from the 10-km squares will be then transferred to the corresponding 50×50 km squares in UTM (50-km) used in EBBA2 (163 squares in total). Overall, data will be collected from 155 terrestrial squares, 95 of which are located in insular areas (with some overlap).

For the needs of the EBBA2 project, only those 10-km squares with more than 80% of their area assigned to a specific 50-km square will be considered and two 10-km squares will be surveyed for each 50-km square. Since the country contains many coastal squares, these will receive a different selection process.

Where one of the national monitoring programmes is already operating, the 10-km square will be selected automatically to provide data for the 50-km square. In cases where no monitoring occurs currently, the two 10-km squares will be randomly selected based on the percentage cover of the main Corine2000 category, (e.g. Forest, Agriculture). Where the 50-km square area is less than 1,250 km$^2$ (i.e. 50% of a whole 50-km square), then only one 10-km square will be selected for survey.

## Sampling Season and Period

EBBA2 fieldwork will take place at any time during the breeding seasons 2013–17, while the GBBA1 fieldwork might be extended up to 2020, in order to cover the remaining 10-km squares.

Each 10-km square will be surveyed once and the sampling period has been restricted from April until June each year (same period as the Hellenic Common Bird Monitoring (HCBM, see below) project) (Portolou, 2014).

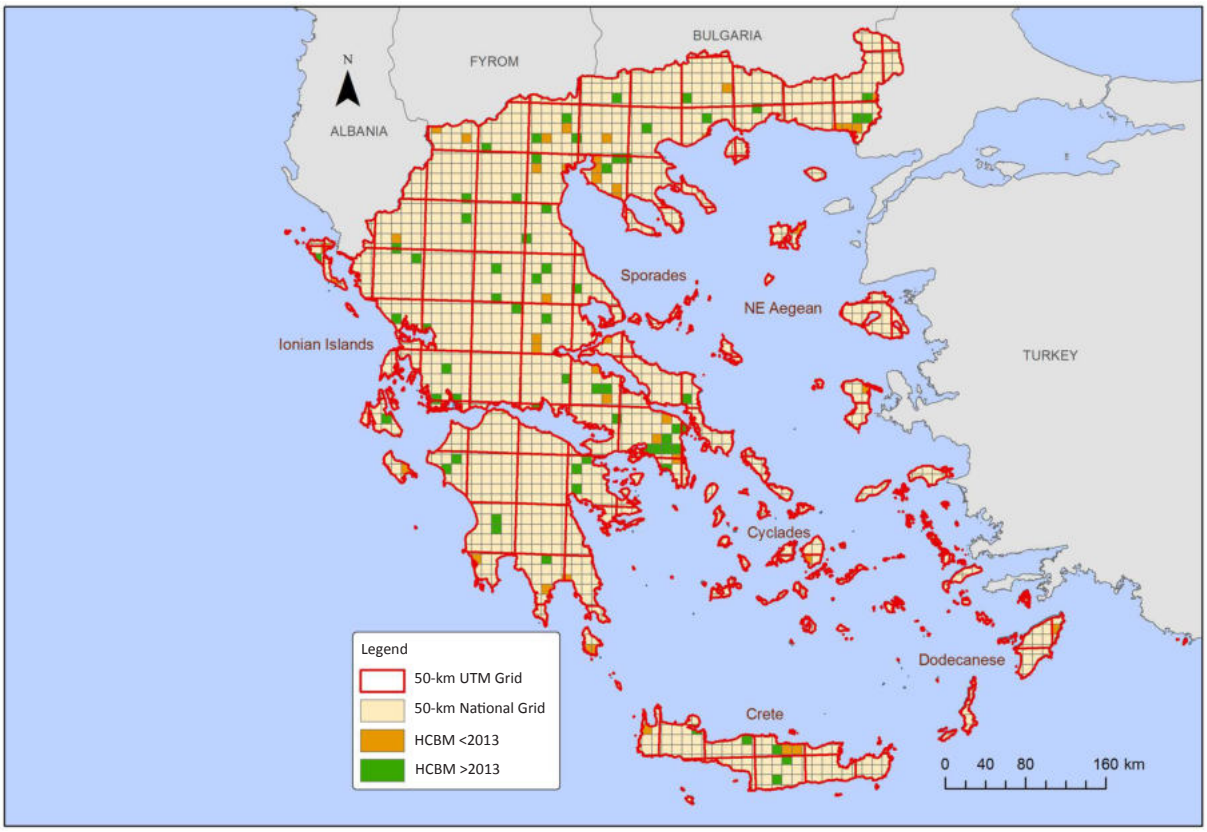


**Figure 1. The 163 50-km UTM squares (red) and the 2,068 10-km national grid squares (grey), with indication of squares which provide data from the HCBM programme.**

For certain species (e.g. herons, raptors, alpine species) which have more extended breeding periods, data from National Censuses will provide extra information to the EBBA2 project (or the sampling periods for specific squares may be extended).

## Casual Records

Casual records for any 10-km square may be submitted through online platforms (e.g. Ornithotopos — the Greek online platform, BirdTrack, Ornitho, etc.) or through available datasheets found on the website. These data will then be compiled to the corresponding 50-km square by the national coordinator and provided to the EBBA2 Steering Committee on a annual basis. Data from 'Ornithotopos' currently provides data from more than 350 locations within the breeding seasons of 2013–14. More than 2,800 visits have been uploaded by 75 participants, of which more than 50% comprise complete-list visits.

## Standardised Surveys

Two existing monitoring HOS schemes currently provide data to the project, namely the aforementioned HCBM and the Important Bird Area Caretakers Network.

In the case of the HCBM, volunteers freely select a 10-km square and HOS randomly allocates a 2×2 km square (2-km) within this. Counts are then performed from April until June at 15 points within the 2-km square. Effective surveying lasts approximately 1.5 hours in two separate visits, performed one month apart. Volunteers will be asked to make complementary visits in the main habitats of the 10-km square, sending just a species list with breeding codes and assessment of abundance for the whole 10-km square. In 2013, data was provided from 64 HCBM squares in 44 different 50-km squares, of which only 8% were considered complete.

Where no monitoring programme exists, participants will be asked to undertake timed-effort visits, in which only time is controlled. Volunteers will be able to freely select a 2-km square from

the pre-selected 10-km squares. Each visit must last a minimum of 1.5 hours of effective surveying within the same day and counts should preferably occur during early morning or late afternoon hours.

## Future steps

It is envisaged that increased interest from both Greek and foreign observers will help attain the best possible coverage of squares over the next three breeding seasons. However, funding proposals for the GBBA1 / EBBA2 project will be prepared over the next few months in order to ensure the coverage of island regions and inaccessible squares. Help will also be sought from national species experts and the team of ornithologists who provided the Greek data during the first European Breeding Bird Atlas.

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# First year of European Breeding Bird Atlas 2 (EBBA2) in Macedonia

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**Abstract.** Taking the first steps towards the setting up of a national Atlas project on breeding birds in Macedonia for the first time ever was a challenge for the enthusiastic bird conservation staff, members and volunteers of the Macedonian Ecological Society (MES). Using digital tools like CORINE LandUse 2000, Memento database for data collection in the field and the support of international volunteers helped to provide a basic Atlas data set and to improve survey skills of national participants. The future goals of the Atlas team in Macedonia are (1) to increase the number of trained and skilled volunteers and (2), to provide financial support for coordination and field work throughout the implementation of the European Breeding Bird Atlas 2 project.

## Introduction

With the methodology and data input techniques for the European Breeding Bird Atlas 2 (EBBA2) set at the Barcelona 2013 meeting, the recommended methodology was put into practice in Macedonia at the start of the first fieldwork season for the atlas in March 2014. It was a learning process, with trial and error, and we had to work with limited human and financial resources. In order to optimize data collection we tried out several approaches.

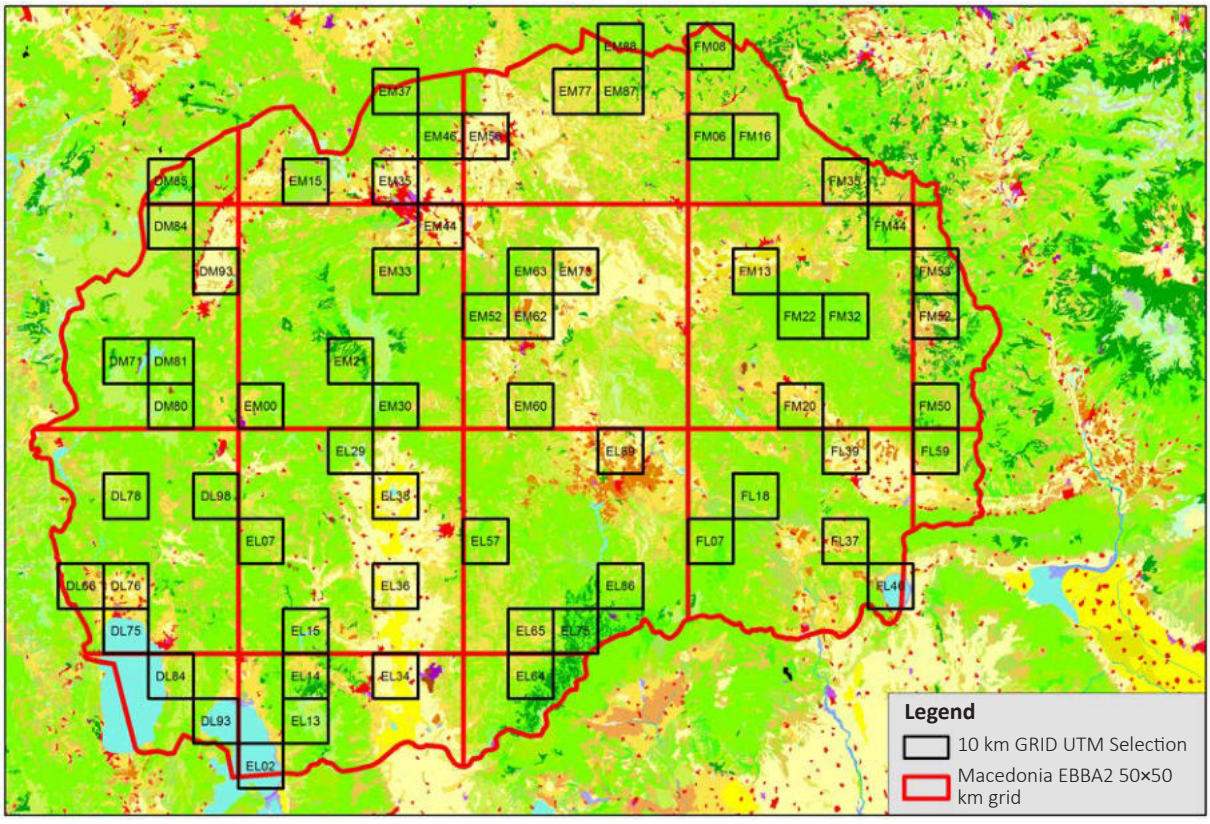


**Figure 1. Map of Macedonia showing the 64 10 × 10 km squares selected using a semi-random approach.**

**Figure 2 and Figure 3. In the field — working close together with visitors from the Czech Ornithological Society (picture: Petr Voříšek).**

## Setting up the Atlas to work: technical aspects

A team of several employees and volunteers from the Macedonian Ecological Society carried out the selection of sampling units at the different scale levels, following EBCC's basic requirements into delivering relevant Atlas data. A total of 18 50-km squares cover the territory of Macedonia. Within this squares, we used a semi-random approach, to select a total of 64 10-km squares for fieldwork. This approach was used as to take into account all habitat types present in Macedonia from which the Atlas data will be collated (Figure 1). As underlying habitat layer we used CORINE LandUse 2000. Within the selected 10-km squares, we performed a random selection of four 1-km squares for standardized effort surveys, taking habitat diversity and accessibility into account to facilitate and optimize fieldwork. After defining the grids, a custom-made Memento database Android App was tested as a technological utility to speed up the data collection and data analysis process.

## Getting the Atlas work and network in place

Putting things into perspective — in terms of skilled volunteers available to collect fieldwork data on birds (population, presence/absence, monitoring rare species etc.), Macedonia is still far behind the optimum target. So far, in Macedonia we have two professional ornithologists, two bird conservation orientated organizations and a total of 12 people with different levels of bird identification skills. Up to now, Macedonia, via the MES has been part of very few bird-related citizen science projects, including the Common Birds Monitoring Scheme (CBMS) of the EBCC which has been implemented in the period 2006-2009. For the purposes of the Atlas, groups of foreign birdwatchers visited Macedonia during the breeding season. This contributed towards an increase of the number of surveyed plots in the first year of the Atlas fieldwork in Macedonia (Figure). With the help of 12 foreign ornithologists from the Czech Ornithological Society and SOVON (The Netherlands) a satisfactory number of 1-km squares was covered.

## Prospects

The lack of financial support for the fieldwork, as well as the shortage of skilled volunteers still remain to be the biggest challenges to the implementation of the Atlas work in Macedonia for the futures years. But luckily, MES received a small but very useful financial support from Macedonian's Ministry of Environment and Physical Planning, which can cover most basic fieldwork costs. Furthermore, we believe that several training sessions in the following years of the Atlas fieldwork will contribute to increase the number of skilled volunteers. We hope this will be sufficient to cover up to half of the established 10-km squares.

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# One way to increase the number of volunteers in bird census and atlas work

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**Abstract.** The www.birdit.no website is a useful tool to increase both interest in and the skills for bird identification. The training of birders with basic knowledge during in and outdour courses, together with stimulating them to participate at bird counting projects is a way of improving the number of participants to monitoring schemes and atlas projects such as the new Second European Breeding Bird Atlas (EBBA2).

## Introduction

The *www.birdid.no* website is a useful tool to increase both interest in and the skills for bird identification. By using this website as a tool for bird identification training combined with a field study, the number of volunteers and their skills has increased in Norway. Also within the framework of the current Second European Breeding Bird Atlas, it is a very useful tool to improve the skills of many new volunteers participating in this project. I will here give a short presentation of this successful project. With some guidance, implementation in other countries is easy. Please contact me for further details if you find this interesting.

## The *www.birdid.no* website

This website is developed by Nord-Trøndelag University College (HiNT), under the direction of Magne Husby. After the start in 2007, several versions are launched and new possibilities are added. It is open and free to use for everyone. The website has been presented to BirdLife partners in the different joining countries. They have also given feedback to the website and completed translations. This Pan European Website is therefore created in cooperation with the whole of Europe!
One option on the website is that you can select birds followed by the training quiz. It is possible to


**Figure 1. Regions/countries which species are included in the test.**

train on birds' appearance (pictures) and sounds (single birds or several birds simultaneously). It is possible to choose both language and country/region for the quiz independently, and to choose between different levels. The website contains bird species living in 52 countries/regions in Europe (Figure 1).

Furthermore, you can take a formal test and receive credit (ECTs) from HiNT for your skills. The formal test is free of charge to everyone (except Norwegian citizens). It is possible to take the formal tests without joining the field study.

## Testing your skills

Bird Identification is for those of you who would like to learn more about birds and get formal evidence of your skills. Both experienced birdwatchers and beginners have given me feedback that they learn a lot by training on the website.

If you like to do the *training quiz*, choose country or Western Palearctic, enjoy and learn. You can choose between beginners quiz, birds appearance or birds sounds for every European country and for Western Palearctic. *Beginners quiz* is a selection of pictures with sound of the commonest birds in Europe. If you find this quiz too easy, you can choose the other training quiz.

You can take the *formal test* on bird identification for your own country, or for the Western Palearctic. That will give you 30 or 60 study credits. If you pass the formal test, you will get your certificate and a free t-shirt with the Birdid logo.

We believe that if you take the formal test you will increase your chances of interesting job opportunities. Birds are indicators of sustainable development in several countries in Europe, and many skilled people are needed to do bird census work. Let this website inspire you to be out more in the countryside.

## The field study in Norway and other countries

The field study in Norway comprises five gatherings and 25 days altogether. Both birds´ appearance and sounds, especially their singing, are important. In addition, the students receive some information about ecology, breeding bird census methods and results, and other subjects.

The most positive effect in Norway is that many medium skilled birders that join the field study learn more, and get the skills, motivation and self-confidence needed to become volunteers in Breeding Bird Survey (BBS).

This group of people would not have become volunteers without this study. It is not only what they learn during the study and by training on the website that is important, but also the increased interest in bird identification that makes them keen birders with binoculars and field guides!

The field studies in other countries are adjusted according to the requests in the countries. Bulgaria started in 2013, and Latvia and Serbia started in 2014.

Furthermore, we offer well-organized bird study trips to three different birding hotspots in Western Palearctic (Morocco, Bulgaria and Northern Norway). You will be guided to the best bird locations at very low cost. Note that these trips are open for everyone. The costs are very low, but of hight quality with two updated guides and maximum ten participants. You will find more information in the links on the website.

## Effects on the number of volunteers in bird census work and their skills

In 2012 (last update) 25 % of the volunteers in the Norwegian BBS have also participated in the field study. We still have problems getting enough qualified volunteers in all regions, but not in the region around the study campus. In this region, nearly 60 % of the volunteers have also participated in the field study (Husby & Hristov 2013).

In Bulgaria, 16 of 34 students in the field study in 2013 were participants in the Bulgarian BBS before they started the study, and of the 18 other students six became participants (Hristov 2013). That means that only 12 of 34 students did not participate in BBS the first year. Of those 12, four joined BBS in 2014. In 2014, there were 21 students and two participated in BBS before the study. Of the 19 others, seven joined BBS already the first year. Iordan Hristov, who is responsible for the Bulgarian study, gave the information.

Oskars Keiss reported that in this first year of the BirdID study in Latvia in 2014, 17 students have attended at least one of the seven meetings. Six of them had already participated in BBS, and of the remaining 11, two joined the monitoring project. Marko Sciban, who is responsible for the Serbian Bird ID study, reported that 21 students joined the meetings in 2014, which hopefully will help to start up their monitoring scheme soon. No doubt, this will also increase the interest to take part in Atlas work.

The skills to identify birds on visual appearance and sounds increased significantly during the field study in both Norway and Bulgaria. The students were in general better at identifying birds by appearance than by sounds when they started, however with time, progress in song recognition was clearly increasing (see the reports in the literature list for further details). These changes in skills will also be investigated in Latvia and Serbia.

## The future

Both Bulgaria and Norway will continue this project in 2014 and beyond. The number of applications for the study in Norway has increased every year since the start in 2006. Latvia and Serbia have started in 2014, and I hope that they will continue. The promising experience in Norway and Bulgaria should motivate other countries to start, and they are very welcome to get in touch. HiNT engage and pay the responsible organization/person in each country.

### References

Hristov, I. (2013) Training on bird identification in Bulgaria www.birdid.no. Hristov Report, pp. 17.

Husby, M. & Hristov, I. (2013) BirdID field study: experience in Norway and description of a new national program in Bulgaria. HiNT Utredning nr 143, pp. 17.

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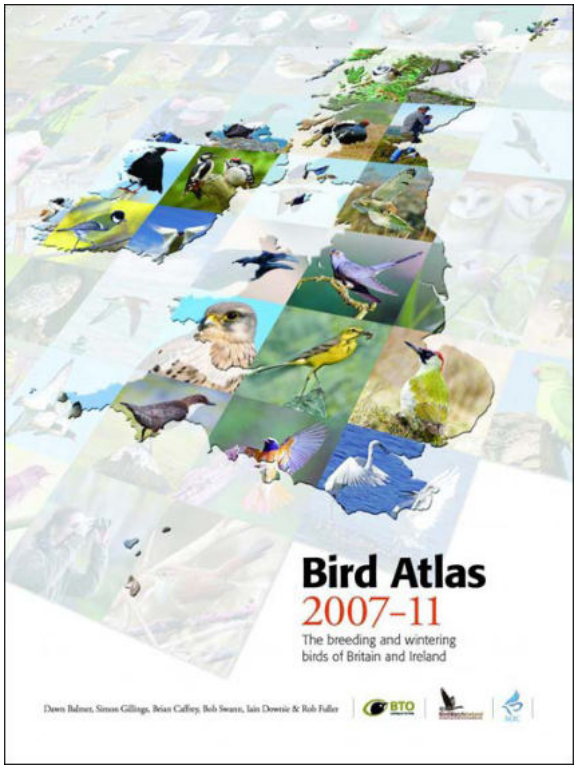
# BOOKS AND JOURNALS

**D. Balmer, S. Gillings, Brian Caffrey, Bob Swann, Iain Downie, Rob Fuller, 2013. Bird Atlas 2007–2011: The Breeding and Wintering Birds of Britain and Ireland.** 720 pages. ISBN 13: 9781908581280
Order: http://www.bto.org/shop, The prize is 69,99 £

Bird Atlas 2007–11 was a massive undertaking, seeking as it did to produce new atlas maps for birds in Britain and Ireland in both the breeding and wintering seasons. Led by the British Trust for Ornithology with the assistance of their partners BirdWatch Ireland and the Scottish Ornithologists' Club, the project corralled the efforts of many thousands of observers who submitted in excess of 19 million records. An account of the project from the authors' perspective can be found elsewhere in this BCN issue. The ultimate end product of this mammoth effort is of course a book which is, as you might expect, a hefty tome weighing in at the best part of 4 kg. Undoubtedly this book is one of the most important ornithological publications in the UK (and Ireland) in recent years, and will hopefully inform conservation action and stimulate further research for years to come.




The 720 pages are dominated by nearly 500 pages of species accounts, with most species receiving a double-page spread. Here you can sense the book's authors must have faced a dilemma. With so much to present, and limited space, what to present? I can only imagine how many options were considered, and how many hours of discussions were required to arrive at the final content. As a result, the text accompanying species pages is shorter than we've seen in previous atlases, and concentrates mainly on describing the ranges and changes, without much discussion of species ecology, conservation and the potential drivers of these changes revealed by the atlas. Each account has a handsome colour photograph of the species in question which over the course of the book amount to a great collection of pictures; one of the many aspects which make it a pleasure to browse through the pages of the book.

Of course, there are the new distribution maps, presented in a now familiar three dot format, with most species requiring both breeding and winter versions. Then there's relative abundance maps — so that's four maps to be included for each species, just to present the current status. But with two previous breeding atlases, and one winter atlas, with which to look for change, and page-space rapidly diminishing, what comparisons to show, and how to do it?

Most species have maps showing change in distribution from the previous atlases — in the case of breeding species, changes since both previous atlases are shown in a single map. And for most breeding species (those for which the sample size was sufficient) maps showing change in relative abundance since the 1988–91 breeding atlas are presented. It's these maps, showing change from earlier atlases, that are of the greatest interest, illustrating the dramatic shifts some of the UK's birds have

undergone in recent decades. The maps showing changes in relative abundance are perhaps the most revealing, in a few cases showing previously unsuspected changes in patterns of abundance within relatively unchanged distributions.

Personally, I find the maps showing changes in distribution are not the easiest to read, with small triangles indicating squares that have been occupied or vacated since previous atlases, and (for the breeding maps) whether these triangle are filled or open indicating whether the changes have been since the first or second breeding atlases. After months of both casual reading and professional use of the atlas, I still have to remind myself how to interpret these maps — it's not immediately intuitive, to me at least. That said, I'm not sure whether a better presentation could have been found — fitting that much information into a single map will be struggle, however done. And although for me these maps are fine to read, I know that some others have struggled to see the finer detail, particularly when some have been presented at a reduced size in order to fit seven to a spread. It is, however, hard to see how this can have been avoided without species accounts spilling over more than two pages, with the consequent impact on book size. Now that all the maps are available online (see www.bto.org/volunteer-surveys/birdatlas/results/mapstore) the combination of book and the internet, where maps can be tailored to your own requirements and viewed at a larger size, is a winner. The BTO are to be congratulated for making the maps freely available so promptly.

Aside from the species accounts, the book holds much else of interest. Introductory chapters give full details of how the project functioned, from the planning stages through engagement with volunteers, data capture, analyses and map production. There is a wealth of valuable information for those undertaking atlas projects, and I would encourage those running national atlas projects as part of EBBA2 to seek this out. But perhaps of greatest interest is the chapter 6, which provides a fascinating overview of the results, both in terms of the distribution of species in 2007–11 but more importantly how those distributions have changed over time. This synthesis identifies the broad patterns of change in the Britain and Ireland's avifauna over the last 40 years, both reinforcing what was already known but also providing new insights, and is essential reading for anyone interested in the conservation of our birds. I guess my only complaint is that after a few months of ownership the spine of my copy is already held together by sticky-tape. But rather than pointing to poor quality production, this may simply be the inevitable consequence of the heavy usage this indispensible book has received already!

**Mark Eaton**

# EVENTS

## Turkish Breeding Bird Atlas: Kick Off Meeting in March 2014

The Turkish Breeding Bird Atlas (TBBA) project started with a meeting on 24 March 2014 in Harem Hotel, Istanbul attended by representatives and volunteers from different parts of the country along with nine members of the EBCC Board and the Atlas Steering Committee. There were 14 participants from Turkey including representatives from all four main national bird conservation NGO's (DD, DAD, DKM and WWF-Turkey), four universities and scientific institutions from İstanbul, Ankara, Samsun and İzmir. The meeting was organized by Kerem Ali Boyla, the TBBA coordinator.

During the first half of the meeting, all participants were introduced to the European Breeding Bird Atlas (EBBA2) project. EBCC members were proud to announce that EBBA2 will also include Russia and Turkey. The attendees were informed briefly about the methodology designed especially to adapt to the realities of Turkey by Sergi Herrando, Petr Voříšek and Kerem Ali Boyla. The low number of birders in Turkey and their concentration in and around big cities will make it a real challenge to cover the large area of the country. In Turkey the atlas will be made on 50×50 km resolution, with the exception of Istanbul province where each 10×10 km will be visited. In each 50×50 km square two 10×10 km squares will be chosen and surveyed and in each 10×10 km square four 1×1 km squares will be surveyed. Aside from this standardised approach, records to confirm occurrence and breeding in 50×50 km squares will be collected by other (non-standardised) approaches, including ad-hoc records.

The history of the breeding bird atlases in Turkey, including a short history of the past regional atlas work and two previous attempts for a Turkish Bird Atlas, was presented. Then discussions turned to how many Turkish birders might participate in the atlas work. Whilst the birding community back in 2000's was not large or stable enough for an Atlas, today there are over 300 active birders and 2000 bird photographers. The meeting participants concluded that a maximum of 32 teams might be expected to do atlas work over four years. With these birders and with additional contributions from foreign observers, about 50% of the atlas squares could potentially be covered by the current capacity.

Mikhail Kalyakin from Russia shared his experiences about of how many squares that had been surveyed in Russia in the last year using the current network of field workers and biologists. This gave the participants good inspiration and put some fire into the discussion about the TBBA. Participants commented that the number of birders might rise in the course of the Atlas project. An academic amongst the meeting participants told us about the biodiversity inventory work that has been carried out in several provinces, with the finance of the government, and has involved a number of Turkish birders. Many academics, including participants at the meeting, will be happy to use Atlas methodology during their fieldwork, thus collecting data useful for the TBBA.

Further discussions dealt with various subjects including the details of the methodology, prioritisation of the squares, use of online databases, participation of foreign birdwatchers, fund raising, possible institutional support, capacity building and training for birdwatchers.

At the end of the meeting the members were all optimistic about the atlas work. The EBCC members supported the Turkish initiative and emphasised the importance starting this atlas project. If we succeed in getting a good start of the project, we believe that we will have a successful Atlas project in Turkey.

In the weekend prior to the meeting, on 22 and 23 March 2014, the steering committee organised a pilot field study with members of Istanbul Birdwatching Club and also birders from the nearby cities. A total of 20 birders covered five 1 km squares on each day, and on two different spots in two different continents on the two days. Mixed teams (EBBC Board representatives & Turkish birdwatchers) performed standardised atlas surveys as well as contributed by making opportunistic observations.

The TBBA Steering committee hopes that the trainees will help future Atlas workers from all over the country with different technical issues.
Turkish National Breeding Bird Atlas is coordinated by Kerem Ali Boyla and Dilek Şahin. You can contact them at kusatlasi@gmail.com. For more information visit: http://kusatlasi.blogspot.com.tr/

Kerem Ali Boyla

**Kerem Ali Boyla, Turkish National Breeding Atlas coordinator during the workshop.**

**Participants from Turkey, the EBBC Board and the European Atlas Steering Committee.**

## In Memoriam Andres Kuresoo

Only a few days before his 60th birthday, Andres Kuresoo passed away at his home near Tartu, Estonia, on 2nd September 2014. Andres was a researcher at the Estonian University in Tartu and had always a strong interest in waterbirds. He played an important role in the development of national and international action plans for threatened species as the Steller's Eider, the Great Snipe, the Long-tailed Duck and the Bewick's Swan. He was the Estonian national coordinator of the International Waterbird Census for many years and also Member Delegate of his country to Wetlands International. Within the Estonian Ornithological Society (EOS) Andres was also strongly involved in monitoring and atlas work of land birds and he participated in several IBCC and EBCC conferences and workshops.

I met him for the first time at the 1989 IBCC conference in Prague (at that time still Czechoslovakia), which was attended by several members of the EOS. After a long day of talks, we all socialized in one of the small — and rather dark and smoky — beer pubs on the western bank of the Vlata river. At the first EBCC conference in Noordwijkerhout (The Netherlands) in 1992, Andres offered to organize the next conference in Estonia, which was met with great enthousiasm and approved by all participants . He became Conference Organizer within the EBCC Board during the three year period leading to this event. The 1995 Pårnu conference was attended by a substantial number of ornithologists from "eastern" and Baltic countries which improved and strengthened further collaboration within EBCC.

The venue on the Baltic sea coast offered many opportunities for migration watch during breaks, and most participants enjoyed Lorenzo Fornasari's late evening guitar performances. Andres continued to be active within the EOS and later on took part in the early Pan-European Common Bird Monitoring Scheme (PECBMS) workshops. In September 2013 he attended the EBCC conference in Cluj (Romania), his last. Andres was a modest person and a hard worker, and though rather timid, he could also be surprisingly funny. We will not forget him.

Anny Anselin

**Members of the EBCC Board and European Atlas Committee (1992–1995) during the Pårnu Conference, 1995. Andres is standing on the right.**

# Your text in the next issue?

Bird Census is meant as a forum for everybody involved in bird census, monitoring and atlas studies. Therefore we invite you to use it for publishing articles and short reviews on your own activities within this field such as (preliminary) results of a regional or national atlas or a monitoring scheme, species-specific inventories, reviews or activity news of your country (as a delegate: see also below).

## Instructions to authors

– Text in MS-Word.
– Author name should be with full first name. Add address and email address.
– Add short abstract (max 100 words).
– Figures, pictures and tables should not be incorporated in the text but attached as separate files.
– Provide illustrations and figures both in colour.
– The length of the papers is not fixed but should preferably not exceed more than 15 pages A4 (including tables and figures), font size 12 pt, line spacing single (figures and tables included).
– Authors will receive proofs that must be corrected and returned as soon as possible.
– Authors will receive a pdf-file of their paper.
– References in the text: Aunins (2009), Barova (1990a, 2003), Gregory & Foppen (1999), Flade et al. (2006), (Chylarecki 2008), (Buckland, Anderson & Laake 2001).
– References in the list: Gregory, R.D. & Greenwood, J.J.D. 2008. Counting common birds. In: A Best Practice Guide for Wild Bird Monitoring Schemes (eds. P. Voříšek, A. Klvaňová, S. Wotton & R.D. Gregory), CSO/RSPB, Czech Republic; Herrando, S., Brotons, L., Estrada, J. & V, Pedrocchi, V. 2008. The Catalan Common bird survey (SOCC): a tool to estimate species population numbers. Revista Catalana d'Ornitología, 24: 138-146.

## Send contributions in digital format by email to: anny.anselin@inbo.be

National delegates are also invited to send a summary of the status of monitoring and atlas work for publication on the website of EBCC, see www.ebcc.info/country.html.
Contact: **David Noble**, British Trust for Ornithology, The Nunnery, Thetford, Norfolk IP24 2PU, United Kingdom, tel: +44 1842 750050, email: david.noble@bto.org

Please send short national news for the Delegates Newsletter to EBCC's Delegates Officer:
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