

# EUROPEAN BIRD PORTAL NEWS

## The EBP project releases a new improved version of its online viewer

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**Abstract.** During the last two years most of the work done in the framework of the EBP has been focussed to fulfil the objectives established in the LIFE EBP preparatory project. In this context, the launch of a new version of the EBP viewer has been a key milestone. This is expected to be put in place by the end of 2018. The partnership increased largely, particularly in 2017. Hence, the geographical area shown in the previous version of the viewer had become far too limited to properly show the new collected data. Also some important technical developments to the system were required. We describe here the improvements and functionalities of the new version.

### Introduction

The European Bird Portal is a project of the European Bird Census Council (EBCC) developed through a partnership of 81 institutions from 29 different countries that mobilizes the data collected by more than 100,000 volunteer birdwatchers. The partnership involves biodiversity data centres and reference ornithological institutions in their respective countries, accumulating a long-time experience collecting high quality monitoring data from thousands of volunteer birdwatchers and turning this information into sound science.

The main purpose of EBP is to combine the data collected by the different online bird recording portals operating in Europe in order to describe large scale spatiotemporal patterns of bird distribution (seasonal distributional changes, migratory patterns, phenology) and their changes over time.

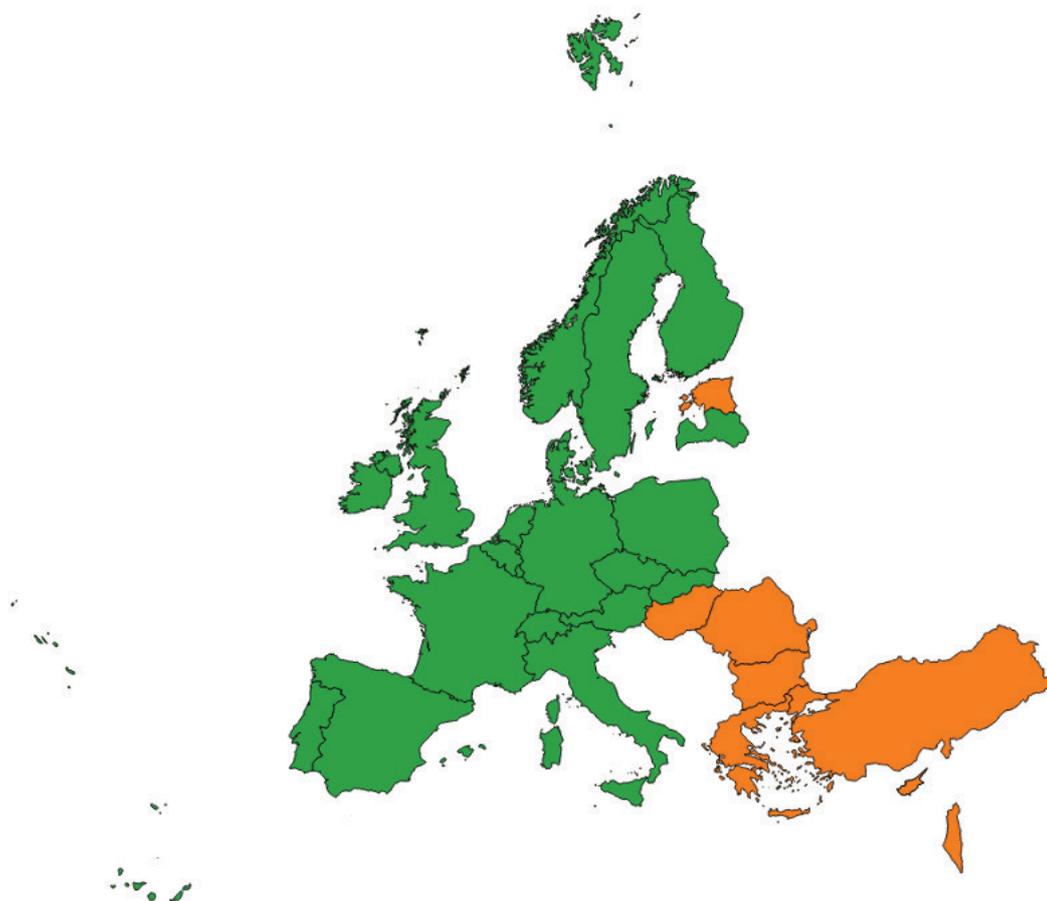
The EBP demo viewer aims at showing the scope and potential of the project depicting the week-by-week distributional patterns of 105 bird species using a total of nine types of species maps and climatic variables. Since two animated maps of any type and year can be selected to be shown

simultaneously for direct comparison, all in all, millions of different map combinations are available to choose from.

### Why a new EBP viewer?

During the last two years most of the work done in the framework of the EBP has been focussed to fulfil the objectives established in the LIFE EBP preparatory project (cf. <http://life.eurobirdportal.org/overview#objectives>). And, in this context, the launch of the new version of the EBP viewer has been a key milestone.

There were two main reasons behind the decision of developing a new version of the viewer. On one hand, the partnership increased largely, particularly in 2017, thanks to the participation of the key ornithological institutions in Bulgaria, Croatia, Cyprus, Estonia, Greece, Hungary, Romania and Turkey and their respective online portals (Figure 1). This meant that the geographical area shown in the previous version of the viewer was far too limited to properly show the data collected by the new partners. Moreover, the increase in geographical coverage would require also doubling the capacity of the current cloud mapping and da-



**Figure 1.** The recent increase in the geographical coverage of the EBP project is one of the reasons prompting the development of a new version of the EBP viewer (in green the countries already part of the project in 2015 and in orange those incorporated subsequently).

tabase repository that handles the processed data used to visualise the animated viewer maps.

On the other hand, it was required to adapt the old version of the EBP viewer to the much higher updating frequency expected to be put in place by the end of 2018, when a new data sharing standard, automated data flow and database repository will be fully functional (cf. <https://goo.gl/Tsg-GaF> and <https://goo.gl/44i5J4>). Up to now, the data has been uploaded to the viewer once a year and the whole data flow has been managed on a manual or semiautomatic basis (the partner's datasets are not directly connected with the central EBP data repository). By the end of 2018, thanks to these new technical developments the content of the EBP viewer will be updated at a weekly basis and showing data up to the previous week.

### The new EBP viewer in figures

The new version of the viewer incorporates 40 million more new bird records and now shows

animated all-year round maps of 105 bird species for a period of seven years, ensuring that the EBP maintains its position as the largest and most dynamic citizen science biodiversity data flow in Europe.

The species maps are based on 205 million bird records submitted between 2010 and 2016 to the on-line bird recording portals run by the project partners, a 24% increase with respect to the previous version. These records were subsequently aggregated by week and 30×30 km square (based on the European Environment Agency reference grid ETRS89-LAEA) summarizing information on the number of observations of each species, the number of counted birds and the recording effort (number of complete lists and total number of records and observers). Four of the species maps (occurrence, traces, counts and phenology) reflect, in different ways, the raw information contained in the aggregated data, while the fifth one (corrected regional occurrence) uses various analytical procedures to account for heterogeneity in

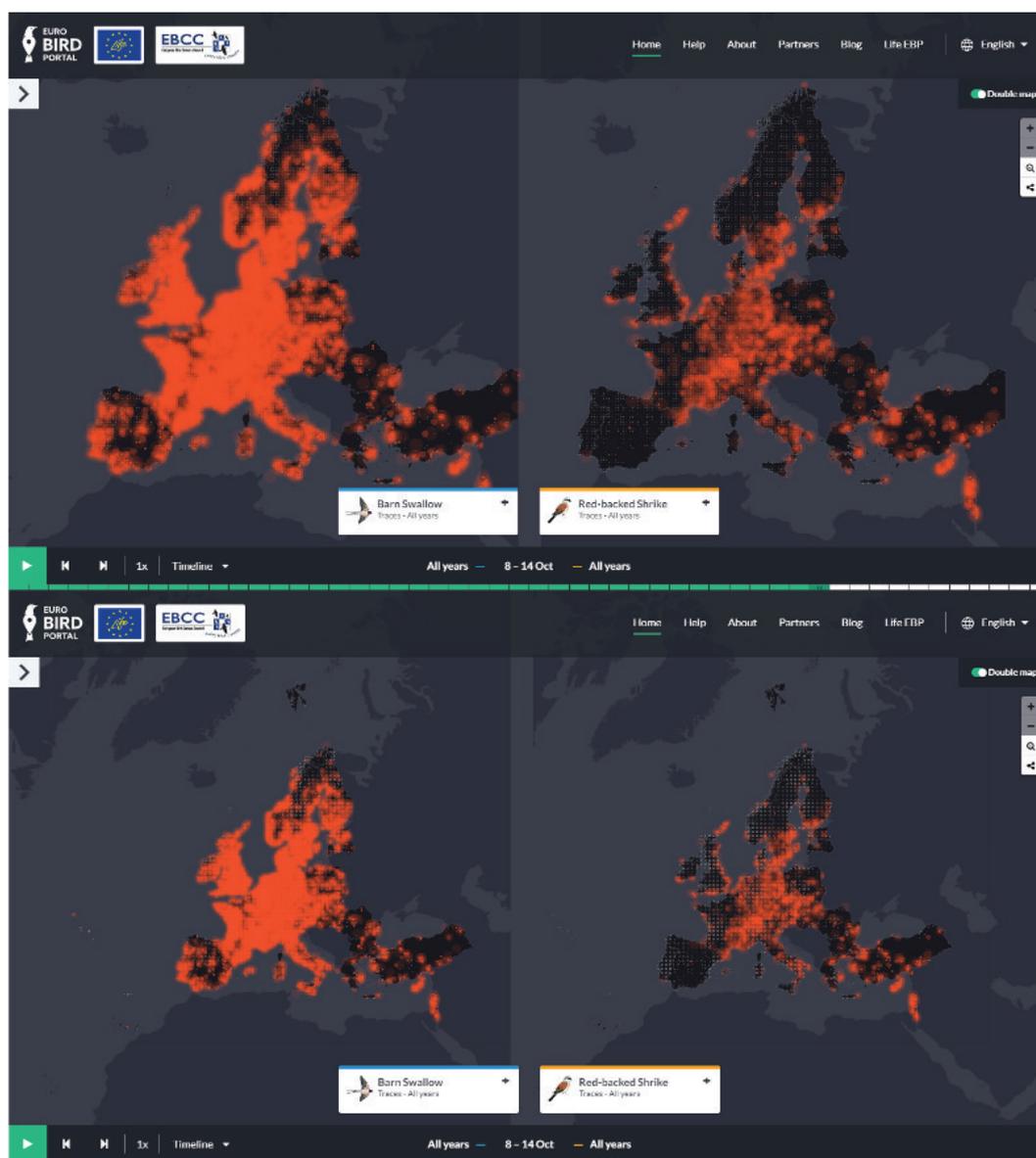


Figure 2. The new EBP viewer allows two viewing options: “Core area” (above) and “Full coverage” (below).

observational effort and species reporting rates. Overall, about 44,000 weekly maps can be seen. However, since two animated maps of any type and year can be selected to be shown simultaneously for direct comparison, all in all, currently more than 30 million different map combinations are available to choose from.

### Main improvements and new functionalities

The new version of the viewer was launched in December 2017 and, despite that some of its new technical improvements will not be apparent until it works in near real-time by the end of

the year, many of the new functionalities are certainly already helping to further foster the interest with the project and to promote overall data collection and participation by giving more added value to the own local portals.

#### 1) Geographical coverage and map viewing options

The new version of the viewer now properly shows the new, expanded, geographical coverage of the EBP project, including the whole of Europe and parts of the Middle East (e.g. Turkey and Israel; Figure 2).

Moreover, a new button allows switching between two different map views: “Core area” and

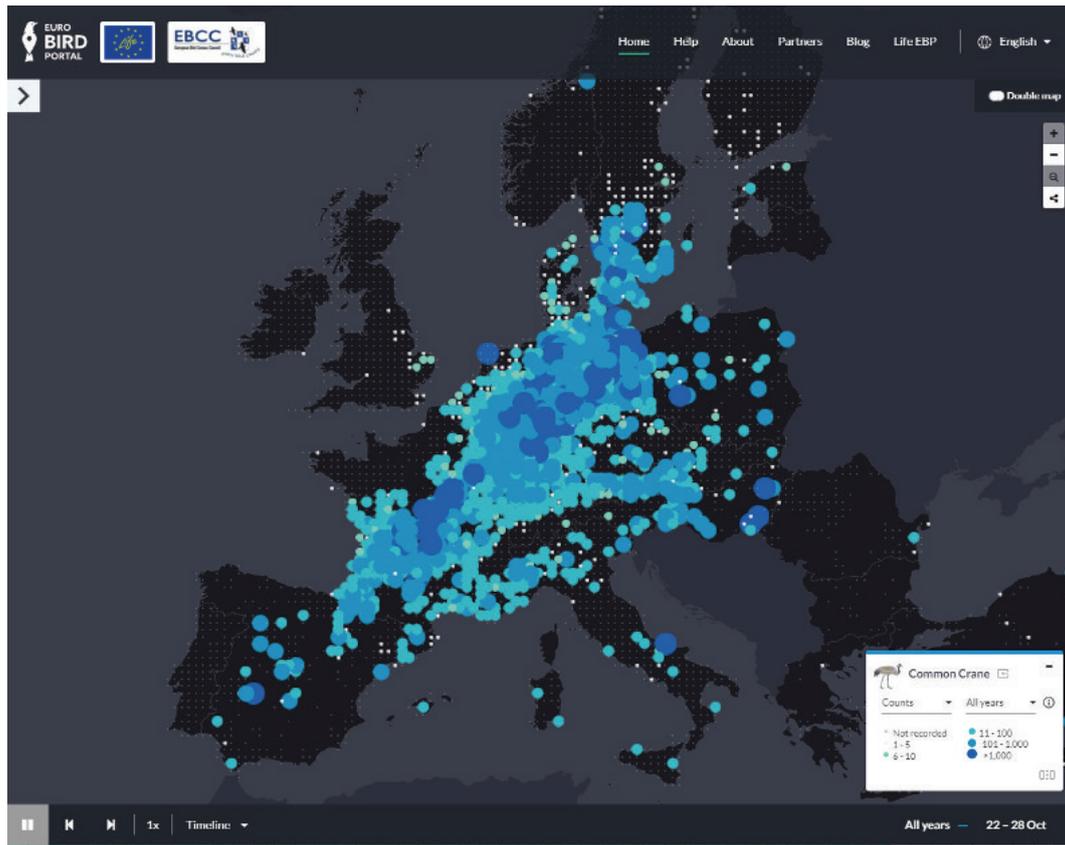


Figure 3. The new EBP viewer allows the visualization of a single map and to apply some zooming.

“Full coverage”. The former option is the predetermined one and focusses the view on the area with the bulk of the data, while the later one (“Full coverage”) also shows all the archipelagos (e.g. Azores, Canary Islands, Svalbard) and a larger part of the Middle East (e.g. the whole of Turkey). Another improvement refers to the option of selecting the visualization of a single map (previously a double map was always shown; Figure 3). This map shows the whole area covered by the project and, unlike the double map, allows three zoom levels. This way, the user can better focus the attention in specific areas or zoom out if the area of interest is not fully shown in the computer screen. Note, however, that despite the improved zooming options, the geographical resolution of all the maps has been kept unchanged (a 30×30 km grid).

Also note that now both the double and the single map views allow some panning (unavailable in the previous version).

## 2) Visual design and usability

The new version of the EBP viewer has a completely new visual design and some new features

that make it more user-friendly and attractive to the broader audiences (see this video for further details: <https://youtu.be/zrkWkCNz4hM>).

Now, users can change the species, map type and time period of each map (left/right or single) directly from the legend info windows or using a lateral drop-down menu. Moreover, attractive species drawings have been added to improve aesthetics and make the viewer more attractive to the general public (Figure 4).

The viewer also incorporates now a helpful timeline that makes really easy to grasp the temporal patterns that lay behind the species maps.

Finally, this new version is fully responsive and tablet and mobile friendly, allowing people to enjoy the EBP maps from a much bigger array of devices than previously (Figure 5).

## 3) Sharing options

Now, sharing the EBP animated maps is easier than ever. The new viewer’s sharing options makes very easy to copy the url of any double map combination or single map in the most popular media networks. And more importantly, now any animated EBP map can also be easily embed-

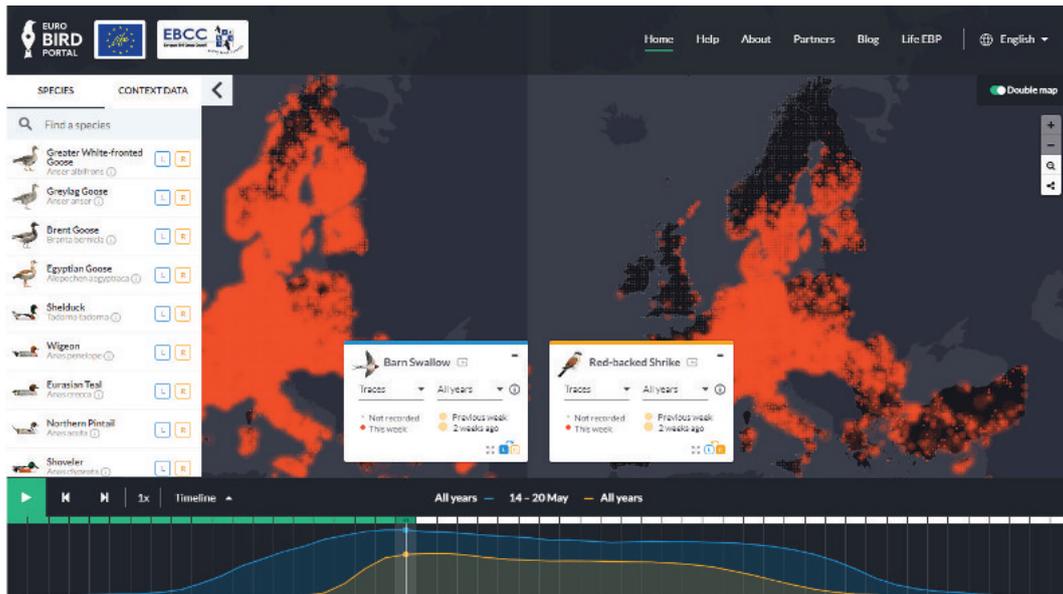


Figure 4. The new version of the EBP viewer has a completely new visual design and incorporates a helpful timeline to easily grasp the temporal patterns behind the species maps.

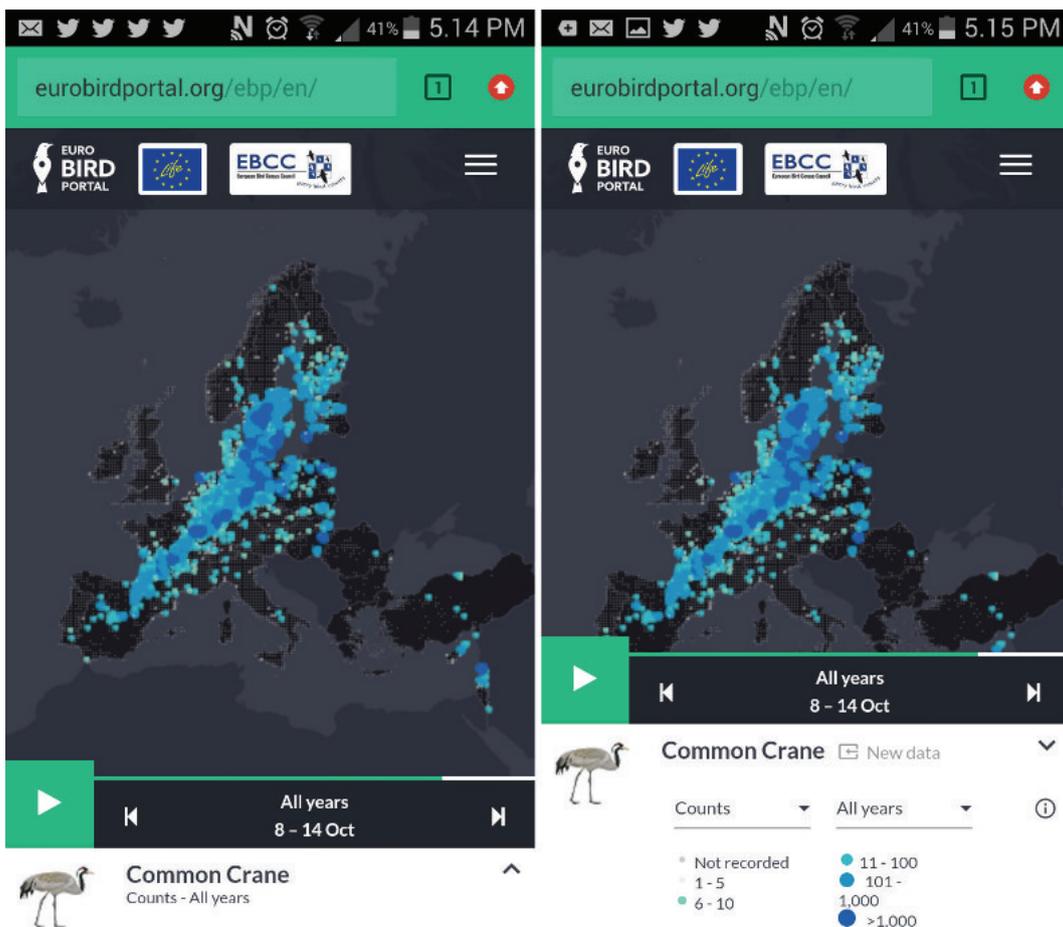


Figure 5. The new version of the EBP viewer can also be enjoyed from mobile devices.

ded to any blog or website using the code provided in the sharing options window (Figure 6).

We expect embedded maps to help significantly to popularize the viewer. Note that embedded

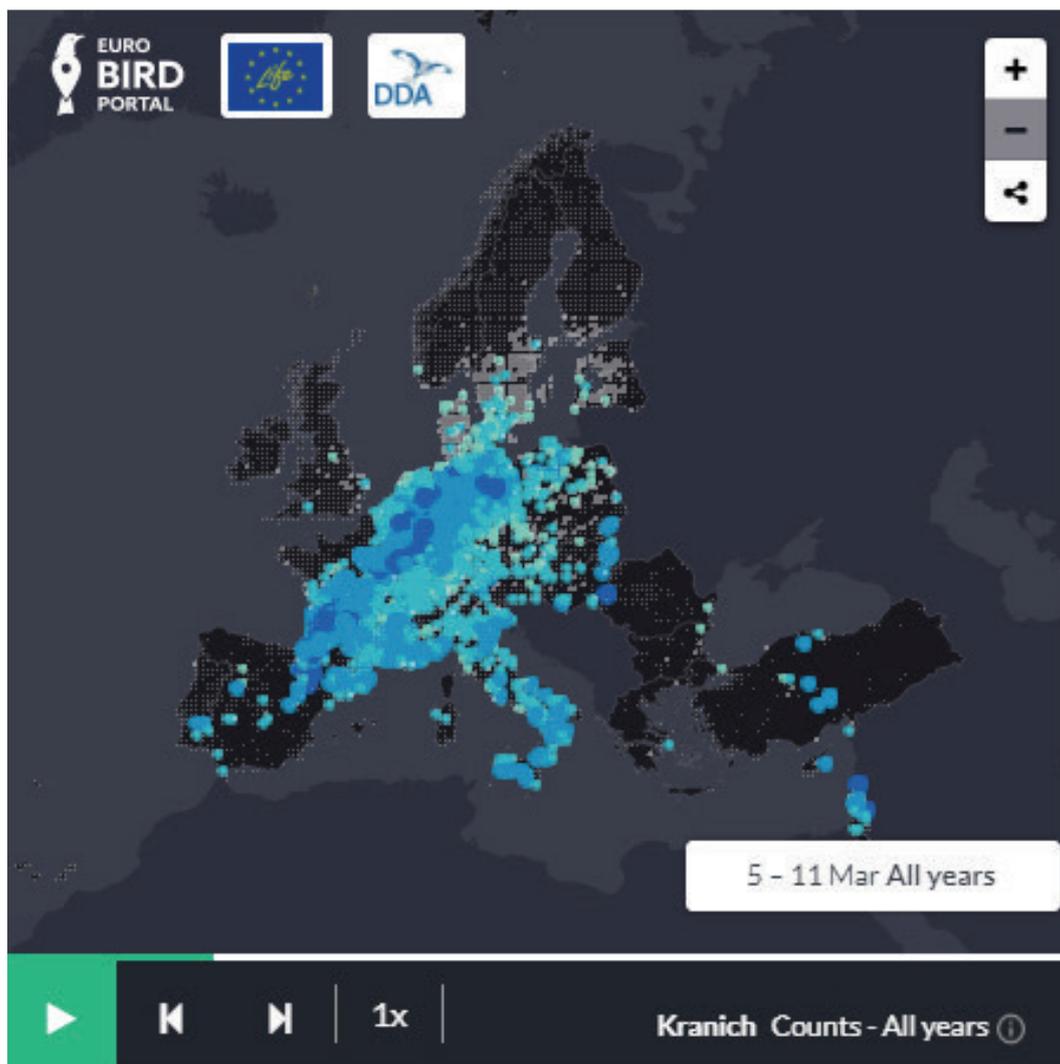


Figure 6. EBP animated maps can be easily embedded in any blog or website thanks to the new version of the viewer.

maps only show the particular map type, time period and species selected by the user and that to see further map combinations or species it is required to go to the EBP viewer.

#### 4) Real-time solution

The new version of the viewer is already adapted to work in near-real time (i.e. with weekly updates up to the previous week), processing the data stored in the new central database (cf. <https://goo.gl/TsgGaF>) and creating the maps automatically. These functions, however, will not be operating until late 2018, once the automated data flow will be put in place.

The new features developed to adapt the viewer to the near real-time mode include a new time selection option that will allow the visualization of the last 52 weeks. Currently, only natural years

(e.g. 2016) or July to June annual cycles (e.g. July 2015 to June 2016) are available.

#### Acknowledgements

We hope that the new improved version of the EBP viewer will help highlight the value of the data collected through the online bird portals operating in Europe and the relevance of sharing bird observations. The EBP main objective is to unravel the seasonal large-scale patterns of bird distribution in Europe, but this can only be possible thanks to the contribution of 100,000 volunteer birdwatchers that share their observations in the online portals and by the efforts of EBP partners to combine this huge amount of data in a sound and structured way. Without their continuous contribution in time, effort and expertise

the EBP project would be unfeasible. Our big thanks to all of them.

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