

Book review



Österreichischer Brutvogelatlas 2013-2018 [Atlas of Breeding Birds in Austria 2013-2018]

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Throughout history there have been periods so exceptional that even today they are known by nicknames that immediately recall their memory. Among these we can remember the *Século de Ouro* (Portuguese Golden Age – the era of great discoveries made from 1415 to 1578), the *Siglo de Oro* (Spanish Golden Age – the period of maximum artistic, political-military, and literary splendour of Spain, conventionally set between 1492 and 1681), the *English Golden Age* (referring to the reign of Elizabeth I of England from 1558 to 1603), the *Złoty Wiek Polski* (Polish Golden Age – the period of maximum splendour experienced by the Republic of the Two Nations between the 16th and 17th centuries) or the *Gouden Eeuw* (Dutch Golden Age – the period in the history for the Netherlands which corresponds more or less to the 17th century). Speaking of more recent times, the 1920s remain memorable and are still known today by highly evocative names (*The Roaring Twenties* in the United States, *Les Années Folles* in France, *Felices Años Veinte* in Spain, *Goldene Zwanziger* in Germany, and *Anni ruggenti* in Italy).

Speaking of European ornithology, we could legitimately attribute the term “golden years” or “roaring years” to the second decade of this century, in fact it is in this period that all the activities that led to the pu-

blication of the second European Breeding Bird Atlas (EBBA2) were concentrated. Despite the name, this was the first truly complete European breeding bird atlas for the entire continent. An extraordinary result to which approximately 120,000 ornithologists from 48 nations contributed and which, in light of subsequent geopolitical events, will certainly not be easily replicable in the short-medium term. This impressive citizen science project also had the great merit of stimulating the publication of numerous similar national ornithological atlases. We recall in particular those of: Switzerland (2018), the Netherlands (2018), Liechtenstein (2019), Malta (2019), Slovenia (2019), Turkey (2019), Denmark (2020), the European part of Russia (2020), the Czech Republic (2021), Hungary (2021), Italy (2022), Portugal (2022), Spain (2022), and Ukraine (2022). The atlas of breeding birds in Austria was added to this list in 2023, which is a large format hardcover volume (24.4 x 32.5 x 4.6 cm), with 680 pages in German for a total weight of 3,820 g.

This atlas of breeding birds is the second for Austria and was published thirty years after the previous volume relating to the period from 1981-1985. The work is the result of a collaboration between the Österreichischen Bundesforste (the entity that manages the Austrian federal

forests), BirdLife Austria, the Bundesforschungszentrum für Wald (Federal Forest Research Centre), the Tyrol Region, and the Dutch ornithological association Sovon.

The first 98 pages are dedicated to general information. In particular, the methods adopted for collecting and processing data are described in detail. Both a 10 x 10 km grid and a finer grid with a side length of approximately 626 x 617 m (0.387 km²) were used for mapping. In the text, the elements identified by the 10 x 10 km grid are indicated as “quadrants”, while the cells of the finer grid are defined as “sextants”. The Austrian federal territory was thus divided into 965 quadrants and 219,142 sextants. The sextants are a legacy of the first atlas and have been preserved to facilitate the comparison of the updated metrics with those of the past. The data collection, initially planned for the period from 2013-2017, was also extended to 2018 to satisfactorily complete the information, especially in the Oberösterreich (Upper Austria). Over 2,300 volunteers contributed to the fieldwork by collecting more than 2.1 million data sets which were recorded mainly on the Austrian version of the Ornitho online system (ornitho.at). For the State of Tyrol, since it immediately became clear that it would be difficult to achieve a sufficient degree of coverage due to the challenging topography and the low density of observatories, direct collaboration was started with the national authorities who provided data of large areas difficult to access, such as the Karwendel (727.4 km²) and part of the Stubai Alps-Ötztal valley (844 km²). Naturally, before use, all data has been carefully validated. Since the distributions of different bird species are strongly linked to a series of environmental factors, a specific chapter is dedicated to the habitats present in Austria and their changes. It is a particularly relevant topic if we consider the high variability of the Austrian territory, characterized in the south-west by the high Alpine areas which then slope down to the east up to the Pannonian plain (northern Burgenland with the Seewinkel and the edge of the Vienna plain). Austria is in a transition area from the maritime climate of the Atlantic (low daily fluctuations in air temperature, abundant cloud cover, precipitation, and high humidity) to the continental climate of Northern Asia and Eastern Europe (wide ranges daily and seasonal temperatures and rainfall concentrated in the summer period). These large-scale climatic conditions are influenced and modified by small-scale (local and/or regional) climatic factors such as the orientation and inclination of slopes, the location and size of water basins, as well as by anthropogenic factors, such as, soil sealing, reforestation, deforestation, irrigation, creation of artificial lakes, etc.). Even in Austria after 1950 there was a significant increase in air temperature and changes in all the climatic indices dependent on it, with a particularly evident acceleration starting from 1980. From the point of view of land use, a bit less than half (48%) of the Austrian surface is covered by forests and just under a third (approximately 32%) is used for agriculture. In 2019, the built-up area represented approximately 7% of the total area. Wetlands and surface water make up a small percentage of the country’s area, just over 1%, but are extremely important for waterfowl. The remaining part of the territory is made up of glaciers, rocky terrain, and areas

with little vegetation. The general chapter continues with in-depth analyses of specific environmental typologies (forests, agricultural areas, lake basins, wetlands, etc.), highlighting the changes taking place and also analysing the impacts on birds deriving from energy generation plants (hydroelectric power plants, wind farms, photovoltaic systems) and recreational activities in natural environments (ski lifts, rock climbing walls, water sports, etc.). From these analyses, it emerges that in the last 30 years the variations in the surface area of land for agricultural use (approximately -25%), of forests (approximately +4%) and of built-up areas (approximately +28%) have changed significantly both the availability and the quality of the habitats used by birds for nesting. The intensification of production processes in agricultural areas has had a particularly negative impact, as clearly demonstrated by the Farmland Bird Index which dropped by 40% in the period from 1998-2021, while the effects on forest birds have been less unfavourable.

The largest chapter is dedicated to the presentation of the results regarding the 235 bird species that bred in Austria in the period from 2013-2018. Two pages have been reserved for each species. For each species, the German common name and the scientific name are provided (the systematics and nomenclature follow the “IOC World Bird List v. 12.1”). Alongside a photograph of the species, some general information is briefly proposed. First of all, it is specified whether the bird is an indigenous species or a species introduced intentionally or unintentionally into the local fauna. Below is an estimate of breeding pairs in the period from 2013-2018 and the short-term (comparison between the periods from 2007-2012 and 2013-2018) and long-term (period 1980-2018) trends. Regarding the conservation status of the species, the classification is expressed in the so-called “traffic light form” at three levels. The classification according to the Austrian Red List and the inclusion in Annex I of the European Union Birds Directive are also reported. There is always a distribution map that shows the presence of the species in the period from 2013-2018 at a quadrant level (100 km²) using coloured dots that distinguish the three classic levels of certainty of reproduction. For 50 species, the quadrants in which individuals were present during the breeding season, but without any evidence of breeding, are shown by black dots; this suggests areas of potential future expansion. For 89 species, maps created using models developed at the finer grid level (0.387 km²) are also available; they express the probability of encountering the species through shades of colour. A graph with the altimetric distribution of the reproductive sites is provided for all species. For many species, a graph is also proposed that compares the current altitude distribution with that of the previous Atlas. For all the species already detected in the period from 1981-1985 there is a map that compares the distribution in the period from 2013-2018 with that of the period of the first Atlas of breeding birds. Naturally, a text is dedicated to each species which deals with the following aspects: description of the supra-regional distribution and general biology; results of the Atlas period from 2013-2018 in which the distribution, altitudinal range, as well as habitats used specifically in Austria are discussed; compari-

son between the first and second Atlas; comments of the modelled map (if present); analysis of the possible causes for the changes contextualized at a regional or supra-regional level. The treatment of the single species is completed by a small block with the bibliographical sources cited in the text and by a short summary in English.

The final part of the book deals with 35 species that did not breed in the period of investigation (2013-2018), but whose reproductions were known previously (1800-2012) or subsequently (2019-2022). Another 21 species are mentioned briefly as their breeding in Austria in the period from 1800-2022 is not certain. The volume ends with a rich bibliography, some further details on the methodology and with the classic indexes of common and scientific names.

From the analysis of the data it can be seen that compared to the first atlas, 16 new breeding species have been added. Five of these bred in Austria in previous times, but were not confirmed in the period from 1981-1985 (*Grus grus*, *Phalacrocorax carbo*, *Aquila heliaca*, *Haliaeetus albicilla*, and *Strix uralensis*). Three species breeding during the first Atlas have disappeared: *Podiceps grisegena*, *Falco naumanni*, and *Lanius excubitor*. The species that have most shown declines in their reproductive ranges are those in mountain areas and agricultural environments. Among typical woodland birds, only a few species showed significant regressions, while species from wetland and urban areas remained essentially stable. The graphs with the altimetric distribution of the reproductive sites reveal that both mountain and forest species occupied areas at significantly higher altitudes. Confirming what has already been found in Switzerland, in general the number of species decreases with increasing altitude. The greatest species richness is found up to about 700 m a.s.l. Between approximately 2,000 and 2,300-2,400 m a.s.l., there is a notable decrease in species richness. The tree line usually exists at these altitudes and therefore acts as the limit for many forest bird species. Above these altitudes, only a few species remain, including some specialized mountain species.

Wisely, the project was supported by the Bundesministerium für Land- und Forstwirtschaft, Regionen und Wasserwirtschaft (Federal Ministry of Agriculture, Forestry, Regions and Water Management) and the Bundesministerium für Wirtschaft und Klimaschutz (Federal Ministry for Economic Affairs and Climate Protection) as part of the Rural Development 2014-2020. Thanks to the funding, 700 copies of the book were printed and sent to people and organizations working in the fields of nature conservation, forestry, and agriculture, as well as administration and research. In January 2024, the Natural History Museum of Vienna published a second edition of the Atlas which, at the price of 95 euros, can be ordered in bookstores or directly from the Museum by writing to: verlag@nhm.at

In conclusion, it can be stated that this Atlas is a work of great quality, very carefully designed from a graphic point of view, full of illustrations (around 500), but above all, complete in terms of content. For this reason, Österreichischer Brutvogelatlas 2013-2018 also contributes to making the “roaring years” of European ornithology unforgettable.

I am grateful to Kelsey Horvath for revising the English text.