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Schweizer Brutvogelatlas. Atlas des Oiseaux Nicheurs de Suisse. Verbreitung der Brutvögel in der Schweiz und im Fürstentum Liechtenstein 1993–1996. Distribution des Oiseaux Nicheurs en Suisse et au Liechtenstein en 1993–1996.

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Reviews



EDITED BY R. TODD ENGSTROM

The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the books they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the American Ornithologists' Union.

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Schweizer Brutvogelatlas. Atlas des Oiseaux Nicheurs de Suisse. Verbreitung der Brutvögel in der Schweiz und im Fürstentum Liechtenstein 1993–1996. Distribution des Oiseaux Nicheurs en Suisse et au Liechtenstein en 1993–1996.—Hans Schmid, Roland Luder, Beat Naef-Daenzer, Roman Graf, and Niklaus Zbinden. 1998. Schweizerische Vogelwarte Sempach, Switzerland. 574 pp., numerous color maps, numerous color text figures, German, French, Italian, Romansch, and English indexes. ISBN 3-9521064-5-3. Cloth, SFr. 98.00 (about $65.00). (Can be ordered from Swiss Ornithological Institute, CH-6204, Sempach, Switzerland; E-mail: vogelwarte@orninst.ch)—This massive book, 32½ × 24½ × 4 cm, weighing more than 3 kg, reflects the efforts of a team of five researchers at the Swiss Ornithological Institute in Sempach who directed the fieldwork of nearly 1000 observers, edited the copy of the nearly 120 authors who wrote species accounts, and synthetized all the cartographic information. The work was aimed (1) at plotting the distribution in quadrats of 10 × 10 km (''atlas squares'') and in selected sets of 1 × 1 km squares, and (2) at estimating relative abundance of the 200 species of birds found breeding in 1993–1996 in Switzerland (41,293 km^2) and its tiny neighbor, the Principality of Liechtenstein (160 km^2). The result of that intensive labor is an extremely handsome book, illustrated with beautiful color photographs of landscape types and avian habitats, numerous graphs and tables, and, of course, innumerable maps that include, not only the details of the species' distribution in Switzerland and Liechtenstein, but also maps of topography, climate, vegetation, soil use, species diversity, and temporal and spatial trends in species distribution and abundance.

Because of my interest in biogeography I have studied and used quite a few atlases, depicting avian distribution at local, regional, or national levels in various parts of the world. Having also reviewed several atlases in ornithological journals (e.g. Auk 94: 803–804; Auk 102, 1985:916–917; Wilson Bulletin 109: 360–362), I believe I have a fair basis upon which to evaluate this kind of ornithological and biogeographical production. In my opinion, the *Schweizer Brutvogelatlas 1993–1996* ranks among the very best of its genre. Not only is the cartography superb and easy to read and use, but also, and significantly, the amount and precision of spatiotemporal information available per species and per surface unit encompassed in this book is probably second to none. Thus one of the two main goals of this atlas (p. 10), ''. . . to give a detailed picture of the situation of breeding birds in Switzerland and Liechtenstein, treating at the same time their distribution and their abundance,'' is amply fulfilled. The second stated goal (p. 10) was that ''. . . the '93–96 atlas had to be comparable with the '72–76 atlas, in order to clarify possible changes in distribution.''

The predecessor of the 1993–1996 atlas, *Verbreitungsatlas der Brutvögel der Schweiz, Atlas des Oiseaux Nicheurs de Suisse* (subtitled ''Cartography of the Distribution of All Native Bird Species in Switzerland from 1972 to 1976''), edited by Alfred Schifferli, Paul Géroudet, and Raffael Winkler, and published in 1980 by the Swiss Ornithological Institute, was a much more modest book, 24½ × 16½ × 3½ cm and weighing only about one-third of the 1993–1996 atlas. As in the newer version, the species accounts in the 1980 edition were on two facing pages and bilingual, in German and French. But the earlier version had no habitat or lansdcape photos, only a few graphs, and only black-and-white maps. (A still earlier book, *Die Brutvögel der Schweiz,* edited by Urs Glutz von Blotzheim, 1962, Verlag Aargauer Tagblatt AG, Switzerland, treating all species of birds that breed or had bred in Switzerland since 1900, had no maps but many excellent black-and-white photographs of avian habitats.) Instead of color photographs of the birds, as in the 1993–1996 atlas, its 1972–1976 precursor had very attractive black-and-white drawings by Robert Hainard. This is perhaps, by the way, one of my few criticisms of the *Schweizer Brutvogelatlas 1993–1996.* Rather than color photographs of the species discussed, I would have per-

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sonally preferred color drawings or paintings by one or several Swiss artists—there are many good ones in that country. Instead of 1000 fieldworkers for the 1993–1996 atlas, the 1972–1976 one had only 271. A total of 191 species were recorded as breeding in Switzerland in 1972–1976, versus 200 twenty years later. Some changes in avifaunal composition and distribution in Switzerland, reflecting recent trends in distribution of birds in central Europe, are notable. For example, three species that used to breed regularly in Switzerland, *Lanius minor, Lanius excubitor,* and *Galerida cristata,* were detected in the 1972–1976 mapping project, but were no longer breeding in 1993–1996. Such atlas data, well grounded in observational facts, pose questions of different sorts, including the respective roles of ecoclimatic changes, modifications of habitats due to human activities, or improvements in conservation practice.

Many other trends are described in the 1992–1996 atlas. I give below a few examples that illustrate the dynamic nature of avian distributions in a small area that is extremely well known and regularly surveyed at a very fine geographical and ecological scale. The Red Kite (*Milvus milvus*) occupied only 106 quadrats (23%) in 1972–1976, and increased its distribution to 207 quadrats (44.3%) in 1992–1996, thus documenting a dual trend of geographical expansion and numerical increase (from ~90 pairs in 1969 to nearly 1000 in 1992–1996) which appears to be due largely, not to changes in habitats, but to complete protection now accorded that raptor. The Great Reed Warbler (*Acrocephalus arundinaceus*) was detected as a breeder in 81 quadrats (17.6%) in 1972–1976, and 69 (14.8%) in 1993–1996. Whereas the species occupied 16 new quadrats in 1992–1996 (+19.8%), it disappeared from 28 others (−34.6%) since 1972–1976, thus resulting in a net loss of 12 quadrats (14.8%). This reed warbler, unknown in Switzerland at the end of the nineteenth century, was first recorded there in 1880. It increased its range subsequently, apparently benefitting from habitat modifications that followed ''water correction'' schemes. The slight decline in the last 20 years corresponds to the decrease (or even disappearance) of the species from areas where the surface of its habitat has become restricted and threatened and where only a few pairs can subsist. Long-term maintenance of a population in Switzerland will depend on habitat management. The situation of the two sibling species of *Hippolais* warblers is fascinating. Whereas the breeding range of the Icterine Warbler (*Hippolais icterina*), an essentially northern species in Europe, decreased from 117 quadrats (25.4%) in 1972–1976 to 67 (14.3%) in 1993–1996, that of the Melodious Warbler (*H. polyglotta*), which has a more southwesterly distribution, doubled from 28 quadrats (6.1%) to 60 (12.8%) in the same period. Those distributional modifications, which could be attributed to interspecific competition, given the generally allopatric and parapatric ranges of those two species, seem in fact to be due to two different trends. The decline in the range of *icterina* and the expansion in that of *polyglotta* in Switzerland are both a part of more general trends in the geographical dynamics of each species. Yet, whereas habitat modifications due to changes in agricultural practices can be invoked in the case of *polyglotta,* that does not seem to play a role for *icterina.* In addition, fine-grained study shows that habitats occupied by those two species, at least in Switzerland, are different, and that competition may not be a factor in their apparently complementary range changes.

By clarifying a number of distributional changes in the breeding avifauna of Switzerland from 1972–1976 to 1993–1996, and, in addition, placing these changes within the context of more general trends in the Western Palearctic, the *Schweizer Brutvogelatlas 1993–1996* admirably fulfills the second of its avowed goals. By pointing out real or potential reasons for spatio-temporal range variations and numerical fluctuations in many European species, this volume therefore is a treasure trove of further questions, whether they be pure research or applied.

The introductory sections of the atlas follow a preface signed by Philippe Roch, Director of the Federal Office for Environment, Forests, and Landscape. Pages 11–61 include an extensive and extremely clear section on the avian environments of Switzerland, by Roman Graf. The habitats, all illustrated with beautiful color photographs (aerial views by Photoswissair, the others by various collaborators of the atlas project), are arranged by geographical units or regions. That section is perhaps one of the best succinct ecogeographic descriptions of Switzerland I have read. I do have one regret, however, namely that the scientific names of plant and bird taxa are not given. The section ends with eight maps (pp. 56–61), including mean July temperatures, mean annual precipitation, vegetation belts, soil utilization, altitudinal zonation, and political subdivisions of Switzerland. Roland Luder wrote a section on the modifications of habitats for birds (pp. 62–73), which discusses forests, lakes and waterways, agricultural landscapes, cities and villages, and recreation. Well illustrated by a series of graphs, that section also includes two black-and-white photographs on facing pages (pp. 64–65) of the same alpine landscape in the Canton of Berne, the top one taken in 1927, the bottom one in 1995. Differences in land use in 68 years include a substantial increase in forest area, a decrease in cultivated land, an increase in area occupied by human settlements, but no change in the landscape above the timberline. The organization and realization of the atlas project are described on pages 74–87 (by Hand Schmid), and the preparation and presentation of data on pages 88–95 (by Beat Naef-Daenzer and Hans Schmid). General results of the atlas 1993–1996 effort are presented on pages 96–114 (by Roland Luder and Hans Schmid). Detailed summaries in Italian (pp. 115–124, by Chiara

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Solari-Storni) and in English (pp. 125–133, by Verena keller) precede the species accounts.

The species accounts occupy pages 135–541. For each species, the 1992–1996 atlas occupies two opposite-facing pages. At the left hand-corner of the left page figures the species name, in German, French, Latin, Italian, Romansch, and English. The left page includes one or two maps. The top map illustrates by means of contours the relative density of occupation of quadrats, on a scale varying from 0.05 (pale yellow) to 10 (red) (as for the Wood Pigeon [*Columba palumbus*]), or the actual observation sites (red dots) (as for the European Nightjar [*Caprimulgus europaeus*]). In some cases of rare or very localized species (for example the Black-necked Grebe [*Podiceps nigricollis*] or the White-backed Woodpecker [*Dendrocopos leucotos*]) the top map is lacking, because no contour map of their density can be drawn on the basis of just a few distribution sites. The bottom map shows the actual distribution per quadrat. Comparisons between the data from the 1972–1976 atlas and the present are easy to make, because the quadrats occupied by a given species in the earlier atlas are indicated by stippling, whereas those in 1993–1996 are in green. Overlapping and nonoverlapping quadrats can therefore be spotted at one glance. Below the map of quadrats is a summary table indicating number and percentage of quadrats occupied by a given species in the two atlases, and the plus or minus trends between the two mapping periods. The right page is occupied by the text (in two columns, with German on the left and French on the right). To the left of the text are several graphs and a map. The top graph shows percentage of square kilometers occupied by that species in number of quadrats in which it was censused. For the more common species (the majority), a parallel bar graph indicates percentage of the population in given quadrats, and an additional double bar graph below shows the territories per 100 km^2 in the areas, respectively, north and south of the Alps. Finally a map of Switzerland indicates frequency of regional atlases in percent. At the bottom of the page is a summary text in Italian and in English and a photograph of the species. The texts are signed by one or more of the nearly 120 authors who wrote them.

The atlas ends with an appendix (pp. 542–547, by Bernard Volet) discussing the five species that bred outside the political limits of the atlas, the four species that were observed within the atlas area but without proof of their breeding there, the six species escaped from captivity that bred within the atlas area, and the five species that bred at least once since 1977, but not during the period of the 1993–1996 atlas. That section is followed by a list of the collaborators of the project, a bibliography of 674 entries (pp. 555–567), and indexes of vernacular bird species names (in German, French, Italian, Romansch, and English) and of scientific names. The atlas endpapers are topographic maps of Switzerland at a scale of 1:800, 000.

Having witnessed ornithological developemnts in Switzerland since the mid-1950s, I can state unequivocally that the *Schweizer Brutvogelatlas* is the crowning glory of a series of remarkable books on the avifauna of that country, starting with Glutz's *Die Brutvögel der Schweiz* in 1962, and continuing with the 1980 *Verbreitungsatlas der Brutvögel der Schweiz*. I am certain that my colleagues at the Swiss Ornithological Institute in Sempach will not rest on this achievement, however, and so I look forward to a third Swiss breeding bird atlas in a few years. Given the long-term involvement of the Institute, I am happy to report that the 1993–1996 atlas was dedicated to Alfred Schifferli. That is a fitting tribute to one of the Institute's former long-time directors, who was the initiator of the atlas project in 1972–1976, and thus is also ultimately responsible for the book reviewed here. I would like to mention two other publications that readers with an interest in the birds of Switzerland, central Europe, and the Western Palearctic in general, will consult with profit together with *Schweizer Brutvogel Atlas 1993–1996*, namely Rafael Winkler's Avifaune de Suisse (Nos Oiseaux supplement 3, 1999:1–254), and Bernard Volet, Hans Schmid, and Raffael Winkler's *Checklist of the Birds of Switzerland* (Swiss Ornithological Institute, 2000:1–16), which summarizes Winkler's earlier detailed annotated checklist.—François Vuilleumier, *American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024, USA. E-mail: vuill@amnh.org*

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