



Book Reviews

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BOOK REVIEWS

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Facing Extinction: The World's Rarest Birds and the Race to Save Them (2nd edition) by Paul F. Donald, Nigel J. Collar, Stuart J. Marsden, and Deborah J. Pain. 2013. Christopher Helm, London, UK. 320 pages, 166 color photographs and figures. £22.50 (hardcover). ISBN 978-1-4081-8966-5.

The World's Rarest Birds by Erik Hirschfeld, Andy Swash, and Robert Still. 2013. Princeton University Press, Princeton, New Jersey. 360 pages, ~600 range maps, >800 color photographs. \$45.00 (hardcover). ISBN 978-0-691-15596-8.

Ornithologists, educators, conservationists, and bird-watchers will find a wealth of material available in two new volumes on globally threatened birds. Both books focus on the nearly 600 species listed by BirdLife International in the 2012 IUCN Red List as Endangered or Critically Endangered, but their format and content is vastly different.

Facing Extinction: The World's Rarest Birds and the Race to Save Them. In this compendium, P. Donald and his coauthors provide a broad-sweeping and up-to-date treatment of the plight of the world's most critically endangered birds. Authoritative and superbly well-written, the book includes 20 chapters with detailed case studies of 22 imperiled species and 1 extinct species (Stephens Island Wren, *Xenicus lyalli*). Six additional topical chapters (discussed below) provide the backbone for the book.

Chapter 1 (“The nature of rarity and the rarity of nature”) reviews the patterns and concepts used to describe forms of rarity and explains how rarity is measured by the IUCN. The IUCN Red List considers rarity not solely in terms of a species’ abundance or range size, but also in terms of the rate of a species’ population decline and the degree of fragmentation of its remaining geographic range. Five IUCN criteria used to assign species to a category of extinction risk (Mace et al. 2008) are described briefly in the text, but a detailed Appendix with

quantitative thresholds would have been informative and useful to the reader.

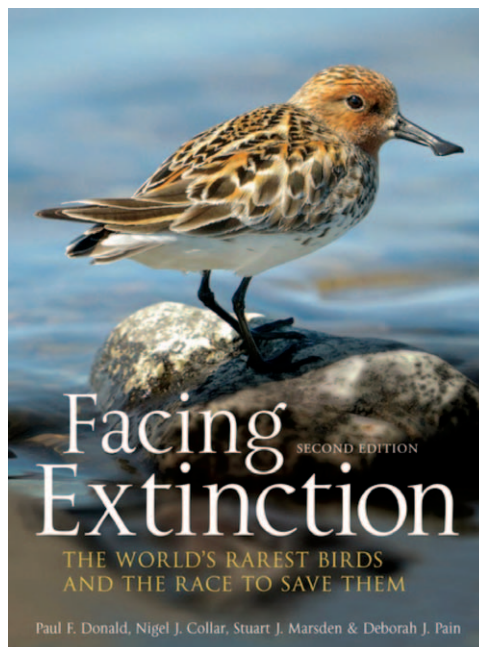
Chapter 2 (“The distribution and causes of rarity”) describes how extinction risk is distributed nonrandomly across taxonomic groups, geographic areas, and body sizes. Global hotspots of extinction risk—which do not correlate strongly with hotspots of species richness—are discussed. The archipelagoes of southeast Asia are described as the “hottest hot spots of all.” The chapter also gives an overview

of the causes of imperilment (agricultural practices, invasive species, and logging rank at the top of the list of threats), drawing heavily on examples from Asia and South America. Seven case-study chapters follow, ranging from the Spoon-billed Sandpiper (*Eurynorhynchus pygmeus*) and Yellow-crested Cockatoo (*Cacatua sulphurea*) of Asia to the Brazilian Merganser (*Mergus octosetaceus*) and Royal Cinclodes (*Cinclodes aricomae*) of South America.

Ninety percent of the approximately 140 documented extinctions of bird species during the last 500 years have been of species confined to islands, and Chapter 10 (“Rarity and extinction on islands”) takes the reader through these extinctions, their causes, and current threats to extant species.

Four case-study chapters illustrate the impacts of human hunting and predation by introduced vertebrate species on the avifauna of oceanic islands. A chapter on Po’ouli (*Melamprosops phaeosoma*) also includes a broader review of the uphill struggle to save Hawaiian avifauna.

Chapter 15 (“Saving the world’s rarest birds”) strikes an optimistic note by highlighting the recent successes of many intensive management programs for tiny populations of rare birds. Two tables review the success of various management techniques used to rescue 24 species that had initial populations in the wild of <50 individuals. BirdLife



International's 10-point plan for conservation of the world's Critically Endangered species is also discussed here. Six case-study chapters follow, including the Kakapo (*Strigops habroptila*), the Madagascar Pochard (*Aythya innotata*), and the unusual and alarming case study of the Asian vultures (*Gyps bengalensis*, *G. indicus*, and *G. tenuirostris*), which have declined by 99% in recent decades due to ingestion of the nonsteroidal anti-inflammatory drug Diclofenac present in livestock.

Chapter 22 ("The lost and found") discusses the inherent problems of approximately 60 species classified as Data Deficient and 14 species designated as Possibly Extinct. Donald et al. suggest that "conservationists tend to be optimistic about rediscovering 'lost' species, and the steady flow of seemingly unlikely rediscoveries supports this outlook." The happy case studies of the Gurney's Pitta (*Pitta gurneyi*) and Forest Owllet (*Heteroglaux blewitti*) illustrate this point. As counterpoints, the authors also offer their predictions of which of the world's least-known species are most likely to be already extinct.

Finally, Chapter 26 ("Rarity and extinction in the future") sounds a cautionary note about extinction debt, climate change, and other challenges that lie ahead. The authors opine that conservationists are "... now in the position of being able to predict some of the threats that will emerge in the future and can make educated guesses about which species are likely to become rare."

Although not an encyclopedic reference on rarity (e.g., Rabinowitz et al. [1986] and other primary literature are not mentioned) nor on what can be done to prevent rare species from becoming extinct (e.g., translocation is allocated only a few pages), this volume is well-researched and well-written. The main strengths of this book are its readability and the timeliness and completeness of its compelling case studies. A wide variety of audiences will relish the opportunity to digest the material in this book and use it as a departure point for further study or investigation. More than 1,100 citations are included. The illustrations are effective and of high quality, and the layout is clean and nearly flawless.

The World's Rarest Birds. This magnificent book showcases the results of an international photo competition timed to coincide with the release of the updated IUCN Red List for birds in 2012. More than 3,500

photographs of the world's Endangered, Critically Endangered, and Data Deficient bird species were submitted, and one-fourth of them appear in this lavishly illustrated and colorful reference book.

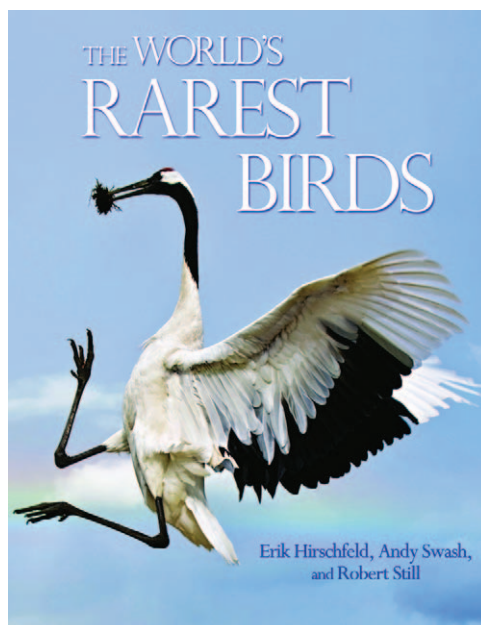
Species are organized into six regional directories (Africa and Madagascar, Asia, Australasia, Oceanic Islands, North and Central America and the Caribbean, South America). Each regional directory begins with a map showing political boundaries, the combined distribution of Endangered and Critically Endangered species, and Important Bird Areas. Species are listed within each region in taxonomic sequence. Every species has a species account with a small photograph; codes for status, population trend, population size, and threats; a range map; and a concise (100–120 words) written account of key threats and the conservation actions taken to counteract those threats. Although these species accounts are attractive and easy to read, I suspect some readers will find them inferior in detail and scope to the expanded species accounts given in BirdLife International (2000).

Clearly, photography is the strength of this book, and many of the best images are given full-page treatment. Photographs are included for 515 species. Publishable photographs were not available for 76 species, and these species are instead beautifully illustrated by artist Tomasz Cofta.

In addition to the superb photography, many readers will appreciate the additional material featured in topical chapters and sidebars interspersed throughout the book. These "features" focus on key conservation challenges or

threatened hotspots (e.g., "the albatross conundrum" and "the world's most threatened flyway" [the East Asian–Australasian Flyway]). However, the features do not include references or citations, and the text is sometimes overwhelmed by the many accompanying photographs. Generally, I found the format and layout of this book busy to the point of distraction. Black text also frequently appears on background page colors ranging from dark green to purple or brilliant blue, which is not easily readable.

Both of these books are likely to appeal to professional and lay audiences alike. Their scope is overlapping, but the approaches are complementary. Together, they serve as a call to action for greater investment in research and conservation to tackle the problems of rarity and endangerment.



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Bird Atlas 2007–11: The Breeding and Wintering Birds of Britain and Ireland by Dawn E. Balmer, Simon Gillings, Brian J. Caffrey, Robert L. Swann, Iain S. Downie, and Robert J. Fuller. 2013. BTO Books, Thetford, UK. 720 pages, color photographs, color illustrations, more than 1,300 color maps, and color tables. \$115 (laminated hardcover). ISBN 978-1-908581-28-0.

Biological atlases are efforts to map the distributions of species in a floristic or faunistic group using a grid-based system to document presence or absence. The basic concept was developed in Great Britain in the late 1950s with the *Atlas of the British Flora* (Perring and Walters 1962), but has since expanded to a wide array of taxa. Whether through historic inertia or the widespread popularity of birdwatching, it was no surprise that fieldwork for the first bird atlases started in Britain in the late 1960s (*Atlas of Breeding Birds of the West Midlands*, Lord and Munns 1970; and *The Atlas of Breeding Birds in Britain and Ireland*, Sharrock 1976). The ornithological significance of these early efforts is the legacy of atlases that were initiated in subsequent decades, from the first bird atlases in North America in the 1970s and early 1980s, to the more than 400 bird atlases completed worldwide (Gibbons et al. 2007). Most atlases have focused on breeding bird populations, and have ranged from local (e.g., San Diego County, California, Unitt et al. 2004) to continental scales (Australia, Barrett et al. 2003). Regardless of spatial extent, bird atlases typically involve collection of fine-scale data over multiple years, and they are excellent examples of how citizen science has benefited both ornithology and bird conservation.

First-generation atlas projects have contributed immensely to our understanding of bird distributions. This is immediately apparent, for example, in the range maps

Mace, G. M., N. J. Collar, K. J. Gaston, C. Hilton-Taylor, H. R. Akçakaya, N. Leader-Williams, E. J. Milner-Gulland, and S. N. Stuart (2008). Quantification of extinction risk: IUCN's system for classifying threatened species. *Conservation Biology* 22: 1424–1442.

Rabinowitz, D., S. Cairns, and T. Dillon (1986). Seven forms of rarity and their frequency in the flora of the British Isles. In *Conservation Biology: The Science of Scarcity and Diversity* (M. E. Soulé, Editor). Sinauer, Sunderland, MA, USA. pp. 182–201.

presented in many modern field guides and in *Birds of North America* (Poole 2014) species accounts. By design, bird atlases are intended to be repeated, and *The New Atlas of Breeding Birds in Britain and Ireland: 1988–1991* (Gibbons et al. 1994) was initiated 20 years after the first atlas. Second atlases increase the value of atlas efforts by

generating community-wide datasets that allow researchers to test for fine-scale change in species' distributions, which is timely given concern about the impacts of climate and land-use changes on bird populations. In Britain and Ireland, more than 50 peer-reviewed journal articles have made major use of their second atlas results (Balmer et al. 2013). Second atlas data have only recently become available for a few states and provinces in North America, but are already being used in important research. For example, using data from New York's second breeding bird atlas (McGowan and Corwin 2008), northward shifts in range boundaries were observed for many species and

reported to be driven by climate change (Zuckerberg et al. 2009).

With the greatly anticipated publication of this third-generation bird atlas, the *Bird Atlas 2007–11: The Breeding and Wintering Birds of Britain and Ireland* has established a new, high bar for atlas projects around the world. The combination of both breeding and wintering atlases in this volume is significant, given the importance of both periods and current interest in full life cycle conservation. Further, *Bird Atlas 2007–11* recruited an incredible 40,000 volunteers, who collected 19 million bird records to document the distribution and abundance of



birds across Great Britain, Ireland, the Isle of Man, and the Channel Islands.

Similar to most published atlas books, *Bird Atlas 2007–11* is a large reference, measuring $12.2 \times 9.7 \times 1.8$ inches and weighing 7 pounds. It is beautifully designed and incorporates extensive color photographs, illustrations, and tables. Some of the most useful material comes from the seven introductory chapters (140 pages), in which the authors have detailed every step of the atlas from conception to completion. These chapters cover regional organization, publicity, field methods, data management, record review, analysis, and summary results. Social scientists or those interested in the effective use of citizen science data may be particularly interested in Chapter 5, in which the authors have provided a demographic breakdown of data sources. These chapters serve as a “how-to” manual for subsequent atlas efforts, something that all atlas programs should endeavor to include in their final publications.

Chapter 6 summarizes long-term changes that have occurred since the first atlas (1968–72), and more recent changes since the second atlas (1988–1991). Among many declining species, the Nightingale (*Luscinia megarhynchos*) breeding population in England has declined ~90% in the last 40 years, and the Corn Bunting (*Emberiza calandra*) is now absent as a breeder from Ireland and much of northern Britain. Not all species are showing downward trends though, and species such as the Cetti's Warbler (*Cettia cetti*) and Firecrest (*Regulus ignicapilla*) appear to have been thriving in Britain over the last 40 years. It may surprise North Americans to learn that 12 species of introduced waterfowl breed in Britain and Ireland, including the Canada Goose (*Branta canadensis*), Wood Duck (*Aix sponsa*), Mandarin Duck (*A. galericulata*), and Ruddy Duck (*Oxyura jamaicensis*). The latter species was introduced in the 1950s and, after reaching ~6,000 individuals in 2000, populations were culled by 90% out of concern for hybridization with the endangered White-headed Duck (*O. leucocephala*) in Spain.

Distributional changes alone do not always present a complete picture, however, and to further enrich the project abundance surveys were incorporated during both breeding and winter seasons. While the surveys did not allow for analyses as robust as some recent atlas projects (e.g., Wilson et al. 2012), *Bird Atlas 2007–11* was able to minimize costs and maximize coverage by having volunteers estimate species' totals within patches. This resulted in a more informative depiction of the occurrence and density of many species. For example, ubiquitous species such as the Barn Swallow (*Hirundo rustica*) were shown to occur at highest densities in Ireland and in relatively low densities in Scotland. This additional information is not only useful for bird enthusiasts, but critical to conservation efforts.

Species accounts are provided for 296 of the >500 species recorded, most of which had confirmed breeding records in at least one 10-km square or winter observations in at least ten 10-km squares. Although space did not allow inclusion of all 500 species, an online appendix that includes all species observed is promised for the near future.

Most species are presented in the familiar two-page format that has become standard practice for bird atlases. Excellent photographs showcasing the species are followed by succinct and insightful accounts describing changes that have occurred over the various atlas time periods and potential explanations for apparent trends. The authors have chosen to present less text, skipping the reiteration of natural history to instead focus on the presentation of the maps. Some results, like the successful reestablishment of the Red Kite (*Milvus milvus*), were to be expected given intensive reintroduction efforts. The colonization of Ireland by Great Spotted Woodpeckers (*Dendrocopos major*) may be related to declining European Starling (*Sturnus vulgaris*) populations and increases in availability of dead and decaying wood.

Given the potential complexity of presenting change maps for the three time periods, the maps are easy to interpret and provide a wealth of information. Maps differ in resolution depending on available data or species conservation status; however, the reader should have little difficulty moving between various maps. The single color gradients combined with intuitive symbology make navigating the maps a breeze. Additionally, the selected colors make sense in terms of seasonal representation—warm reds for the breeding maps and cooler blues for winter maps. Only the breeding abundance change maps mix colors, and are represented by a gradient from brown (decline) to red (increase). While most readers will find them easy to interpret, the maps may present some difficulty for individuals who have red–green color blindness (deuteranopia). This is unfortunate, given previous acknowledgement of the issue (e.g., Brewer 2009, Thogmartin 2010).

Bird Atlas 2007–11 was a monumental effort to assess the status and distribution of birds in Britain and Ireland, and the results generated have high importance for bird conservation and research. This book should be very useful for organizations planning a bird atlas project. The target audience is diverse and includes atlas volunteers, amateur and professional ornithologists, conservationists, and natural history buffs. This attractive book is well-suited for libraries of universities and conservation organizations, and for the personal collections and coffee tables of anyone with a keen interest in the birds of Europe.

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