

Book reviews

ATLAS OF BIRD DISTRIBUTION IN NEW ZEALAND 1999–2004

By C. J. R. Robertson, P. Hyvönen, M. J. Fraser and C. R. Pickard

2007. Published by The Ornithological Society of New Zealand, Wellington. 533 pp., 2100 maps. Hardback, \$A135, ISBN 0-9582486-5-6.

As far as bird atlasing goes, the New Zealanders got there before Australia with their 1969 *Bird Mapping Scheme*, which made a pretty good start and was followed in 1985 by publication of the *Atlas of Bird Distribution in New Zealand*. Of course the *Atlas of Australian Birds* in 1984 put Australia back on the map and when the second Australian atlas was published in 2003, it was only a matter of time before a second New Zealand national atlas would come winging across the Tasman. So the *Atlas of Bird Distribution in New Zealand 1999–2004* has been a much anticipated and eagerly awaited arrival. Produced on a shoestring budget and heavily reliant on public goodwill, this latest production by the Ornithological Society of New Zealand (OSNZ) is staggering in its achievement. A substantial volume that describes the distribution of over 200 avian taxa, it does justice to the 850 observers who, over a five year period, travelled 1.2 million kilometres and completed 31817 surveys across 3192 map grids (95% of the grids covering the main and offshore islands). With a contribution of 440000 person-hours, the total in-kind support for this second New Zealand atlas is estimated at \$NZ10 million.

The book presents well with its sky blue cover featuring the plucky Tui, a signature species if ever there was one. The pages are colour coded and carefully thought out, with handsome maps that combine vegetation cover and topography, overlaid by different-sized dots indicating relative abundance, and occupying two pages for the more common and widely distributed birds. Another welcome innovation is the inclusion of survey effort on the smaller maps that show seasonal and breeding range. Historic maps provide a rapid view of changes since 1985 for most species and at the bottom of each map page are a few lines of text inferring whether the species has increased or decreased and references to published research. Some of the changes have been dramatic, such as the Spur-winged Plover, which has increased spectacularly across the North Island. In a brief overview, the authors note that of 137 taxa considered, 33% have become more widely distributed, 24% less widely distributed, and 43% showed no change between the two atlases. Not surprisingly, it is the endemics such as the Yellowhead and North Island Rifleman that have suffered most. This overview brings to mind a similar pattern in New South Wales, which includes a large part of Australia's intensive land-use zone, where 23% of the birds have declined and 24% have increased over roughly the same period. It is, however, at the point when the reader begins a serious interpretation of the results that a degree of frustration is felt over a lack of explanation of the methods and analysis. It is not clear in the above analysis for example, how decliner and increaser taxa were defined. Also, given that reporting rate is often related to survey effort, was survey effort corrected for when making the comparison between the atlases? After some

searching, details about the methods and analysis can be found in the appendices, but other details are missing. The survey data section could have provided more information on how the data were collected and the rationale behind decisions such as deleting 'suspect', unsubstantiated and rejected records from the database, rather than coding them for possible future verification. The authors acknowledge that reporting rates will be over-emphasised in the substantial number of grids for which only a few survey sheets had been completed. So rather than calculate a reporting rate for these grids, why not simply note presence? In the biodiversity section, the key for the *Searched Habitat* maps is not explained. Another minor frustration is the use of common names, which do not follow standard taxonomic lists used elsewhere, for example Australasian Crested Grebe in preference to Great Crested Grebe and Spur-winged Plover in preference to Masked Lapwing.

As with repeat atlases around the world, the organisers were in the difficult position of wanting to enhance the value of the data collected while at the same time making them as comparable as possible with the first atlas. The benefits of collecting point-based survey data within a defined local area, using fixed and repeatable methods, are well known, particularly when making inferences about change in distribution and habitat preferences for individual species. In response, bird monitoring programs and atlas surveys around the world are embracing this new approach. Yet, by producing what is essentially a repeat of their previous 1985 atlas, an opportunity to improve the statistical quality of the work has been missed. A list of the taxa observed was generated for each 10-km grid square, limiting the scale of inference to large-scale landscape patterns. The authors acknowledge this when producing maps showing sites of significance for individual bird species, based on habitat preferences. Secondary verification using a habitat layer was required to correct for the disparity between the scale of data collection and the scale of inference, and so avoid classifying sites as significant when they are not. There is also the issue of temporal scale. While observers were asked to estimate the time spent surveying, the authors acknowledge the unreliability of such estimates. With surveys lasting anywhere from a single visit to three months over a given season, quantifying the effects of survey effort on survey outcomes would be problematic. Put simply, it could be argued that observed patterns in abundance or changes to distribution over time may be due to observer behaviour rather than any real patterns shown by the birds.

Concerns over survey methods aside, there is much to be admired in the *Atlas of Bird Distribution in New Zealand 1999–2004*. In the survey data section, the assessment of the effect of survey method on the species recorded is informative. For example, surveys by groups of individuals walking around, or surveys from moving vehicles, were less likely to include uncommon bird species, than surveys by individuals recording birds alone. Space on the field data sheets has been cleverly used, with individual bird records allocated to the habitat type in which they were seen. Not surprisingly, where more habitats were visited within a grid square, a greater diversity of species was recorded, but more useful are the habitat associations identified for each species. Avian diversity was also mapped for the

different habitat categories, such as native forest or farmland. It is interesting to note how much avian diversity was recorded in exotic plantations. Also in the biodiversity section, distribution maps of endemic, exotic, migrant and endangered birds illustrate the broader changes to the avifauna. In a country such as New Zealand that has seen 50% of its avian taxa go extinct and become 'a battleground of territorial invaders', such maps provide a powerful visual tool for communication. The hypothetical pre-human map, estimating the proportional distribution of the original avifauna is also an interesting addition.

Keen that the atlas database be seen as a resource for future research, the authors further whet our appetite with comparative maps showing the distribution of ecologically similar species, such as the Bellbird and Tui, which nevertheless occupy different parts of the landscape. Why has this strongly mosaic pattern arisen? Is it maintained by social or environmental factors? Does the pattern change over time? Climate matching based on distributions in Australia, and mapping of habitat availability within New Zealand, demonstrate that exotic species such as the Eastern Rosella and Common Myna are set for further expansion, whereas the Greenfinch and Starling may have already occupied their available niches.

This bird atlas database, which provides a starting point for further research and monitoring, is perhaps the greatest legacy of this collaboration between the OSNZ and Birdlife International. The *Atlas of Bird Distribution in New Zealand 1999–2004* throws light onto, and teases open the possibilities within, this significant national resource and the authors are to be congratulated on its production. Apparently shelves with books are now passé and to own such a thing is to be fusty and old fashioned; well that's a lot of rot and what better way to demonstrate this than by getting yourself a copy of this weighty yet beautifully crafted book, which will prove an invaluable reference for amateur and professional ornithologists for years to come.

G. W. Barrett

CSIRO Sustainable Ecosystems

A. Silcocks

Birds Australia

R. Cunningham

Fenner School of Environment and Society,
Australian National University

THE ORNITHOLOGIST'S DICTIONARY: OR ORNITHOLOGICAL AND RELATED TECHNICAL TERMS FOR LAYMAN AND EXPERT

By Johannes Erritzoe, Kaj Kampp, Kevin Winker
and Clifford B. Frith

2007. Published by Lynx Edicions, Barcelona. 290 pp., black and white illustrations. Paperback, €19, \$A31, ISBN 978-84-96553-43-9.

I am not in the habit of reading dictionaries cover to cover. However, in reviewing this valuable and well-produced little book, I greatly enjoyed doing what most people do with dictionaries: finding out the meanings of words of which I was uncertain or unfamiliar, as well as dipping in and out to be

reminded of many words with which I had not been confronted for a while, or to be introduced to unknown gems, such as *turacin*, 'a complex red, copper-bearing pigment known only in feathers of turacos (Musophagidae)', and *Senmurv*, 'a fabulous creature, half-bird and half-mammal, of Persia'. As for *sharming*, *Simurg* and *sexy sons*, well, you'll just have to buy the book.... Sadly, *zirkehn* doesn't get a guernsey, and, while not a dictionary of names, *Halcyon* could arguably be included.

The authors state that 'rare and abstruse technical terms ... are not exhaustively covered' but they have done an admirable job in selecting those that are included. There are many terms, particularly relating to contemporary molecular methods used in taxonomic work, that have brief definitions that clarify what is meant or being done. The inclusion of many anatomical names is also valuable, even though the authors state that many such terms can be found in specialist books. To have definitions of them readily available in a work such as this is great for those of us not specialist in any such field and lacking the required books.

One interesting aspect is the inclusion of entries for many, but by no means all, of the major ornithological societies and ornithological journals throughout the world, under both the full name of the organisation and any acronym that it may go by. Of parochial interest, while the *Royal Australasian Ornithologists Union* and *RAOU* are included there is no mention of *Birds Australia*, which has been the recommended alternative English name for a good many years. Further, the omission of the Bird Observers Club of Australia (BOCA), newly incarnated under the truly awful Bird Observation and Conservation Australia, is significant. While a minor point, there is some unnecessary duplication, as well as inconsistency, in the treatment of the organisational names and their acronyms. For example, under *BOC*, we are sensibly presented with 'abbr. for the British Ornithologists' Club' to which one could then refer and where some details of the society are given. In contrast, for many organisations there is some partial information given with the acronym, which is then unnecessarily repeated and often supplemented, with the entry for the full name of the organisation (e.g. see *BOU* and *British Ornithologists' Union*).

I suppose that it is in the nature of a review to identify any faults or omissions—as well as praise the good. '*Elepaio*', the journal of the Hawaii Audubon Society, is incorrectly spelled *Elapaio* and also has '*The*' incorrectly added. I could not find the full references to the citations in the *Introduction*, though there is a brief list of other references towards the end of the book. Whereas *HANZAB* is devoted an entry, *BWP*, which is probably more widely known, is not. While it is an impossible task to have consistency in hyphenated forms in such a work, I find it difficult to understand the rationale in the hyphenation in forms with 'wing' as a prefix (e.g. wing-bar, wing coverts), and why sub-moustachial is hyphenated when nearly all other words with the prefix sub- are not. Under *supplanting*, the authors mention 'displacing', which could usefully have had a definition.

While not errors as such, I think the authors needed to be a little more exact with some definitions, notably of some facial patterns, which are often tightly defined in the literature given their importance in bird identification. This is exemplified by the overlapping and inexact usages in the terms *cheeks*, *malar region*, *moustachial* and *submoustachial stripes*. Similarly, one could argue with the definitions of *eye-ring*, *orbital ring* and

periophthalmic ring, which the authors treat as interchangeable, ignoring the distinctions often made. The definition of *wattle* does not mention the full range of terms for the various extra fleshy bits on the heads and necks of birds. I must also disagree with the comment, under *juvenile*, that 'We propose the term changed worldwide to a young bird that is out of the nest and able to care for itself'. This is well and good but leaves the ornithological world with yet another vague term for a 'young' bird and needing a term to describe the first pennaceous plumage.

The inclusion of some non-ornithological terms seemed unnecessary, such as '*i.e.*' which has no special meaning within ornithology and would be readily found in any reputable dictionary. The authors state that they are 'eager and grateful to hear from any reader about comments on and ... corrections or additions to this work as it is our firm hope that the book will be constantly updated via future editions'. Indeed, they already have several hundred words and terms to be added to a just such an edition.

Despite the few minor errors or nuances in definitions that I raised above, this is an excellent little book, with brief and accurate definitions of a great range of words and terms. This compact and well-produced work, as is typical of Lynx Edicions, admirably fills an obvious gap in the market, and seems to me to be just what is required by most contemporary ornithologists and anyone interested in birds and birdwatching to be able to find out exactly what might be meant by an unfamiliar term with which they may be confronted. There has been many a time while working on *HANZAB*, and other projects over the last couple of years, when I would dearly have liked to have this book with me. I hope soon to have a copy permanently on my desk.

Peter Higgins
Sawtell, NSW, Australia

THE BIRDS OF ZAMBIA: AN ATLAS AND HANDBOOK

By Robert J. Dowsett, Dylan R. Aspinwall and Françoise Dowsett-Lemaire

2008. Published by Tauraco Press & Aves, Liege. 606 pp., 720 distribution maps, 16 colour plates. Paperback, £29.99, ISBN 2-87225-005-0.

The senior author notes in his *Preface* that this is the sixth account of Zambian birds and that it updates and expands upon its last predecessor *The Birds of Zambia* (Benson, Brooke, Dowsett and Irwin, 1971; Collins, London). He also mentions the 'tragic disappearance at the end of 1995' of co-author Dylan R. Aspinwall at age 53 without further explanation. As the bibliography to this work includes 45 publications with Aspinwall, 100 with Dowsett, and 28 with Dowsett-Lemaire, as sole or first author (the latter two also co-authoring many of one another's papers), the vast contribution to Zambian ornithology made by this team is apparent.

The authors present their work as a synthesis of all that is known about birds in Zambia, as a basis for future research and conservation. The chapters: 1 *Physical features* (5 pp.), 2 *Vegetation and major bird habitats* (16), 3 *Biogeography* (11), 4 *A history of ornithology in Zambia (ex-Northern Rhodesia)*

(11), 5 *The composition of the avifauna* (9), 6 *Conservation* (3), and *Acknowledgements* (1) are followed by the *Systematic list* (452 pp.) or species accounts. *Appendix 1* deals with *Ringed recoveries* (8 pp., 12 maps) and *Appendix 2* is a *Gazetteer of localities* detailing altitudes, map square references, coordinates, and Important Bird Areas (23 pp.). Following the *References* (32 pp. of small typeface) is the *Index* (20 pp.).

The species composition of the Zambian avifauna is reported to consist of 553 residents (504 with definite breeding status), 105 intra-African migrants (73 confirmed breeding), 18 intra-African vagrants, 96 Palearctic migrants (64 wintering, and including 14 vagrants) and 3 Nearctic vagrants in 2007.

Each species text occupies less than a page but, by use of abbreviations, is tight within their subheadings *Distribution*, *Ecology*, *Status*, *Conservation*, *Breeding*, *Taxonomy*, *References*. A map for every species shows those of 303 squares of 30 × 30 minutes overlaying Zambia, within which each was recorded (each square having been visited at least once). Squares within which species were recorded are typically filled with blue but are sometimes filled otherwise in order to indicate specific breeding events or other status, as is interpreted in accompanying text. The map data represent a total of 81 141 species-square records.

While its immediate predecessor (see above) contained 12 colour plates of birds, each showing multiple species, the present work contains none. But then this book, as its subtitle implies, makes no pretence at being a field guide. Certainly my fondly remembered colleague and ornithological sparring partner Con Benson (1909–1982), sole or first author of >100 publications cited in the present work (including the 1971 *The Birds of Zambia*), would have been delighted by the content of this 2008 publication.

This book has been thoughtfully researched, designed and written and, its substantial bulk notwithstanding (24 × 17 × 3 cm; >1.5 kg), a very considerable amount of information has been synthesised into as few pages (of rather heavy good quality paper) as possible. The resulting work represents a major contribution to African ornithology and an absolutely indispensable reference source, in study and field, for all with the slightest interest in the avifauna of Zambia. Its authors and publishers deserve as much support as they do praise. I highly recommend this book to students of African ornithology and to any biologist visiting Zambia in order to investigate and/or enjoy the rich avifauna to be found there.

Clifford B. Frith
Malanda, north Queensland

COCKATOOS

By Matt Cameron

2007. Published by CSIRO Publishing, Melbourne. 220 pp., colour and black/white photographs, maps. Paperback, \$A39.95, ISBN 978-0-643092-32-7.

Australia has been called *Terra Psittacorum*, the land of parrots, owing to the variety and abundance of its parrot species. One of the two families of the order Psittaciformes, the Cacatuidae or cockatoos, comprises some of the most quintessentially

Australian birds. Whether the soul is stirred by the plaintive cries of black cockatoos as they float by in small groups, or the dazzling pink of a flock of Galahs (*Eolophus roseicapillus*), or indeed if the senses are jarred by the noisy Sulphur-crested Cockatoos (*Cacatua galerita*) outside the window first thing in the morning, these birds are both fascinating and hard to ignore. Fourteen of the 21 species reside on the Australian mainland, and none of the remaining species make it past Wallace's Line into Asia, making their grouping in one book both taxonomically and geographically sensible. It was also fitting that this book should be written by one of our own excellent cockatoo specialists, Matt Cameron, who did his PhD study on Glossy Black-Cockatoos (*Calyptrorhynchus lathami*) in central New South Wales.

Cockatoos is a pleasure to read, and imparts information at a level appropriate for both bird enthusiasts and professional ornithologists. It is organised into 11 chapters covering descriptions of the cockatoo species, together with their morphology, ecology, and behaviour. The later chapters change course and discuss how cockatoo numbers have been influenced since European settlement. Some have become major pests both in cities and agricultural lands, while others have declined to the point of near-extinction. This book is timely and reviews both the classic work by Denis Saunders, Ian Rowley and others in the Western Australian wheat belt, and the handful of more recent studies of the conservation biology of endangered cockatoo species throughout the region. It adopts the friendly approach of naming researchers explicitly in the text, and also highlights important examples from the author's own research. The book is brought to life by a large number of colour photographs of the species in one section, and black and white photographs throughout.

One thing I immediately enjoyed about the book was that it gives extensive coverage to cockatoos found in the islands to the north of Australia. These little known species balance the picture of cockatoo radiation in Australasia, and often comprise the populations that are most endangered. For example, how many people are aware of the Tanimbar (*Cacatua goffini*) or Solomon Corellas (*C. ducorpsii*), or indeed the Philippine Cockatoo (*C. haematuropygia*)? The latter species has suffered so greatly from habitat loss and trapping for the bird trade that it is now considered to be highly endangered. Another threatened species is the Yellow-crested Cockatoo (*Cacatua sulphurea*). All of its four sub-species are endangered, but none more so than Abbott's Cockatoo (*C. s. abbotti*), which has been reduced to a handful of individuals on Masakambing Island.

The Australasian distribution of cockatoos also attests to their having evolved in Australia after it broke free from Antarctica and the rest of Gondwana. This would make the group less than 55 million years old. Chapter 3 is a delight to read as the author takes us on a short guided tour of the cockatoos' likely beginnings in rainforests, before they diversified into the new opportunities created by the drying of the continent. The impact of more recent Pleistocene glacial cycles on distributions is outlined for Palm Cockatoos (*Probosciger aterrimus*) in the north, and the other black cockatoos and corellas across the continent.

This book makes one stop and consider what a cockatoo really is, what they eat, why they occur where they do, and why

they move (Chapters 4 to 7). In the review of colour, size and shape of cockatoos, we are reminded that although we think of them as very large birds, the size range of cockatoos is really quite considerable (80 to 1000 g). Similarly, bill size and shape falls into two major categories with Sulphur-crested Cockatoo, corellas, Cockatiel (*Nymphicus hollandicus*) and Galah having a 'parrot-like' bill that allows them to exploit a variety of grasses, herbs and shrubs. This contrasts with the bills of black cockatoos designed as pincers for opening woody fruits. Bill form varies across the cockatoos according to preferred diet. For example, Long-billed (*C. tenuirostris*) and Western Corellas (*C. pastinator*) have elongated upper bill tips to help them dig up corncobs and tubers, and each subspecies of Red-tailed Black-Cockatoo has a variation on bill design that helps it forage on the seeds in its region or habitat type.

This may reflect my own bias but I particularly enjoyed reading the chapter on reproduction (Chapter 8). As someone who has spent a lot of time pondering how the entire breeding biology and mating system of Eclectus Parrots (*Eclectus roratus*) on Cape York is driven by their competition for suitable nest hollows, I drew huge satisfaction from the account of the importance of this resource to cockatoos. Cockatoos are often big birds and therefore need large hollows, but the propensity of trees to form hollows (i.e. from fungal and termite activity) varies greatly. The chapter draws explicit attention to the importance of both old trees, and senescent and standing dead trees, as being of particular importance to cockatoos. The location of nest trees is also important. In some cases, such as the Glossy Black-Cockatoos on Kangaroo Island, the birds seem willing to travel large distances between nest trees and food and water. In other cases, such as Carnaby's Black-Cockatoo (*Calyptrorhynchus latirostris*), the birds have disappeared from areas where nesting habitat remains but food supplies have been reduced. I enjoyed the attention given to the typically slow life-history of cockatoos, starting with the (often) long periods of sexual immaturity, small clutch sizes, and slow growth rates of nestlings, with Glossy Black-Cockatoos winning the prize for the longest nestling period (90 days). Cockatoos in general seem to have low reproductive success, sometimes relating to food supply and other times to predators. Unfortunately adult mortality rates are poorly understood for most of the species. The low reproductive rate in a Carnaby's Black-Cockatoo population with poor food supplies eventually led to their extinction. Other species and populations must have long adult life spans to sustain such low rates of reproduction.

One fascinating attribute of the cockatoos is that whereas some of the populations have dwindled dramatically in the face of habitat loss and persecution, others have done the opposite. The clearing of woodlands and forests, addition of water supplies, and planting of crops have allowed open-country species such as Galahs, Little Corellas, Sulphur-crested Cockatoos and Cockatiels to expand their ranges considerably. However, woodland and forest species have declined in the face of similar environmental changes. The final chapters deal with this paradox explaining how cockatoos are pests in some places, and exceedingly rare in others. The subject matter of this section is at times both shocking and challenging. For example, tens of thousands of Yellow-crested, Umbrella, and Salmon-crested Cockatoos, and Tanimbar Corellas have been traded legally in

the last few decades, leaving one to wonder the extent of the illegal trade. The thorny subject of whether wildlife can or should be given explicit economic value, so that species can be utilised sustainably, is also covered. The final chapter on conservation brings together all these issues, giving detailed attention to habitat loss, forestry, agricultural landscapes, fire regimes, and global warming. The prognosis for the group as a whole is not too bad, and the author ends on a note of cautious optimism citing some important success stories where declining populations have been turned around. If I have one small complaint about this book, it is that the interaction between the often slow life history and conservation status of these birds could have been explored more fully.

In summary, I found reading this book both easy and highly rewarding. I am of course biased, but even though I am a parrot biologist, I nonetheless learned a great deal, and made many new connections. I think this was mostly aided by the over-view nature of the book in which the cockatoos were brought together under various umbrella subjects (e.g. habitat, morphology, reproduction) rather than as single species identities. Matt Cameron has created one of those rare books in which there is something for everyone.

Robert Heinsohn

Fenner School of Environment and Society
Australian National University