

Book reviews

Edited by P. Dann

BIOGEOGRAPHY AND ECOLOGY OF FOREST BIRD COMMUNITIES

edited by Allen Keast

1990. SPB Academic Publishing bv, The Hague, Netherlands. Pp. 410, many maps and diagrams, colour plates 17, 210 x 300 mm. US\$120.

This collection of mainly technical papers represents a valuable contribution to an integrated treatment of the biogeography and community ecology of forest birds. As Keast relates in his distressing introduction, the book emanated from a consensus reached by several eminent ornithologists following the 19th IOC in Ottawa that an integrated volume addressing this topic should be compiled. Although the original objectives were not met in their entirety for a variety of reasons, the book nevertheless is a collection of papers with much mutual relevance and represents a yardstick with which future work can be compared.

There are 28 chapters spanning over 400 pages. Chapters 2 to 4 define what we mean by the term 'forest' as a preliminary to regarding forests as habitats for birds. The concluding chapters, 25 to 28, are useful syntheses and recapitulations of the intervening chapters, and are worth reading in their own right as several differences in interpretation arise between the authors. In the main body of the book (Chapters 5 to 24), there is the variety of spatial and temporal scales that one would hope to be covered in a book with this title. Some of the strongest elements involve the distilled opinions of several collaborations whose work has extended for one or more decades, and whose previous publications may not have been as readily accessible as one would wish.

For me, comparisons of the dynamics of different forest systems and on different continents raised or emphasised several important points. First, there are, not unexpectedly, close relationships between biogeography (both historical and contemporary) and community patterns. This indicates that interpretation of existing community structure at any location must take into account the biogeographical history of the area. One compelling example is the difference in ecological specialisation displayed in rain forest avifaunas despite similar diversities and numerical stabilities (western Amazonia versus west Africa — Chapters 16 and 17). Another is the apparent avoidance of primary rain forest habitats by northern migrants in both South America and Africa (Chapters 16 and 17), but not in south-east Asia (Chapter 24). Therefore, generalisations about any

particular forest type (e.g. 'tropical forests') are hard to make, a point raised by Gentry (Chapter 4). Whether these differences arise from subtle, contemporary ecological differences within the tropical rain forests, or are due to regionally specific processes that occurred during the past, is unclear at present. Nevertheless, these cross-continental comparisons do reveal the difficulties ecologists face in generalising arguments based on studies conducted in one region alone.

A second point is that the spatial scale at which studies are conducted greatly influences the perception of community structure. Although hardly a new idea, several papers noted that high diversities in tropical rain forests are largely a function of the occurrence of many rare species, whose typical ranges of activity are so large that plots of at least two square kilometres are needed to census them reliably (Chapters 16 and 17). Thus, scales of study must relate to the ecological characteristics of birds rather than the convenience or logistic feasibility of the observer.

Third, there seems to be an emerging view that nest predation is a pervasive and influential phenomenon, so much so that it often may keep population densities below levels at which interspecific competition might become an effective force. And last, instability of climates and habitat distributions during the Pleistocene and up to the present day may have had even greater impact than is usually recognised. Tropical rain forests of Amazonia and Africa are likely to have recolonised more open woodlands (from refuge areas) since the end of the last glacial, distributions of boreal forests have been volatile, and anthropogenic disturbances have greatly modified many areas (particularly around the Mediterranean) during the same period. Keast (Chapter 9) mentions that the lack of habitat specificity shown by many species of North American forest birds may indicate that these species have not had time (since the last glaciation) to evolve precise habitat fidelity. These factors make evolutionary inference on the adaptiveness of current community structure a hazardous exercise.

This book provides an immense amount of information on the diversity and differences in community structure of birds occupying forest habitats around the world. One is overwhelmed by the disunity of patterns even in seemingly comparable habitats, which seems to defy making any generalisations as to how bird communities 'work'. This may dishearten many who believe that bird communities are mechanistically organised. Others will appreciate this rich diversity as an

expression of the distinct historical heritage of each region and forest type, and the variety of options that species can and have adopted. The dependence of local or regional patterns in community structure on the biogeographic setting is driven home continually throughout the book.

Apart from numerous typographical and grammatical errors ('Shugart' appears as 'Shugert' at several points despite his eminence and authorship of the second chapter), and several cited papers not being listed in references in some chapters, Keast has done a fine job in editing and drawing together the diverse themes of this volume. The book is essential reading for the professional ornithologist (terrestrial ecologist/biogeographer) but may be too technically oriented for many readers.

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WHERE TO FIND BIRDS IN NORTH-EAST QUEENSLAND

by Jo Wieneke

1992. Published by the author (22 Bishop Street, Belgian Gardens, Queensland 4810). Pp. 122, 8 maps, line drawings. \$17.50 (including postage).

Many people are spending at least part of the winter in the north. This small, high-quality example of 'desktop' publishing will be invaluable for birders operating between Townsville and Daintree, and west to Mareeba and the Atherton Tableland. The author stresses that this book is not a field guide and should be used in conjunction with one. Over 400 species have been recorded in the wide range of habitats to be found in this region – offshore reefs and islands, coastal mangroves and intertidal areas, wetlands, grasslands, eucalypt woodland and both lowland and upland tropical rainforest.

Most of the localities mentioned in the book are on public land of one sort or another, under the control of a variety of authorities. The places are dealt with in seven sections, each of which includes details of accommodation, useful contacts, places to go and how to get there.

I thoroughly recommend this piece of enterprise – I only wish I had had it with me when I visited the area!

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ATLAS OF SOUTHERN HEMISPHERE ALBATROSSES

compiled by W.L.N. Tickell

1993. Published by the author (Department of Zoology, University of Bristol, Bristol, BS8 1UG, United Kingdom). Pp. 19, 10 maps, available free of charge from the author.

This atlas is a sequel to *Birds of the Antarctic and Subantarctic* (Antarctic Map Folio No. 14. American Geographical Society, New York) which the author compiled along with seven other seabird biologists in 1971. It consists of a brief introduction, maps of the southern hemisphere showing at-sea distributions and breeding sites of nine albatross species, and references. The author points out that this is intended to be an 'active' document; loose leaf to facilitate photocopying and designed to stimulate further observations and comments for up-dating the plots.

The scale (5° x 5° blocks) and the absence of any measure of record frequency may diminish the usefulness of this atlas for some purposes but the informative and attractive maps it contains will be of great interest to seabird enthusiasts.

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CURRENT ORNITHOLOGY – VOLUME 10

edited by Dennis M. Power

1993. Plenum Press, New York. Pp. 383, 155 x 235 mm. \$100.

This book contains six chapters, each one a major position paper on a current area of research in avian biology, and each one potentially demonstrating how advances in ornithology may make contributions to the advancement of other areas of science.

Broadly the topics covered include phylogeny, mating, parental care, trophic structure, demography, behavioural ecology, species diversity and ontogeny. The authors are drawn from universities or research institutes in various parts of the world including the U.S.A., Canada, Chile, Finland and Germany.

The opening chapter, by David Ligon, is an interesting discussion of the notion that the phylogenetic history of avian mating and parental care systems needs to be more explicitly recognised by avian behavioural ecologists. Among other aspects, he discusses classical

polyandry (the avian feminist's seventh heaven?) in shorebirds, asking (and attempting to answer) the question as to why it is so rare. He acknowledges the possible role that chance has played in the evolution of classical polyandry, perhaps implying that 'replaying life's tape' as Stephen Jay Gould would say, may have determined a different outcome.

The second chapter, by Marti *et al.*, on the trophic structure of raptor communities examines the food and time axes of community ecology, but not habitat selection considering that this has been adequately addressed elsewhere.

McDonald and Caswell's chapter on avian demography contains a useful glossary of terms to help the non-mathematician negotiate the 'double integrals, strange notation and seemingly impenetrable thickets of equations' contained in the matrix models. The authors claim that demography is of fundamental concern to conservation biology with demographic rather than genetic consequences of rarity possibly being the imminent threat to species facing rapid habitat destruction in many parts of the world.

After observing the feeding activities of, for example, a Rufous Night Heron *Nycticorax caledonicus*, it would be the ideal time to retire to the comfort of your boat or shack to consider (perhaps with a warming port) Raymond McNeil *et al.*'s chapter on nocturnality in colonial waterbirds. Was the observed species truly nocturnal, or merely crepuscular and if so, why? What are the agents of natural selection favouring nocturnality in these birds? Are they avoiding predators or are they kleptoparasites (avian night burglars)?

Kerry Rabenold's chapter five reviews the reversed latitudinal diversity gradient in bird communities of spruce-fir forests in eastern North America, and then compares this with a tropical system in order to isolate particular ecological or evolutionary variables. The author uses this to suggest that progress can be made toward demonstrating the potential of evolutionary or ecological processes in controlling species diversity.

Starck's chapter six analyses the internal constrictional constraints limiting structural changes and the external selective forces guiding the evolution of avian ontogenies. Based on comparative morphology, the chapter presents structural data and relates these to physiological, ecological and basic behavioural data. Also discussed are the difficulties associated with the classification of avian ontogenies due to the diversity of avian hatchlings with a useful section comparing the

use by various authors of terms such as nidifugous and nidicolous, super-, semi-, precocial and altricial.

For this reviewer, a recent student of the biological sciences, these chapters present stimulating reading, but they also reflect the problems of 'current' literature in attempting to keep pace with results from technological developments (e.g. DNA fingerprinting) that almost certainly will require major revision to thinking on many topics involving mating and parental care. New editions of texts on behavioural ecology are being produced at regular intervals, and review books such as this one (with references mostly only up to 1991) suffer the same problem.

Reviews of this type tend to lack the comprehensiveness of subject coverage expected from, say, a textbook, whilst being extremely detailed on specific aspects of their chosen topics. The topics are discussed very comprehensively within the limits set by the authors.

At a price of \$100, this is probably a book for libraries rather than the individual study, but within the limits discussed contains much of interest to the ornithologist.

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BIRDS OF ROTTNEST ISLAND by Denis Saunders and Perry de Rebeira

1993. 2nd edition. Published by the authors (24 Victoria Street, Guildford 6055). Pp. 117, colour plates 13, colour map 1, \$15.

Since the first edition of this book was published in 1985, the former army barracks have been developed to become the Kingstown Environmental Education Centre, and the Rottneest Island Voluntary Guides run a variety of tours including an early morning bird walk. These events, added to the continuing popularity of this picturesque holiday resort, have necessitated a second edition of this local bird guide.

In this well produced and very reasonably priced guide to enjoying the birds of Rottneest Island and their delightful environment, the authors have updated information on the 49 species that regularly occur there. In this new addition, several of the twelve habitat colour photographs have been changed and the seven colour plates of the birds (by Perry) are presented in a much improved way — larger and on a coloured background.

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