

MOUND-BUILDERS

DARRYL JONES & ANN GÖTH 2008

CSIRO Publishing, 120 pages, \$39.95

Mound-builders are an extraordinary, yet often overlooked group of birds, which use naturally occurring sources of heat such as decomposing leaf litter, to incubate their eggs. Three of the 22 extant species (family Megapodiidae) occur in Australia: the Malleefowl, Australian Brush-turkey and Orange-footed Scrubfowl. The authors provide an exploration of the similarities and differences between these three species, adding interesting facts on related species and informing the reader of the progress that has been made on research into these unique birds.

It is fitting that the book should be written by two specialists in the field of megapodes: Darryl Jones with a 30-year background in the study of mound-builders throughout Australia and the islands to the north, with a more recent focus on the behavioural ecology of the Brush-turkey; and Ann Göth, who conducted her PhD studies on Brush-turkeys in Brisbane and continues to work on this species. Both authors are extensively involved with the conservation and research of megapodes, sharing insights from their own research, as well as highlighting the important work of other researchers, throughout the text.

Mound-builders is suitable for anyone with an interest in birds, with an easy-to-read and engaging writing style. You can feel the authors' passion for their subject. This compact volume consists of 120 pages divided into 8 chapters. The authors set the scene in Chapter 1 from a historical perspective, and also provide a brief overview of mound-builders. The ground-breaking work of scientist Harry Frith in the 1950's is duly acknowledged,

and his work is notably quoted throughout the text. The following two chapters cover taxonomy, distribution, habitat, and general ecology, and build a foundation for the next four chapters, which describe in detail the unique characteristics of mound-builders, including their mounds, role of the parents, and their social and reproductive behaviours. The final chapter discusses conservation and management strategies.

I enjoyed the sections on taxonomy and distribution in Chapter 2, as they provide a very good insight as to where the Australian mound-builders fit on the evolutionary 'tree' in comparison with other megapodes, including an excellent table on megapode phylogeny. I found coverage given to other extant (and extinct!) megapodes useful in placing the Australian species in a broader context. It is interesting that whilst the Orange-footed Scrubfowl belongs to the largest and most widely distributed group within the megapode family, it is the species which we know least about.

Fascinating facts on the general ecology of the three species are provided, including the recent discovery that the male Brush-turkey's wattle reflects ultra-violet light; that Brush-turkeys can shed their vertically arranged tail-feathers like a lizard loses its tail when attacked by a predator; and the amazing 'duet' sung by pairs of Scrubfowl that can be heard up to a distance of 6 km away!

Chapters 4 – 7 reveal how every aspect of these birds lives' revolves around the incubation mound. The authors describe in detail the complex construction process of the mound, and the effort required in its ongoing maintenance to retain the correct temperature. Emphasis is placed on the importance of rainfall in the breeding process, and how these species have adapted their behaviour to contend with the elements. The reader is left in awe of the intricate and perfectly adapted process from the beginning of a mound-builders' life

within and outside of the mound. It covers in detail the special characteristics of the eggs and the development of the embryo, how the temperature within the mound may indeed influence the sex of the chick, and the incredible struggle faced by the well-developed chick to dig itself out of the mound (all nicely summarised in two tables). Mound-builders receive no parental care, and one is left feeling total wonder that any chicks make it through to adulthood, with no parents to provide protection, guidance and role models, and a range of environmental hazards to contend with, particularly feral predators. A number of compelling questions are posed, including "how do they know what to eat?", "how do they recognise predators/conspicifics?", which are subsequently answered through the results of various studies.

The extraordinary adaptations of mound-builders are synthesised in Chapter 7, describing the highly different mating techniques of the three species. As adult birds are 'excused' from all of the tasks associated with raising offspring, they are free to concentrate on other ways to ensure continuation of the species, or, enhancing breeding. The authors pare this down to two tasks: providing the best incubation conditions; and females "provisioning the egg" with the best food sources available for the developing embryo.

The final chapter provides an insight into past and present threats to the Australian megapodes, including egg harvesting and hunting, however, actual conservation and management strategies are only lightly touched on. Broad community interest in protecting the Malleefowl (which is the only Nationally listed of the three species) has increased markedly over the last decade, with the authors duly acknowledging the input of WA groups. To be fair, however, recognition should also be given to the exemplary actions of the Victorian Malleefowl Recovery Group who have been and continue to be instrumental in developing,

implementing and coordinating conservation and recovery actions for Malleefowl. A small paragraph on the recent achievements towards Malleefowl recovery would have been welcome, including mention of the National Monitoring System, National Database, and PhD study on Malleefowl genetics.

Whilst the Brush-turkey and Scrubfowl both carry the conservation status of 'Least Concern', the section on *Living with suburban mound-builders* offers a greater appreciation of why these two species, in particular the Brush-turkey, visit our suburbs, and how we can learn to live with their often exasperating habits.

Colour plates are of high quality, however, a few more of the Scrubfowl and a few less of Malleefowl would have provided a better balance. I found the range of Malleefowl on the distribution map unusual and somewhat flawed – the illustrator could have referred to the National Recovery Plan for accuracy, and made solid blocks, rather than a myriad of spots. The picture on the back cover is referred to as a Scrubfowl, however, is plainly a Brush-turkey.

Overall this small book provides an excellent introduction into the fascinating lives of mound-builders, leaving the more inquisitive reader with a large list of references for further reading. The Orange-footed Scrubfowl certainly warrants more attention, as we still know so little about our smallest and yet probably most abundant mound-builder. An inspiring read for those who spend most of their attention on more attractive, nest-building songbirds!

Sharon Gillam