

BOOK REVIEWS

ESTIMATING NUMBERS OF TERRESTRIAL BIRDS Edited by C. J. Ralph and J. M. Scott, 1981. Studies in Avian Biology Number 6. Cooper Ornithological Society.

During one week in October 1980 along the balmy Californian coast, over 500 ornithologists from around the world gathered together to exchange ideas and research results and to quarrel endlessly over how to count birds. One might wonder why so many otherwise normal birdwatchers should spend their energies on such an apparently simple topic. Yet the results of their discussions, a weighty tome of over 600 pages with nearly 1500 supporting references, clearly establish that one plus one does not equal two when it comes to counting birds.

The book is organized according to the symposium sessions. It also has an Introduction and several Appendices, which are largely the reports of working groups on specific problems, such as revising the annual North American Christmas Count (any thoughts of initiating such a count here?). An essential addition is the 'Reader's Guide' which sets out page references for a number of topics, including descriptions, appraisals and comparisons of methods. This guide is in many ways more useful than a standard index.

The papers which were presented are first divided into the two major types of bird counting: 'Estimating relative abundance', that is, which birds are more numerous than others; and 'Estimating birds per unit area', or actually trying to "guesstimate" how many individuals live in a given square or circle or along a line-transect. A number of methods are set out in each section along with results from actual studies employing those methods. The next section contains the results of studies which compare methods against each other and attempts to explain such things as why counting in strips yields 15.2 birds while counting in circles yields 10.7 birds.

The next three sections look closely at how the main components of bird counts influence the results. These components are the bird species themselves (we all know that grasswrens are more difficult to count than pelicans), the environment (it's easier to see and count birds on mudflats than in dense scrub), and the observers (it's not by chance that some names regularly appear in 'Bird Notes'). After reading these sections one begins to realize that nothing in the world of counting birds is unchanging.

The next two sections, 'Sampling Design' and 'Data Analysis', again show that the numbers of birds found in a paddock can change simply by flicking a switch on the computer. The final section 'Overviews' indicates how all this methodology can

be applied to problems of bird ecology, and gives some indications of how to decide which method to use.

It is impossible to summarize or even evaluate adequately a book of such size. Because of its rather technical nature, one learns more about birdwatching than about the birds themselves. It is not a book to be purchased or read by most amateur ornithologists. By contrast however, it is an important reference book for students, professionals, and project leaders who have to know how to count birds.

There is a heavy bias in the papers on the problems encountered in North American conditions. In many such cases the birds are migratory, breed within a clearly defined season and are essentially territorial; thus the problems of counting breeding birds in North America are different from those encountered in Australia or the South American tropics.

The overall message of this book is that there is no one method for counting birds. Each has its advantages and disadvantages. However, there are several steps which should be followed when the mood or the problem demands that one know how many birds there are. First and foremost, know the area and the birds that live there. One should only attempt to count birds when these factors are fairly well known. Second, know why the birds need to be counted in the first place. What questions need to be answered and will numbers supply those answers? Third, choose a method appropriate to the environment, the bird species, the observers and the time and money available. And finally, like all scientific tools, the method needs to be calibrated. Test it against another method or on a known population before going so far that one cannot turn back.

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