

# Preface

Australia's butterfly fauna is now reasonably well known, and most of the species can be recognised and named by non-specialists with the aid of the comprehensive text and later field guide by Braby (2000, 2004). Numerous localised subspecies have also been named and, although the acceptance and status of many of these is still open to debate, they clearly demonstrate the considerable additional variety present over the mosaic of the country's environments. Robust biological and distributional frameworks have been constructed for many taxa, even though many of the more intricate details have not been documented. Their very low abundance and narrow distributions, indeed, render some taxa formidably difficult to study. Interest in butterfly conservation has also increased markedly in recent years, and the butterflies are the only group of invertebrates in Australia so far accorded a National Action Plan to help define and focus their conservation needs (Sands and New 2002). Much of the historical and evolutionary background to Australia's butterfly fauna was summarised by authors in Kitching et al. (1999).

In this account, I deal with some aspects of the conservation of a restricted southern subset of Australia's butterflies, essentially those found in, and many of them endemic to, the East Bassian Province. In general, these butterflies have received far more attention than those elsewhere in the country. The region supports much of Australia's human population, and is that most intensively surveyed for Lepidoptera. It comprises Victoria and immediately adjacent parts of the south east corner of the Australian mainland (namely southern South Australia, the Australian Capital Territory, and most of New South Wales) as well as Tasmania, and the intervening islands of Bass Strait.

It is also the predominant region in which practical butterfly conservation in Australia has largely been founded, mainly during the last three decades. I bring together information accrued over this period on the conservation status, needs and management of several species and subspecies of conservation significance. These cases have helped to initiate, drive and develop interest and policy affecting insect conservation in the region. The wider values of this synthesis include demonstrating the development of some of the first insect species conservation programmes in southern Australia, assessing the needs for these, and how those needs were acknowledged and addressed. They revealed the massive contrasts between Australian knowledge and capability for butterfly conservation and that which may be 'taken for granted' in parts of the northern temperate region as an outcome of the much stronger historical and biological documentation extending over more than a century. Other than by coincidence and inference, we have little knowledge

of historical changes in Australian butterfly abundance and distributions before the last quarter of the twentieth century, and interest in insect conservation is generally a modern development, largely in response to perceptions of influences of anthropogenic change and greater appreciation of Australia's biodiversity and its vulnerability to the massive losses of natural vegetation that have occurred so widely over the country. These gaps in knowledge ensure that the research component of management for most Australian butterflies assumes predominant importance in order to provide the basis for sensible knowledge-based and well-focused conservation, and to render management likely to succeed. Much of the limited background information on some taxa has hitherto been unpublished or is contained in internal or agency reports of limited circulation as 'grey literature', and the period covered and the cases treated are amongst those that have led to widespread acceptance of insects as 'worthy' of conservation attention in Australia. More generally, this account thus builds on an earlier published foundation perspective of insect conservation in Australia (New 1984) to illustrate increasing interest and maturity within this science.

The major current perspective is developed from discussion of conservation efforts for several species or subspecies that have helped to found interests in insect conservation in the region. Almost all the taxa involved are members of significant endemic radiations of butterflies. Most, such as myrmecophilous species of *Lycaenidae*, display considerable ecological complexity and are ecological specialists in some way – with, of course, features such as larval monophagy, other specialised requirements such as specific ant mutualists, and very limited habitat spectrum likely to increase their vulnerability and, hence, their conservation needs and profile. In addition to taxa being conservation targets in their own right, studies of butterflies have raised (and helped to clarify) the complex problems of defining and protecting 'communities' both in legislation and practice, and to draw attention to the vulnerability of habitats of very restricted extent. These cases have played substantial educational roles, not least in awakening young people and others to the intricacies of insect biology and the features affecting wellbeing, and several cases are discussed in some detail to illustrate these wider influences. They are complemented by briefer accounts of most other butterflies that have attracted attention for conservation needs in the region, although some of these taxa have not yet received detailed attention. Collectively, these examples demonstrate the range of regional concerns and threats for butterfly wellbeing, and how some of these concerns are gradually being translated into conservation practice. They demonstrate also that much remains to be learned, and done.

These examples are preceded by wider commentary to introduce the region's butterfly fauna and its conservation needs, and the development of relevant conservation legislation and practice for invertebrates. The final discussion synthesises some of the major issues facing butterfly conservation in the region, and prospects for the future, helping to place the progress made into a wider perspective. The book is thus divided into three parts, with the first part setting the perspective for the case histories and these, in turn, contributing to the fuller information needed for future use and development. The sequence of taxon-based cases discussed in

Part II runs from the comparative conservation of intraspecific forms (subspecies) through comparison of closely related species within a genus (one case of two congeneric species, a second of a more diverse array), to a broader appraisal of taxa depending on a vulnerable restricted ecosystem (alpine grasslands), and finally to the wider issues involved in transforming butterfly conservation planning from strict taxon-focus to that of a 'community' in which individual butterfly taxa may be threatened. Part 3 integrates these examples with other taxa for which conservation is warranted, and discusses the considerable effort and involvement needed to assure Australia's butterflies a more secure future.

**Acknowledgements** This book draws on the work of many enthusiastic people to whom the conservation of butterflies in Australia is important, and it is a pleasure to thank them for their advice, opinion and friendship. Long term cooperative work on butterflies with Dr Don Sands, Dr Alan Yen, Dr Michael Braby, Dr David Britton and Andrea Canzano has helped to clarify much of the conservation need. Other colleagues, including Mike and Pat Coupar, David Crosby, Fabian Douglas, Dr Ross Field, Ann Jelinek, Dr Beverley Van Praagh and Megan Relf, have also provided comments, copies of reports or publications and, in some cases, unpublished information with permission to cite it. I am very grateful to the following for use of their photographs, as attributed individually in the legends: Andrea Canzano, Mike and Pat Coupar, David Crosby, John Homfray, Phil Ingamells, Simon Nally, Mark Neyland and Megan Relf. Unattributed photographs are by myself, and set specimens of butterflies are from collections of Museum Victoria, courtesy of Dr Ken Walker.

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I also thank Zuzana Bernhart for her interest in this work. Production of the book has been facilitated greatly by the careful attention of Elisabete Machado and Arulmurugan Pavitra.

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Butterfly Conservation in South-Eastern Australia:  
Progress and Prospects

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2011, X, 190 p., Hardcover

ISBN: 978-90-481-9925-9